A STUDY ON THE LACK OF SCALE WITHIN THE HEDGE FUND INDUSTRY IN CANADA

A thesis submitted to The University of Manchester for the Degree of Doctor of Business Administration (DBA)

In the Faculty of Humanities

2015

JOSEPH PANCRATIUS

CANDIDATE’S SCHOOL/MANCHESTER BUSINESS SCHOOL

People Management and Organization Division

DBA (MBS-Legacy)
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The University of Manchester  
Joseph Pancratius  
Doctor of Business Administration (DBA)  
A STUDY ON THE LACK OF SCALE WITHIN THE HEDGE FUND INDUSTRY IN CANADA  
January 31, 2015  
Abstract  
As a nation, Canada has claimed global success in financial services in many ways. However, the scale of the Canadian hedge fund industry is incomparable to that of London and New York. Although it only holds 1.5% of global hedge fund assets, the Canadian hedge fund industry has the ingredients to become a leader among its peers. During the past ten years, several external factors (including changes in technology, the 2008 economic crash, and trends in outsourcing) have had an effect on financial services worldwide, but there are also internal factors specific to Canada that have directly contributed to the industry’s lack of scale. The thesis uses cluster concepts to gain an in-depth understanding of these patterns and identify the causes for the Canadian hedge fund industry’s lack of scale. However, cluster concepts are only useful to a limited extent in explaining the emergence, sustenance, and decline of financial services clusters. Historically, cluster concepts as explored by Marshall (1890), Porter (1990), and Piore and Sabel (1984) have been used to explain the successes and failures of manufacturing industry clusters, but these theories have been infrequently used to explain financial services industries. The dispersion of clusters due to globalization, advancements in technology, and deglomeration has made it even more challenging to identify, measure, and evaluate cluster behaviour in general, but especially in the financial services industry. Therefore, in addition to traditional cluster theories, this thesis seeks to evaluate the dynamics of the Canadian hedge fund cluster using newer theories such as New Economic Geography and the concepts of dispersion and deglomeration in order to explain Canadian hedge funds’ lack of scale.

The thesis explores the main ingredients for cluster formation and growth, as well as the opposing arguments of cluster dispersal. A mixed-methods approach was used, employing semi-structured interviews and secondary analysis. Endogenous causes specific to Canada were isolated and investigated through data analysis. Throughout this study, the task of cluster facilitation was explored in order to identify the key role that each individual participant plays within the Canadian hedge fund industry. The present research is the first of its kind, and could open up possibilities for further study. The core of future research could be focused on the cluster measurement and identification of cluster borders. Another research stream could attempt to deepen understanding of the feasibility of each recommendation listed in this research. This could involve more detailed, exploratory quantitative and qualitative work that could quantify the cost and benefits of promoting hedge funds in Canada.
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Acknowledgements

I would like to express my special appreciation and thanks to my supervisors Professor Dr. Adam Leaver and Professor Julie Froud. You have been tremendous mentors for me. I would like to thank you for encouraging my research and for allowing me to grow as a research candidate. Your advice on my research and your brilliant comments and suggestions has brought me up to this stage. Also I would especially like to thank the participants of the financial services industry of Canada. All of you have been there to support me when I collected data for my research and encouraged me throughout the process.

Finally I would like to thank the DBA Office, Manchester Business School for their relentless support.
Chapter One: Introduction

In the past ten years the popularity of hedge funds has grown tremendously, reaching close to 2.4 trillion American dollars (USD) in assets (Barclay Hedge 2014). However, the growth of the Canadian hedge fund industry as compared to the rest of the world has lagged behind (Sharp, A 2013). Canada as a nation has gained global success in many ways recently, as evidenced by, for example, the survival of the Canadian financial system during the near-meltdown of global systems, or the fact that the World Economic Forum has declared Canada as having the soundest and safest financial system in the world for six (as of 2014) years running. Toronto, Canada’s leading financial centre is ranked as the 11th largest financial centre in the world by Global Financial Centres Index (Qatar Financial Centre Authority, 2013a). Given these facts, it is surprising that Canada holds only 1.5% of the hedge fund industry’s assets (AIMA Canada Handbook p 7). The lack of scale in Canada in this relatively new industry during the past ten years is alarmingly low.

1.1 – Problem Background

Mutual fund assets under management (AUM) in Canada total $901 billion as of March 2013 (IFIC). In comparison, hedge funds amount to only $30 billion. Potential hedge fund investors are Canadian domiciled or foreign high net worth individuals (HNWIs), family offices (termed Ultra-HNWI), or institutional investors (such as pension funds). Canada has the seventh largest number of HNWIs and Ultra-HNWIs in the world and can boast of reaching the 300,000 mark in 2013, which demonstrates an increase by 12% since 2012 (AIMA 2013). HNWIs and Ultra-HNWIs collectively represent 60% of assets under management in Canada. Pension funds in Canada are consistently regarded as global leaders by international peers due to the scale of their assets, totalling $1.12 trillion as of 2011 (Canada Institutional Investment Network). The Canada Pension Plan Investment Board, one of the top five pension funds in Canada, has $170.1 billion assets under management, out of which allocates $10.4 billion to hedge funds (Canadian Hedge Watch, 2012). However, it allocates all of these assets to external public market managers who represent non-Canadian hedge funds, such as Bridgewater Associates, Fortress Investment Group, and Pershing Square Capital. Quebec’s $159 billion Caisse de dépôt et placement du Québec pension fund and the $117.1 billion Ontario Teachers’ Pension Plan have also traditionally looked abroad for their hedge fund exposure (Sharp A, 2013). These trends clearly
indicate a significant lack of demand for domestic hedge funds in Canada. In order to investigate this it is essential to consider how financial services are clustered, both in general and as it pertains to Canada specifically.

Cluster theory is used to explain aspects of the emergence, sustenance, and decline of financial centres, and this can be applied to Canadian financial services clusters such as the hedge fund industry. The geographic concentration of interconnected businesses has been described using cluster theory by traditional theorists such as Alfred Marshall, Michael Porter, and Piore & Sabel. These concepts have been most frequently used to explain the successes and failures of industrial districts, but have been much less frequently used to analyze the financial services industry. Furthermore, there has been only limited analysis explaining why a cluster declines over the time and which key drivers must be considered in order to establish the sustainability of a cluster.

A cluster is composed of firms constituting the value system of buyers and suppliers, as well as firms in related technologies that share certain factor or product markets. Cluster theory was initially introduced by Alfred Marshall (1890), and was further developed by scholars such as Michael Porter (1990) and Piore & Sabel (1984). According to these theories, clusters follow life cycles (Solvell, Lindqvist, and Ketels, 2003), and evolve over time according to changing external and internal factors. At the embryonic stage, the development of a cluster is sparked by an initial – often exogenous – shock. It then moves on to gain agglomeration economies and goes through a structural transformation. Either the cluster achieves a national/international leadership in a given sector or technology and becomes resilient in the face of technological shocks and economic recessions, or the cluster declines both socially and economically (Bergman, 2008).

Financial centres, which consist of multiple financial services clusters, are areas in which high-level financial functions and services are concentrated (Porteous, 1995). They can be categorized in several ways, including as international financial centres (IFCs), regional financial centres (RFCs), or offshore financial centres (OFCs). Financial services are usually spatially concentrated in agglomerations within financial centres, which are typically large cities. Clusters are dependent on the existence of certain economic preconditions, and will only succeed if they generate a viable and self-sustaining mixture of economic and social inputs and outputs. Due to this fact, some financial centres grow and some wither as they go through the life cycle of their
productivity. Some countries or regions have adapted processes and features that could make them more attractive as financial centres from a sourcing perspective at particular historical junctures. According to the framework established and developed by the abovementioned cluster theorists, the hedge fund industry can be classified as a cluster that is part of the overall financial services industry. Hedge funds have been a core component of successful financial centres like London and New York City.

Critical factors for a successful financial centre include political/legal stability, a strong human capital base, a sound regulatory and supervisory framework, a lenient tax regime, a well-developed transport and telecommunications infrastructure, and robust payment and securities settlement systems (Lanoo, 2007). Competitive pressures that act as drivers of change within the financial services industry can either help to shape the relative strength of a financial centre or reduce it. Over the past two decades, financial centres in many countries have become more and more internationally and globally dispersed in orientation and in function. When technological innovation spreads out in a financial services cluster, new clusters tend to appear in low-cost areas. If these innovations are then commercially successful, they often develop and grow at the expense of historical sites (Maggioni, 2004). The deregulated and borderless market assisted by technological advancement has been quoted as a probable cause for this decentralisation.

One of the key motivations for the present research is to find probable reasons for the lack of scale of the hedge fund industry in Canada so that some attainable remedies may be prescribed through this research. In order to explain the patterns of the hedge fund industry over the past few years, several factors must be evaluated, including key success variables and possible sources of industry bottlenecks. Financial service clusters within new and emerging financial centres that do not show signs of sustainable growth generally do not do so because of a failure to take into account the full range of factors affecting cluster development (Sölvell et al, 2003). It is yet to be researched whether or not this is the case for the hedge fund cluster in Canada.

There are some key signs that Canada has the ingredients required to become more successful as a financial services cluster (World Economic Forum, 2014), despite the fact that the growth in the Canadian hedge fund industry has not been comparable to its peers. First, Canadian hedge
funds managed by domestic investment managers have outperformed global hedge fund indices\(^1\) in relatively recent years (Klein et al., 2013). Second, Canadian banks seem to provide good shareholder returns despite their limited global presence. Third, security brokers appear to have developed strong positions domestically. Canada has become a centre of excellence in providing financial service, particularly for hedge funds, since 2004, since it presents strong investment options in the financial services sector with locations that provide operating cost advantages over major European and US competitors (Foreign Affairs and International Trade Canada, 2012b).

Financial service clusters in Canada can be found in Ontario (Toronto), British Colombia (Vancouver), Alberta (Calgary), Quebec (Montreal), and Nova Scotia (Halifax). The Global Financial Centres Index, which is a ranking system that provides profiles, ratings, and rankings for 83 financial centres worldwide, ranks Toronto in 11\(^{th}\) place globally (Qatar Financial Centre Authority 2013b). The other major regional financial centres in Canada, including Vancouver, Montreal, and Calgary ranked respectively as 14\(^{th}\), 18\(^{th}\), and 26\(^{th}\) (Qatar Financial Centre Authority 2013b), and Halifax has yet to be included in the index. Vancouver calls itself a global commercial gateway, while Montreal boasts of more than 3,000 financial service firms. Calgary is North America’s fastest growing economic region, with more head offices per capita than any other Canadian city, specializing in financing the energy sector. Halifax has recently been identified as the most sought-out destination for international companies to establish back- and middle-office operations. Financial centres in Canada provide some of the best operating environments worldwide and are considered to be one of the largest contributors to the Canadian economy, contributing 6.3\% of the GDP as of the end of 2012 (Statistics Canada, 2013). It is very interesting to note that a country with so much potential has underperformed in sectors such as the hedge fund industry.

Toronto, Canada’s leading financial centre is considered to be a centre of excellence for hedge fund services. It is one of the top 12 financial services hubs in the world (Qatar Financial Centre Authority, 2013b), is North America’s third largest financial centre, and Canada’s finance and business capital (Qatar Financial Centre Authority, 2013b). The Toronto Stock Exchange (TSX) is the third largest stock exchange in North America and seventh largest in the world, and

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\(^1\) Including Credit Suisse/Tremont (CS/Tremont), Hedge Fund Research Inc. (HFRI), CISDM hedge fund indices, and CISDM sub-indices.
accounts for at least 10% of Canadian economic activity (Statistics Canada, 2013). A recent evaluation conducted by the Toronto Financial Services Alliance (TFSA, 2013) revealed some reasons why Toronto seems to be retaining its position as one of the leading financial centres. Firstly, its advantageous geographical location provides easy access to other major North American metropolitan areas and its comparable input costs and good macroeconomic conditions are a comparative advantage relative to its American peers. Secondly, it has strong related and supporting sub clusters, including business services, information providers, and computer and communication services. Thirdly, it has well-educated human resources and a higher incidence of professional designations within its workforce (World Economic Forum, 2013).

In this thesis, cluster theories – both classic and contemporary – are used to investigate the reasons for the Canadian hedge fund cluster’s lack of scale, with the hopes of informing potential strategies for improving this sector. The ultimate objective of this research is to provide policymakers and practitioners with a means of intervention for increasing the competitiveness of the Canadian hedge fund industry through strategies and policies that will produce higher growth.

1.2 – Problem Statement

Financial centres change due to external and internal forces, and it is not a given that change factors affecting the financial centre as a whole will affect the clusters within. Three major change factors seem to be impacting financial centres in recent years: technology, outsourcing, and the economic crash of 2008. It has not yet been evaluated whether these factors have initiated a change in the hedge fund cluster, nor what the extent of this change might be. By adapting a cluster theory approach, it may be possible to segregate specific factors, either internal or external, that could explain the performance of this cluster.

Firstly, technology has advanced in recent years, improving performance and reducing cost. Business data can be delivered anytime and anywhere via the internet (Leamer, E; Storper M 2001). Innovation seems to be the norm when firms, in order to retain their position within a financial service cluster, adapt in favour of integrating technology with business decisions. Value chains become more segmented and are often more efficient and cost-effective when data-mining capabilities are used to compete at all levels. Some academics (Brezis E.S. ,Krugman P. (1997), argue that these trends could be the beginning of the break-up of many leading clusters due to a
reduced emphasis on geographical proximity and agglomeration economies, led by a decline in transportation and trading costs, increasing virtual markets, and advances in communication across space. These developments present us with an opportunity to review newer theories, such as New Economic Geography (NEG), in relation to the financial services industry.

Secondly, outsourcing non-core functions seems to have had a decentralizing effect on financial services clusters. Canada’s financial services cluster is comprised of supporting industry players like investment managers, administrators, prime brokers, legal counsel, and auditors. Each of these segments of the financial services cluster has adapted outsourcing in some form or another in order to be competitive. According to Quinn (1992), firms should re-examine their entire value chain and outsource any activities that are found not to be of world-class standard. Glaeser and Redlick (2009) have argued that a cluster will rise or fall in a manner that is dependent on its ability to attract and retain a multi-talented workforce. As the international division of labor grows, cluster locations like India have become more specialized in particular activities such as back office functions (Krugman, 1991b), thus attracting particular sections of the value chain. It can be argued that strong clusters tend to grow stronger through outsourcing, as innovation increases and cost of production decreases. If innovation has increased Canada’s competitiveness by offshoring activities to lower-cost destinations, one would expect its ranking in the Global Financial Centre Index to have risen, but this has not been the case (Qatar Financial Centre Authority, 2013a).

The leading financial centres have been successful in maintaining their leading positions by creating satellite financial centres (for example, Canary Wharf) and acting as one international financial centre. Between the years of 2004 and 2010, all major hedge fund administrators (including Citco, Citigroup, UBS, and State Street) set up their offices in regional financial centres like Toronto and Halifax. Since then, outsourcing destinations also have broadened. It has not yet been established whether this increase in offshoring activity has contributed towards the break-up of hedge fund services in financial centres like Toronto, or if it has made such clusters stronger. This question will be addressed in detail using the cluster approach in the present research.

Thirdly, external shocks like the economic crash of 2008 seem to have had an effect on how financial centres operate. Although Canada seems to have fairly conservative financial
regulation, risk management practices, and sound macroeconomic policies, increased global regulation since the crash seems to have had an effect on Canada as a financial centre. Reduced appetite for riskier sectors, reduction of overall lending exposure, decline in cross-border transactions, changes in the terms of derivative contracts and counter-party arrangements, and changes in bank reserve requirements are some of the effects of this crisis undoubtedly affecting Canada’s financial services landscape.

These changes must be systematically evaluated in order to identify whether they could be the cause of lack of scale of the hedge fund sector of the Canadian financial services industry, and to estimate to what extent these change-drivers contribute towards the non-growth of the Canadian hedge fund industry if this is the case. If the reasons for this lack of scale cannot be explained through these major change factors, the other underlying causes must be identified so that possible solutions can be advanced. Using cluster theories as its main tool, the present study is driven by these considerations.

1.3 – Research Focus, Aim, and Purpose

In order to analyze the growth, decline, or sustenance of a financial centre, it is important to fully understand the marketplace in which it is located. A marketplace is effectively weightless, and is based on the choices made by its participants. Investors are among the hedge fund marketplace’s participants. Hedge funds cater mainly to high net worth individuals, institutions, and family offices. According to the Alternative Investment Management Association (AIMA), Canada ranks seventh in the world for HNWIs and UHNWIs as of the end of 2012. Thus, the potential for these investors to invest in hedge funds in Canada has been present always, but based on the AUM in hedge funds in Canada, neither the HNWIs nor Ultra HNWIs have used hedge funds as a major part of their investment strategy. It is imperative that the factors preventing these investors from investing in Canadian hedge funds be investigated if prescriptions to grow the hedge fund industry are to be developed.

There is no doubt that the relative growth of the Canadian hedge fund industry has been lagging for the past ten years. In 1999, the assets under management (AUM) in Canada was 2.5 billion USD (50 funds), in 2004 it was 26 billion USD (190 funds), and as of the end of 2013 it was 30 billion USD. Comparatively, the global hedge fund industry grew from under 50 billion USD in
1990 to close to 2 trillion USD before the economic crash in 2008 (Hedge Fund Research, 2014) and as of end of 2013, 2.4 trillion (Barclay Hedge, 2014). In Canada, only 4% of hedge funds have assets of more than $1 billion, and 30% have assets between $10 million and $49 million (Canadian Hedge Watch 2013). Traditional cluster theory has been used to explain similar discrepancies with other – mainly manufacturing – industries in the past. However, the specific nature and context of financial services could prove to be challenging for these long-used approaches. Combining traditional cluster theories with newer versions could help to explain the comparative lack of scale of hedge funds in Canada.

For example, in measuring cluster growth, decline, or saturation, it is essential to define the borders of a potential cluster within a region or nation and measure it so that the size and growth of the cluster can be mapped. Cluster borders span beyond their home base to the entire globe through virtual service networks where suppliers, distribution channels, and end users are geographically dispersed. Drawing cluster boundaries is often a matter of degree, and involves creative processes informed by an understanding of the linkages and complementarities across industries and institutions (Porter, 2000). At times, significant clusters may be obscured or unrecognized due to the ways in which industrial segments are demarcated in a cluster. In order to understand the Canadian context, global hedge fund clusters must be examined thoroughly in order to evaluate the usefulness and limits of different measures through which the hedge fund cluster can be examined.

Determining how clusters are classified and situated can be an ambiguous and complex process. It has been argued that a cluster’s existence is influenced by the actions of key players within that industry, who may not necessarily act collectively. There are six ‘central’ or ‘core’ actors operating within Canada’s hedge fund sector. They can be segregated into three major groups: service providers, policy makers/government, and investors. Each central actor is categorized based on its participation in one or more functions within the operating model, and each player can service more than one cluster within the financial services sector. For instance, an investment manager could service both retail clients and hedge fund clients. An administrator, legal counsel, or prime broker could be providing a variety of services from both their head office and from its branches that are dispersed across the globe. If services have been outsourced to a third party, the measurement could become even more complex. Alternatively, the residency-based investor
population could be used as a measure for Canada’s hedge fund market. Each set of measures has the potential to reveal varying insights into the nature of hedge fund growth in Canada. In essence, both qualitative and quantitative measures must be used in order to estimate Canada’s hedge fund potential.

Furthermore, external factors that bring about change in the global hedge fund space – including, as described above in section 1.2, technology, outsourcing, and the 2008 economic crash – must be applied to Canada in order to evaluate the extent of their effect on the Canadian hedge fund landscape. These factors could have possibly contributed to the decline of an existing cluster, resulting in a decrease of its economic contribution. Alternatively, these factors could be contributing to a decentralization of the value chains, facilitating either the growth or decline of a specific sector. Whether this is case and to what extent will need to be determined through research.

Recently, academics have argued for the decentralization of clusters as a means of innovation and overall competitiveness. For instance, globalization can be seen as both an integration of production and markets (Friedman, 1999) and also a decentralization of how business is conducted. Globalization has accelerated in past decades due to two main catalysts: deregulation of barriers to entry and technological advancement. These two factors have eroded national boundaries and markets. Whether through the integration of securities markets through cross-border listings or the increase in multinational fund managers, the electronic movement of capital has created a market in cyberspace, thus reducing the need for a geographical location. As firms belonging to financial services’ supporting industries have multiple locations and do most of their work through microprocessors it has become harder to ascertain and identify these firms’ locations. Audit firms, for example, have taken advantage of this phenomenon by decentralizing their operations into various countries and extending their services to accommodate niche markets. Thus, decentralization must be evaluated in order to distinguish it from the causes of lack of scale of the Canadian hedge fund cluster.

In recent years, Canada has become a centre of excellence for financial services, mainly due to its quality and availability of labor as a medium-cost centre (KPMG, 2012a). However, this phenomenon seems to have reversed in the past three years, as many non-core activities have been transferred to lower-cost jurisdictions like India. This may have resulted in Canadian labour
force reduction. This adds to the complexity of cluster measurement if labour is used as a measure of cluster competitiveness. This declustering effect must be evaluated in order to determine to what extent it contributes to the underperformance of the Canadian hedge fund industry.

The economic crash of 2008 and the regulatory changes that have followed must be carefully considered in order to understand the hedge fund industry’s performance globally and in Canada. In the wake of new global regulations such as Dodd Frank, FATCA, and AIFMD, the global hedge fund scene may change rapidly, for better or for worse. For instance, the role of prime brokers has changed since the crash of 2008. Now, hedge funds use multi-prime brokers in order to reduce exposure to counterparty risk. A survey by KPMG (2012b) revealed that prime brokers now not only provide basic services like securities lending and custody, but also seem to participate in helping their clients accumulate capital. Other supporting professions such as administrators, legal counsel, and auditors have also been affected by the aftermath of the crash, especially due to increased regulations and investor demands.

Lastly, while external change factors are being evaluated it is important to examine internal forces that may greatly contribute to the performance of the industry. For instance, government intervention can create two main kinds of effects: social efficiency and equitable distribution of resources. Social efficiency can be measured relatively easily, while equity in resource allocation is more subjective. Additionally, government decisions seem to affect sectors differently. For instance, the deregulation of capital movement could have one set of effects, while specific regulations and taxes may have completely different effects. Laws used to regulate markets and to provide consumer protection could impose external costs to many firms. Establishing regulatory bodies to monitor and control activities that are against the public interest could have an effect on taxes, whereas taxes and subsidies used by government to affect price, output, and profit of firms, as well as to correct market distortions, can affect consumers. These complex outcomes must be evaluated to determine their overall impact on the hedge fund cluster so that policy recommendations can be put forward.

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2 Capital introduction (often summarized as ‘cap intro’) is a phrase referring to the introductions that prime brokerage houses will make on behalf of their money managers to help raise their assets under management.
There is less agreement about how governments and various institutions can support the creation, growth, or expansion of clusters. According to Porter (1990), regulatory authorities and other key players that oversee regulation and compliance play an important role in promoting or discouraging cluster growth through policy intervention. They also have the monumental task of curbing the “herd effect” among policy advisors, which happens when some states or regions develop targeting strategies and others follow suit. An industry requires the support of policy makers to make change for the better, and the Canadian hedge fund industry is no exception. The extent of this support must be evaluated in order to enhance the growth of the industry.

While Porter acknowledges that “most clusters form independently of government”, he provides many justifications for policy intervention. He argues that some sectors, such as the retail mutual fund sector, offer greater wealth-creating potential and are therefore more enthusiastically targeted by policy makers. Whether or not this is true has yet to be researched. If this theory provides to be correct, there will likely be inter-cluster conflicts within financial services where optimum resource allocation among different clusters may be compromised. The extent of these inter-cluster tensions could lead to non-goal congruence among players in the industry as a whole.

Non-goal congruence in an industry can develop in various forms. Market developments are important in motivating policy makers to change the financial regulatory landscape. Most countries have chosen to liberalize domestic rules and relax international capital controls. The removal of capital controls and major advances in communications and transportation make it possible for companies to acquire services easily across borders, including borrowing and administrative services. Some countries have taken active measures to attract a larger share of international business by improving infrastructure to support financial services, as well as by virtually eliminating regulatory burdens on international financial transactions. When this is the case, growing the domestic industry may not be as large of a priority for industry players.

There are some interesting questions related to the internal factors that affect clusters that have yet to be explored. For example, if clustering is considered a purely entrepreneurial activity and is driven by the production of valued goods and services to produce profits, can government promote cluster growth, thus superseding the market in cluster creation? Canada practices multi-jurisdictional regulation of securities. Porter argues that “regulation undermines competitive
advantage. However, if a nation’s regulation lag behind those of other nations it becomes stagnant” (Porter, 1990, p. 626). If this is the case, do the 13 provincial and territorial securities regulators undermine the international competitiveness of the securities industry, thus impacting the customers and industry they serve? Does the high marginal effective tax rate on investments impact investors’ decision-making processes, thus reducing demand for domestic financial products like hedge funds in Canada? What is the motivation for investment managers to promote domestic hedge funds, as opposed to retail mutual funds? One way of answering these questions, which could then in turn satisfy the research questions of the present research, would be to use a systemic cluster analysis method.

1.4 – Research Questions

This thesis seeks to explore how central actors contribute to the development of hedge fund clusters in Canada. Ultimately, the goal of this research is to evaluate the role of central players that enact essential components of hedge fund cluster growth in Canada, and to establish how they might contribute to expanding this cluster to a size directly comparable to other financial centres such as London and New York City. In service of accomplishing these objectives, a series of research questions that address relevant aspects of the growth in hedge fund industry in Canada have been drawn. Question A focuses on understanding cluster processes and outcomes by relating them to the hedge fund industry, and is broken down into two sub-questions. Sub-question A-1 seeks ways of using various cluster theories to define and measure a hedge fund cluster, and Sub-question A-2 aims at understanding how cluster analysis can be used to explain why the Canadian hedge fund industry has not grown compared to its peers. Question A mainly seeks to identify where cluster theory falls short in explaining the underperformance of the hedge fund industry. The questions are as follows:

A: How can cluster theory be used to understand changes in the hedge fund industry?

A-1: To what extent can traditional cluster theory be used to identify and measure a hedge fund cluster?

A-2: How can cluster theory be used to understand why the scale of the Canadian hedge fund sector remains under-developed?
Canada’s financial services market is highly developed, and so the same should be able to be expected of its hedge fund industry. However, in reality, the Canadian hedge fund industry falls short in comparison to the growth of global hedge fund industry. Thus, it bears exploring what steps might be taken for this industry to compete on the global stage.

Question B aims to evaluate the extent to which cluster concepts can be used to improve cluster competitiveness through the actions of industry participants, and is similarly broken down into two sub-questions. Sub-question B-1 concentrates on investigating potential actions that could be taken to resolve the issue at hand, and Sub-question B-2 focuses on the implications of encouraging the growth of the hedge fund cluster in Canada within the broader context of Canadian financial centres. The questions are as follows:

B: To what extent can cluster analysis be used to encourage policy change so that the competitiveness of the hedge funds industry in Canada can be improved?

   B-1: What regulations, tax rules, and institutional policy changes could encourage hedge fund growth in Canada?

   B-2: What are the implications of encouraging the growth of the hedge fund industry in Canada?

The research questions outlined above are purely exploratory in nature; it is quite possible that cluster analysis will not be found to apply in all relevant circumstances, or to provide explanations for the research problem in its entirety. Hedge funds are complex, and research on hedge fund clusters is still in its infancy. Regardless, there are a number of gaps in the existing literature, as detailed above and further investigation is required in order to begin to provide answers to the questions at hand. The following section will explain how the present research will be enacted, and identifies further research needed on the issue.
1.5 – Methodology

This thesis utilizes a mixed-methods approach. Initially, secondary data – both qualitative and quantitative – from multiple publicly-available, verifiable, and reliable sources was collected. Historical data from the last ten years was collected to help explain past growth of the hedge fund industry in various jurisdictions, in order to produce a longitudinal understanding of the issue. These sources consisted of reports published by hedge fund magazines, surveys, books, journals, research working/white papers, government statistical publications, and past interviews. They were used to evaluate the emergence and growth of the financial centres, financial services, and hedge fund clusters both in Canada and worldwide. In addition, secondary data was collected from similar sources to provide a snapshot of the current point in time, which was used to compare the Canadian context to that of other jurisdictions.

Further data was collected through semi-structured interviews with central actors in the hedge fund industry, who were asked about their views on how to understand and measure hedge fund clusters both in Canada and worldwide. Since secondary data analysis cannot perfectly substitute for expert judgment, professionals from six categories of major players within the hedge fund industry were selected for these semi-structured interviews. These included: investment managers (resulted in five participants), investors (two participants), prime brokers and capital introductions (four participants), administrators (four participants), and other supporting industries (nine participants, including four auditors, four legal counsel, one educator, and one due diligence). These 25 participants were selected on the basis of having at least ten years’ experience within the hedge fund industry, each holding decision-making positions in their corporations. Interviews consisted of probing questions that were individually designed for each category of participation, as well as general questions that could apply generally to all forms of expert experience.

These interviews were used to establish the role of each sector as it pertains to the growth of the hedge fund industry in Canada. The data analysis involved comparing and analyzing the information obtained through face-to-face interviews with the secondary data acquired earlier, in order to arrive at overall concepts that could inform the research questions. Further details about the methodology, data collection, and measurement approaches employed in the present research are presented in Chapter 4.
1.6 – Organization of Thesis

The remainder of this thesis has seven chapters. Chapters 2 and 3 focus centrally on understanding cluster theory better by exploring existing literature on the subject. These literature review chapters are presented with the aim of demonstrating a comprehensive view of academic perspectives on cluster theory as it pertains to the financial services industry. Chapter 2 concentrates on traditional cluster theories, including Alfred Marshall’s focus on industrial districts, Michael Porter’s theory of cluster competitiveness, and Piore & Sabel’s flexible production theory. Furthermore, it evaluates the extent to which these theories might be used to describe changes in a cluster life cycle process. The shortfalls of these traditional theories are described in detail in this chapter, and the gaps in literature are identified. Chapter 3 reviews the literature on clusters from a number of newer perspectives, including the theory focusing on the de-clustering and reformulation of clusters, which was not able to be explained using traditional theories. The newer theories discussed in this chapter acknowledge the dispersion of clusters due to technology, outsourcing and the economic crash of 2008, and explains the spatial dispersion of economic activity through reduced transportation costs and virtual connectivity through space.

Both Chapters 2 and 3 focus mainly on external factors that cause either clustering or dispersion, which may explain why some clusters prosper and some wither away. Chapter 4 describes the methodology, philosophical perspectives, research approach, and challenges of the present research and outlines the framework by which data was gathered and analyzed. This is followed by Chapter 5, where empirical findings from secondary research on the global hedge fund industry are presented in detail. Gaps, interesting trends, and issues that could form the basis for further investigation are identified to give direction to the semi-structured interview. Chapter 6 and 7 details the findings of the thesis drawing from both the secondary data and the semi-structured interviews, and the main findings of the study are summarised, discussed, and explained. Chapter 8 summarizes these findings by identifying some of the main factors contributing to the Canadian hedge fund industry’s lack of growth, and offers recommendations for stimulating the growth of the hedge fund industry. In addition, the limitations of the approach taken by the present research are evaluated, and possible extensions of the research are presented, including suggestions for further study and implications of this research for the Canadian hedge fund industry.
1.7 – Conclusion

The hedge fund industry is vital to the success of any financial centre. This research presents a useful opportunity to revisit cluster theory and how it might inform policy reform and other forms of institutional change in order to improve the hedge fund industry within Canada. By doing so, this research aims not only to identify the drivers of this industry that can be found in the regional or national economy, but also to educate industry participants and influence policy debate in order to pave way to the growth of the industry. Without identifying fundamental barriers to the Canadian hedge fund industry’s lack of growth, an opportunity might be missed to develop this industry and enhance its chances of increasing its Global Financial Centre Index ranking. Until this point, there has not been enough attention paid to the subject to adequately provide solutions to this problem.

The main ingredients for cluster formation and growth and the opposing arguments of cluster dispersal form the core of this thesis. Theories of agglomeration economies presented by traditional theorists will be compared and contrasted with more recently explored understandings of virtual communities of knowledge-sharing. Reduced relevance of geographical proximity will be evaluated as a centrifugal factor in the de-clustering of financial services firms as it pertains to the hedge fund industry, and the extent to which technology advancement has nullified agglomeration economies will be analyzed. All of these centrifugal and centripetal forces will be applied to understandings of the Canadian hedge fund industry in order to better understanding the lack of scale of the industry. The driving forces for cluster growth, which is the net effect of these centrifugal and centripetal forces, will be deeply explored in relation to the hedge fund industry in order to arrive at a set of probable causes for the lack of growth in the industry.

Clustering may not be the natural state for many industries, but it has often been deliberately fostered by internal factors such as government policy. According to Porter, “in certain circumstances, cluster participation can retard innovation”. Porter elaborates on this by pointing out that established clusters can become rigid, leading participants to resist supporting radical innovation. Firms within an established cluster can struggle with greater barriers to change and face inertia in the face of past relationships that no longer contribute to their competitive advantage (Porter, 2000, p. 24). This implies that key participants often play an active role in cluster promotion and facilitate cluster emergence in order for a cluster to succeed. Throughout
this study the task of cluster facilitation is explored in order to identify the key roles each individual participant plays within the Canadian hedge fund industry.
Chapter Two: Industrial Districts and Financial Service Clusters

Clusters can be defined as non-random geographical agglomerations of firms with similar or closely complementary capabilities (Maskell and Keibir, 2006). One hundred years after the introduction of Alfred Marshall’s (1890) widely-used theory of agglomeration economies, Porter (1990) and Piore & Sabel (1984) expanded his arguments to apply to a more contemporary context. Agglomeration economies, particularly geographical, spatial and industrial economies, have been highly explored and viewed as pivotal in the creation of clusters in the manufacturing industry. Limited attention has been given to the life cycles of financial services clusters and financial centres, though this has been changing in recent years as attempts are made to understand structural changes to financial centres that are caused by factors such as the advancement of technology, decreasing trading costs, and the virtual nature of conducting business. Questions have been raised about whether the cluster theories of prominent scholars like Marshall, Porter, and Piore & Sabel can adequately explain cluster formation, decline, and life cycles in financial service clusters.

In the recent past, new theories have emerged that have introduced new perspectives on cluster formation and that can be better applied to the formation, existence, and decline of financial centres. One example of these theories is the New Economic Geography (NEG) (Krugman, 1991b) framework and its supporting theories, which put less significance on the agglomeration effects of clusters, which was earlier theorists’ central tool for describing them. However, a broader examination of a diversity of cluster theories will be required in order to adequately explain the emergence, existence, and decline of financial centre clusters; simply focusing on one single theory will not suffice (McCann and Sheppard, 2003).

This first of two literature review chapters will present a review of traditional cluster theories and their application to financial services. Some limitations of these theories as they relate to the financial service industry will also be identified. The chapter begins by explaining the cluster theories that were first made famous by Marshall (1890) and then later elaborated by Porter (1990) and Piore and Sabel (1984). Then, the implications of these theories for the development of financial services will be explored, focusing primarily on how these concepts might help to explain the development of financial centres. Finally, relatively recent knowledge spillover concepts such as knowledge linkage -K-linkage (Fujita, 2007), buzz, and pipelines (Oinas, 1999;
Owen Smith & Powel, 2004) and their relationships to financial centres’ inception, growth, change, and decline will be discussed.

2.1 – Clusters and the Development of Industrial Districts

Marshall (1890) described industrial districts as areas where a concentration of small, locally-owned firms have settled. He emphasizes that the ‘industrial district’ is not simply a localized industry concentrated in certain localities (Marshall, 1890, p.268), but “any industry concentrated in certain localities” (p. 268). If the initial localization lasts long enough, it becomes an industrial district, thus inheriting numerous advantages. Intra-district trade between buyers and suppliers are prominent in these districts due to good long-term prospects for growth and employment, as well as labour immobility. Marshall outlines some of the reasons for a geographical concentration of firms: firstly, the needs of the manufacturers to be close to the resources on which they depended; secondly, physical conditions, such as climate, soil, mines, quarries, access by land or water; thirdly, demand for goods; and fourthly, the widespread knowledge and information that is ‘in the air’ and the presence of a special ‘atmosphere’ that promotes a continuous interplay between competition and cooperation. All of these features described by Marshall in his industrial district model can be summarized under the heading ‘agglomeration economies’.

According to Porter, a cluster can be defined as: “a geographical concentration of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions (e.g., universities, standard agencies, and trade associations) in a particular field that compete and also cooperate” (Porter, 1998a, p 197). In order to survive, clusters must also possess sufficient resources and competences to give their businesses a sustainable competitive advantage over other places. Piore and Sabel (1984) take Alfred Marshall’s theory of industrial districts one step further by emphasizing the high incidence of personal interaction between customers and suppliers, natural endowments and externalities, and thick institutional environments. In their view, firms within clusters must have high degrees of specialization, cooperation among competitor firms to share risk, stabilized market share and innovation, shared infrastructure, management training, marketing help, and technical or financial help, with the local government playing a major role in regulating and promoting core industries. Synthesizing the above definitions, an industrial district or cluster can be defined as a geographical
concentration of interconnected companies with close supply links, specialist suppliers, and service providers, where related industries operate both competitively and cooperatively amongst themselves.

**Composition of industrial district clusters.** Marshall (1898) argues that the strength of the small and medium firms in a district comes from external economies like knowledge growth, supporting industries, and common appliances (p. 50). These firms are able to compete with large firms, since large firms mostly thrive on internal, as opposed to external, economies. Coming from a competitive advantage perspective, Porter (1998b) defines clusters as the collection of small and medium enterprises from a certain industry in one specific region, which form a stable and sustainable collection of firms with competitive advantage. According to Porter (1990), the heart of a cluster is comprised of multiple firms that produce competing and complementary products and their locally-based buyers and suppliers. It can also include specialized service providers, associations, research organizations, educational institutions, and government bodies. Service industries (including financial services) can also be formed as clusters (Porter, 1990, p.265). Porter argues that firms’ success in international markets is dependent on their ability to compete domestically. He advocates for a high degree of rivalry among competing firms. He also highlights the importance of having a network of suppliers who can provide goods and services at low-cost. Piore and Sabel (1984) emphasize production techniques such as flexible production and boutique concept. They support specialization through the reorganization of production flow by modifying technology, thus moving away from Fordist mass-production techniques. Piore and Sabel argue that communities of skilled craftspeople are as capable of generating high standards of work as large, vertically-integrated firms. Moreover, they claim that small firms are more flexible and better-equipped to adopt and promote innovation.

**Drivers of cluster attractiveness and growth.** Marshall (1890) describes three standard sources of positive spatial agglomeration, or spillovers in an economy. The first factor is labour market externalities, where firms are dependent on highly skilled personnel, which typically can be found in cities where the supply of the skilled labour is readily available. In this situation, skills are passed on from generation to generation, and supporting industries – for example, material, transportation, and labour industries – grow near the localized industry (Marshall, 1890,
Job segregation and specialization promotes automation, and a constant demand for skill is maintained (Marshall, 1890). The second factor is the cluster’s proximity to suppliers of intermediate services, including sophisticated communications hardware, software, and other professional services. This proximity can sometimes ensure that firms receive timelier and higher quality service, and also lower prices. These advantages are vital for the profitability of the company. The third factor is knowledge spillover effects, where the knowledge created by one firm spills over to other firms working on similar projects, which results in mutual benefit. Knowledge spillover promotes the creation of new ideas, which when incorporated into current procedures can establish new forms of industrial thought leadership (Marshall, 1890). These three factors are examples of some of the advantages that cluster theorists identify as being part of cluster membership, which ultimately benefits the entire industry. Marshall calls this specialization “a special atmosphere”, which leads to various advantages for firms localized in an industry.

The subsequent work of Porter (1990) and Piore & Sabel (1984) supports Marshall’s (1890) argument that the continuing interplay between competition and cooperation is a significant driver of growth within industrial districts (Marshall, 1890). Porter’s (1990) cluster theory identifies competition among firms as a central driver of the growth and productivity of cluster firms. His view is that competition drives the growth and productivity of a cluster, in three ways: first, by increasing the productivity of companies based in the area; second, by driving the direction and pace of innovation; and third, by stimulating the formation of new businesses within the cluster (Porter, 1998a). Porter continuously emphasizes that interconnections and spillovers within a cluster are often more important to productivity and growth than the actual scale of individual firms. Piore and Sabel (1984) popularized thinking about clusters as in the context of a world economic system characterized by a more flexible set of production practices. Contrary to the mass production of goods in the early 20th century – a phenomenon often called Fordism more specialized, higher-quality products, were introduced through flexible specialization and bringing places closer together in time and space as regional clusters. Thus, Piore and Sabel (1984) focused on highly flexible and increasingly productive technology and highlighted the creation of regional institutions that balanced cooperation and competition.
Although traditional theories of industrial districts and clusters continue to be used to date, there has been an increasing disavowal of agglomeration economy theories. This may be due to a better understanding of processes of industrial de-concentration, referred to as ‘de-glomeration’ by some economic geographers (Werker and Athreye, 2004). This cluster decentralization may be caused by technological advances and/or increasing costs due to congestion (Kanemoto, Ohkawara, and Suzuki, 1996). Financial services are no exception to this phenomenon, even though traditional cluster theories were developed to explain manufacturing industries. In the following section, the financial service industry will be discussed in detail in order to determine how cluster theories can be used to understand it, and in order to evaluate the effect of exogenous and endogenous factors of change on financial centres.

2.2 – Financial Centres

Clusters within financial services are often called financial centres. A financial centre can be defined as “the grouping together, in a given urban space, of a certain number of financial services”, or as “the place where financial intermediates coordinate transactions and arrange the settlement of payments” (Cassis, 2006, p. 5). In other words, a financial centre is an area of agglomeration where high-level financial functions and services are concentrated. The Global Financial Centres Index (GFCI)³ is compiled and published twice a year, and can be considered the leading indicator of how well international financial centres are performing. New York City and London have maintained the top rankings amongst all financial centres globally since the GFCI was launched in 2005. Though financial centres are not always located in the largest cities as measured by population or economic activity, financial services do tend to be spatially concentrated in large cities like London, New York City, Singapore, and Hong Kong. London remains one of the leading global financial centres of the modern age, despite the relative decline of the British economy’s global importance (Porteous, 1995). London’s sustainability as the leading financial centre may be linked to its ‘first mover advantage’, since London was the first region to enter the financial services industry on a large scale. First mover advantage can be achieved by producing a new product, service, or process or by entering a market (Lieberman

³ The Global Financial Centres Index is a ranking of the competitiveness of financial centres, based on over 26,000 financial centre assessments from an online questionnaire together with over 80 indices from organisations such as the World Bank, the Organisation for Economic Co-operation and Development (OECD), and the Economist Intelligence Unit.
and Montgomery, 1988). Theories of “path dependency” (Porteous, 1999) have also been used to gain insight into the development and longevity of international financial centres. For example, Clark and Wójcik (2007) argue that path dependence underpins the persistence of local and regional traditions in the face of globalization. First-tier international financial centres like London and New York City have absorbed the greatest financial losses and remain in first and second place respectively in the GFCI rankings, particularly throughout the economic crash of 2008. Second-tier financial centres like Amsterdam and Frankfurt have declined in relation to other second-tier financial centres recently, as have offshore centres.

**The inception of financial centres.** There have been many theories, seeking to explain the development of clusters; the following section will be assessed below. One particularly common focus in the literature is the question of why a financial centre develops in one particular location as opposed to another. There are two frequent explanations in the literature (Porteous, 1999; Martin, 1999): firstly, the theory of the information hinterland, which can be defined as the space or region through which a particular financial centre provides the best access point for the profitable exploitation of valuable information flows. In this conceptualization, information flows in two ways: from hinterland to the core city, and from the core city to outside reference points. The value of these information flows may be shaped initially by natural endowments, but ultimately the patterns of natural resource exploitation and of secondary and tertiary sector development in the region typically become more important. The second common explanation for financial centre development is that the theory of asymmetric information. Agglomeration of financial firms can occur by moving closer to an information source in order to find and interpret non-standardized information from which profit can be made. A trade-off is often made between being closer to the information and being closer to stock exchanges where the information can be readily and profitably used. A common example of this pattern is the establishment of foreign banks in national financial centres, as opposed to servicing that nation’s market from the bank’s parent, which may be located in an existing international financial centre situated further away from the national market.

A financial centre is not only the gateway to hinterland, but also the point of entry between different hinterlands. This gives rise to interregional attachments. Montreal’s early dominance as a financial centre was attributable in part to the fact that it served as the first point of attachment
for British capital flowing into Canada (Code, 1971). This framework can be used to explain the successes of provincial financial centres in Canada such as Quebec (Montreal) and Ontario (Toronto), as well as in financial centres in Australia like Victoria (Melbourne) and NSW (Sydney). Both Sydney and Toronto were able to consolidate the natural advantages associated with their superior physical location into subsequently developed benefits. One example of this consolidation of benefits is the construction of the first major international airports in each country.

The more specialized an industrial district is, the more it attracts similarly specialized resources (Piore and Sabel, 1984). Marshall (1890) points out industries are likely to remain in one location for a longer period of time once they have settled there. Coming from an ‘external economy’ angle, he defines a corporate cluster as an industrial region, which is a special region that collects the specialized industry (Marshall 1890). Porter (1990) elaborates that industrial policy rests on a view of competition in which some industries are seen as offering greater wealth-creating prospects than others and are therefore targeted for support.

According to more recent economic geography theorists (Porteous 1995; Amin and Thrift, 1994) who build on traditional theorists like Marshall, there are three theories of agglomeration economies and externalities that can be applied to the financial services industry. The first of these is the theory of informational spillover, which indicates that quality and timeliness of information matters more than its volume in the financial services. Furthermore, information that is gathered in more efficient ways than competitors can be used to the firm’s advantage to increase profit. This is where interpersonal and other localized information networks in financial centres may be a vital means of rapid information diffusion (Porteous, 1995). The second theory indicates that socio-institutional and cultural factors are also important for agglomeration financial services firms. For example, trust and reputation are crucial to the conduct and operation of transactions between financial agents (Thrift and Leyshon, 1994). Thus, it is often the case that financial centres will develop to serve economic areas with some aspects of cultural commonality. The third theory focuses on regulatory frameworks and structures, and indicates that financial firms will be attracted to low taxes, minimal trading controls, and freedom of entry. This aspect was particularly evident in the creation of offshore financial centres (OFCs) like
Bermuda and the Cayman Islands in the 1960s and ‘70s, as well as the current potential for growth of hedge funds in Switzerland, which can be partially explained by the AIFM Directive.

**The boundaries and measurement of financial centres.** Porter’s (2000) view of clusters is more inclusive than Marshall’s industrial districts theory, which focuses on single industries. Porter’s framework, in comparison, articulates that clusters can encompass a region, state, or a city, as well as neighbouring countries. According to Porter:

> The boundaries of a cluster are how we look at it. Drawing cluster boundaries often is a matter of degree and involves creative process informed by understanding the linkages and complementarities across industries and institutions that are most important to competition in a particular field. (Porter, 2000, p. 17)

Thus, sometimes drawing boundaries in particular ways can result in significant clusters being obscured or even going unrecognized. In an increasingly global market place, the financial sectors and entire economies of individual nations are increasingly dependent on financial and economic developments in other countries (Herring and Litan, 1995, p. 65). Porter says that a cluster focus highlights the externalities, linkages, spillovers, and supporting institutions, and that the strength of the spillovers and their importance to productivity and innovation determine the ultimate boundaries (Porter, 1998a, p. 202). He argues that a cluster should be defined by the presence of knowledge spillovers, which in turn form the basis of the cluster’s innovativeness. Spillover effects are inevitable, whether they be positive or negative. Furthermore, the presence of spillovers turns what would otherwise be a domestic event into an international event. According to Isaksen and Hauge (2002), a “cluster is a concentration of interdependent firms, within the same or adjacent industrial sectors, in a small geographic area, which could be a city or a group of countries” (p. 14). Maskell (2002) defines the boundaries of the cluster as the “fit between the economic activities carried out by the related firms of the cluster on one hand and the particular institutional endowment developed over time to assist these activities on the other” (Maskell, 2002, p. 936).

In summary, clusters are defined by relationships and not membership. Furthermore, their spatial boundaries are variable and do not necessarily correspond with political borders. However, if cluster policies are to be used as an analytical tool of cluster development, and if measures are to be developed in order to stimulate clustering formations, cluster boundaries must be drawn and
measured. There appears to be two general approaches to identifying and measuring clusters: first, through focused studies that provide in-depth qualitative information made available through desk research and interviews with local experts; second, through the various quantitative, statistical techniques that aim to identify and track clusters by measuring observable trends when a cluster seems present. Both methods seem to have advantages and disadvantages. Thus, in most cases, a combination of both qualitative and quantitative methods may help to identify clusters and to reduce the imperfections each method might pose if employed individually.

Gathering qualitative information on a case-by-case basis could provide some insight into the emergence, strengths, and weaknesses of particular clusters, allowing for the identification of its main success factors and fields of activity. These findings could be further explained by gathering quantitative information through published data to reinforce the cluster measurement process being used. For instance, the number of firms and employees in a particular region could be understood as a clear indication of clustering activity. This can also help to define the boundaries of that cluster, since employment levels in finance is often regarded as a key indicator of a financial centre (Kerr, 1965; Laulajainen, 2003). However, as argued by Bogen, Robbins, and Terleckyj (1961), the introduction of technology and automation has reduced the labour needs of many routine financial activities, meaning that employment alone can no longer be a crucial indicator of a financial centre. Another factor that has been put forward is the number of bank head office locations (Kerr, 1965) situated in a region, since some of the most important financial activities are performed in the headquarters of a bank (Stephens and Holly, 1980; Semple, 1985; Dicken and Lloyd, 1990). In reality, the registered office of a financial institution and its main operating office could be separate. For instance, the Bank of Nova Scotia has its registered office in Halifax, but its most important financial functions have been conducted in Toronto since 1910. The Cayman Islands is another clear example, where around 9,200 companies are registered (Cayman Islands Government, 2012), even though relatively few of these reside in the Cayman Islands and conduct operations there. This suggests that bank head office locations may not, in fact, be a valid measure of cluster activity.

The physical location of head offices of large corporations may also provide an indication of the importance of individual financial centres (Porteous, 1999; Martin, 1999). Rates of cheque
clearing might have once been used as an indicator for activity levels at financial institutions like banks, but due to the increase in electronic banking methods this process has been largely replaced, thus eliminating this as a consideration as an indicator of a financial centre (Porteous, 1999; Martin, 1999). Stock exchange turnover could be considered a measure worth exploring, since it also relates to stock broking and investment management activity. The number of foreign bank offices in the city could also be considered a measure, since the establishment of a foreign bank office in a city indicates the city’s relative importance as a financial centre due to information agglomeration processes (Porteous, 1999; Martin, 1999). Other probable measures include communication methods, including the frequency of international phone calls, Fed Ex, mail, and air travel. The quantitative techniques\(^4\) that rely on more sophisticated forms of economic modelling are based on complex statistical methods. It is important to note that the robustness and weight of measured clusters will not be stable over time. The boundaries between different sectors are constantly changing and may not be reflected by the available statistical data. Thus, analysis must be further improved by considering additional statistical indicators and including qualitative information. Cross-checking the results obtained from these methods using triangulation\(^5\) could be one approach to enrich the existing information on the subject.

Presently, financial services revolve around digitalization, decentralization, denationalization and global consolidation (Sassen, 1999). This has radically changed the ways in which business is done today. The financial industry may now be, in fact, completely dependent on information communication technology (ICT) platforms and digital networks for its communication, as sophisticated ICT platforms make it possible to exchange information worldwide in real time. Many external economies are obtained by transferring some activities to other financial centres, thus rendering cluster borders invisible. Financial institutions have become increasingly global through a variety of other methods that do not require a physical location in the host country, including alliances, partnerships, and service provision. These increases in widespread financial globalization have generated higher levels of industry consolidation and integration (Amel et al., 2004). In the face of these trends within the financial system, very few people have specifically

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\(^4\) For example, the US Cluster Mapping Project uses a methodology developed by the Institute for Strategy and Competitiveness of the Harvard Business School and the European Cluster Observatory. This project was started in September 2006, then subsequently customized and further developed in accordance with the European codification system and to suit European data availability and quality. ([US Cluster mapping 2014])

\(^5\) Triangulation is a validation process by which two (or more) methods are used in a study in order to check the results.
attempted to evaluate the success and decline of financial centres in an increasingly globalized world. In the section that follows, drivers of change in financial centres are explored in more detail.

2.3 – Change Factors in Financial Centres

The financial services industry is shaped by its rapidly changing economic, political, and social environment. Drivers of change can create shifts in how, where and when services are offered, and also decide which products and services are delivered, and to whom they are delivered. Change drivers in financial service environments include competition, technology, regulations, need for internal efficiencies, and growth through consolidation. The emergence of new competitive forces requires industries to change constantly in order to survive. Competition seems to be beneficial for clusters, since it creates a fertile environment in which to grow world-class service firms (Porter, 1998a). Firstly, technology has allowed participants in the financial marketplace to engage in regulatory arbitrage by facilitating the unbundling and repackaging of individual financial products when activities are prohibited by regulations (Herring and Litan, 1995). Secondly, regulation is intended to promote the public good by requiring individuals and firms to change their preferred behaviour in ways that will benefit others (Scott, 1988). However, regulations have also created some adverse effects (Herring and Litan, 1995). Thirdly, it is essential that internal efficiencies are considered such as the phenomenon of low value added functions being transferred to developing countries. Financial products must be competitively priced in order to avoid losing out to the competition. Demand conditions seem to be firms to be innovative in order to be cost-effective and be competitive. Lastly, despite relatively high trade barriers present in many service industries, the internationalization of service has grown tremendously in the past decade, largely through consolidation. Many new service industries are being created, and established service industries are being restructured and revolutionized (Porter, 1990). In the following section, factors possibly explaining the success of some financial centres in the worst circumstances, and the withering of others will be discussed.

Life cycle approach. Financial centres can rise and fall over time. A well-developed international cluster, established as a liquid marketplace and supported by a deep pool of skilled labour, can be extremely durable (Clark, 2002). Cities that act as financial centres face greater competitive forces than most, since the financial services industry is at the heart of the global
economy, facilitating trade and investment (GFCI 2013, City of London). Interestingly, each financial centre reacts to competitive forces such as people, infrastructure, market access, business environment, and general competitiveness differently. In addition, each financial centre is comprised of a collection of different kinds of financial services which are affected by these forces in varying ways. One way to explain these overall changes is an ‘industry life cycle approach’, which explains industrial change as analogous to the product life cycle (Vernon, 1966). Klepper (1997) proposes three different stages of the industry life cycle: embryonic, growing, and mature. In order to be competitive, financial centres are forced to change constantly in order suit the environment. Cluster development resembles the development of the industry life cycle in several ways. Transport networks, historical and institutional factors, regulatory regimes, and the terms of intra- and extra-regional trades can all cause changes to the life cycle. Technological, economic, and institutional changes are constantly re-moulding the information required by financial centres. As a rule, the stage of development is determined by the age and the growth of the cluster in relation to the industry life cycle (Enright, 2003; Dalum, Pedersen, and Villumsen, 2005; Maggioni, 2002).

In the initial, exploratory, or embryonic stage of a financial centre’s growth, market volume is low, uncertainty is high, and the product design is primitive. The first noticeable feature of the financial sector in general is its high degree of spatial agglomeration in particular locations, usually large cities (Porteous, 1995). Although American corporate headquarters went through decentralization processes between 1957 and 1980 (Semple, Green, and Martz, 1985), cities such as New York, that have been centres of financial control from very early on remain dominant. Financial centres with early advantage (London, for example) seem to retain their dominance and advantage. Location-specific information accessibility and labour seem to fuel this path dependency.

Cluster in the ‘mature’ stage find neither themselves in a state of equilibrium, where they show neither large growth nor a remarkable decrease in the number of firms or employees. In this stage, fluctuations are more cyclical than structural. The boundaries of the cluster move incrementally as new technologies become integrated in order to cope with innovation and competition. At this stage – also called the ‘sustenance’ stage – the cluster is at its critical mass. Brenner (2004) suggests that exogenous factors (such as the demand for products and degree of
competition) and industry-specific endogenous factors (like in Hollywood or in the London Financial Centre) are highly influential on this stage of a cluster. According to Martin and Sunley (2011) firms survive during the maturity stage by upgrading products and/or focusing on niche or prestige market segments. Sometimes firms within the cluster branch into new forms of product in order to cope with market saturation, the rise of major competitors, or a technological breakthrough. Thus, firms continually develop new products or product variants through ongoing innovation, and the cluster progressively evolves in an adaptive, path-dependent manner (Martin, 2009). Firms in an established financial services cluster (for example, London, New York, and Paris) have proven to be flexible enough to respond and adapt to a constantly changing market and technological environment while remaining in the ‘exploitation and growth’ cycle mode. They have shown a very strong resistance to internal and external pressures and have continuously changed into ‘successful adapter regions’ when certain agglomeration advantages changed into agglomeration disadvantages (Boschma and Lambooy, 1999). Clusters that do not belong to this narrow definition of resilience retain a modest degree of sustenance, but remain potentially vulnerable to decline. The mature stage of a cluster can be depicted as the sustenance of a financial centre where decentralization of financial services may occur. The aspect of decentralization is discussed later in Chapter 3.

The decline of established financial centres is just as interesting as their development, though there are similar disagreements about the nature and possible causes of decline. The decline stage of a cluster is described by Martin and Sunley (2011) as follows:

The decline of a cluster is when a cluster fails to achieve sufficient critical mass, externalities, or market share. The anchor firms may weaken the cluster and innovation may also falter. New firm formation is low and firm failure rate is high, which deters new entrants. The existing resources and competences become not sufficient or ill-suited to form the basis of a new cluster formation leading to a deep ‘poverty trap’ and disappearance. (p. 1313)

Cluster theorists consider the decline of clusters to be a part of their economic activity and product life cycle (Norton, 1979; Vernon, 1966). However, Richardson (1973) has criticized the ‘product life cycle’ approach. Though he agrees that American cities have declined in economic activity throughout the years (Madden, 1958), he challenges the commonly-held ‘product life cycle’ theory of this decline. He argues that any analysis of the decline of American cities should account for what competition was introduced to the cluster and when it was introduced. He
states: “in general terms, it is the manifestation of the fact that the size of any particular city at any point of time, depends upon the size and location of all other cities, not only at that point in time, but also historically”. The decline of clusters derives from the interaction between several factors inside and outside the cluster (Porter, 1998a). Porter (1998a) argues that internal causes of cluster decline stem from the cluster itself as it forms rigidities that diminish productivity and innovation. External causes originate from developments or discontinuities in external environments, such as technological discontinuities or changes in demand.

Bresnahan, Gambardella, and Saxenian (2001) theorized that in the formation of a new cluster, the main aspect driving growth and establishing a critical mass is its outstanding entrepreneurial endeavours, risk-taking ability, willingness to tap into markets outside its comfort zone, and ability to attract skilled persons from other parts of the globe. Additionally, the new cluster’s openness to absorb and create new knowledge is crucial for its continued growth. In the next section, some knowledge creation concepts are discussed in the context of financial services clusters.

**Knowledge creation and the rise of financial centres.** Krugman (1991a) gives the following explanation for how and why clusters emerge: once initial economic activity starts, increasing returns accommodate the cumulative development of locations in order to secure them as prominent clusters, notwithstanding the arbitrage mechanisms of spatial system (Krugman 1991a). From the inception of a financial services cluster, knowledge creation, dissemination, and innovation are vital to its success. Traditional theories of cluster development contend that knowledge can only be exchanged amongst those in the same local environment who meet repeatedly in person. This has been proposed as the central argument for why it is beneficial for a firm to be located in a spatial cluster, surrounded by other similar and related firms. However, this view has been challenged by recent researchers in human geography who have introduced alternative theories that challenge and extend the agglomeration argument. For example, the concept of ‘K-linkages’, introduced by Fujita (2007), focuses on knowledge creation and knowledge sharing through means other than spatial concentration. Another concept is the ‘Buzz’ (Storper and Venables, 2004), which is a term describing knowledge creation within clusters. Yet another is ‘pipelines’ (Owen-Smith and Powell, 2004), which refers to knowledge
creation through sources external to the clusters. These concepts are discussed in detail in the following section.

**K-Linkages.** In the age of what Fujita (2007) terms the ‘Brain Power Society’, the dynamics of the spatial economy arise from dual linkages in the economic and knowledge fields (Fujita 2007). According to Fujita (2007), there has been minimal research done on a form of agglomeration that is created from linkages formed through the creation and transfer of knowledge, ideas, and information. These linkages have traditionally been named ‘knowledge spillovers or ‘knowledge externalities’, but Fujita calls them ‘K-linkages’. The K-linkage model created by Berliant and Fujita (2009) describes a process wherein each participant resides in a location and engages in a production activity while also participating in knowledge (K) interactions. Given that each person in this economy will be in more frequent contact with people in the same location than those in another, each location will naturally develop a set of common knowledge that is different from other clusters and concentrations. In this way, each cluster develops a unique culture while the economy as the whole benefits from the synergy created through the interactions of different cultures.

In the past, K-linkage effects were known as E-linkages, with ‘E’ referring to economic activities where knowledge creation, knowledge transfer, and learning occur through the production and transaction of traditional goods and services. E-Linkages occur among firms and consumers. K-linkages indicate the relationships among agents that result from E-Linkage-related activities. Using such terminology, we may imagine that agglomeration forces on the ground arise from the dual effects of E-linkages and K-linkages. In conceptualizing and creating K-linkages, ‘creation of knowledge’ must be clearly distinguished from ‘transfer of knowledge’ or ‘learning’. Furthermore, it must be understood that for the creation of new ideas, cooperation among heterogeneous agents is essential.

K-linkages are the knowledge that is created by two agents when they meet and collaborate to create new ideas or new knowledge together. These two persons endeavour to develop new ideas by combining their differential knowledge. This also produces combined knowledge that is common to both parties. This joint process of knowledge creation can be expected to function

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6 The ‘Brain Power Society’ is one where the creation of knowledge and information using brain power plays a central role (Thurow, 1996).
best when the proportions of these three components – the knowledge of the first party, the knowledge of the second party, and their combined knowledge – are in balance. Therefore, for a cooperative process of knowledge creation by a group of people to be productive, both a sufficient heterogeneity and a sufficient common base in their states of knowledge are essential. When such a delicate balance in their states of knowledge exists, an unexpected synergy can potentially evolve from their close collaboration.

Even when these two agents have developed a sufficient balance of heterogeneity and homogeneity in their states of knowledge, their heterogeneity may shrink if they continue a close cooperation in knowledge creation. This is because the cooperative process of knowledge creation can result in the expansion of the two parties’ common knowledge, both through the sharing of newly created ideas and the two-way transfer of differential knowledge. As a result, the cooperative process of knowledge creation among the same group of people tends to become less productive over time (Fujita, 2007). The rate of new knowledge creation is high when the proportion of shared and exclusive ideas is in balance (Berliant and Fujita, 2009). If one person in the collaboration does not have exclusive ideas, there is no reason for the other person to meet and collaborate.

Some financial centres have been able to create fruitful opportunities for people to meet in one location. One example of this is Singapore’s openness to invite other international firms and skilled work force into their country, offering special incentives for them to come and share knowledge. These practices of collaboration have helped Singapore to develop into a super-financial centre. Shared knowledge creates new knowledge within clusters, and this fuels innovation, thus providing ammunition for the economy to grow (Malmberg and Maskell, 1999). Overall, the K-linkage theory does not deviate significantly from earlier knowledge creation theories. It is largely a modification to these theories that allows them to be applied to financial service clusters.

Knowledge creation through the ‘buzz’. The ‘buzz’, a theory introduced by Storper and Venables (2004), refers to traditional practices of creating and updating new knowledge through face-to-face contacts. According to Gertler (1995), “actors continuously contribute to and benefit from the diffusion of information, gossip and news by just being there”. Buzz is created by just ‘being there’ within the cluster, participating in day-to-day activities in an environment full of
rumours and strategic information (Grabher, 2002). Not all clusters create this kind of buzz, and buzz can be entirely different in different clusters, making it difficult to conceptualize or observe (Markusen, 1996). Network communication and information linkages are important for buzz creation. According to Granovetter (1985) and Uzzi (1997), as time passes, these social relationships can help to create information transfer, joint problem solving, and the development of trust. Through being under the same regulatory regime, firms and participants within a financial services cluster create a uniform behavioural attitude that can help the cluster to grow. Gertler (2001) explains that the communities that develop in these circumstances can either be within firms and or between firms within the cluster. Within a financial services sector, the buzz encourages the development of shared values and attitudes, which contributes to the promotion of interactive learning and problem-solving as well as the exchange of complex information about changes in markets and technologies. A well-established knowledge transfer support system can create a multiplier effect that promotes the growth of a cluster within a short period of time, as evidenced by the cases of Dubai and Singapore.

In contrast to forms of communication and interaction that take place within the cluster, tapping into an external pool of knowledge and establishing new relations with firms outside the cluster or between other clusters is referred to as knowledge creation through external sources. Owen-Smith and Powell (2004) use the term ‘pipelines’ to refer to the channels used to facilitate such distant interactions. Codified knowledge transfer through virtual means is very prevalent in the financial services industry. In the next section, the process of knowledge creation through pipelines is explored.

**Knowledge creation through pipelines.** In recent years, financial centres within Asia (including Hong Kong, Shanghai, and Singapore) have been in a tremendous growth phase. This provides some evidence to the idea that knowledge creation in financial services can take place between clusters, because these neighbouring countries seem to have grown at a faster rate in relation to other geographical locations. This phenomenon could be explained through the combination of localized learning with learning between neighbouring clusters through ‘pipelines’ (Oinas, 1999). Due to advancements in technology, knowledge creation has expanded interregionally and internationally (Owen Smith and Powell, 2004). The establishment of trust is important between clusters in order to share knowledge and engage in mutual support. Harrison
(1992) argues that this process of trust-building takes time, as evidenced by the support system that exists in some of the most predominant and longest-standing financial centres. In order to absorb external linkages, it is important that a cluster finds a successful balance of a supporting system between them. As Grabher (2002) points out, it takes time, cost, and effort to maintain these kinds of relationships. Openness in a cluster creates innovation and flexibility, which is important both for stability and for the growth of the cluster.

Some financial centres, including Singapore, have made a conscious effort to reduce the costs of these external knowledge pipelines by openly inviting international business into their regime. By doing this, as Nooteboom (2000) points out, the financial centre follow K-linkage theory by mixing both similar and non-similar knowledge. As a major financial centre that contributes significantly to the economic development of the region, the combination of local buzz and pipelines seems to be working well for Singapore. Singapore also seems to be assimilating the knowledge that it transmits well, which Cohen and Levinthal (1990) call this ‘absorptive capacity’ through training programs which can transfer externally inherited information into a form which can be used internally and apply it successfully to its operations. Frankfurt’s failure as a leading second-tier financial system can be attributed to its lack of ‘absorptive capacity’ (Grote, 2007). Through absorptive capacity, clusters can create new mental maps that translate and integrate new knowledge into the day-to-day activities of the cluster (Bathelt, 2003).

Clusters’ continuous success depends on their capacity to change and adapt. The more specialized a cluster is increases its vulnerability to market shocks. Many financial centres are still attempting to recover from the 2008 economic crash and return to their financial strongholds and pre-crisis levels. This is even the case for financial centres like London that seem closer to this target than others. Interestingly, some of the Asian financial centres do not seem to have been affected at all, while others have already begun to decline. In order to further investigate how financial centres respond to external shocks like the 2008 economic downturn it is important to focus on clusters’ composition at a micro level.

**Rigidity and inflexibility approach.** Rigidity is one concept that has been used to explain why clusters decline or fail to develop. Porter (1998a) defines rigidity as the lack of flexibility and capacity to act rapidly to the challenges (Porter 1998a). “A company within a cluster should often source what it needs to implement innovations more quickly” (Porter
Rigidity may reflect factor mobility, capacity to innovate, or even political and organizational structures. Krugman (1993) claims that increased regional specialization in one particular field can contribute to the risk of downfall, since it can cause regions to become too rigid and unable to change in the face of external threats. The bigger and more concentrated a cluster is, the harder it can be for it to re-invent itself and reach its pre- decline stage. Krugman also argues that factor mobility contributes to continuous cluster decline, since skilled labour tends to move away from specialized clusters once decline starts. He says, “In states that suffer adverse shocks there is no discernible tendency for states to recover lost jobs. Instead, workers simply move out until unemployment rate falls to its natural level” (Krugman 1993, p254). Furthermore, Ottaviano and Thisse (2001) suggest that strong rigidity can be found in spatial structures where processes of agglomeration have started. There can be many forms of rigidity in financial service clusters, including product, technology, learning, capital expenditure, and attitude of policy-makers. In the section that follows, some of these rigidities are discussed as a means of evaluating their contribution to cluster decline.

Historically, it has been argued that spatial proximity promotes collective learning (Camagni, 1991) which is considered to be a comparative advantage for clusters (Porter, 1993). However, localized learning has recently been shown to promote rigidity in clusters (Boschma and Lambooy, 1999). Financial services are prone to this where a narrow focus on a particular product could lead to rigidity in knowledge acquired. Consequently, an aspect which was initially considered strength may in fact be a factor in cluster decline. Storper (1992) uses the concept of ‘technology districts’ to illustrate the ways in which collective learning in technology can create ‘technology lock-in effects’ that can cause unnecessary commitment to capital goods, research and development, specialized labour, support industries, and infrastructure. In these circumstances, participants can become too close to their own relevant and original industries (Malecki, 1991) where firms could incur extra costs to unbundle existing systems in order to add new technology to rapidly accommodate external changes (Pérez and Soete, 1988). Grabher (1993) calls this phenomenon the “trap of rigid specialization”. Overall, these homogenous industries have developed based on their past strengths, which follow the “path dependency” theory of industry evolution (Arthur, 1990). Since these industries and services can sometimes become narrowly focused in specific products and services, if an overall change in demand for that particular product or service occurs, they can become unable to cope and begin to decline.
(Malmberg and Maskell, 1997). When an external shock happens there are very few adjustments that can be reasonably made due to their inflexibility. According to Storper and Walker (1989), “the commitments of previous centers of industry to their special technologies render them often less than more fit to pursue diverging lines of activity”. Maskell and Malmberg (1995) have also forwarded another interesting perspective, which is that of the cost required to “unlearn”, which involves training costs and the removal of institutions that are unwilling to re-train in order to accommodate changes in demand conditions.

Markusen (1987) further expands on his theory that in an oligopolistic market, the corporate culture can become rigid due to the lack of competition. This may limit the kinds of innovation needed for a cluster to develop. Hassink (1997) states that “hierarchical structures limit the ability to adapt quickly as conditions change and risk-avoidance becomes self-reinforcing as there are only a handful of successful role models to inspire potential entrepreneurs”. His argument is that large companies tend to create hierarchical structures, which he calls ‘top down networks’ that are prohibitive to innovation and knowledge transfer. He also points out that research and development, which is critical for innovation and marketing, becomes redundant in these large, oligopolistic firms as they become comfortable with their existing markets. Further evidence of this trend can be seen in Saxenian’s (1994) research, which examined large, integrated companies within a regional cluster setting in order to prove that big companies with integrated networks and comfortable surroundings could be detrimental to the overall economic performance of the cluster.

The vested interests of many stakeholders, including large firms, political parties, labour unions, and policy makers can play a huge role towards the rigidity of clusters. Amin and Thrift (1994) have shed some light on how “institutional thicknesses” can be detrimental to a cluster’s flexibility. They theorize that the interaction between institutions within a cluster, the cooperation of representative bodies in order to promote common industrial purpose, and similar views and synergy effects, could put a cluster in a position where it has difficulty changing when change is needed. Olson (1982) and Grabher (1993) have similar views on this phenomenon, which they call ‘political lock-in’ or ‘institutional scleroses’.

**Decentralization of operations.** Decentralizing or dispersion forces in the financial sector have become a challenge for established clusters in recent years, and the rapid
development of communication technology seems to favour this decentralization effort. Another challenge is de-coupling, which occurs when a service can be performed closer to the buyer and processes can still be controlled centrally. Modern technology and management techniques are now penetrating services at a faster rate than ever before (Porter, 1990). This partly explains why major banks establish localized branches in countries where they are active in order to serve as listening posts. O’Brien and Dale’s (1992) argument that we have reached the “end of geography” emphasizes that more and more transactions can be conducted remotely in a more efficient and increasingly low-cost manner. Back office financial functions have become increasingly decentralized to smaller provincial centres and low cost destinations in recent years. Due to control issues, financial firms have not yet decentralized any of their core functions except for back office functions. As Porteous (1995) puts it, the financial sector is generally highly competitive, and since they do not have bulky equipment to move they are highly mobile. Thus, it could be simply a matter of time before the decision to decentralize core functions is made as well.

Firms located in only one place risk losing the competitive edge on access to non-local information which firms in other locations may access first through technology. For international financial centres, different time zones create a force for decentralization. In financial centres such as Tokyo, Sydney, Hong Kong, Frankfurt, London, New York City, Toronto, and Los Angeles, a 24-hour-a-day interlinked information and communication system is in place, thus creating ‘zonal’ financial centres. However, decentralization comes with its own challenges and will not automatically produce better outcomes. For example, moving specialist staff with families to peripheral destinations can sometimes be costlier than moving machines. The quality of financial information could decline sharply over distance between generator and user. These kinds of risks must be considered carefully when contemplating decentralization. According to Porteous (1999) and Martin (1999), though there is decentralization forces that compel clusters to break up, forces of spatial agglomeration in the financial sector still remain powerful.

**Other drivers of change.** In the above section, the rationale for cluster change was discussed generally. There are a few additional factors that motivate change, particularly in the financial services. These factors are listed below.
Changing cost structure. In the 1970s, the decline of many old industrial agglomerations in Western countries occurred due to severe competition from low labour-cost countries like Taiwan and South Korea (Norton, 1979; Martin and Rowlthorn, 1986). These industrial regions had showed long periods of economic growth before they declined. In analyzing the cost structures of the American manufacturing industry, Reese (1979) argued that the decline of these industries was due to a changing cost structure, where specific cost advantages triggered production to move to low-cost areas. Conversely, van Duyn and Lambooy (1982) argued that the change in costs did not trigger the decline of established clusters, since the cost savings could have been used to implement research and development and technological learning in order to solidify these clusters’ status. Storper (1992) supports this argument, stating that the cost savings from the host country could act as an additional benefit for the established clusters, helping them to boost their status of prominence.

Dis-agglomeration effects. Agglomeration economies change in form throughout the various stages of their life cycle (Markusen, 1987; Steiner, 1985). After a city reaches a certain size, dis-agglomeration economies are believed to set in, causing the cluster to decline (Richardson, 1973). As a strong proponent of the theory that dis-agglomeration effects can contribute towards the decline of clusters, Richardson (1973) argues that positive externalities like labour pooling when wages increase due to a shortage of supply and knowledge diffusion from advanced to less advanced regions also have negative effects that may lead clusters to decline. He points out that dis-agglomeration can also originate from causes such as the rising cost of land and the crowding effect of cities (which can lead to pollution). High cost of living congestion costs and other disamenities are also crucial factors that contribute to staff salaries, especially in the financial sector. Office space can also become costly in major centres like London, New York City, or Hong Kong.

Barrier of entry. Another theory of cluster change is that of a market tendency to become oligopolistic and vertically integrated in an established cluster over time (Markusen, 1987). These market trends can become a barrier for entry for new firms that do not benefit from external agglomeration economies and have little access to regional resources like local labour and suppliers. In these scenarios, the labour market can also become inflexible and geared towards larger firms. This can result in a shorter supply of supporting firms that can cater to
start-ups because most of these firms are integrated with the larger ones. In this context, new firms have less motivation to enter the market, thus limiting cluster growth and precipitating the decline phase.

**Global competitive pressures.** Amin and Thrift (1994), who based their contemporary globalization process theory on competition among firms, emphasize that both internal and external factors must be considered when providing an explanation for the decline of clusters. 

Van Duyn and Lambooy (1982) and Lambooy (1986), later supported by Scott (1993), proposed that the reduction in demand conditions for available products could trigger the decline of well-established clusters. It has also been argued by contemporary cluster theorists that the success or failure of agglomerations may depend on circumstances – such as global competition – that lie outside the scope of the regions themselves (Amin and Thrift, 1994). Furthermore, Porter (1990) suggests that extreme cooperation and coordination of companies also could work towards decreased competition and domestic rivalry, which he surmises could be detrimental to the continued success of the cluster. Applying this hypothesis to the financial services industry, it could be argued that even clusters that thrived during periods of increased demand conditions and the peak of their product life cycle have succumbed victim to declining activity and a decline in status (OFCs-Offshore Financial Centres). This may be due to regulations which facilitate new competitive environment for OFCs stemming from centre of excellences such as Toronto.

**Removal of capital controls and change in demand conditions.** A reduction in capital and border controls has had significant effects on financial services clusters in the recent past. Market developments are important in motivating policy makers to change the financial regulatory landscape. Most countries have chosen to liberalize domestic rules and relax international capital controls. Increasingly, countries across the world have dropped controls on movement of capital. Markets are dynamic, and thus present a moving target for policy makers (Herring and Litan, 1995). The removal of capital controls and major advances in communications and transportation make it possible for companies to easily bring services like borrowing and administrative across borders (Kane, 1987). Some countries have taken active measures to attract a larger share of international business, both by improving their infrastructure to support financial services and by virtually eliminating regulatory burdens on international financial transactions. Furthermore, countries such as Canada, France, New Zealand, and the
United Kingdom have relaxed traditional restrictions on the permissible scope of operations of domestic depository institutions in order to permit them greater flexibility in responding to changing market conditions.

2.4 – Conclusion

This chapter has outlined how the traditional cluster theories of Marshall, Porter, and Piore & Sabel alone cannot fully explain the development and decline of financial service clusters. There are several reasons why this is the case. Firstly, these theories have been disproved due to the existence of dis-agglomeration effects that contribute towards cluster decline. Secondly, these theories are no longer applicable to the financial service industry because of the improved ability to spread codified knowledge and information to distant locations. Thirdly, traditional theories that focus on proximity alone cannot reduce the transportation and trading costs if there is no market for the product or service being offered. For the abovementioned reasons, the industrial districts concept proposed by Marshall is inadequate when applied to financial services, and this gap in the literature has only been partially filled by contemporary cluster theorists and economic geography writers. Combining both traditional and contemporary cluster theories can help explain cluster life cycles to a limited extent, since changes in the condition of clusters can be attributed to both endogenous and exogenous factors, but there are still pieces missing. For example, there could be more than one factor contributing to the state of a cluster. Financial centre rankings like the GFCI Index evaluate the performance of the overall financial services cluster, which is comprised of multiple sectors that can move in different directions and exist at different phases of their life cycle. Sector agglomeration explains why financial centres are often found in large cities, but fails to explain why major financial centres such as Amsterdam and Frankfurt have declined over the years. These theories can neither fully explain why some clusters survive while others wither, nor their longevity. The boundaries of financial centres have become harder to measure, and the development of dispersed sectors requires new concepts to identify and account for financial services clusters. New theories have emerged in the recent past – including NEG and K-Linkage – that emphasize the importance of knowledge spillover without continuous requirement of face-to-face interaction or proximity. If the lack of scale of the hedge fund industry in Canada is to be assessed, it is essential that newer theories and concepts be employed. In the next chapter newer cluster theories will be reviewed in order to
determine how they can be applied to the financial service industry, with the hope that some of the literature gaps identified in Chapter 2 can be filled.
Chapter Three: Decentralization of Financial Services

In the previous chapter, Marshall’s (1890) agglomeration theory, Porter’s (1990) cluster theory of competitive advantage, and Piore and Sabel’s (1984) flexible specialization theory were assessed to establish whether they could help to explain the explosive growth of past clusters. Chapter 2 concluded that while these theories are useful in explaining the formation and sustenance of clusters, they do not account for clusters’ evolution over time (Menzel and Fornahl, 2009). Although agglomeration theories used by traditional theorists are still supported and defended by many scholars, in the past decade a growing number of theorists have undertaken to explain the development of agglomerations using evolutionary models, theories, and concepts (Boschma and Frenken, 2005; Boschma and Martin, 2007; Frenken and Boschma, 2007). These attempts have succeeded in filling the void to some extent.

There has also recently been a divergence from the theory of agglomeration benefits, which posits that geographically-proximate firms reap benefits from this proximity. In fact, industrial clusters seem to be increasingly affected by the international fragmentation of production activities (Cusmano, Mancusi, and Morrison, 2010). There has also been a great deal of focus given in academic literature over the last ten years to the idea of cluster dispersion. These diversification forces seem to be driven by economic, organizational, and institutional factors. It is possible that clustering and declustering could operate simultaneously in the same sector; scholars have approached this possibility from various disciplinary perspectives. The literature on declustering that deals with the decentralization of activities illuminates the different pressures exerted on parts of an industry’s value chain, highlighting the diverse dynamics and varied drivers that may explain the de-clustering and re-formation of these industries.

One set of scholars have argued that firms should engage in geographically disperse activities in order to gain access to markets, lower costs of production, reduce the risks of excessive concentration in one or a few jurisdictions, and/or to gain bargaining advantages with labour. They argue, opposing forces impact the clustering and dispersion of an industry (Krugman, 1991a). According to these scholars, these benefits can be achieved at the cost of relocating geographically. The process that these scholars used to support these theories is the interaction of centripetal forces (which tend to concentrate industry in a few geographical regions) and centrifugal forces (which push in the opposite direction and tend to disperse industry across
regions and nations). Strong centripetal forces tend to be more likely than centrifugal forces to determine the level of spatial decentralisation among clusters (Krugman 1991a; Krugman 1991b; Krugman, 1998; Krugman and Venables, 1995; Neary, 2001; Fujita and Krugman, 2003).

A cluster is considered institutionally rich when it includes numerous institutions that offer a variety of resources. According to this theory, through high levels of interaction among these institutions, collective structures emerge and so does a mutual awareness of the necessity of developing common objectives and unified action (Sydow and Staber, 2002). However, a second set of scholars diverge from this view, arguing these vital practices of community, collaboration, and relationship-building can in fact be built through virtual communities (Hofstede, 1993; Pan and Leidner, 2003) and not solely through geographically proximate firms.

A third strand of scholars argues that dispersion economies can occur when firms save costs by spreading their activities out from their home office along their regional or global supply chain. These authors have observed that clusters change, disperse, and alter their value chain operations in an evolutionary manner (Boschma and Frenken, 2005; Boschma and Martin, 2007; Grabher, 2009). Advancements in information communications technologies (ICT) seem to have played an important role in promoting the dispersion of firms over space, which then reduces operation costs.

The factors that contribute to agglomeration and dispersion economies differ in significant ways. Though there are key variations in the arguments described above, the overall perspective is that clusters must be centrally understood in terms of dispersion. This exclusive focus on cluster dispersion prevents analysis of cluster decline. In the following segments, these three strands of scholarship will be assessed to establish whether they can be applied to an analysis of cluster decentralization and re-composition.

3.1 – Rationalization of Decentralization: Economic Forces

New Economic Geography (NEG) is a body of research initially stemming from international trade theory. This framework attempts “to explain the formation of a large variety of economic agglomerations (or concentrations) in geographical space” (Fujita and Krugman, 2004, p. 140). NEG proposes an equilibrium model that illustrates how centripetal forces pull economic activity together and centrifugal forces push it apart. This analytical framework was popularized by
economists such as Krugman (1991; 1998), Fujita (1986; 2007), and Venables (1995) in the early 1990s in order to explain the formation of a large variety of agglomerations in geographical space. To date, the NEG continues to be the only framework that determines the location of agglomerations explicitly through a micro-founded mechanism (Fujita and Mori, 2005).

New Economic Geography suggests that increasing returns and imperfect competition will lead to geographical divergence rather than convergence (Krugman, 1991a; Krugman, 1999b; Krugman, 1998; Krugman and Venables, 1995). According to general equilibrium theory, which is a commonly-used economic model in NEG, economic activities’ equilibrium spatial configuration can be viewed as the net outcome of a process involving two opposing types of forces: centripetal (agglomeration) forces and centrifugal (degglomeration) forces (Krugman 1991a; Fujita, 1986). These processes are meant to explain both the concentration and dispersion of clusters (Fujita and Mori, 2005).

The effects of centripetal forces range widely, and can include: reduction in market size, increase in transportation costs, increased availability of skilled labour, and a fine concentration of specialized suppliers and other pure external economies such as knowledge spillovers. Centrifugal forces contribute to deglomeration effects, including an increase in regulation, competition, and increase in cost of congestion, land prices, labour, and resources, as well as pollution. Agglomeration and deglomeration effects must operate simultaneously in order to arrive at the general equilibrium that may explain cluster formation, sustenance, and decline. In short, “new economic geography” approaches employ modeling strategies to examine the role of market-size effects in the generation of linkages that foster both geographical concentration as well as the opposing forces working against such concentration. Both centralization and decentralization can exist simultaneously within the same industry but in different value chains. In order to explain the cluster decentralization, centrifugal forces must ultimately exceed centripetal forces in order to arrive at a net outcome.

**Centripetal forces.**

Centripetal forces have been researched and described extensively by traditional cluster theorists through agglomeration economies. Transport costs mainly apply to the production of manufactured goods, where the supply chain and delivery are in tangible physical form, and
geographical proximity is essential. These costs have a direct correlation with distance, and tend to cause firms to cluster in order to reduce them. Firms also tend to cluster where employees with specialized skills are situated. External economies mainly include knowledge spillovers where knowledge and information is shared through face-to-face interaction.

**Specialisation.** Krugman (1991) argues that a combination of consumer preferences in product variety and fixed production costs can lead to specialization at the firm level. According to his analysis, this explains the existence of a monopolistic-competitive market structure. Departing from microeconomic location theory, which focuses on constant returns and perfect competition⁷, he examines the effects of increasing returns to scale in a monopolistic market structure. He asserts that it is less expensive to produce one single product in large quantities rather than it is to produce a variety of products in smaller quantities. According to this theory, it is natural that when production of a service is subject to increasing returns firms will tend to concentrate on this activity alone within a small number of locations.

Additionally, economies of scale are cumulative processes in which large markets attract production, resulting in an increase in market size (Weinstein and Davis, 2002). In this situation, there are large number of consumers and a small number of large firms in the cluster end up becoming the largest exporters of the service and hosting more than their proportional share of firms in the increasing returns sector. These theories could explain why there are specialized clusters/concentrations in the financial services industry. For example, investment managers tend to cluster in financial centres like New York City and London, hedge fund administration usually cluster in cities like Toronto and Halifax, and back office clusters tend to exist in locations like India.

**Transport costs.** Transport costs become an important factor in firms’ cost-minimization processes, especially when the production costs are fixed. Transport costs must be minimized both on supply and demand aspects of the value chain. Manufacturing industries differ from financial services industries in that production indivisibility make it profitable for firms to concentrate production in a relatively small number of plants and to produce for dispersed consumers. This ultimately means that increasing returns to scale constitute a strong centripetal

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⁷ Microeconomic location theory posits that, in a perfectly competitive market, with constant returns to scale, external sources of agglomeration encourage regional specialization.
force. Conversely, in financial services, service production can be divided and some value chain activities can be provided virtually, which can reduce transport costs considerably. Fujita and Thisse (1996) support this argument by adding that declining transport costs can make it less profitable for firms to locate close to other firms.

Interestingly, very high or very low transport costs could favour the dispersion of economic activities (Krugman, 1991). The relationship between transport costs and the degree of an economy’s geographical concentration seems to be U-shaped. The market potential of an industry sharply decreases when moving away from the city in which this industry used to reside, then begins to increase after a certain distance. This is called the ‘shadow’ of the industry (Fujita and Krugman, 1994), and this shadow differs from industry to industry. In the financial services industry, this shadow can be larger and often comprises many countries, since this industry provides a variety of services from a variety of places. These services can all be combined and delivered to markets worldwide at low transaction costs.

**Mobility of factors of production.** Immobile factors can include land and natural resources, as well as people in some cases. In recent years, factors including globalization, technological advancements, societal declustering effects, and hyper-competition have contributed to the changing landscape of financial services worldwide. Nelson (1975) writes about diseconomies of agglomeration in centralized operations, and contends that decentralized firms gain more benefits related to rents and staff costs than do centralized firms. Storper and Walker (1989) discuss the ways in which industries have rapidly dispersed in the twentieth century. They identify several factors as main catalysts for the general move away from clusters, including de-industrialization processes (p.97), core–periphery relations (p.180), and deskilling of labour (p.181). Walter (2009) argues that the success of financial services depends on their size, their range of activities, and the geographic scope or client breadth. Since the modern financial services firm must cater to multiple segments, including client, products, and

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8 The core-periphery model is based upon an unequal distribution of power in economy, the core being the dominating ‘central’ realm, while the peripheries tend to be isolated, dependent, and underprivileged. The ‘core periphery model’ divides the workforce into ‘core’ workers and ‘peripheral’ workers. Core workers are the more permanent workers of a company, usually possessing a high level of qualifications and/or firm-specific skills that cannot be easily replaced. Peripheral workers are those who are employed on a fixed-term or occasional basis, providing the firm with numerical flexibility (Atkinson, 1984).
geographies, all of which are interlinked, it must increasingly decentralize its functions in order to reduce costs and avoid the risk of insolvency.

Immobility of people can force companies to disperse from their current locations and gravitate towards labour availability. Krugman (1995) theorizes cluster decline as it applies to financial centres in the following way: the world economy must achieve a certain critical level of integration before the forces that cause differentiation into ‘core and periphery’ can take hold. The rise in core income is partly at the expense of the periphery, and the opposite is true as well. As further changes occur, the advantages of the core get eroded, and the resulting rise in peripheral income may be partly at the core’s expense (Krugman, 1991).

Core-periphery theory can also be applied to the outsourcing of financial services. Outsourcing has been defined as the transnational relocation or dispersion of activities (Doh, Bunyaratavej, and Hahn, 2009). A report by the U.S. Department of the Treasury showed that eight of the ten largest American financial services companies worldwide adopted outsourcing in 2008, as compared to 2000, when only three of these companies had adopted this practice (Blackmore and Young, 2009). It is important to differentiate between the portability of skills and the mobility of labour. Miozzo and Soete (2001) and Miozzo and Grimshaw (2006) point out that advancements in technology have not only rendered skills mobile, but have also aided in the reduction of production costs and increased the distance across which knowledge transfer can occur, provided that the sender and receiver have tremendous institutional influence (Robert-Nicoud, 2008).

Internal divisions of labour are both cause and effect of core-periphery contrasts, as reflected in occupational type, wage differentials, and employment stability. Similarly, global cores can become entrenched as control centres for head offices, as well as for research and development activities. Peripheries, on the other hand, tend to be dominated by branch plants and thus exhibit high levels of external control, including foreign control. Some support for cost reduction in low-wage locations can be found in core-periphery scholarship (Bock, 2008; Farrell, 2005; Grote and Täube, 2007).

There are three factors that must be considered when analyzing the effects of business process outsourcing, which contributes to the dilution and decentralization of financial services. The first relevant factor is the international/spatial division of labour, wherein institutional and cultural diversity forces a “global industrial shift” towards the transfer of labour-intensive, low value-
added jobs out of developed country clusters into developing countries. This creates concentrations that specialize towards one particular line of production activity. Cost efficiencies are realized in order for financial service firms to become competitive (Ghoshal, 1987). The second variable for consideration is which endeavours are taken by firms. For example, some firms use lean methods, wherein the rationalization of the production process eliminates the duplication of processes and platforms (Dicken, 2003), which contributes to decentralization. The principles of lean production can also be attributed to the intensification of work (Turnbull, 1986; Ackroyd et al., 1988), now that the time difference between nations can be used in order to work 24/7, thus saving overall production time. The third consideration is what sourcing option is being used, since this indicator may point to whether financial services firms are saving costs and becoming competitive within global production networks (Gupta, 2006).

Many research and development industries have become multinational firms in order to serve globally-dispersed clientele (Aharoni and Nachum, 2000; Harrington and Daniels, 2006), whereas in the past, these service firms were clustered in major cities (Harrington and Campbell, 1997). Lowendahl (2002) writes that “professional service firms globalize because they project size and globalization as proxies for high quality and reputation”. Cantwell and Santangelo (1999) assert that value-creating activities are becoming easier to outsource and manage from distant locations due to changes in business models resulting from globalization and increased digitalization. Shortages of required skills for services and competition often drive companies to look elsewhere for their high-skilled technical talent and service expertise (Lewin, Massini, and Peeters, 2009; Manning, Lewin, and Massini, 2008). Now that the majority of financial services, including hedge fund services, are delivered though virtual space rather than being delivered physically, cluster dispersion is becoming increasingly prominent within the financial sector.

Krugman (1991) argues that when firms move to a certain region, demand for labour (and thus wages) will increase at the new region, which encourages workers to move to that region as well. This concept is supported further by Ota and Fujita (1993). However, Krugman adds that the process of growing world trade, further fuelled by falling transport costs, can cause clusters to divide spontaneously (Krugman and Venables, 1995). This segments the world into a high-wage North and low-wage South, which later causes the South to rise at the expense of the North. A growing number of financial services firms have chosen to break their services down into value
chain activities and spread them across different regions and countries, taking advantage of advanced technology and lower factor prices across the globe. This phenomenon, which can be partially connected to offshoring to lower-wage countries such as India, is occurring broadly within the financial services industry, resulting in the loss of semi-skilled jobs in the U.S. and Canada. This pattern is discussed in more detail at a later stage of this chapter.

**Centrifugal forces.**

Scholars from the institutional school of thought argue that cluster sustainability can be affected by both internal and external threats. While the internal strengths and weaknesses of the cluster can act as both centrifugal and centripetal forces of cluster change, external sources including regulatory changes, competition and other deglomeration forces have also created environmental shifts that have resulted in innovation and adaptation, employed as a means of survival for companies (Greenwood and Hinings, 1996).

**Regulations.** Changes in regulations have particularly affected the product and services being offered by the hedge fund industry. The repeal of the “Ten Commandments” of the Offshore Industry in 1998 triggered the decline of many offshore centres, followed by recent regulations such as the Dodd Frank Act (2010), which forced these centres into a rapid downward spiral. Offshore financial centres have been severely affected by regulatory pressures from G20 countries, particularly the EU and the US. These pressures largely stem from the financial crisis of 2008. One set of regulatory requirements that is currently in force are the TIEA (tax information exchange agreements) backed by G20 countries and the Organisation for Economic Co-operation and Development (OECD). According to OECD, in the period of time between April 2010 and April 2011, almost 300 tax information exchange agreements were signed by various domiciles that used a favourable taxation regime and secrecy to their competitive advantage (Houlder, 2010a; Houlder, 2010b). Under this regulatory regime, OECD countries are forced to publish accounts of the activities of their offshore subsidiaries. This has forced many to pull out of these offshore financial centres, which has resulted in a significant impact on the profitability and sustenance of OFCs. The Cayman Islands, the British Virgin Islands, Guernsey, and Jersey have each faced their own challenges to the maintenance of their profitability, some barely maintaining their offshore status (Mathiason, 2009; Que’ree’, 2009). According to Body (2010), OFCs must begin preparing for a new world that does not include
ingredients that have helped them to become prosperous, such as banking secrecy and tax avoidance. “In tomorrow’s world, there will be no more havens in which to hide funds from the taxman” (Gurria, 2009, p. 36)

According to Palan (2010), most OFCs are finding it exceedingly difficult to resist international pressures to overhaul their operations and comply with the changing regulations. The fact that there is no evidence of political support from their parent territories such as the UK (Mathiason, 2009) demonstrates that many OFCs are already facing budgetary deficits. Using a path dependency approach (Scott, 2001; Martin and Sunley, 2006), it can be established that these OFCs had an overly narrow focus when building their business on financial services for a niche market. Confronted by severe regulatory pressures to erode the secrecy space that they considered to be their competitive advantage in attracting clients (Hampton, 1996), OFCs may be on the fast road to decline.

Regulatory regimes have had an immense influence on financial services in the recent past. The geography of space has been fundamentally altered, mainly due to the deregulation of the financial services industry (Ellis and Taylor, 2006). There is substantial evidence that regulatory changes have profound impacts on whether or not a financial cluster succeeds. Another frequent cause for the re-visitation of regulations is when fraudulent activities emerge out of a seemingly uneventful situation. Whenever there is an overhaul of a regulatory regime, there seems to a correlated change in the way financial services clusters react and modify their operating model. This is evidenced by the difficulty that many financial centres have had in being flexible enough to copy with recent regulatory changes. Conversely, these regulations have helped some of established financial centres such as London, New York City, Ireland, and Luxembourg to maintain or re-establish their status as leading hedge fund centres. These rapid changes have led many to change their operating model and move towards a more decentralized framework in order to survive. Advancements in information technology have assisted these firms to continue profiting even while adapting to a decentralized mode of operation.

Financial institutions like banks are the life blood of the financial services industry and form a crucial part of the value chain. McCauley, McGuire, and von Peter (2012) contend that “the financial crisis has led to a reconsideration of banks’ global business models”. Banking has become global and thus relies heavily on its cross-border positions. The globalized banking
sector can be understood as both a “multinational” model and an “international” model. A multinational model is a process of decentralization, where a bank expands from its home and sets up subsidiaries and branches outside its home (Jones, 1992; Aliber, 1993). These institutions are funded locally where the branches reside. The international model is a process of centralization, where the bank operates mainly outside of its home country and establishes itself in a major financial centre in order to conduct cross-border transactions. Banks pursuing a more decentralized, or multinational, model were less affected by the disruptions of the global financial crisis, since local positions proved to be more stable during than those funded across borders and currencies (McCauley, McGuire, and von Peter, 2012). The global economic crisis of 2008 also highlighted the need for regulatory reforms on both a national and international level. The maintenance of liquidity levels was one of the central priorities of these reforms, which has had a direct impact on banks’ decision to operate using a centralized or decentralized model. According to the Financial Services Authority (FSA 2008), this regulatory regime mandates that each subsidiary maintain their liquidity ratios and prove themselves to be self-sufficient. The findings from a study conducted by the Committee on the Global Financial System (2010) indicate that most banks are poised to choose a decentralized multinational model in order to comply with the new liquidity requirements. This interpretation is supported by McCauley, McGuire, and von Peter (2012), who assert that the new liquidity standards are designed to promote a multi-national decentralized structure.

Changes in regulation have had tremendous effects on the geography and environments of stock exchanges, including where they are situated and how they operate. Alongside changes in the role of technology and the need for governance, regulatory changes also greatly contributed to the decline of financial centres such as Amsterdam and Frankfurt (Ferrarini, 1998; Casey and Lannoo, 2009). Compared to the UK, the slow pace at which these centres embraced changes to regulations like the Markets in Financial Instruments Directive (MiFID) contributed to their decline, as financial firms began to leave their home domicile and establish themselves in neighbouring financial centres like London and Luxembourg (Casey and Lanoo, 2009).

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9 For example, Basel 111, the international regulatory framework for banks.
Recently, changes to regulations have made it easier for funds to re-domicile from offshore centres like the Cayman Islands to jurisdictions like Ireland.

**Competition.** Competition, which was once considered to be an important driver in cluster growth, is slowly becoming a driver of dispersion. Since changing global dynamics influence competition, they play an important role in creating and dismantling financial service clusters. In the financial services industry, value chain activities are dispersed globally and brought together through technology. Thus, each segment of the value chain in itself creates competition among related firms and impacts the way they operate. This is discussed in detail later in this chapter.

Porter’s (1990) “competitive advantage and collaboration” theory, stresses the importance of competition among firms within a cluster for its success, as well as the collaboration of firms in order to develop new products and services. However, Kogut and Zander (1992) argues “competitive advantage can be gained by combining and synthesizing the knowledge and skills from a variety of geographically dispersed organizational sources”. Discussing the ‘dynamic capabilities framework’¹¹, Teece, Pisano, and Shuen (1997) argues that the success of this framework depends on a firm’s ability to achieve new forms of competitive advantage. Supporting these arguments, Galunic and Eisenhardt (2001) emphasize that a firm’s success in creating new competitive advantages relies on its ability to integrate and reconfigure both internal and external competencies in service of being better able to address rapidly-changing environments. Prahalad and Hamel (1990) propose that another way of looking at a firm’s core competencies could be to determine how effectively it can coordinate diverse production skills and integrate multiple streams of technologies.

Innovation is crucial in order for clusters to maintain their positions of leadership. The faster its responsiveness to market threats and opportunities, the more successful a firm can be (Coleman, 1999). A distinctive feature of the financial services industry is the divisibility of its value chain activities. With the use of technology, a third-party service provider who resides on the other side of the world can provide real-time service to another section of the value chain. The commoditization of financial services has rendered it increasingly possible for firms to break

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¹¹ The term ‘dynamic capabilities’ was first introduced in a 1989 working paper that was influenced by Gary Hamel's multinational strategy research leading to Core Competences of the Corporation.
activities up into chunks and pass them on to specialized companies in an attempt to optimize their overall value chain. Alternative fund services have embraced the decentralized value chain approach effectively, largely due to the intangible nature of these services. This form of decentralization creates new clusters or concentrations around the world.

*Deglomeration.* According to Papageorgiou and Thisse (1985) and Fujita (1988), firms are attracted to places where there are many end users because this increases their access to consumers, but they resent places involving many firms because they must then face fierce competition. This is similar to how households are often attracted to places where there are many sellers so that they can access to a large variety of goods, but are repelled by places where many households reside because of high land rents. The concentration of firms in one location can generate increased demand for local land and cause increase in rents, thereby providing a disincentive for further concentration. Social costs such as congestion can also be a driving deglomeration force. Maillat (1998) argues that the increasingly opportunistic behaviours of governments and policy makers can reduce agglomeration economies, create inter-cluster tensions, and/or increase congestion costs, thus making a location in the functional region less advantageous. In some cases, being close to other firms producing similar goods can create congestion, which increases the time and costs it takes to ship inputs and outputs. In these circumstances, the government may intervene and disperse industries from the core to the periphery, trading agglomeration economies for lower location, saving time and costs in the process, in order to assure social and political stability.

Industries sometimes also disperse of their own accord if it results in cost savings. Some scholars argue that industrial concentration in one geographical region can create competitive disadvantage at different points in the business cycle. For instance, when technological change is rapid, firms within a cluster may be at a competitive disadvantage, either because they do not have access to information outside the complex (Glasmeier, 1988; Glasmeier and Sugiura, 1991) or they decide to resist this change. This resistance may also lead these firms to be less innovative (Harrison, 1994). These findings suggest that deglomeration can lead to firms migrating to other locations in order to reap the benefits of dispersion economies.
3.2 – Institutional Embeddedness and Contrarians

Past cluster theories have emphasized proximity as a facilitator of knowledge spillover amongst firms that constitute a cluster. Marshall (1920), David and Rosenbloom (1990), Krugman (1991a), and Kelly and Hageman (1999) have shown that the intensity of knowledge exchange can have a direct effect on the innovating process of people and firms located in a cluster. Hippel (1988) has stated alongside other researchers that direct contact with competitors, suppliers, and customers can be a good source of innovative ideas. Institutional theory scholars have shown that new firms that are establishing themselves in new industries tend to locate in areas with abundant relevant resources and where institutional pressures, including the co-location of similar industries, are moderated. However, some scholars have recently argued that geographical co-location is not mandatory for knowledge spillover benefits to be gained. Rather, access to virtual means of communication can substitute for proximity.

The learning economy is affected by the increasing use of information technology (Lundvall, 1996). Firms have increasingly begun to adapt to the creation of new knowledge through virtual means such as conference calls and virtual meetings so that they can save time spent on face-to-face interaction, which Clapp (1993) points out as being largely comprised of “travel time”. The time and costs saved by sharing knowledge virtually can then be spent on other development practices (De Maggio and Grippa, 2007). In this section, the role of geographical proximity and knowledge spillover among clusters is explored and the creation of virtual knowledge sharing communities is analyzed as a centrifugal effect of the declustering of firms.

Many firms have faced challenges by combining their knowledge and expertise and creating new organizational forms. Since the 1960s, information technology has been a critical part of corporate infrastructures, and has enabled suppliers, buyers, and producers to share information in real time with remarkable accuracy. One of the means by which knowledge can be shared amongst firms is through “cellular forms” (Miles et al., 1997) of virtual knowledge-sharing, often called collaborative knowledge network (CKN) structures.

CKNs are groups of self-motivated individuals that use the wide connectivity and the support of communication technologies, and that span beyond the organizational perimeter of companies on a global scale. They are linked by the idea of something new and exciting, and by the common goal of improving
existing business practices, new products, or services for which they see a real need. (Gloor et al., 2003)

These groups are designed to share knowledge and expertise among firm communities in order to effectively handle challenges and continue to survive in the financial services industry.

By the 1980s, technology had enabled CKNs to operate even more efficiently. The CKN model introduces creative collaboration, knowledge sharing, and social networking mechanisms into the financial services industry, positively impacting individual capabilities and organizations’ performance (Gloor et al., 2003). Local area networks, wide area networks, and personal computers made remote collaboration and knowledge-sharing commonplace. Observing, reporting, and reacting to data now took hours instead of days. Internet portals, digital workplace tools, online marketplaces, and wireless technologies all contributed to the growing influence of CKNs in many successful companies. Costs incurred on emergent electronic discussion groups and instant messaging tools are virtually nonexistent, and CKN participation has increased tremendously.

The CKN structure has the capability to support a very large group spanning geographical and organizational boundaries, and to link several communities of practice electronically in the same circuit. This is particularly true in the financial services sector. According to Cebon (2006), virtual communities do not have real boundaries in time or space. Many firms that support the hedge fund industry are beginning to realize the advantages of participating in a virtual community. A study on geographical colocation by De Maggio, Gloor, and Passiante (2009) concluded that knowledge-intensive industries, such as software-dependent financial services, are able to share knowledge through virtual means to a great extent. Information originating from different parts of the world and thus difficult to find locally can be aggregated and operationalized through technology (Aral, Brynjolfsson, and Van Alstyne, 2006), making it virtual sources more effective than face-to-face contact.

In the context of clusters, the term pipelines (referred to in chapter 2.3) relate to channels that are used in distant knowledge creation interactions between geographically-dispersed firms within an industry. Decisive, non-incremental knowledge flows are often generated through “network pipelines”, rather than through undirected, spontaneous “local broadcasting” (Owen-Smith and Powell, 2004). Distant contacts can be a source of novel ideas and expert insights useful for
innovation processes (Rosenkopf and Almeida, 2001). Firms therefore develop global pipelines not only to exchange products or services, but also in order to benefit from outside knowledge inputs and growth impulses. Thus, in a globalizing knowledge-based economy, each cluster’s economic prospects depend not only on its internal interactions but also on its ability to identify and access external knowledge sources located far away (Glasmeier, 1988; Maillat 1998; Bresnahan, Gambardella, and Saxenian, 2001; Bathelt, 2003). Dispersed firms establish such trans-local pipelines through professional gatherings, international trade fairs and conventions, inter-firm organization, networks, and projects. Bathelt, Malmberg, and Maskell (2004) assert that pipelines that are developed between clusters can create substantial amount of knowledge spillover due to advancements in communication technology. Grabher (2004) supports this argument by emphasizing the diminishing the role of geographical proximity in knowledge creation and spillover effects.

In the financial services industry it is important to keep up-to-date with current developments and changes (Faulconbridge and Hall, 2009). Hall (2009) states that, especially in knowledge-based economies, acquired skills must be constantly reproduced through education so that competitiveness can be maintained. Training is an integral part of these knowledge clusters due to the higher-level skills involved (Becker, 1993). This means that universities and other training institutions often cluster with skilled personnel in order to create local networks and communities that support newly-formed clusters. This illustrates the institutional embeddedness of cluster growth. Due to advancements in communication technologies, knowledge service clusters are frequently created some geographic distance away from the original cluster and their services are more oriented toward worldwide audiences. The rapid growth of these new knowledge service clusters is fuelled by the entrepreneurship of these emerging clusters. With the support of their governments, they seem to flourish (Bresnahan, Gambardella, and Saxenian, 2001; Feldman, Francis, and Bercovitz, 2005; and Porter, 2000). Once these institutions attract foreign investments and build a critical mass, agglomeration and specialization effects take over in an effort to sustain them (Pouder and St. John, 1996). The recent emergence and growth of financial centres such as Singapore and outsource destinations such as India are clear examples of locales where training institutions are prominent and supportive of the financial services industry, and where the support of the government is clearly evident in the success of the declustering process.
3.3 – Cost saving through dispersion of value chain activities

O’Brien (1991) predicted the ‘end of geography’ in financial services that would result from globalization and technological advancement. As a concept applied to international financial relationships, the ‘end of geography’ refers to a state of economic development where geographic location no longer matters. For financial firms, this means that there is a much wider range of choices when choosing a geographical location, provided that an appropriate investment in information and computer systems can be made. O’Brien (1991) argues, as markets and rules become integrated, the need to base decisions on geography will alter and diminish. Longcore and Rees (1996) emphasize that information technology is a cause for the declustering of financial services.

Advancements in information communication technologies (ICTs) and the internet have altered firms’ relationship to time and space (Castells, 2000). Polenske (2010) argues that dispersion economies have been highly influenced by the impacts of ICTs on global supply chains. She agrees that ICTs have acted as enabling forces and have facilitated the dispersion of economic activities throughout space. This is in part due to their potential cost-reducing impacts. No longer restrained by the geographical nature and spatial constraints of their supply chain or their market potential, firms are becoming more and more independent. Digitalization has played a pivotal role in firms being able to establish themselves in more dispersed geographical areas. Hildreth et al. (2000) argues that firms find it more cost effective to adapt to external challenges when they are able to rely on technology. In order to appreciate the extent of the tremendous impacts that technology has on business models, it is necessary that these changes be viewed at a macro level. This section focuses on the disintegration in financial service value chains that is caused by technological advancement.

According to Richard and Devinney (2005), information technology causes the vertical disintegration of value chains. This applies greatly to financial services’ engagements with global (Tanriverdi, Konana, and Ge, 2007), which gives firms the opportunity to find the best options available for their organization, in service of cost reduction and innovation. Global financial firms are now able to operate in all major time zones, and software interfaces allow for real-time connection with a whole range of financial services. This capacity gives the client the power to choose from a large range of financial services providers (Clark and Thrift, 2005).
Jacobides (2005) and Coe (1997) both demonstrate how many firms have taken steps towards reengineering their work processes in order to optimally allocate production costs and seek out knowledge and innovation in order to remain competitive. Gupta (2006) has indicated that this phenomenon has created complex value chains, involving multiple supply providers that are spread across the globe providing goods and services online. Warf (1989) states: “The introduction of microcomputers and networked computer terminals has added impetus to the decentralisation of more routine functions, this leading to a ‘spatial bifurcation’ in many large finance firms”. This means that core functions can be limited to certain areas of the world like New York and London, (Moss, 1987; Berry, 1989) while all other supporting services can be administered elsewhere and delivered digitally where necessary. This usually means that value-added financial services are concentrated in leading financial centres, while supporting (non-valued added) functions are transferred, or decentralized, outside of the cluster. Financial firms are taking advantage of third-party contract manufacturers who not only provide business process outsourcing but also increase the possibility that financial services firms in the future may exist as virtual organizations that focus solely on client services (Irving et al., 2003, pp. 104). These trends illustrate the critical importance of acknowledging that the changing geography of the digitally-charged economy facilitates the de-clustering, dispersion, and reformation of financial centres.

The financial services industry is no exception to using digitalized technology when producing, supporting, and delivering services to clients. According to Dicken’s (2003) “spider web” theory, “international businesses in a market context are typically involved in a ‘spider’s web’ of collaborations with other enterprises whose resources can be utilised for competitive advantage” (p. 7). Porter, (2001) agrees that today, IT and the internet have permeated the value chains of every business sector. Many products and services offered through the electronic marketplace are virtual products that exist solely in digital form, such as downloadable computer files or programs. Possessing superior technology is considered to be a major competitive advantage within the hedge fund industry. It has been observed by virtualization scholars that various aspects of a value chain are all affected differently by innovations in technology, with some responding to the pressures of change and others remaining completely unaffected.

Spatial bifurcation involves separating out functions into ‘higher order’ functions and ‘back office’ activities, and relocating the latter to lower-cost locations.
A financial centre can function without a stock exchange, and this is evidenced by centres like Geneva or Boston. In a special report published in the Financial Times entitled “World Financial Centres and Exchanges”, it was proposed that financial centres and stock exchanges are separate entities and not perfectly correlated (Biglari, 2007). This report also stated that while stock exchanges matter to investors, they do not matter to the financial centres, even though one might argue that stock exchanges contribute towards employment levels in the financial centre, as well as its reputation. Leading financial centres have used diversification strategies, as well as established offices and subsidiaries across the globe in order to take advantage of proximity to their trading technology users, suppliers of issuers, and trade matching engines, as opposed to prioritizing proximity to the stock exchange. This contributes to the decentralization of activities within these centres.

The stock exchange is the part of the financial services value chain where investments like equities, bonds, and derivatives are traded. Before the virtualization of stock exchanges, the stock marketplace was a physical entity that was located in a specific financial centre, where the physical presence of the broker and dealer was required. Changes to regulatory requirements and competition between stock exchanges have sparked a widespread tendency for the stock exchanges to merge in order to gain dominance, economies of scale, markets, and products. Technological and regulatory developments have allowed trading to be carried out anywhere from a remote location. Technical barriers have disappeared as new trading platforms are created that aim to reduce the costs of trading and improve service offerings. Securities markets have been extensively liberalized, to the extent that they actively invite foreign companies to list on domestic markets, thus dismantling the monopoly of national stock exchanges. The process of trading has also become faster, which has increased the turnover and liquidity of stocks. Through the introduction of Investment Services Directive (ISD) in 1993, investment services firms are now allowed to operate in other member states through remote trading screens.

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13 The Stock Exchange Business models have been revolutionized by the introduction of regulations like the MiFID (2007) in Europe and the NYSE Regulations since 2000 (Reg. NMS). The Big Bang in 1986 triggered a series of stock exchange deregulations in Europe, initially from the London Stock Exchange. These regulations were followed by the Investments Services Directive in 1996, and more recently in 2007, by the MiFID.

14 Since this regulatory overhaul, direct competition between stock exchanges has been abolished, to the point of even removing concentration rules (Ferrarini 1998).

15 The ISD was adopted by the European Union in 1993 and represents a unified regulatory framework for the securities industry.
Investment bank branches have been moving closer to investors in order to best cater to their specific needs, as well as the needs of the markets in which they participate. This also helps them to offer new issuer services to new companies that are issuing shares through the branch network. Wojcik (2010) argues that trading should be understood separately from listing. He continues on to say that services to traders and issuers should also be understood separately from each other and, more importantly, that secondary exchanges should be distinguished from primary exchanges. When markets – as opposed to exchanges – are considered, it is evident that if a financial centre does not have a market for its services, it cannot survive as a financial centre. Cooper (2011) posits that if a city has no financial marketplace and is not part of the global infrastructure of wholesale financial services, then it does not possess a financial cluster of financial services. “It is the location of markets,” he says, “not exchanges, which determines the strength and durability of clusters”. This emphasizes the fact that, ultimately, it is the market that determines the success of financial centres and clusters, not exchanges.

**Cost Reduction through Outsourcing.** A nation has a comparative advantage when its residents are able to produce a good at lower opportunity cost than the good would be able to be produced in another nation. If residents of a country are able to produce more units of an item from the same given resource inputs than is true in another nation, then that country has an absolute advantage in producing that item. According to Saxenian (2004), the “New Argonauts” provide a mechanism for seeding entirely new centres. In financial services, this practice is enacted through the decentralization of activities by creating centres of excellence. A centre of excellence is an organizational unit that embodies a set of capabilities that has been explicitly recognized by the firm as an important source of value creation with the intention that these capabilities be leveraged by and/or disseminated to other parts of the firm (Frost, Birkinshaw, and Ensign, 2002). Multinational corporations (MNCs) such as Citigroup and State Street, among others, have been opening up captive delivery models in Canada and providing hedge fund administration from Canadian centres of excellence like Toronto.

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16 Economic geographer Anna Lee Saxenian (2002, 2004, and 2006) uses the term “New Argonauts” to explain how technically skilled entrepreneurs who are regarded as transnational entrepreneurs and who travel back and forth between Silicon Valley and their home countries, were able to create companies far from Silicon Valley by transferring the knowledge gained on skills and technology.
MNCs are becoming increasingly aware of the opportunity that lies in tapping into growing pools of qualified but relatively inexpensive production resources, such as staff with specialized expertise (Doh, 2005; Lewin, Massini, and Peeters, 2009). Mori and Turrini (2005) argued that heterogeneity and varying skill levels among workers can be used to explain the segmentation of the skilled workers required to produce financial services, due to the varying complexity of products and services offered. If the transportation and communication costs of service provision are ignored, then the spatial sorting of workers can dictate where the skilled, or front-unit workers reside and where the less skilled, or back-end workers segregate. This spatial fragmentation represents one of the main ingredients of globalization’s economic process and the de-clustering effect it has on financial centres. The shared service model, is becoming popular in financial services where an organizational unit moves all or part of its processes to a service centre elsewhere, mostly offshore, with the aim of decentralising certain services (Moshirian, 2008). This approach is quite different from former strategies, wherein companies performed most functions internally and were supported in close proximity by service providers within the cluster. These same functions are now mostly being performed outside the cluster, either by setting up wholly-owned subsidiaries of the MNCs (sometimes called a “captive delivery” approach) or by sub-contracting tasks to specialized service providers (Couto et al., 2007).

MNCs have generally looked to either developing countries or developed countries trainable resources, thus constructing centres of excellence that are relatively transitory (Heijmen et al., 2009).

Recently, destinations (including India and China) that were once considered to be viable, low-cost providers of value-based activities, have been developing as specialized clusters. These locations have been competing amongst themselves for scarce talented resources, which has caused a rise in costs of production. Wages tend to increase as new clusters become overcrowded, and these clusters then lose their competitive edge. Competition increases, talent shortages multiply, and diseconomies of agglomeration set in at a faster pace (Pouder and St.John, 1996) as these clusters grow faster and faster. A new trend that has become increasingly noticeable among newly-formed clusters is that, in order to cope with deglomeration and skill shortages, these “hot spot” corporations have been opening up hubs around the globe and managing them from a distance through technology. This seems to be done with the hope of
combating the overcrowding effects associated with creating second-tier service clusters and concentrations.

Grimpe and Kaiser (2010) assert that using a third-party provider for activities within a value chain can result in too much knowledge being passed on to the supplier. The longer a firm engages a third-party provider, the easier it can become for the provider to learn the firm’s processes thoroughly and specialize in their supposedly exclusive activities. Kotabe and Mudambi (2009) use the phrase “hollow out” to describe what happens when the competencies of a sourcing firm deplete, leaving their supplier to become a competitor. However, it seems that outsourcing can generally only work if there is a long-term relationship between the supplier and the outsourcing firms. Thus, Mudambi and Venzin (2010) recommend that outsourcing firms should remain well-aware that they could face firm competition from their supplier firms at any time.

3.4 – Conclusion

This chapter’s central aim was to review the literature on declustering as it pertains to financial services industry clusters. Current literature was examined in order to better understand the potential impacts of decentralization on knowledge networks, competition, regulation, business process outsourcing, technological advancement, exchanges, and markets, as well as the changing business model of financial services. This literature review was conducted in several ways. First, economics literature on price/market-driven dynamics was analyzed, with a focus on the New Economic Geography and its general equilibrium model, wherein centripetal and centrifugal forces are used to describe the dispersion of activities within a cluster. Second, the idea of technology creating dis-embedded virtual networks was reviewed. Non-traditional means of knowledge creation that promote declustering were explored. Third, scholarship that promotes the idea of a decentralized value chain and supports changes to value chain processes in time and space were reviewed, highlighting the potential for hub-and-spoke systems wherein specialisms can cluster in one geographic region while spoke systems engage in a process of perpetual relocation.

A large focus of this chapter was on the ways in which decentralization is unravelling through the segments of a value chain, and the three main scholar groups who discuss this, including
economists, institutionalism scholars, and scholars who support virtualization and outsourcing. The ways in which changes in demand, technology, and regulation over the last ten years have transformed the face of the financial services industry was analyzed through the literature. The comparative advantage of using offshore facilities in recent years were discussed in detail and related to the de-clustering of financial services. Although proximity of support has long been understood to be an integral part of a cluster’s success, this chapter explored scholarship demonstrating that it is no longer a requirement for firms to be geographically close to one another in the financial services industry. The McKinsey Report commissioned by Bloomberg (2007) admits that “technology, trading markets and communication infrastructures are evolving to make real time interactions and transactions possible and affordable from virtually anywhere, thus reducing some of the benefits of physical co-location in major financial centres such as New York” (McKinsey Report, 2007, p. 11). It is a well-known fact that advancements in technology and the digitalization of financial services delivery have revolutionized the ways that financial services firms behave and operate.

Hedge funds are a part of financial services, and thus the decentralization of financial services also impacts and involves the hedge fund sector. Cluster analysis is the current tool used to model economic development, both at national and regional levels. Applying theories of decentralization to hedge fund clusters could aid in the investigation of their scale. Thus, the next steps in the research process were to identify gaps where the literature failed to explain the dynamics of the hedge fund industry and to rectify these gaps through additional research.
Chapter Four: Methodology

Through the extensive exploration of cluster theories in the literature review of Chapters 2 and 3, it is apparent that the foundational cluster theories of Alfred Marshall, Piore & Sabel, and Porter relate most closely to the manufacturing sector and are not sufficient for understanding the financial services sector. The majority of these theories do not explain the emergence, growth, decline, or renewal of clusters. In particular, a theory of why some clusters survive and some wither, and why the life cycle of some clusters seems to differ from that of their related industries is missing. In order to use cluster analysis as a tool to measure the underperformance of hedge fund services in Canada, systematic data collection and analysis will be required in order to examine major trends in the financial services sector.

Every research project begins with the selection of a topic to study and ends with the dissemination of research findings. In order for a research process to attain credibility, it must be both reliable and valid (Brink, 1989). The purpose of this chapter is to explain how reliability and validity are ensured throughout the present research by maintaining trustworthiness, rigor, and quality throughout. Validity is concerned with whether research components are meaningful enough to ensure that the research method measures what it intends to measure. Reliability is the degree to which an assessment tool produces stable and consistent results when repeated with minimal variation. A measure can be perfectly reliable and yet not be valid. It is also important that data integrity\(^\text{17}\) is maintained when synthesizing multiple and differing sources of information (Creswell and Miller, 2000, p. 126). This chapter gives an overview of the research methods employed in the thesis, how they have been used to explore the research questions, and how they have worked to ensure the presence of some of the above-described reliability and validity concerns. The chapter also outlines and explores the philosophical approach that guides the present research. Drawing on relevant literature, the research methods are discussed, including the practicalities of applying these methods, the sampling techniques used, and data validation and analysis practices. Finally, the limitations and de-limitations of the selected methods are discussed, along with how these difficulties were anticipated and mitigated.

\(^{17}\) Data integrity is present when the quality of information collected is whole, complete, and correct.
4.1 – Research Objective

The objective of this thesis is to explain the lack of scale of the hedge fund industry in Canada using both traditional and contemporary cluster theories. By identifying the reasons for the local stagnation of the industry, it may be possible to outline actions that could be taken to assist the future development of Canada’s hedge fund cluster. The Canadian hedge fund industry is a good example of a cluster that has grown without reaching the ‘established’ stage of its life cycle. It seems logical that the life cycle of a hedge fund cluster should follow the life cycle of the financial services industry that it is a part of. However, evidence indicates that firms in different clusters develop differently despite belonging to the same industry life cycle (Saxenian, 1994). Given this principal objective, the following research questions focus particularly on the life cycle aspects of the Canadian hedge fund industry. In the following segment, these research questions are given detailed consideration before exploring the research methods that were used to address them.

4.2 – Research Questions

A: How can cluster theory be used to understand changes in the hedge fund industry? Clusters are groups of industries connected by knowledge, skills, inputs, demand, and other linkages in a region (Porter, 2003). According to Porter (2000), an industry cluster can be defined as a group of firms where each member’s competitive success depends on other members of the group. The hedge fund industry can be classified as a cluster that exists within the broader financial services industry (Robicheau, 2014). Hedge fund clusters are geographic concentrations of interconnected businesses, suppliers, and associated institutions that provide supporting services to hedge funds domiciled either locally or offshore. Formal and informal interdependence between hedge fund industry players can result in common value chains, the adoption of similar technologies, or the exchange of knowledge and innovations. According to Krugman (1994), most industries exhibit clustering behaviour. Porter (1990) supports this statement by saying that “clustering is so pervasive that it appears to be a central feature of advanced industrial economies”. Commonly-accepted cluster characteristics include:

1) Firms linked through traded and untraded relationships with each other;
2) Interlinked firms which are geographically proximate; and
3) A mix of public and private organizations, suppliers, providers of support services, governments and policy makers.

However, the argument that clusters must be comprised of firms that are geographically proximate is a contested issue in cluster research and policy as a result of today’s technologically-advanced world. Even the definition of ‘proximity’ remains unclear, as it could refer to “driving distance, a city, a province/state or even nation” (Wolfe and Lucas, 2005). Diez (2001) notes that many benefits to clustering – like the creation of tacit knowledge, social capital, and the promotion of collective learning – are intangible and difficult to quantify. In order for them to help in fully understanding hedge fund cluster phenomena, cluster analysis processes must be supported by in-depth review of published data and other available information, including interviews with stakeholders and meetings with industry players. This data must be valid and reliable in order to explain the development and growth of certain financial centres and clusters.

**A-1: To what extent can we use traditional cluster theory to identify and measure the hedge fund cluster?** Cluster development is a long-term process. Many clusters go through life cycle processes, meaning that at any given moment they exist as embryonic clusters, established clusters, mature clusters, and declining or transformational clusters. Even among growing clusters, some remain in a phase of infancy for extended periods of time. As mentioned in the previous section, the Canadian hedge fund industry likely belongs to this category. While the agglomeration of related industries can result in productivity-enhancing externalities, there may also be systematic inefficiencies that impede the growth of these regional clusters (Porter, 1998a; Swann, 1998; Helsley and Strange, 2014) and require policy action.

“There is an increasing need for cluster-based data to benchmark regions and help policymakers and practitioners define effective regional strategies” (Delgado, Porter, and Stern, 2013, pp1). The first step in this process of policy change is to identify and measure key variables related to the Canadian hedge fund cluster. Effectively understanding and measuring hedge fund clusters can support the success of policy actions that are developed in order to encourage economic growth and innovation in cluster formations (Porter, 1990; Porter, 2003; Delgado, Porter, and Stern, 2010a; Delgado, Porter, and Stern, 2013).
The identification of cluster boundaries is an important aspect of cluster definition. Once boundaries are located clusters can be measured using a combination of qualitative and quantitative analytics. Quantitative variables that can be measured in order to understand hedge fund industry clusters include: number of service provider firms and jobs; wages; extent of innovation; and new business creation. Porter (2003) developed cluster based definitions by examining the employment co-location patterns of service and manufacturing industries. This approach captures many types of externalities and could possibly apply to hedge fund clusters; however, it is important to remember that clusters are, by nature, dynamic and activity-specific. Thus, meaningful cluster definitions that are specific to hedge funds must be established in order to effectively measure the Canadian hedge fund cluster. Qualitative research, including engagements with industry players, may contribute strongly to the accomplishment of this task.

The second sub-question expands on consideration of measurement practices to interrogate the scale of the Canadian hedge fund industry:

_A-2: How can cluster theory be used to understand why the scale of the Canadian hedge fund sector remains under-developed?_ Wolfe and Lucas (2005; 2004) acknowledge that clustering exists pervasively in Canada, largely in the manufacturing sector. The hedge fund industry is a part of financial services more broadly, and the Global Financial Centre Index (GFCI) ranks Toronto – Canada’s leading financial centre – as 11th in the world. Although cluster theories may help to understand changes in the Canadian financial services industry at a macro level, hedge fund services are only a sector of this industry and must, therefore, be evaluated separately at a micro level. This can be done by examining the main indicators of the hedge fund industry’s lack of scale. These could consist of a mix of quantitative and qualitative factors, including: industry size; growth, number and rate of return of funds; growth in the number of key players in the industry; attitude of the players of the industry; and statistical data on providers and buyers of hedge funds.

Cluster theories have emphasized that both internal and external industry factors are important for creating and sustaining competitive advantage. The hedge fund cluster is based on a set of relationships where firms collaboratively ensure individual and collective efficiency and competitiveness. Foundational factors such as skilled and adaptable human resources, availability of capital and finance for the growth of hedge funds, efficient physical infrastructure,
access to new technologies, and a responsive regulatory environment also contribute to the overall performance of hedge fund industries.

Cluster competitiveness models that are based on traditional cluster theories, such as Porter’s (1990) diamond model, can aid in evaluating cluster strength and performance in a particular industry. Based on this evaluation, cluster competitiveness programs can be initiated so that stakeholder firms participating in the cluster, including government, policy makers, industry associations, and training institutions can identify challenges and opportunities. This will allow them to act collectively rather than individually. The present study’s second main research question addresses these considerations, focusing more directly on the implications of the findings of Question 1. A large focus of this question is on what kinds of actions could be taken, and by whom, in order to tackle the underdevelopment of the Canadian hedge fund industry.

**B: To what extent can cluster analysis be used to encourage policy change so that the competitiveness of the hedge funds industry in Canada can be improved?** A cluster-based approach to policy development complements other type of analyses that are used to understand and formulate policies and practices related to the hedge fund industry. Porter’s (1990) diamond model, which is based on cluster analysis, is the most widely-known model examining cluster competitiveness. However, this model overlooks the capabilities of firms within a cluster, lacks measures of outcomes, and contains variables that are broadly defined only (Davies and Ellis, 2000; Martin and Sunley, 2003). Thus, it is essential that this model is complemented by other means of analysis, since it generally encourages engagement with a diverse group of stakeholders so that they may develop a shared understanding of the underlying public policy issues and act on them collectively (Shakya, 2009).

Effectively elaborating on Porter’s model could follow two steps: first, the diamond model could be applied initially to quantify the ‘factor conditions’, ‘demand conditions’, ‘related and supporting industries’ and ‘firm strategy, structure, and competition’. Then, based on the results, strategic initiatives could be undertaken by the stakeholders, since policy initiatives ultimately require decision-making by the public sector. Links between the government and these four factors can then be assessed for their effectiveness in order to identify conflicts and inefficiencies. Using this two-step process could facilitate emergent collaborations between public and private sectors that arise in order to address policy bottlenecks more effectively.
Furthermore, the government of Canada is divided into federal and provincial jurisdictions. Given that there are 13 provinces in Canada, that some provincial powers are delegated to municipalities, and that meaningful linkages between provincial governments and their stakeholders differ from province to province, cluster analysis can be incredibly complex. This illustrates the need for other methods of analysis that can aid in evaluating hedge fund cluster competitiveness. The following sub question concerns the current position of the hedge fund industry in Canada and inquires about potential solutions to any current challenges that the present research could inform.

**B-1: What regulations, institutional policies, and tax rules can be developed to encourage hedge fund growth in Canada?** Asking the right people about their views on the state of Canadian hedge fund industry and what can be done to instigate change is very important. The emerging global regulatory framework has, in many ways, changed the ways that financial institutions operate. It is being increasingly acknowledged that the hedge fund industry must adapt and respond to this altered landscape. As the financial services landscape shifts, the traditional full-service operating model for the hedge fund industry is also being challenged. Succeeding in a re-regulated world will mean that hedge fund services will need to focus more intently on specific areas of the value chain.

Hedge funds tend to transition towards a common platform in order to better understand and manage counterparty risk, to reduce system development costs, and to mitigate security threats associated with online activities. Hedge fund services, like many other industries, are moving towards fundamentally new, stable, and standardized application architectures and processes. A wide range of activities, including data collection, transaction posting, reconciliations, and other back office functions are increasingly being offshored to third parties. If non-value added tasks are being outsourced it could be argued that automation is a valid alternative to outsourcing. It is important to evaluate these fundamental attitudinal and behavioural changes across the value chain of hedge funds in order to provide recommendations for the improvement of the industry’s performance. While external conditions continue to affect the hedge fund sector, it is also essential to investigate what internal changes could be made in order to improve the sector’s performance.
The Canadian financial services industry is generally dominated by six major banks (Porter, 2008). These banks control many sectors, including retail and commercial banking, investment banking, securities, and trusts. Canadian financial services firms could benefit immensely by prioritizing sub-sectors like the hedge fund industry. However, a real understanding of stakeholders’ opinions about aspects of the current situation including competition from banks, the cooperation of government and policy makers, their attitude to change, their current habits, and their motivations can only be established by conversing with these key players and asking targeted questions. Financial market policy should be centrally concerned with encouraging innovation (Porter, 2008). The hedge fund cluster’s success could be largely driven by innovation, but there could also be opposing forces that might prevent firms in the sector from moving towards a position of global prominence and growth. Defining the government’s role in driving innovation in the financial services industry is a difficult task (Porter, 2008). However, governments and regulators must be interrogated in order to determine whether there is an interest or incentive for them to change current policies and procedures. The same logic applies to individual participants of the industry.

An uncompetitive tax regime can introduce risks of undermining the economic strength of a region or country (Porter, 2008). Canada’s tax system can be complicated due to its provincialized regime, which results in its 13 separate provinces each having different tax rates. The main source of revenue for the Canadian government lies in individual income taxes. An increase in taxes could impede upon the opportunity costs that come with enhancing the growth of Canadian hedge funds. Little is known about the exact effects of fiscal policy on growth, which could be measured by establishing how much one dollar in tax cuts or spending increases translates to GDP levels. This issue is political, since some policy makers promote tax cuts whereas other groups believe in spending. Differing views on fiscal policy can result in goal congruence issues that impede the growth of the industry. How much the hedge fund industry is contributing to the Canadian GDP can be estimated to a limited extent by reviewing secondary data that has been published. However, the opinions of industry players matter most in attempting to deduce how much sensitivity to the scale of the hedge fund industry exists.

**B-2: What are the implications of encouraging the growth of the hedge fund industry in Canada?** Using a value chain approach, the hedge fund industry can be systematically
disaggregated in order to examine its strategically relevant activities and relate them to the interactions of its major players. In this process, it is important to determine whether key players in the hedge fund industry are performing value chain activities in more cost-effective ways than their global counterparts. Policy recommendations derived from this process could lead to greater efficiency in how these players act within the industry and could thus contribute to the improvement of hedge fund performance.

The explicit and implicit support of industry policy makers in this process will help to create goal congruence amongst the range of actors in and around the hedge fund cluster, which could be relevant to the sector’s local development. Provincially-funded education targeted to the main players of the industry could be vital in order to highlight the importance of sharing one goal for the betterment of the financial service industry as a whole. This could, in turn, improve demand for hedge funds and increase awareness about the hedge fund industry’s impact on the Canadian economy. The increasing sophistication of product offerings, including hedge funds, may inevitably impact the overall competitiveness of Canadian financial industries. Firms that are driven by global aspirations could then develop a more unique positioning in the industry and begin to compete globally.

Each of global hedge fund industry’s change drivers must be viewed in relation to the Canadian hedge fund industry in order to isolate and detect the real reasons for the underdevelopment of the industry.

4.3 – Philosophical Perspectives and Research Method

This research uses a pragmatist approach, which is an epistemological approach that justifies theories and concepts by examining their consequences, as well as the goals, values, and interests they support. A pragmatist approach is often understood as the strongest justification for the use of mixed methods research (Tashakkori and Teddlie, 1998; Tashakkori and Teddlie, 2003; Rallis and Rossman, 2003), because it sees the research question as more important than either the method used or the paradigm that underlies the method (Tashakkori and Teddlie, 1998; Tashakkori and Teddlie, 2003). Bryman (2006) has argued that, in practice, much research is driven by pragmatic assumptions. Pragmatism places greater emphasis on method and philosophical attitude than on a systematic philosophical doctrine (Nolan, 2001). Inherent to this
is a belief that one can work from two different philosophical positions (such as interpretivism or positivism), or combine them, with an understanding that these paradigms are not so much opposing positions but rather points on a continuum (Tashakkori and Teddlie, 1998, p. 26).

Pragmatists place little emphasis on which methods are used, as long as the methods chosen help to answer the research questions. For these reasons, a mixed methods approach is strongly related to a pragmatist framework, as pragmatism does not require a particular method or combination of methods, and does not exclude others (Feilzer, 2009). “Ultimately, pragmatism brushes aside the quantitative/qualitative divide and ends the paradigm war by suggesting that the most important question is whether the research has helped ‘to find out what the researcher want to know’” (Hanson, 2006, p. 109).

Although many frameworks have been used to justify using a mixed methods approach, pragmatism is one of the most commonly used philosophical frameworks, identified in textbooks and foundational articles such as those written by Bryman (2006), Creswell and Plano Clark (2007), Feilzer (2009), Johnson and Onwuegbuzie (2004), Morgan (2007), Scott and Briggs (2009), and Tashakkori and Teddlie (2003; 2009). The pragmatic approach involves using the method that appears best suited to the research question and not dwelling on philosophical debates about which is the best approach overall. This gives researchers the freedom to use any methods, techniques, and procedures at their disposal, whether quantitative or qualitative. The actions or methods that the researcher employs to direct their inquiry are thus directed by the needs of the inquiry itself.

**Research method.** Mixed methods research involves adopting a research strategy that employs more than one kind of research method. These methods could be both qualitative and quantitative, or a mix of quantitative methods, or a mix of qualitative methods. Succeeding at mixed methods research means that developing the capacity to work with many different types of data. Mixed methods research can help to extend and explore theoretical work that is often specific to particular disciplines, and often encourages thinking ‘outside the box’. The rationale for using mixed methods research is that the flaws of each individual method will be compensated for by the counter-balancing strengths of another. Thus, by combining methods, observers can achieve the best of each while overcoming each method’s unique deficiencies (Denzin, 1970; Amaratunga et al., 2002). Qualitative and quantitative research, when used
together, can produce more complete knowledge, which allows for more effective translation of theory into practice (Johnson and Onwuegbuzie, 2004). Being able to mix different approaches also has the advantages of enabling triangulation. Triangulation is “the combination of methodologies in the study of the same phenomenon” (Denzin, 1970, p. 291). Triangulation can help to reduce both procedural bias and sampling bias.

All research methods have downsides that can limit the conclusions that can be drawn from their findings (Scandura and Williams, 2000). It is therefore essential to ensure validity by obtaining corroborating evidence using a variety of methods. The limitations of any research tool can distort the final results when used alone (Denzin, 1970). Thus, mixed methods approaches can be an excellent way to overcome this through a triangulation of methods. Triangulation is to enhance research rigor and validity by utilizing at least two different types of data – usually qualitative and quantitative – from two separate samples to study interrelated aims (Alasuutari, Bickman, and Brannen, 2008; Creswell, 2008; Maxwell and Loomis, 2003).

According to Curran and Blackburn (2001), mixed methods procedures are becoming increasingly promoted within business and management research. Tashakkori and Teddlie (2003) argue that mixed methods can aid in evaluating the extent to which research findings are trustworthy, and whether or not inferences can be made from them. Sandelowski et al. (2012) suggest that mixed methods reviews are particularly relevant to international organizations because they “broaden the conceptualization of evidence, more methodologically inclusive and produce syntheses of evidence that will be accessible to and usable by a wider range of consumers”. For instance, semi-structured interviews at an exploratory stage can be validated by secondary analysis in order to answer the descriptive and explanatory aspects of the research questions. Webb et al. (1966) suggest that:

"Once a proposition has been confirmed by two or more independent measurement processes, the uncertainty of its interpretation is greatly reduced. The most persuasive evidence comes through a triangulation of measurement processes. (p. 317)"

This research used mixed method procedures, employing semi-structured interviews to present information in snapshot form and secondary analysis to give a more longitudinal picture of the issue. The data collected spans a time frame of the last ten years. Both qualitative and quantitative data was used to inform the research questions. For example, questions explored by
the semi-structured interviews sought to fill gaps left by the existing published data that can only be addressed via expert opinion. Both the semi-structured interviews and the secondary data analysis worked hand-in-hand; for example, the interview questions were designed to validate secondary data, and the secondary data was used to inform the research questions and clarify participants’ responses. The gaps left in the secondary data analysis were later posed as questions to the interview participants.

4.4 – Research Methodology

In this research, a combination of secondary analysis and semi-structured interviews was used so that the data derived from one could be used to enhance and inform the other. In mixed methods studies, the research questions dictate the methods used (Brewer, Newman, and Benz, 1998; Tashakkori and Teddlie, 1998). For instance, information gathered and collated from published records can reveal a phenomenon or pattern that can be further addressed through interviews. Conversely, points raised in interviews can be further validated by collecting historical data after the interview. This section outlines the research methods used to address the present study’s research questions. In this chapter, methods used in secondary data analysis will be considered first, followed by an outline of methods used for the semi-structured interviews.

**Secondary data analysis.** Secondary research can be used to generate new knowledge, new hypotheses, or support existing theories. This research method permits comparisons across groups, nations, or time and can trigger questions not previously addressed by the original researcher. Glaser (1963) explains secondary research as “the study of specific problems through analysis of existing data which were originally collected for another purpose” (Glaser, 1963, p. 11). Hewson (2006) frames secondary analysis as: “the further analysis of an existing dataset with the aim of addressing a research question distinct from that for which the dataset was originally collected and generating novel interpretations and conclusions” (Hewson, 2006, p. 274). This method was chosen so that statistical data from reliable, publicly available sources could be used as a guide in order to establish the emergence and growth of the hedge fund cluster across Canada. Comparisons are also made between well-established hedge fund clusters across the globe. The data gathered in this phase is largely outlined in Chapter 5.
The process. The aim of the secondary analysis phase of this research is to gather data on the global hedge fund industry in order to evaluate the effects of three variables: first, the economic crash of 2008; second, technological advancement; and third, the outsourcing of value chain activities. There were several types of information that were useful to this end. For example, historical data stemming from the last ten years was required in order to map out patterns of growth in the hedge fund industry, including industry size and participants. Information about performance on hedge fund returns was obtained from publicly available data sources. A cross-sectional understanding of the Canadian hedge fund industry was needed in order to create a point of comparison to the global sphere. Growth information regarding hedge fund buyers\textsuperscript{18} and sellers\textsuperscript{19} was useful to inform analysis about the global and domestic landscape of the hedge fund industry. All of this information was obtained through a systematic review of documentary analysis in journals, as well as from large-scale datasets, research working papers, government statistical publications, and past interviews conducted. The information gathered was both non-numeric (qualitative) and numeric (quantitative). Qualitative data included published interviews, policy documents, focus groups, and records from panel discussions conducted by professionals through a finance media source called Opalesque\textsuperscript{20}. Quantitative data included government surveys, other large-scale public surveys (such as the GFCI), other longitudinal studies, and statistical records from routine data compilations over a five to ten-year period. A ‘comparative method’ was used to compare global hedge fund growth/decline to Canadian hedge fund industry patterns based on the same three variables (the crash, technology, and outsourcing).

Data collected through this secondary research process was not able to be obtained as primary data due to cost and time constraints. Thus, it was important to triangulate the secondary data with data from another source in order to give it further validity. This triangulated data paved the way for the development of new interview questions. Analyzing the data in light of recent prospective change drivers, such as the 2008 economic crash, outsourcing, and technology also led to unexpected new discoveries in the change in trend of hedge funds, and it was useful to be able to follow up on these insights and fill gaps even after the semi-structured interviews were

\textsuperscript{18} Otherwise known as ‘investors’.
\textsuperscript{19} Including investment managers, administrators, prime brokers, auditors, legal, and other service providers.
\textsuperscript{20} Opalesque has provided professional news services to participants in the alternative investment sector since 2001, providing premium online information services related to the hedge fund and investment industries.
complete. Non-participation in the interview process was also able to be somewhat rectified by filling gaps left by particular industry players with secondary data instead.

**Sampling method.** Multiple-source secondary data from published materials and databases were used throughout the process of data collection. The published outputs of eight mainstream and well-regarded journals in the field of hedge funds were used as sources. These sources included: Hedge Week, Barclay Hedge, TheCityUK, Hedge Fund Intelligence, HFWeek Magazine, EuroHedge, Computer Weekly, and Canadian Hedge Watch. Research databases included Citi Prime Finance, Capco, Risk.net, Eze Castle Integration, TheCityUK, Prequin, Capgemini, Thomson Reuters, and AIMA. Surveys were obtained from the following sources: KPMG International, Ernst & Young, Deloitte, PwC Canada, the Global Financial Centres Index, Hennessee Group LLC, FSOkx, Carbon360, The Group of Thirty, Aite Group, and Global Custodian. General internet searches were an excellent source of archived qualitative data. Sources found online included: semi-structured interviews through Opalesque; field notes and observations through published white papers and past research; and both large-scale and small surveys through GFCI. Governmental databases such as Statistics Canada, the Organisation for Economic Co-operation and Development (OECD), Hedge Fund Research Inc., TASS, and on-line Library consortium provided data that was also used for triangulation purposes.

**Data analysis and validation.** Concepts emerging from data analysis were compared and collated in order to speak to the research questions. Secondary data that was downloaded from online sources were applied to the research questions, and modified so that comparisons were able to be made between hedge fund centres. Out-of-date information was consistently replaced by newer information from other sources, since older data is often of little value in quickly changing markets. In some cases follow-up research was required when new data became available or when global and local circumstances changed. New data was occasionally added from other sources when the format of the data was not suitable to the research questions. Relationships between the Canadian hedge fund industry and its change drivers were explored and common trends were highlighted. This process involved making constant comparisons between data sources, making regular revisions, and adding new data when needed. Themes and concepts that emerged frequently in these secondary sources were identified and used to inform
questions for the semi-structured interviews. Triangulation methods were used throughout the research, meaning that initial findings were compared and validated against two other sources in order to arrive at the final conclusions drawn by the research. If information from any two of the sources (for example, Source A and Source B) did not agree, then the third source (Source C) was compared against these previous sources. If Source C agreed with either Source A or B, then a conclusion could be drawn. If all three sources clashed, then either further sources (for example, Source D, E, etc.) were sought out or the query was reframed.

**Challenges and mitigation process.** A major concern when using secondary data is the reliability of the source from which the data is obtained. Given that the data used in this study is also used by experienced researchers, a strong argument can be made for its quality and the reliability of its origins. Databases like Hedge Fund Research Inc. (HFR), Statistics Canada, the Global Financial Centres Index, and BarclayHedge Alternative Investment management Association (AIMA) and Canadian Hedge Watch are used extensively around the world by experienced researchers and are thus arguably reliable. Data validity can be another concern when the information collected was designed to cater to different research questions, leaving gaps in the information (Denscombe, 1999). There were also temporal considerations when selecting data for this study. For example, the sample time period selected needed to be the same for all relevant jurisdictions and had to match the relevant index period if an index was used for comparison purposes. Ten years of consecutive data was used, which encompassed four consecutive periods in some instances. The jurisdictions being compared in this research each had different inception dates, length of existence, and accessibility of information, which sometimes posed a threat to collecting data in systematic ways. Given that each jurisdiction exhibits strong particularities, there were concerns about whether the findings of this research could be generalizable to different locations. In order to resolve this, the data was carefully combined and selected to suit the research questions and the local context. A consolidated database usage strategy was used in order to confirm data integrity and triangulation throughout. A control model was created by making comparisons to indices like HFR and CSFB/Tremont that have been created in the last ten years for control/comparison purposes. It can be argued that sample selection bias could exist in this research due to convenience sampling of source documents. This challenge was mitigated by using top ranked journals (all ranked at A+, A, or B levels) and reputable databases and sources.
Semi-structured interviews. Analysis based on publicly available data alone unfortunately cannot fully answer the research questions posed by this project. It is argued that secondary data analysis cannot perfectly substitute for expert judgment (Delgado, Porter, and Stern, 2013). Further understanding the cluster dynamics caused by various changes over the last ten years can occur through semi-structured interviews, in order to include the views of Canadian hedge fund industry participants. One of the advantages of mixed methods approaches to research is that one method can complement the others, fill in gaps, and illuminate factors that are not easily measured by the others. In this project the gaps left by secondary data analysis were hoped to be filled by interviewing major players in the Canadian hedge fund industry, including investment managers, administrators, legal counsel, auditors, prime brokers, custodians, investors and other service providers (for example, operational due diligence service teams).

The present study’s interview questions are exploratory in nature and were modified to speak to each segment of participants. The interview protocol included a combination of open questions, probing questions, and specific, closed questions. Broad topic areas were broken down into manageable groupings of questions, and all questions were submitted for evaluation in order to incorporate an element of internal testing for validity (Mann, 1985). Having a preliminary assessment of the questions’ effectiveness helped to identify ambiguities, leading questions, and other concerns so that they could be corrected.

The resulting list of questions aimed to better understand the hedge fund industry’s current status and how it has changed over the last ten years. The questions did not have a set order but rather varied depending on the flow of conversation (Saunders et al., 2003). Some questions attempted to establish specific drivers of change in the hedge fund industry and elicit predictions about what might happen to the industry in the next five years. Other questions explored each player’s views on how hedge fund clusters should be categorized and measured. Central themes in these questions were: the non-importance of geographical proximity of related firms within the hedge fund industry, the decentralization of value chains, and their subsequent reformation. Specific questions were included about the role of variables that may influence the growth, decline, or stability of hedge fund clusters: specifically the economic crash of 2008 and the resulting change in regulations; technology; and outsourcing.
Questions about the Canadian hedge fund industry were generally open-ended, and explored the challenges involved in attracting capital within Canada. Additionally, there were questions focused primarily on changes in investor demography, and participants’ thoughts about the differential advantages of hedge funds and mutual funds in Canada. Investment managers, specifically, were asked about the rationale for their preference between managing retail mutual funds, domestic hedge funds, and offshore hedge funds. Since the hedge fund industry operating model has changed considerably since the 2008 economic crash it was essential to include some questions on the increasing de-centralization of the industry. Some direct questions were posed in order to gauge the extent to which large influential institutions like banks promote hedge funds in Canada. Representatives of organizations promoting the growth of the hedge fund industry in Canada were asked probing questions regarding growth promotion measures employed within the industry. Further questions concerning the key push/pull factors in the Canadian hedge fund industry, the comparative regulatory framework, competition, and the possibility of growth were asked. The questions were modified in order to suit the individual category of participant.

Face-to-face interviewing is most appropriate when depth of meaning is important and the research is primarily focused in gaining insight and understanding (Gillham, 2000; Ritchie and Lewis, 2003). By using semi-structured interviews, expert views about hedge fund clusters and their measurement can be obtained directly by posing questions to participants. When it comes to learning about the hedge fund industry specifically, there are two major reasons for using semi-structured interviews. Firstly, using this face-to-face method means that the perceptions and opinions of respondents regarding complex and sensitive issues can be addressed at a very high level. Participants with a depth of knowledge about the hedge fund industry will have unique and in-depth perspectives on the issues raised by this thesis, and as such are indispensable. Secondly, semi-structured interviews make it more likely for a researcher to garner specific educational and personal stories from the participants than if standardized interviews were employed. Furthermore, the presentation of the interviewer can influence the respondents’ answers (Patton, 1990). Dress etiquette and manner of interviewing can also be factors that put the respondent at ease (Denzin, 1970).
The objective of semi-structured interviews is to sometimes change the words but never the meaning of questions provided, so that the interviewee can answer the same questions, asked differently (Treece and Treece, 1986). This method of interviewing was used in the present research to account for the fact that different players in the hedge fund industry come from very different areas of expertise, meaning that every respondent may not be able to answer questions relating to their specialty if the exact same vocabulary is used with every person, as would be the case in a structured interview (Treece and Treece, 1986). The effectiveness of the semi-structured interview within this research context is thus not as dependent upon the repeated use of the same words in each question, but upon conveying equivalence of meaning (Denzin, 1970). Equivalence of meaning in each question helps to standardize the semi-structured interview and facilitates comparability among respondents’ answers. Additionally, face-to-face contact with the researcher can motivate participants with professional and educational backgrounds in the hedge fund industry, who might not bother with a questionnaire, to participate in the study (Gordon, 1975). Interviewers must have some knowledge of the subject being explored in order to obtain valid and complete data in the interview (Treece and Treece, 1986). This knowledge base can also be practically useful and reassuring to the interviewee.

Through this method, not only can the wording of each question be tailored to the specific participant, but ambiguous or incomplete answers can be probed, clarified, and validated with the interviewee (Hutchinson and Wilson, 1992; Gordon, 1975; Austin, 1981; Bailey, 1987). Probing, in particular, can be an invaluable tool for ensuring the reliability of the data set, because it allows for the clarification of interesting and relevant issues that arise in the interview (Hutchinson and Wilson, 1992), provides opportunities to carefully explore sensitive issues, and get spontaneous answers from participants (Treece and Treece, 1986). Inconsistencies in respondents’ accounts can be addressed, and additional time can be provided, if needed, to help respondents recall information for questions involving memory (Smith, 1992). Interactive opportunities during semi-structured interviews can establish a sense of rapport and reduce answers that are being given in service of ‘social desirability’ rather than accuracy (Patton, 1990), thus enhancing the reliability and quality of the information and reducing tensions between the interviewer and participants (Oppenheim, 1992). In a research context, it is essential that participants are able to speak their mind, and semi-structured interviews can be excellent tool for facilitating this.
By reviewing the recordings of previously-conducted interviews, new questions can be added in order to correct weaknesses or gaps that may have been present in the previous interviews. This kind of review can also help interviewers to avoid the use of leading questions and inappropriate probing, which Gordon (1975) describes as “the subtle manifestations of persuasive urge”. An added benefit to face-to-face interviewing is that a sense of rapport can be built that triggers an interest in the hedge fund industry on the part of the participant.

Semi-structured interviews have the potential to overcome the poor response rates often encountered through a questionnaire or survey method (Austin, 1981). It is well-suited to the exploration of attitudes, values, beliefs, and motives (Richardson, et.al 1965). It provides the interviewer with an opportunity to evaluate respondents’ answers by observing their body language and nonverbal indicators, which is particularly useful when discussing sensitive issues (Gordon, 1975). It also ensures that the respondent answers the questions on their own as opposed to influenced by others (Bailey, 1987), which is a risk in focus groups. Just as the interviewer can ask the same question in different ways, a semi-structured interview also allows the respondent to provide their responses in a way that suits them. They can give short, spontaneous answers or long, more reflective ones. They may feel more prepared to provide personal comments, off the record remarks, or discuss more sensitive matters than would be the case with a written survey or more formal interview. The interviewee can also be given personal assurances that their information will be confidential and anonymous. All of these things allow the interviewer more control and flexibility over the interview process.

**The process.** Stakeholder voices – in this case, key players in the hedge fund industry – are incredibly important in understanding cluster development, or any other research topic (Minkler and Wallerstein, 2008). Allowing stakeholder experiences to inform the research should help to make the findings useful, relevant, and translatable to practice settings (Bellamy et al., 2008; Layde et al., 2012; Owczarzak and Dickson-Gomez, 2011). Each participant group was given specific questions (appendix 2) that focus on their particular expertise and environment, and in order to help them – and, in some cases, reassure them about the scope of the interview – an outline of the questions were sent in advance of the interview. The aim of these interviews was to not only understanding the interviewees’ viewpoints, but also the reasons for that viewpoint.
In this thesis, semi-structured interviews were conducted within a timeframe of four months. Confidentiality of information was guaranteed explicitly to the participant, as well as through gaining ethics approval from the educational institution supporting the research. A list of categories was prepared and grouped together under higher-order headings. The aim, here, was to reduce the number of categories by ‘collapsing’ similar groupings into broader categories, ultimately developing a final list of themes. This final list was independently reviewed by two external consultants and discussed further. Adjustments were then made, as necessary, in order to ensure the validity of the method of categorization and reduce researcher bias. Interview questions were developed from the themes. A pilot phase was used in order to allow for reflection on the questions and to make informed modifications to the interview themes prior to the main data collection. Adjustments were made to the questions after each interview so that sufficient standardization was maintained to ensure the validity and reliability of the data. This can be challenging when interviewing a diverse population (Moser and Kalton, 1986).

The procedures used to log data must be given considerable attention due to the dynamic nature of interviewing, topic control needs, and data interpretation (May, 1989). Thus, all interviews were recorded and transcribed using a digital recorder, which helped with data storage and protection. Recorded data was transcribed electronically, which saved time and resources and facilitated ease of analysis. This is generally the record-keeping method of choice, as it can provide detailed insight into the nature of both respondent and interviewer’s statements when played back. In some cases, the accuracy and authenticity of answers can be gauged by paying attention to pauses and intonations. Audio taping also reduces the potential for interviewer error and minimizes the possibility of the interviewer cheating or engaging in academic misconduct by logging a question that was not actually asked.

**Sampling method.** Twenty-five interviews were conducted in Toronto (appendix 1). Purposive sampling\(^2\) was chosen for this research so that the sample selected contained a population representing a diversity of different professionals who are experts in their fields, who could each have different opinions of the same phenomenon. Six major categories of players within the hedge fund industry, including investment managers, investors, prime brokers,

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\(^2\) A purposive sampling strategy involves the researcher prioritizing samples, cases, or individuals that differ on some characteristic or trait (Creswell, 2008, p. 204).
administrators, auditors, and legal counsel were selected. The sample included: administrators (4), investment managers (5), prime brokers (3), investors (institutional & High Net Worth Individuals (2), Mutual fund distributor (1), auditors (4), legal counsel (4), operational due diligence firms and educators (2). Snowball sampling procedures were added when required. The overall intent of this sampling strategy was to engage in an in-depth exploration of a central phenomenon, a goal to which purposive sampling is well-suited (Creswell, 2008, p. 203).

Government and policy makers are major participants in the decision-making process of the industry, so every attempt was made to approach these players to seek their participation. For triangulation purposes, information published from reputable sources was used as a third source.

The respondents were selected on the basis of having at least ten years of experience within the hedge fund industry, each holding decision-making positions in their respective corporations. Careful consideration was given to ensuring that each participant was selected on the basis of the varied roles they performed within the industry. For instance, within the administration sector, while the head of operations was interviewed in one firm, somebody with a client management role was selected from a different firm to ensure that a diversity of roles was represented. In other instances, two people with the same role in different companies were selected so that their opinions could be compared. The selection process largely occurred through participation in networking events and conferences, as well as through work acquaintances, which allowed helped to verify participants’ positions and expertise. Initially, the strategy was to focus on a set numbers of participants in order to enhance the variability of the sample. However, additional opportunities presented themselves after initial interviews that allowed for a subsequent ‘snowball’ approach, which consisted of drawing on the membership contacts of the Alternative Investment Management Association (AIMA Canada). Many interviews were arranged through the offices of the CEOs and partners of major financial services corporations. Some of these stakeholders nominated associated firms and clients who they thought might be able and willing to offer a range of different views.

In one case where I was unable to conduct a face-to-face interview, I conducted the interview over the telephone. However, every effort was made to obtain a face-to-face interview, and

22 Snowball sampling is a form of purposeful sampling in qualitative research that “typically proceeds after a study begins and occurs when the researcher asks participants to recommend other individuals to study” (Creswell, 2008, p. 206).
approximately less than 4% of the interviews were conducted over the telephone. This low percentage is unlikely to have introduced bias into the research process.

**4.5 – Data Analysis**

One of the most challenging parts of the research process can be the process of analyzing respondents’ answers once the interviews have been completed (Babbie, 1992; Couchman and Dawson, 1990; Fox, 1982). The aim of the analysis is to produce a detailed and systematic recording of the themes and issues addressed in the interviews and to link these themes and issues together in a categorical system. An open-minded approach must be adopted while analyzing the data, keeping in mind that one person’s view may not be directly linked to another, that common themes in the interviews might not be common in the real world, and that the reasonability of one person’s answer can be compared to another using process of triangulation.

Michael Quinn Patton (2002) says that “qualitative analysis transforms data into findings. No formula exists for that transformation; it is guidance, without recipe” (p. 321). Most of all, this process is not a number crunching exercise, but rather an analysis of ‘reasonability’ wherein the researcher attempts to demonstrate and prove the validity, or reasonableness, of the conclusions based on their ability to be connected to real-world situations (Buckley, Buckley, and Ching, 1975). Transcription software was used to convert the interviews into Word documents. Initially, the transcripts were read through, notes were made, and general themes were noted. Transcripts were then read through again, unusable material was weeded out, and general themes were developed under broad headings. This process of grouping all of the interview data into loose ‘headings’ or ‘categories’ is called ‘open coding’ (Berg, 2001). Next, the transcripts were re-read in relation to the agreed-upon list of categories and sub-headings were finalized in order to establish the degree to which these categories encompassed all aspects of the interviews. Adjustments were then made, as necessary. Each transcript was then analyzed meticulously in relation to the list of categories and sub-headings and categorized according to this list. Finally, the findings were written up in order to link the findings to the research questions. In this process, the data was triangulated by comparing and contrasting it with the information gathered through secondary analysis. The goal was ultimately for all relevant data to be accounted for under a category or sub-category (Glaser and Strauss, 1967). In practice, however, there are always elements of interviews that are unusable in analysis (Morse and Field, 1996).
4.6 – Challenges and Mitigation Process

As with any research project, there are some potential limitations and challenges to this research that must be addressed.

Bias is a considerable challenge when using data reported by different sources that the researcher does not control. Some of these biases could influence the representation of data when comparisons are made. Hedge fund returns must be compared across widely in order to ascertain underperformance based on returns. Backfill bias arises when hedge funds with a good track record do not report the initial few months of the launch but subsequently backfill the returns in order to smooth the effect of returns. This bias can be substantial, according to Fung and Hsieh (2000; 2002). It can be eliminated by establishing the date that each individual fund began to report on the database, and removing the returns for the months between the reporting date and the reported initial return date. Survivorship bias can arise when hedge funds that are opened as a family of funds end up shutting some of them down. Hedge funds sometimes do not report funds that are shutting down, or sometimes pull the fund history out of a database when this happens. This bias will have to be eliminated by investigating the returns individually. End of life reporting bias can arise when hedge funds do not report on the final few months of their life due to negative returns. The only way to eliminate this is to scrutinize anomalies periodically.

Semi-structured interviews are an efficient way of collecting qualitative data, since the interviews can be tailored in accordance with the participant’s profile. Although the benefits tend to outweigh the flaws, issues can sometimes arise that must be addressed on a case-by-case basis in order to gain the optimum benefit from the interviews. Furthermore, if response rates are low for particular groups, these groups can become underrepresented within the sample as a whole, which limits the researcher’s ability to draw conclusions (Williamson, 1981). Non-response can result in a limited research sample which can lead to flaws in the research outcome. In some cases participant do not give full answers when being interviewed. The reason for this could stem from their motivation for participating in the first place (Morse, 1989). Unanticipated circumstances can also result in unusable transcripts, which can decrease the sample size. For example, some participants might refuse to be taped, refuse to fully answer questions, and refuse
to be interviewed, or be non-responsive to initiating or follow-up phone calls. These occurrences were closely monitored so that more interviews could be arranged if needed.

This research involved government, policy makers and regulators as interview participants. Interview questions can sometimes raise strong emotions on the part of the participant, which can lead to conflicts between the interviewer and the participant. Submitting interview questions in advance to participants can sometimes lead to the non-participation of the intended participant if they are put off by the interview topics. When several important participants, such as government and policy makers, decline to participate in the interviews, the researcher must treat this as a red flag and reflect on the reasoning behind this inclination. Consideration was also given prior to contacting participants as to which issues may be politically sensitive or controversial issues, and every effort was made to carefully phrase questions on these topics so as to avoid offending participants.

**Ethical and practical issues.** Being a member of the financial services industry who has established strong networks in this industry over the last ten years qualifies me as an insider with a strong motivation for doing this research. In some ways, this relationship to the industry has benefited me in terms of expertise and networks. However, this relationship also means that I have pre-conceived ideas about the subject matter. I have attempted to bracket these biases as best as possible. Ultimately, I do not see any conflict of interest between myself and the participants in this research. I have further ensured this by emphasizing voluntary participation and giving utmost care towards maintaining confidentiality, privacy, anonymity, and the interests of participants. Service providers warranted my particular attention, since they may have wished to divulge information that they did not want their clients to know about. Similarly, the investment managers may have had a strong investment in the state of regulatory issues and government participation. Furthermore, investors had an interest in maintaining their anonymity at all costs. With these interests and considerations in mind, all data that was collected was password protected, backed up in external storage devices, and generally made non-accessible by an outsider. I have committed to never share the findings of this research unless proper authorization from participants is obtained.
As in every research project, there is a host of potential problems and practical issues that could pose a threat to the feasibility, validity, and speed of the research. Some of these concerns, which are largely related to resources, are described in the following section.

**Resources.** Research on hedge funds is very limited and the resources available to do further research are few. The research that has been done on traditional investments like mutual funds does not appear to be applicable to hedge funds due to its complexity. Research materials exist on the measurement of hedge fund performance (Liang, 2003; Fung and Hsieh, 2000; Brown, Goetzmann, and Ibbotson, 1999), but not on hedge fund clusters specifically. Though the internet has made it relatively easy to quickly search and obtain relevant and comprehensive data, membership subscription requirements can make it costly to obtain access to many forms of exclusive data. Additionally, time constraints can make it a lengthy process to validate the sources of secondary research materials. This can sometimes mean that promising information must be discarded due to its unverifiable nature.

The hedge fund industry is a global industry, and the responsibilities of the Canadian government are divided into both federal and provincial jurisdictions. Therefore, effective research on the hedge fund industry may require international or interprovincial travel in order to meet with participants, which can require substantial financial resources.

**Reliability.** The size of the Canadian hedge fund industry is small relative to the global scene, and the variety of hedge fund indices required to compare the performance of individual funds is limited. Thus, hedge fund strategies in Canada are mainly restricted to long/short funds, making comparison to global indices and benchmarks inappropriate.

**Validity.** Careful consideration must be engaged when using a ‘point in time’ approach to analysis. When taking this approach, one runs the risk of placing too much emphasis on current conditions alone, thus skewing the results. This is a particular risk in circumstances where external shocks like the economic crash of 2008 have affected financial centres globally yet disparately. Other change factors like technology regulations and outsourcing can have different effects on the hedge fund industry’s value chains, which can make it difficult to translate the effects of a specific change driver into a broader concept of change.
Due to the increasingly virtual nature of services that are offered, it is difficult to measure leading and lagging dimensions of a cluster such as collective efficiency. Research like the cluster mapping project (Porter, 1998a) is still in its early stages and needs to be applied extensively to financial services so as to review and validate it. A lack of thoroughly validated information may make it difficult to create metrics for hedge fund services clusters specifically. This paper proposes that cluster concepts and techniques be applied in order to measure the scale of hedge funds in Canada. However, the mechanisms by which the collective efficiency of a hedge fund cluster can be improved will require additional research, and the timeline of their implementation may take a very long time.

4.7 – Conclusion

The purpose of this chapter was to describe the research context and methodology of this study, explain the sample selection, describe the method of research design, and explain the data analysis procedures. The research questions were connected to each of the methods involved, focusing on the appropriateness of each method to the question it was intended to help answer. An overview of the data sources used for secondary analysis was listed, and it was explained how this data was used to develop a meaningful analysis, emphasizing the challenges that were encountered during the process and how they were mitigated. An anonymized list of interview participants (Appendix 1) and an outline of the overall themes and questions discussed in interviews (App-2) is listed at the end of this thesis. The challenges, limitations, and delimitations of each method used were all discussed. The weaknesses of both secondary analysis and semi-structured interviews were stated and evaluated for their potential threat to the research. It was concluded that none of the limitations described are large enough to pose an overall threat to the validity of the analysis and findings that follow. In the following chapters, the findings from both secondary analysis and semi-structured interviews will be analyzed in detail.
Chapter Five: Recent Trends in the Hedge Fund Industry in Relation to the Financial Services Cluster

In Chapter 2, clusters were defined as geographic concentrations of interconnected companies, including specialized suppliers, service providers, and associated institutions from a particular sector. Traditional cluster theorists have argued that geographic, cultural, and institutional proximity provide companies with special access, closer relationships, better information, powerful incentives, and other advantages that are difficult to obtain from a distance. However, when applied to the financial services industry, these theories have, in many respects, failed to explain the evolution of financial centres. Thus, Chapter 3 reviewed newer, alternative cluster theories, including the New Economic Geography, wherein reduced transaction costs and concepts of centrifugal and centripetal forces are explored in order to explain changes in the financial services industry. Particular emphasis was given to the virtual knowledge creation concepts and dispersion of financial services clusters.

So far, two types of economies were discussed: agglomeration economies, which were highly discussed by traditional cluster theorists (Marshall, 1890; Porter, 1990), and dispersion economies, which were introduced by more contemporary theorists (Storper and Walker, 1989). This chapter focuses on the cluster dynamics of the hedge fund value chain, and begins by describing the anatomy of the global hedge fund industry, identifying the key players and roles, and discussing the interaction between industry participants and their geography. General characteristics and trends of the industry are outlined, and key differences between the clustering and concentration of activities are identified. Empirical evidence is presented in order to map out some of the changes that the hedge fund industry has seen over the last ten years. One of the central aims of this task is to demonstrate the diminishing relevance of agglomeration economies and to show the de-clustering and reformation of the industry. The overall intention of this chapter is to use empirical evidence to explain the probable reasons for the stagnation of the hedge fund industry in Canada, specifically relating it to agglomeration economies and dispersion.
5.1 – Overview of the Global Hedge Fund Industry

Hedge funds are loosely regulated, collective investment vehicles that are designed to cater to a small number of sophisticated investors. Hedge funds are similar to mutual funds in that they are pools of underlying securities, but they are comparatively far less regulated. There are a number of other differences between these two investment vehicles, including fees, investment styles, investor characteristics, pricing, and liquidity. Furthermore, as dictated by the Securities Act of 1933, hedge funds are restricted to having only “accredited investors” or high net worth individuals who can ‘fend for themselves’ (Eichengreen et al., 1998), and institutional investors, and companies, whereas mutual funds are designed for retail distribution.

Compared to hedge funds, mutual funds typically do not have short positions, do not borrow, and make limited use of derivatives (Koski and Pontiff, 1999). Hedge fund managers have more flexibility to choose from a wide range of investment techniques and assets, including long and short positions in their portfolios. Leverage$^{23}$ is commonly used in hedge funds in order to magnify the effects of investment decisions [Liang, 1999]. In recent years, investors seeking higher returns have been looking for alternative products like hedge funds, which have fuelled growth in the industry. In light of these changes in product offering, fund service providers like investment managers, administrators, and prime brokers have generally been broadening their focuses from administering plain mutual funds to providing full service for hedge and alternative products.

An additional difference is that, while the compensation of mutual fund managers depends mostly on the amount of assets under management (Elton, Gruber, and Blake, 2003), hedge fund managers can gain additional fees based on the performance of the fund. This consideration sometimes motivates fund managers to launch their own hedge funds. Furthermore, hedge fund managers can tailor hedge fund operating structures to accommodate investor tax situations, as well as cater their investment strategies to different investor risk preferences. Overall, hedge funds have been on the financial landscape since 1949, when Alfred Winslow Jones created the first hedge fund.

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$^{23}$ The degree to which an investor or business is utilizing borrowed money.
The hedge fund industry currently has approximately 2.4 trillion USD assets under management (BarclayHedge 2014). The hedge fund itself is a legal entity that is often legally distinct from the manager. There are mainly six principal actors in the hedge fund business, including: the hedge fund manager who manages the portfolio of assets; the administrator of the fund, who is responsible for processing trades and valuing assets; the prime broker and global custodians, who provide custody, securities lending and liquidity to the fund; the legal counsel, both onshore and offshore; auditors; and governance (including operational due diligence and directors). The activities associated with these participants are all organized and regulated in the domiciles where they reside or operate.

The hedge fund manager is a regulated entity that reports to a local supervisor. The administrator is usually independent of the manager, and is often located in an entirely different country. This is the case for other service providers, as well. Hedge fund managers compete with other funds and other managers from around the world. Depending on their tax situation, investors could be domestic or international, but the investment manager does not need to be in the same geography as the investors. The form and intensity of the regulation that applies to any part of the hedge fund value chain differs from one country to another. Therefore, the commercial and regulatory geography of the hedge fund industry is complex. Fig-1 illustrates the general operational flow of the hedge fund industry and its main players, based on hedge fund operating models.

Porter’s (1990) value chain theory indicates that the primary activities of an entity relate directly to how value is created for a product or service. Support activities make the primary activities possible through the management and coordination of the different activities. The hedge fund value chain (Fig-2) can be categorized as a ‘global value chain’, as it is spread across wide geographic space. Certain activities are concentrated while others are dispersed, which influences hedge funds’ structure. Investment managers perform the majority of tasks from a distant location, thus distinguishing their legal identity from their operational identity. These tasks generally include management of capital contributions and redemptions, analysis and structuring, as well as trade execution and monitoring of fund portfolios. While the investment manager trades according to the fund strategy, the support functions are provided remotely by intermediaries like prime brokers and custodians, who also work in conjunction with
administrators, legal counsel, auditors, fund governance and operational due diligence groups. These players also typically work from distant locations, when possible.

Sales and marketing is probably the most important aspect of hedge fund operations. Though hedge funds cannot be marketed directly to potential investors, fund sponsors promote their funds worldwide through intermediaries like prime brokers, service providers, and referrals. In order to market to international investors, the marketing function must be separated from fund sponsors but also geographically dispersed in order to be close to all potential investors.

On the surface, hedge funds seem to function as one homogenous activity like retail mutual funds do. In reality, a hedge fund is an odd constellation that has high-skill trading activities at its centre. However, all hedge fund activities take place in a highly proceduralist and legalistic context, generating the need for a great deal of administrative, often mundane work. Different aspects of the business will relate to different competitive and institutional pressures. Thus, structurally, different areas of the business experience significant variation, which exerts different clustering dynamics on each aspect of the value chain. In the following section, these value chains will be discussed in two main segments: hedge fund buyers and service providers. Focus will be placed on these components’ geographical location, relationships, roles, and responsibilities.

**Hedge fund buyers (investors).** Hedge fund structure and dynamics are not only determined by activity characteristics, but also by two other factors: the composition of demand and national tax arrangements.

Typical hedge fund investors include: high net worth individuals, investment funds, pension funds, collective investment funds, family offices, private banks, endowments, insurance companies, and other corporations (Fig-3). The fund structure determines the location in which the hedge fund is domiciled. When a hedge fund is structured, the principal goal is to produce the most favourable tax result for the investors. However, since tax situations differ from investor to investor (including institutional vs. individual differences and domestic vs. non-

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24 A hedge fund sponsor, also referred to as an investment manager, is a person who invests shareholder assets associated with the funds that he or she manages or sponsors.
domestic differences), there are also other considerations that can influence the precise form of a hedge fund.

The two main hedge fund categories – on-shore and off-shore hedge funds – were established with personal taxation in mind. Taxable United States investors\(^{25}\) generally prefer to invest in U.S.-domiciled pass-through entities, such as a limited partnership domiciled in Delaware\(^{26}\), whereas tax-exempt U.S. investors\(^{27}\) and non-U.S. investors generally prefer to invest in offshore corporate entities domiciled in jurisdictions with no or low corporate income tax. Hedge fund managers that target all types of investors will typically set up a domestic fund as a U.S. limited partnership (LP) or limited liability company (LLC) in order to accommodate U.S. taxable investors. Then, they will set up an offshore fund as a corporation, in order to accommodate tax-exempt U.S. investors and non-U.S. investors. Resultantly, hedge funds are usually domiciled onshore (for example, in the United States, in the United Kingdom) or offshore (for example, the Cayman Islands, Bermuda, the British Virgin Islands, and Ireland), and marketed accordingly to investors. In order to identify investors’ geography, it is important to describe how hedge fund structures break down demographically.

Hedge funds can be structured as stand-alone, side-by-side, or as master feeders (Fig-4a, 4b & 4c). These structures can help to identify hedge fund investors’ geography when analyzing hedge fund service clusters. A brief explanation of each structure is provided in the following section.

The stand-alone structure, in its basic form, tends to be created either as a limited partnership in order to cater to domestic taxable investors, or else as an offshore corporation in order to cater to tax-exempt and non-domestic investors.

The side-by-side structure consists of both a limited partnership catering to domestic investors and an offshore structure for tax-exempt & non-domestic investors, in order to address the

\(^{25}\) Individuals and family partnerships

\(^{26}\) Delaware allows the owner to enjoy the benefits of a tax-free jurisdiction on all business transactions and profits generated outside the United States without having to go through the restrictions of a US Corporation. It offers the possibility to have a US company with the similar advantages of an International Business Company (traditionally called “offshore company”).

\(^{27}\) Including public pension funds, private sector pension funds, endowment plans, asset managers, wealth managers, foundations, insurance companies, sovereign wealth funds, family offices, investment banks, and superannuation schemes.
concerns of each type of investor. In this structure, the fund managers make either the same or close to the same investments for each fund.

In the master-feeder structure, a domestic fund and an offshore fund (called feeder funds) are established that both invest indirectly in a single portfolio through a master fund (called a flow-through fund). The feeder funds participate indirectly in the master fund’s portfolio through their ownership of the master fund.

Investors stand to benefit considerably from choosing a hedge fund structure that suits their tax situation and risk profile. It is of paramount importance to understand the subtle differences in hedge fund structures, since they alone dictate the geography of hedge fund investors. Hedge fund investors (also called buyers), who are usually globally dispersed, provide the capital needed by hedge fund sponsors and investment managers. Investment managers, who can be categorized as one of the providers of hedge funds, then invest this capital in order to provide an appropriate return for the investors.

**Providers of hedge funds.**

*Investment managers.* Even hedge funds domiciled in offshore financial centres are mostly managed from onshore locations like New York and London, thus making their legal identity and operational identity different. This supports the decentralization of the industry’s value chain. The United States overall is the largest centre for hedge funds, managing close to 70% of global assets (as of the end of 2012). Europe follows with 21% and Asia holds most of the remainder (CityUK, 2012). In Europe, London is the largest centre for hedge funds, by far. Hedge fund services are a part of the financial services provided by leading financial centres such as New York and London. New York’s greater metropolitan area is substantially larger than London’s, at approximately 22 million people as compared to London’s 14 million (City UK, 2012). However, London has a slight edge as the world's leading financial centre, with New York coming in second place. Gross (2007) explains the clustering of investment managers as follows:

Hedge funds would seem to be a business in which location doesn’t matter. Buy and sell orders can be executed from a beachfront villa in Costa Rica just as fast as from a cube farm in midtown, and the laws of economics dictate that businesses seek out the lowest-cost destinations. Yet the hedge-fund industry exhibits one of the most
vivid examples of concentration in today’s economy—and it does so in two of the world’s most expensive places in New York and London. (Page 1)

Investment manager residency seems to be the most appropriate and straightforward measure of clustering activity, even though their legal residency and operational coverage could span a wider geographical range. However, due to the complexity of hedge funds, this must be discussed in conjunction with the cluster dynamics of other value chain activities.

**Hedge fund administrators.** The principal contractual duty of an administrator is to take care of the day-to-day back office, and some middle office functions of the fund in the manner prescribed by the constitutive and offering documents. Fund administration firms can exist as components of large conglomerates like banks, or as stand-alone specialist firms. They range from small, two-person corporate entities that are licensed to practice as fund administrators in a single jurisdiction to medium-sized fund administration firms that are owned and controlled by accounting firms. Large fund administrators typically belong to wholly-owned subsidiaries of investment banking groups that have significant influence. These subsidiaries are licensed to practice in many jurisdictions across the globe and often have several hundred funds under administration. Geographical proximity is not necessary in order to support hedge fund services. However, the size of the administrator sometimes dictates where it is cost-effective to operate.

Since administrators’ duties (Fig-5) include corporate secretarial functions, an office is often required in the jurisdiction of the hedge fund. However, most other services, including shareholder and transfer agency services calculation of net asset value, middle office functions, financial reporting, and client reporting can all be provided from remote locations, thus facilitating a debundling approach to support services. Fig-6 illustrates the administrator role, broken down by back, middle, and front office tasks. The top ten administrators all have their headquarters either in the United States or the United Kingdom. However, most of their back office functions seem to be conducted in centres of excellence elsewhere, including Toronto, Halifax, and India, where they have either established offices or outsourced tasks. Service delivery is then conducted through digital interfaces, thus reducing the need for geographical proximity. This online service delivery incurs virtually no transport costs, which makes traditional cluster theories difficult to apply.
Custodians and prime brokers. The portfolio of securities held, in addition to other investments and assets of collective investment funds, must be safeguarded for the protection of investors. This is where custodians fit in. Regulations often state that fund assets must be entrusted to a licensed bank or a regulated custodian, who will then be responsible for holding these assets in their secure custody. Prime brokerage often provides all securities services required for an actively managed hedge fund, including the execution of trades, clearing, settlement, custody, reporting, the function of credit by way of margin lending, and stock lending. Essentially, prime brokers function as global investment banks that are able to provide most brokerage services through virtual means, as well as credit financing and stock lending to the hedge fund market. The current top five firms account for 60% of all prime brokerage business within the hedge fund industry (E & Y survey 2013).

Prime brokerages create and maintain brokerage accounts and work closely with fund administrators on a day-to-day basis. Hedge fund managers often trade with a number of executing brokers and other counterparties like the over-the-counter (OTC) market, investment banks, and exchanges. No proximity to executing brokers is necessary in the execution of trades, clearing, and settlement. Furthermore, brokers need not be clustered around stock exchanges due to the virtual nature of these exchanges. Major prime brokers offer global custody, which means that the prime broker acts as a custodian on behalf of hedge fund clients. Having the prime broker act as central global custodian in this decentralized approach allows them to report on overall trade positions and to accurately ascertain counterparty risk in real time. Some custodians delegate aspects of their functions to a sub custodian elsewhere in the world in order to comply with local securities regulatory requirements.

Other support services. How frequently support services are provided generally informs how these activities cluster in the value chain. Though these firms are different categorically,

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28 An investment bank is a financial institution that assists individuals, corporations, and governments in raising capital by underwriting or acting as the client's agent in the issuance of securities (or both). They generally do not issue mutual funds.

29 Bank of America, Barclays Capital, Citigroup, UBS, and Merrill Lynch.


31 Commercial banks that provide custodianship do issue mutual funds. However, major investment banks such as JP Morgan, Citibank, and Morgan Chase handle both investment banking and commercial banking. SEC and FSA require that banks impose a "Chinese wall" to prevent communication between investment banking on one side and commercial banking on the other in order to prevent conflict of interests.
they are interdependent and work together to provide support. Many of these services are offered online, and thus do not require geographical proximity. However, due to the fact that these services are provided infrequently, there could be some preference for face-to-face interaction, as dictated by either the provider or the receiver of these services. In the following section, these services are discussed in more detail.

**Auditors.** Auditors support the hedge fund industry in three major ways: audit processes, internal control certification, and consultancy. Firstly, licensed investment funds are required to prepare annual financial statements and to have these statements audited by a recognized and licensed auditing firm. This audit requirement can provide a sense of security for current and potential hedge fund investors. Secondly, the primary aim of internal auditing processes is to provide annual independent assurance to the board and senior management on the effectiveness of internal control, risk management, and governance processes, thereby protecting the organization and its reputation. Internal audit certification is becoming more of a requirement due to the recent increase in fraudulent activities in the sector. This practice has been adapted by many supporting industries of the hedge funds industry (including administrators and prime brokers) in order to obtain certification of controls. This can act as a passport to gain exposure into the industry. Thirdly, globalization has compelled many audit firms to offer consulting services to hedge fund firms in various stages of the fund life cycle, so long as these services do not cause a conflict of interest.

Globalization has contributed to the decentralization of auditing functions, thus reducing the need to cluster geographically. Many of these audit functions are conducted online, allowing businesses to file and transmit information electronically and reduce the need for face-to-face interaction and physical presence. The ‘Big Four’ audit firms (PricewaterhouseCoopers, Deloitte, Ernst & Young, and KPMG) continue to dominate the financial services industry through global dispersion. Each of these firms has headquarters in the major hedge fund domiciles, both onshore and offshore, but provides most services remotely. Harmonization in accounting and mutual professional qualification recognition agreements with foreign institutes have also facilitated a decentralized approach to auditing, and have also improved the comprehension and comparability of financial statements amongst the end users in order to support global capital markets.
Legal counsel. Hedge funds usually employ legal counsel for both onshore and offshore funds when the fund is incorporated, and usually during amendments and termination. Like all other support services, these players work hand-in-hand with administrators, prime brokers, investment managers, and sometimes directors. Law firms are sometimes also needed in other jurisdictions, depending on where the fund is planning to trade or market itself. Legal firms are usually one of two things: boutique law firms that focus on securities law or the investment management industry, or very large regional or national law firms. The ‘name brand’ legal firms tend to use a decentralized approach, installing branches worldwide. Some large legal firms (like Simmons & Simmons and Dechert in the UK, Schulte Roth & Zabel and Seward & Kissel in the US) specialize in onshore and offshore hedge funds, and thus tend to offer their services to these funds.

The services of a legal firm are required only at certain junctures of the hedge fund life cycle, which means that consistent face-to-face contact is not required. For example, initial structuring and regulatory advice can be obtained locally in New York or London, and subsequent support could be provided by offshore counsel. As offshore funds are marketed globally, they require extensive coverage by geographically-dispersed legal firms. Lauralouise Duffy, CEO of the New York-based Global Fund Exchange, says:

The evolution of offshore legal firms into more international operations with offices in a number of jurisdictions has made the job of selecting offshore counsel easier. […] I don’t think that legal advice in the hedge fund is a one-stop shop.

The implication of this is that managers should carefully select legal firms that best suit individual funds, rather than use one legal firm for all its funds.

Some other tasks that are provided by hedge fund legal counsel on an ongoing basis include: Blue Sky filings, the provision of updates on relevant hedge fund laws, revisions of offering documents when necessary, drafting side letter agreements when needed, filing on behalf of the manager, and reviewing marketing documents. Most of these activities can be accomplished online. Legal firms tend to use decentralized, global networks for reasons of specialization and cost minimization.

Operational Due Diligence and Governance. The services of an ODD team is required at the investors’ preference. They act as the gate keeper in order to provide investor protection.
Fund governance tasks are fulfilled by Directors, which is a mandatory requirement by the regulatory framework of hedge funds. Both ODD and Directorship functions were performed remotely. However, as a consequence of the crash of 2008, there is a preference to have more face to face interactions to perform this task. This aspect is detailed later in the chapter.

The cluster dynamics, roles, geographical location, and interactions of major hedge fund industry players have been discussed thus far. In the next section, changes within the hedge fund industry will be considered in detail, focusing mainly on trends observed over the past ten years and how various participants have positioned themselves during this time in order to innovate in the competitive landscape of the industry.

5.2 – Recent Trends in Hedge Fund Industry Clusters

The previous section outlined the activities of different parts of the hedge fund industry, including institutional, legal, and structural differences between each of these components, with the aim of understanding how different pressures compel an industry to cluster and/or de-cluster at different nodes. However, this picture has not been static. Significant changes have interacted with these general trends over time, which means that the same clustering pressures do not exert evenly across all nodes over time. Some changes have affected cluster dynamics in ways that have made cluster measurement rather challenging. Particularly since the economic crash of 2008, technology and outsourcing trends have initiated tremendous changes in the industry. In this section, the impacts of these trends on clustering dynamics at different nodes will be discussed in detail.

Between the years 2000 and 2008, hedge fund assets under management grew from $277 billion USD to $2 trillion USD. After the crisis of 2008 and subsequent fraud scandals, AUM dropped to $1.33 trillion USD due to a drop in performance, trading losses and redemptions. However, the industry has seemed to bounce back between 2009 and mid-2012, and is now much closer to pre-crisis levels. Fig-7 shows how the global hedge fund sector has grown since 1997.

The number of hedge funds in existence has been on a steady decline since the crash, mainly due to fund closures and a lack of new launches. The United States and Europe continue to dominate
the hedge fund industry, which supports path dependence theory (Martin, 2009; Martin and Sunley, 2006). In the section below, empirical data from secondary sources is used to identify the trends that may be affecting hedge fund clusters. However, this research method will be insufficient to answer the research questions fully. Detailed information on a micro level can be difficult to obtain through published sources and secondary research, since the area of hedge funds is relatively new. In order to discover new facts, test important concepts, and identify relationships between players, as well as measure hedge fund clusters through changed dimensions, it is important to gather data through additional means.

**Changes in investor demography.** The interrelationship and convergence of economies and cultures continues to influence the high net worth (HNW) population. Recently, researchers examining the population of HNW individuals ranging from 2001 to 2011 found that the investments and lifestyles of HNW individuals are taking a growing international flavour and that rates of high net worth individuals are shifting between countries (Hedge week 2011). The illustrations below (Fig-8 and Fig-9) indicate the distribution and the steady growth of high net worth individuals globally.

Investor demographics like geographical location can clear paint a picture of where potential hedge fund investors can come from. However, this demographic information does not indicate in which jurisdiction money is invested in as domiciles of the funds could be disparate. The money that has been injected into the industry since 2008 has mainly come from North America, Asia-Pacific, and the Middle East, while allocations from the European Union have been steady (Prequin 2012). This trend could explain the development of hedge fund clusters such as Dubai and Malta, as well as the growth and sustenance of established clusters such as the United States, the United Kingdom, and the Cayman Islands.

Listed below is a depiction of a research finding from a leading consultancy firm (Prequin, 2012,) showing the percentage of investors in major countries. This data indicates that Europe and North America are the global leaders. The breakdown for each segment is illustrated in Fig-10a through d. North America, the mid-Atlantic region consisting of Delaware, Maryland, New Jersey, Pennsylvania, Washington D.C., New York, Virginia, and West Virginia amounts to 25%

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32 High net worth individuals are investors with $1 million in liquid investable financial assets.
of investors, whereas in Europe, the United Kingdom accounts for 39%. In the Asian segment, Australia is ahead of Japan and covers 39% of the region. In the rest of the world, the Middle East constitutes 45% of the population.

Since 2007, new capital coming into the industry has largely been from institutional investors (Citi prime 2012). According to KPMG (2012), institutional investors now possess a clear majority of all assets under management in the global hedge fund industry, with 57% of the industry’s AUM residing in this category. This has been an increasing trend since the financial crisis. Before the crisis, most industry capital came from non-institutional investors, like high net worth individuals and family offices. The crisis appears to have caused a significant number of hedge fund redemptions, mainly from the HNWI population, thus shifting the investor composition more towards institutional money. The figure illustrates the current comparison between the number of institutional investors and the number of HNWIs investing in hedge funds. (Fig-11)

Changes in investment management services. Investment management residency is a major indicator of concentration for hedge fund clusters. New York is the world leader in hedge fund asset management, followed by London (City UK report 2012). As of 2012, 43% of global assets were managed in the United States, which represented a 50% decrease since 2001. During the same time period, the United Kingdom grew from managing 10% of global assets to managing 18%. At the start of the century, North America overall had 83% of the share management, but this dropped to 70% as of 2012. As of 2002, Europe had grown from 11% to 21%, but this trend slowed down in the face of the recent growth of US assets. Other locations seem to have remained relatively stable. A further breakdown by region revealed that in 2006, US-domiciled and non-US-domiciled hedge fund managers were close to even in number. In the United States, 46% of managers were residing in New York, 15% in California, and the rest were spread evenly across the country. The top five U.S. states account for 59% of hedge fund manager residency, and the top ten U.S. states account for about 90% of the hedge fund assets. As of 2012, about one half of reported funds worldwide are managed in the United States, particularly in New York and followed by California, Connecticut, and Florida (Edhec 2012).
As of 2011, UK-domiciled hedge fund managers managed around 70% of European-based hedge fund assets (The City UK 2012). Around 600 funds located in the UK contained approximately 85% of European-based hedge fund assets. The largest seven hedge funds in Europe were all headquartered in London in 2012. The other 30% of assets belonged to European hedge fund manager domiciles such as France, Switzerland, Netherlands, Sweden and Channel Islands. Fig-12 and Fig-13 illustrate the breakdown of major hedge fund manager clusters worldwide and in the two major financial centres (New York and London respectively).

It has been observed in recent years that hedge fund managers often seek to improve operational efficiency by outsourcing non-core activities, such as risk management and analytics, middle-office operations, technology, legal, compliance, and middle-office reporting functions including the trading desk. There are several characteristics this evolution, including the availability of integrated front- and middle-office platforms, as well as end-to-end collateral management capabilities (Forum, 2013). Some of these tasks have been taken on by hedge fund administrators, which may have caused the major growth in this area. Furthermore, back-office support services such as transfer agency, trade input, reconciliations, and NAV calculations have been outsourced since early 2000 (Forum, 2013).

**Changes in third party hedge fund administration.** The business of fund administration has grown alongside the expansion of the hedge fund industry. A 2012 KPMG study revealed that demand for hedge fund administrators is increasing due to an increasing desire amongst investors for transparency. This study also found that increased institutional investment has resulted in a greater emphasis on thorough due diligence. After the repeal of the ‘Ten Commandments’ in the wake of the implementation of the Taxpayer Relief Act in December of 1997, offshore financial centres have moved many of their hedge fund back-office

33 http://www.hedgefundintelligence.com/Product/16991/Previous-Events-Details/InvestHedge-Forum-2013.html
34 Adopted by the U.S. Treasury Department in 1968, the ‘Ten Commandments’ required a U.S.-managed fund to have ten administrative functions performed at its offices outside the U.S. in order to avoid being subjected to certain U.S. taxes on its U.S.-source income. These functions include: 1. Communication with shareholders; 2. Communication with the general public; 3. Solicit sales of the company’s stock; 4. Accept subscriptions of new shareholders; 5. Maintain the principal corporate records and books; 6. Audit the company’s accounts; 7. Disbursement of payments of dividends, legal fees, accounting fees and directors fees; 8. Publish or furnish the offering and redemption price of the company’s shares; 9. Conduct shareholders and directors meetings; and 10. Make redemptions of the company’s stock.
35 This new regulation made it possible for hedge funds to self-administer their offshore funds or to consider other on-shore alternatives.
functions to locations such as Toronto and Halifax in Canada. These destinations have historically been world leaders, especially in the financial services industry, in technology and trainable human resources. Technological advances like electronic data sharing, web-based reporting, password-protected information portals for hedge fund managers and their investors, and many other communication tools, have made the financial services process even more effective. This has been the case even when services are performed in different locations. Table 1 illustrates the location of administration firms throughout the world as of 2011.

While clustering is clearly evident in the hedge fund administration industry in certain destinations like Canada, concentration has declined in offshore financial centres like the Cayman Islands and Bermuda. Consequently, as of the end of 2012, although the top ten administrators are all headquartered in either the United States or the United Kingdom, most of their back office functions appear to be conducted in satellite offices in centres of excellence like Toronto and Halifax. Niche administrators, though considerably smaller in size than the top ten, seem to be scattered across the globe in patterns mainly driven by geographical proximity to their client. Fig-14 breaks down some of the leading administrators in the hedge fund industry, based on assets under administration. The top five are considered to be large fund administrators, as defined earlier in the chapter. The largest administrator, Citco, is an independent specialist in hedge fund administration, while six others are large institutions like banks that have added hedge fund administration to their suite of financial services.

The majority of recent fraudulent activities involved self-administered US funds, and since these frauds became widely-publicized investors now want to see that the funds they invest in are administered by an independent third-party administrator. Morrissey (2012) argues that “Investors are now expecting managers to have independent administration of their funds. In this environment it makes even more sense to outsource. Companies want to avoid large capital expenses involved with building or maintaining technology, system upgrades, disaster recovery and so forth”. He believes that fund managers will want all their resources focused on their core competencies, managing assets and servicing clients.

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36 For example, that of Madoff Investments, LLC, Stanford Financial Group, and Westgate Capital Management, LLC.
One of the main causes of growth in the administration services industry seems to be the increase in demand for independent administration. Additionally, increased emphasis has been placed on due diligence and fund governance since 2008, which has initiated a renewed interest in particular supporting industries. This phenomenon is described below.

**Growth of additional support industries.** Activities like operational due diligence and fund governance seem to be taking more priority in the value chain of hedge funds than ever before. Financial crises and fraudulent incidents that have occurred over the past ten years have exposed a great deal of inconsistency in hedge fund practice, as well as sub-optimal arrangements between funds and investors that could have been avoided through tighter fund governance and better scrutiny of the offering documents. ODD and fund governance practices have increased rapidly in recent years, warranting their qualification as a significant support industry. Thus, it would be prudent to discuss the firms conducting these activities in order to assess their role in the clustering dynamics of the hedge fund industry.

**Operational due diligence.** Operating as an independent body, the operational due diligence firm consists of a team of specialists that conducts ODD reviews on behalf of the firm’s clients. This team evaluates the management company, the fund, the service providers, and the control environment, assessing assets, trading, and valuation controls. The team visits the appropriate participant face-to-face, through conference calls, or both, in order to establish due diligence for the stakeholder at a frequency dictated by the client.

Independent checks and control are compulsory practices that ensure job segregation and compliance. Due to the ‘independency’ requirement of the due diligence process, most ODD firms tend to be ‘stand-alone’ entities that are not owned by major financial institutions. These firms tend to be situated in major financial centres where hedge fund support services are more accessible. Although hedge fund industry players often interact from remote locations, operational due diligence interviews tend to occur through face-to-face interaction between the ODD member and the interviewee. These relatively new and developing services have not yet been evaluated as part of the clustering process.

**Fund governance and directors.** Directors are an integral part of the hedge fund governance model, and have been since hedge funds were introduced to the industry. Because of
this importance, careful thought must go into appointing hedge fund directors. There are two major considerations in this decision: firstly where the directors are located and secondly where the funds are set up. Consideration must be given with respect to a fund’s tax domicile\(^{37}\) instead of its legal domicile\(^{38}\) so that unintended tax consequences can be avoided. The general partner performs directorial duties for an onshore limited partnership company. In offshore hedge funds, a team might consist of two or more people, usually combining an executive director (who is an employee of the fund) and a non-executive director (who is independent from the fund), according to the hedge fund’s offering memorandum. Offshore funds cater to investors outside of a fund’s jurisdiction. As a result, most hedge fund directors are located in the offshore location where the fund is domiciled and conduct their activities in this location. This often causes the formation of a periphery cluster of fund directors. However, in many cases, one director is located in the offshore jurisdiction while the rest remain onshore, which means that the majority of meetings and decisions are made by one representative in the offshore jurisdiction where the fund is domiciled.

Fund directors are involved throughout the hedge fund life cycle, from launch to liquidation. Directors’ basic function is to act as gatekeeper for the fund and its investors, as well as to oversee the affairs and activities of the hedge fund at a high level of independence. However, directors are required to interact with each player of the industry, both remotely and face-to-face. Although many resolutions can be signed electronically and meetings are often conducted over the telephone, physical representation is legally required when annual general meetings and extra-ordinary meetings are conducted. These requirements warrant some level of clustering of directors’ firms in fund jurisdictions.

**Outsourcing of non-core functions.** Clusters can be differentiated in many ways, including by their specialization in a particular stage of their field’s value chain, by their focus on specific geographic areas, by customer needs, or by market segments. For instance, India has taken such a lead role in financial service back-office functions that it could be understood as its own cluster. Regional clusters can improve their position by identifying what specialized role

\(^{37}\) Where the entity is formed (e.g. Cayman Islands or BVI).
\(^{38}\) Where the effective management and control resides.
they can play in the industry. More recent research on clusters indicates that many successful peripheral clusters can exist within an industry, each taking a unique role.

Marshall’s (1890) cluster theory focused mainly on the manufacturing industry and highlighted the impact that enhanced access to knowledge and factors of production can have on productivity. In the past, access to factors of production such as human resources meant that physical proximity to labour was crucial and that tasks were indivisible. This is not the case in financial services, where tasks can be broken down and outsourced to locations where factors of production (such as human resources) are. This may explain the increased wave of outsourcing that has been occurring for the last six years. The outsourcing of activities has been a major contributing factor to the decentralization of operations within the hedge fund industry.

Cluster measurement continues to be a challenge within the hedge fund industry making it challenging to identify their development, sustenance, and decline. The global dispersion of institutional investors and offshore hedge fund investments makes identifying and categorizing investor residence a monumental task. HNWIs are continuing to invest in locations other than their domestic market, which is a practice encouraged by better returns and risk diversification. As of 2010, 28% of HNWIs owned homes abroad and claimed residency in locations other than their home country. It is estimated that 80% of investors in the Middle East and 46% of investors in Europe are residents abroad, which makes it difficult to measure the cluster formation of investing. In addition, 19% of HNWI have children living abroad, and this figure seems to be increasing (Hedge Week, 2010). It is possible that investors could be classified based on demographic information in order to map out hedge fund clusters, although this has not traditionally been done. Investment managers seem to be the least affected geographically, which could be due to increases in the debundling and outsourcing of many of their tasks. There has been a noticeable increase in the growth of hedge fund administration, organically as well as through mergers and takeovers. In the next section, the major drivers of development, sustenance, and decline in hedge fund clusters will be explored in more detail.

5.3 – De-clustering in the Financial Services/Hedge Fund Cluster

Since the financial services industry is not static, the dynamics of clustering will change over time. This section will describe these changes and explain how they have occurred in response to
various factors. One of the central ideas in the ‘new economic geography’, sparked by Krugman (1991b), is the tension between ‘centripetal’ forces and opposing ‘centrifugal’ forces, which can help to explain the contention between forces that tend to promote geographical concentration and those that tend to oppose it. The centripetal and centrifugal forces that drive industry players to geographically cluster and disperse also contribute to the development or decline of a financial service cluster. This trend is examined in detail below.

**Drivers of de-clustering.** Centrifugal forces must exceed centripetal forces in order to initiate a declustering effect. The net effect of centrifugal and centripetal forces which are categorized and explained as technological, organizational, legal and regulatory in this chapter, seem to indicate that clusters are being dispersed across the globe. According to a hedge fund benchmark study conducted by Eze Castle\(^{39}\) in 2012 that surveyed 320 hedge funds and alternative investment firms about operational and technology decisions, technology is one of the primary drivers for their costs of production. Hedge funds are active users of electronic trading systems; almost all hedge funds use some form of electronic trading to support aspects of their investment activity. The employment of up-to-date information and communications technology is vital at each and every step of hedge fund operations, including data management, communications, and processing transactions. Thus, in the following section, the possible ways that technology could have contributed to the declustering of hedge fund services are further explored.

**Technological pressures.** Fundamentally spatial economic models in which distance is an explicit variable, such as the new economic geography, imply that the delivered price of goods increases exponentially with the distance shipped (McCaan, 2005). Advancements in information and communications technology appear to have helped to reduce transport costs, since most financial services are now delivered from remote locations through the Web, telephone, conference calls, video conferencing, and remote connectivity. Factors of production are thus rendered extremely mobile, which means that they do not need to be geographically close in order to derive economies of agglomeration and reduce costs of transportation. There is

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\(^{39}\) Eze Castle Integration is the leading provider of IT solutions and private cloud services to more than 600 alternative investment firms worldwide, including more than 80 firms with $1 billion or more in assets under management. Eze Castle Integration is headquartered in Boston and has offices in Chicago, Dallas, Geneva, Hong Kong, London, Los Angeles, Minneapolis, New York, San Francisco, Singapore and Stamford.
increasing evidence that technology can reduce transportation costs as information is delivered to the end user. For instance:

Hedge fund IT expense in 2011 is forecast at $2.09 billion USD, equivalent to 9 basis points of the industry’s total AUM. Infrastructure providers are leveraging new delivery models and cloud technology to offer emerging managers off-premises hosting abilities, allowing these funds to more quickly implement capabilities with less capital. This marks a completely new model [Hedge 3.0, Fig-15] for the hedge fund industry. (Eze Castle Integration, 2012)

In one of its Vision Series publications, State Street (2012), one of the largest financial institutions in financial services, states:

Next generation technology will have the scale and flexibility to dramatically drive down data costs and will eventually evolve to offer predictive capabilities, among other highly useful functions. It will enhance the risk and compliance environment, and empower end users to accomplish business objectives rapidly and cost-effectively. (page 4)

Furthermore, survey results from a study on IT spending (Citi Prime, 2011) indicate that hedge fund firms are investing heavily in information technology in order to create more efficient ways to deliver products and services to clients.

Interdependencies are important among industry players, but this does not appear to mean proximity. In the hedge fund industry, the importance of personal relationships between client and service provider cannot be underestimated, but it is impossible to be close to investors that are scattered all over the world. Constant communication through video conferencing and relationship management seems to have replaced the proximity requirement. Customer relationship management (CRM) vendors offer web-based tools and software that can be accessed using a secure internet connection.

Podcasts and link-and-learn technology have reduced the industry’s dependence on formal and informal networks that previously were the only avenue through which to socialize and gain knowledge. Academic and professional institutions providing distance learning and online training have also reduced the need for institutions to be clustered around the end users. Dispersed industry associations are able to provide regular updates online and provide certifications online. Some critical financial support services such as audits can now be conducted from remote locations, which reduce the need for the service provider’s physical
presence. The growth and success of the three leading administrators – Citco, State Street, and BNY – can possibly be attributed to their dispersed model. Linked through technology and relying on business process outsourcing and centres of excellence, these companies are still able to benefit from the economies otherwise gained by agglomeration and geographical proximity.

In today’s economy, cost reduction through the use of technology is vital in order to be competitive and innovative. Additionally, data management and reporting solutions are important for achieving operational efficiency. New regulatory requirements have produced a massive amount of data from service providers – especially fund administrators – and this must be managed on a daily basis. This has forced fund managers to develop more efficient workflows. In the next section, cloud computing and its effects on the decentralization of the hedge operating model will be explored.

Cloud computing. A recent phenomenon that seems to have promoted the decentralization of hedge fund services is the usage of commoditized IT services through ‘cloud’40. In recent years, the hedge fund business model has been changed drastically by cloud computing, particularly in new hedge fund start-ups. Cheaper bandwidths, the availability of remote data centres, and the rise of service providers worldwide are just some of the factors that have been creating a foundational shift in the industry, wherein start up or spin-off hedge funds can establish and build their infrastructure and capabilities in a cost-efficient and effective manner. Clouds are often offsite technologies that can be offered at a low cost to startups by reducing the startup cycle time considerably. Startups are not the only ones benefits from cloud technologies; even established funds have been able to lower their operating costs and replace their legacy systems using these technologies.

It is apparent that the adoption of cloud technology has promoted decentralization and the virtual nature of financial service offerings. Based on research by Eze Castle (2012), Fig-16 below shows that 21% of hedge funds within their sample have already adopted cloud technology at least partially. Fig-17 breaks this 21% of cloud users down into segments of functions, indicating that 22% of these companies have completely outsourced their IT function to cloud companies.

40 ‘Cloud’ is computing as a service over the Internet. Cloud computing – often referred to as the ‘cloud’ – is the delivery of on-demand computing resources, from applications to data centres, over the Internet on a pay-for-use basis.
While many technological pressures seem to stem from competition and the need to keep abreast of innovation, fund manager must be very careful to maintain efficient operations in order to survive within a cluster. Since the crash in 2008, more seems to be demanded for less from hedge fund service providers. There is a constant focus on reducing costs and improving efficiency. The next section evaluates whether technological advancements are effective in reducing operational costs through outsourcing and decentralization.

**Cost reduction through outsourcing.** Cluster theories have always emphasized cost reduction as the main competitive advantage (Marshall, 1890). Contemporary outsourcing activities have proven that cost reductions can be obtained through labour arbitrage, savings in solution development, and access to services, advances in technology, and overall management and control. Outsourcing and selective offshoring reduce operation costs and overall management costs through technology. It is a commonly-held view in the industry that the latest technologies provide real-time and secure access to information, no matter where these systems are located. Real-time processing through technological advancement has facilitated the transfer of back-office processes – such as trade processing, reconciliation, and call center operations – to lower-cost destinations in different time zones. This has two potential benefits: lowered cost of production and quicker turnaround time due to time differences between countries.

In the past three years the hedge fund outsourcing market has gained momentum and currently seems to be at its peak. Since hedge funds tend to generate the most profit when they are operating at the lowest cost, the cost savings associated with outsourcing processes can increase hedge fund returns, thus creating a competitive advantage in the industry. The larger hedge funds grow, the more cumbersome they can become. Outsourcing can help with this by effectively eliminating many day-to-day staff operations. Outsourcing does not have to cover every aspect of operations, but can rather be dismantled into specialized pieces and re-assembled in order to receive the optimum benefit out of service delivery in its entirety. This is demonstrated in Gordon et. al’s (2005) ‘Onion Layer Model’, as seen in Fig-18.

In Fig-18, the outer rings depict the supporting structures of the business, which comprise lower value-added and less risky functions where proximity is limited and not important, such as back and middle-office functions. The inner-most rings represent highly personalised and specialized services like investment management, where proximity is of the utmost importance and cannot
be outsourced. The decision factors concerning which services are prime candidates for outsourcing are always unique. Although non-core activities that are essential to business are typically the low-hanging fruit, hedge funds are increasingly looking beyond the basics in order to derive more value across the enterprise. Front-office trading is handled by investment managers and in most cases cannot be outsourced to a third party. Specialist knowledge is essential to implement and manage complex strategies.

Fund administration is considered to be a back-office function that can be outsourced. For example, trade execution, which is a front-office function, is executed through prime brokerage, which in turn executes the trade and sends the information to an administrator situated in another part of the world. This totally segregated function consists of many non-core functions, such as trade input, reconciliation, cash settlements, fund accounting, transferring agency, anti-money laundering checks, trust accounting, and middle-office functions that comprise all post-trade, pre-settlement tasks. The information that is collated by administrators is processed in conjunction with cash flow that comes from other parts of the world. This information is sent by the administrator to the investment managers, who in turn report it through the statements to investors online. The illustrations (Fig 19-21) below detail the status of the outsourcing initiative by hedge funds globally (FSO Knowledge Exchange, 2011).

Fig-19 illustrates the current proportionate breakdown of outsourced functions. Recently, middle-office functions have been added to the services provided by administrators. In the past, this was done by prime brokers. Now, in a multi-prime environment, the administrator is in a better position to handle this task, since they work in conjunction with all the prime brokers of the fund while the prime brokers do not interact between themselves. The chart below (Fig- 20) states that 74% of low-risk, back- and middle-office functions are currently being outsourced worldwide.

The illustration (Fig-21) above indicates that Brazil, Russia, India, and China (sometimes referred to as the BRIC nations) lead the list of locations where outsourcing occurs, followed by Asia-Pacific countries. This percentage is expected to grow in the upcoming years, thus turning these temporary periphery-clusters into clusters and concentrations. It appears that this is already taking place in India, where specialized firms, many of them major corporations, control the back-office industry for hedge funds. Hedge funds have begun to actively implement a ‘front-to-
back office’ process. This includes front-office support such as trade capture, broker recap review, and trade enrichment. In this model, middle-office support includes trade booking, broker/blotter reconciliation, internal system reconciliation, internal vs. third-party reconciliation, trade amendment investigation, and resolution, and static data review. Ancillary services support is also provided, which includes regulatory/investor reporting, reference data management, and expense management, which could be transferred to these receiving destination countries in the near future.

**Organizational pressures.** While many in the hedge fund industry support the idea that outsourcing can contribute to the formation of periphery financial service clusters, there is another model that is growing in popularity amongst financial service firms, largely in developed countries. The practice of ‘lean production’, wherein companies do more with a smaller amount of labour, is increasingly being adapted to the financial services industry. As a result, specialized staff reduction has added to the shrinkage of clusters. In many cases, job losses have been permanent and have contributed to the decline of financial centres.

Consolidation is seen as a means of gaining market share and reducing excess capacity. The five key changes that tend to motivate consolidation include: technological progress, improvements in financial condition, excess capacity, international consolidation of markets, and deregulation. In the section below, evidence of increased mergers and acquisitions is used as an argument proving the effects of declustering and the globalization of financial services.

**Consolidation of service providers.** Marshall (1890) emphasized the importance of limited dependence on economies and reducing input costs. His explanation of clusters relied heavily on the vertical and horizontal integration of industries. Marshall (1890) and Porter (1990) both demonstrate that clusters promote vertical (buyer/supplier) integration and horizontal relationships such as those facilitated through technology. This argument is supported by some of the mergers and acquisitions (M&A) that are mentioned below. However, it is important to note that although the recent increase in mergers and acquisitions acts as evidence for traditional cluster theory in some ways, this trend does not support the proximity argument, which is an equally important aspect of these theories. In other words, while the merging of entities most certainly increases the economies of scope of interconnected companies, the distance between these entities does not appear to be a determinant of their effectiveness.
Hedge fund administrators have been successful in growing their market share through consolidation. During the first ten years of the new millennium, the hedge fund administration space saw some notable M&A activity (Table 2). For example, the Bank of New York took over administrators including International Fund Administration Ltd. and PNC Financial Services Group, in addition to smaller banks such as BNY Mellon and Allied Irish Bank (AIB). State Street took over administrators (including International Fund Services), legal firms (including Mourant Ozanness), and smaller banks (including Investors Bank & Trust). Citco, the largest administrator worldwide, took over administrators Globe Op and Op Hedge, and Tudor Systems, which is a technology platform. Citigroup also took over BISYS Fund Services and Forum Financial Group, two of the largest administrators. JP Morgan took over both investment firms (such as Thread needle Investments and Paloma Partners) and administrators (such as Trident Investment Management and Tranaut Fund Administration). These globally-dispersed mergers and acquisitions have proved to increase these firms’ efficiency and market share.

Through post-consolidation reorganization, national financial operations are able to increase cost-effectiveness by reducing high-cost, nation-based operations and increasing internationally-oriented operations. This process of globalization implies decentralization. The consolidation trend seems to have intensified in recent years, as large administrators have merged or acquired other institutions of similar magnitude in an attempt to create a ‘best of breed’ solution for their businesses. For example, Fortis Inc. sold its fund administration services to Credit Suisse in May 2010. State Street acquired Goldman Sachs Administration Services in July 2012, and Admiral Administration was acquired by Maitland Group in 2012. AIS Fund Administration was acquired by U.S. Bancorp in late 2012. North Street Group acquired Hedge Fund Solutions in May 2013, and Mitsubishi UFJ Trust and Banking (MUTB) acquired Butterfield Fulcrum Group in June 2013. In the second half of 2013, SS&C Technologies acquired Prime Management Limited, a fund administrator focused largely on the insurance-linked securities market, only a year after its acquisition of Hedgemetrix LLC. In November 2013, U.S. Bancorp Fund Services also announced its acquisition of Quintillion Limited, an Ireland-domiciled firm focused largely on the European market. Opus Fund Services’ absorption of AlphaMetrix360 and the merger between The Conifer Group, LLC and Vastardis Capital Services Holdings LP occurred early in the year of 2014. This was followed by MUTB acquiring Meridian Fund Services in March 2014. Orangefield Group announced the acquisition of Columbus Avenue Consulting LLC and
North Street Global Fund Services acquired Los Angeles-based hedge fund administrator Hedge Solutions more recently in May 2014.

Consolidation may also be an efficient way to improve efficiency and eliminate excess capacity that has arisen in the industry or local market. When there is excess capacity, some firms may be below efficient scale and have an inefficient product mix. The consolidation of financial service firms across national borders may also derive in part from the international consolidation of markets. In this way, the globalization of markets has likely contributed to cross-border M&A and the globalization of financial service firms. Regulations such as restrictions on banks’ ability to expand geographically were relaxed between 1980 and early 1990 in the United States, with a number of restrictions removed on intrastate and interstate banking. The removal of these constraints allowed some previously-prohibited mergers and acquisitions to occur. In the United States, evidence suggests that consolidation accelerated as a result of deregulation. Europe has also been undergoing deregulation. The European Union banking directive has allowed banks to operate fairly freely across national boundaries in Europe since 1993, and the implementation of monetary unions has also supported international M&A. Though there has been little intra-Europe international consolidation of banks, there has been considerable consolidation of other financial institutions.

In the next section, a macro view is taken of the recent spike in regulations on the hedge fund industry. The ways in which these patterns have contributed to de-clustering in the hedge fund industry will be evaluated.

**Regulatory pressures.** Following recently instituted regulatory requirements, including the Dodd-Frank Act\(^{41}\), the Foreign Account Tax Compliance Act\(^{42}\) (FATCA), the Alternative

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\(^{41}\) Two key aspects of the Dodd Frank Act (effective since January 1\(^{st}\), 2013) affect the hedge fund industry outside of the US: the Volcker Rule, which limits the involvement of US financial institutions in hedge funds, regardless of their domicile; and the registration requirements for investment managers seeking to market their funds to US investors. The increased costs associated with compliance may act as a bar to the US market for many hedge fund managers. (IFC Review 2013)

\(^{42}\) The United States Foreign Account Tax Compliance Act (FATCA), effective since January 1\(^{st}\), 2013, is another piece of US legislation that hedge funds worldwide will see the effects of. FATCA requires foreign financial institutions, including hedge funds, to disclose information on investors and beneficial owners who are US persons to the US Inland Revenue Service. If they do not provide this information, a withholding tax of 30% will apply to the entire fund on US source payments. (IFC Review 2013)
Investment Fund Managers Directive\(^43\) (AIFMD), and the proliferation of Tax Information Exchange Agreements (TIEA), hedge fund domiciles have undergone a noticeable change. While the first three of the above-listed regulations have only been partially implemented so far, Tax Information Exchange Agreements seem to have had a direct effect on hedge fund domiciles already. International TIEAs ensure that information relating to criminal or civil tax investigations or civil tax matters under investigation is provided or exchanged on request. Most states that have bank secrecy legislation (as defined by the OECD) for offshore financial centres have now begun or completed TIEA negotiations with these same centres. These agreements have mostly been struck with the 35 designated financial centres, which are mainly offshore. Those involved have made a commitment to the OECD to improve transparency and freely exchange information for taxation purposes. Since signing these agreements, offshore centres have experienced a significant exodus of cash (OECD 2014). For example, foreign deposits in Jersey have decreased by approximately 60% between January 2008 and July 2011. (OECD 2014)

The government’s adoption of the ‘too big to fail’ approach and the subsequent bail-outs forced the implementation of regulations like the Dodd-Frank Act. This has had a variety of impacts. For example, the Volcker rule (an aspect of the Dodd-Frank act) has triggered the rupture of relationships between banks and hedge funds and the subsequent creation of separate independent hedge fund segments (including Copia Capital’s break from Morgan Stanley’s Front Point Partners unit and Credit Suisse Group’s spin-off into two Candlewood hedge funds). The “Tough to Get Too Big” provision in this act forces clusters of large companies to break up into smaller, scattered operations. In recent years, some major world financial service centres have taken steps to discourage corporations from excessive growth and complexity. In the U.S. the Financial Stability Oversight Council is presently responsible for monitoring systemic risk and advocating that the Federal Reserve implement strict rules for capital, leverage, liquidity, and risk management as companies grow in size and complexity. This places significant requirements on companies that pose risks to the financial system. As a result of these new developments, there has been increasing pressure on the Federal Reserve and similar institutions

\(^43\) The Alternative Investment Funds Managers’ Directive (AIFMD), which has been in effect since July 2013, seeks to harmonize the regulation of hedge fund managers that have funds domiciled or marketed within the EU. The broad scope of AIFMD captures not only European fund managers, but also any non-European managers that establish market or distribute funds within the EU. (IFC Review 2013)
to break up large, complex companies and to divest some of its holdings if these companies pose a grave threat to the financial stability of the country.

**Hedge fund re-domiciliation and increased demand for regulated funds.** As discussed in section 5.1, the jurisdiction in which a hedge fund is established can be crucial, particularly in deciding who can invest in it and what its structure will be. However, recent changes to the regulatory framework of hedge funds seem to have contributed to the rise and fall of domiciles. In January of 2006, 54% of hedge funds worldwide were domiciled offshore in locations like the Cayman Islands, the British Virgin Islands, the Bahamas, and Bermuda, 22% were domiciled in the United States, 4% were domiciled in Ireland, and the remaining 21% were distributed throughout Western Europe (PWC, 2006). US and non-US domiciled funds (which can also be categorized as onshore and offshore funds, respectively) were either domiciled in Delaware (onshore) or the Cayman Islands (offshore). In the same time period, US-domiciled funds in Delaware accounted for 35% of the US-domiciled hedge funds, with the rest spread evenly among Florida, New York, California, and Connecticut. Fig-22 demonstrates that, in 2011, onshore and offshore hedge funds were split approximately evenly. At 34%, the Cayman Islands was the leading location, followed by the US with 24%, Luxembourg with 10%, Ireland with 7%, the British Virgin Islands with 6%, and Bermuda with 3% (Euro Hedge, 2012).

Regulated onshore products are becoming an increasing investor demand in comparison with offshore products. This has triggered a steady re-domiciliation of funds from jurisdictions like Bermuda, the Cayman Islands, the British Virgin Islands, Guernsey, Jersey, and the Isle of Man to jurisdictions such as Ireland and Luxembourg. Research from SEI has shown the convergence of growing capital flows into regulated alternative investment products, most often in the form of Undertakings for Collective Investment in Transferable Securities (UCITS) funds and US-regulated mutual funds. During the first eight months of 2011, more than $61 billion was poured into regulated funds using alternative strategies (SEI 2012). Changes to the regulation of off-boarding procedures seem to be streamlined, friendly, and tax-efficient, thus facilitating the relocation of investment funds onshore. Changes that have made the re-domiciliation process less onerous could be one of the main reasons for the decline of offshore centres. Recent changes in accounting practices have also had a strong impact on domiciles that do not have double tax treaties, facilitating the domiciliation process from offshore financial centres to more onshore
destinations. The AIFMD could have a tremendous impact on hedge fund clusters, especially in offshore domiciles, as offshore staff are forced to relocate to onshore domiciles. The illustrations below (Fig-23a and Fig-23b) indicate the current re-domiciliation status for funds from offshore domiciles to Ireland and Luxembourg. The appetite for onshore funds has never been so fierce among investors and hedge fund sponsors. A survey conducted by KPMG and RBC Dexia in 2011 had the following findings: 24% of the survey participants had already re-domiciled their funds from offshore to an onshore domicile; 27% intended to do so in the very near future. According to this survey, the three main drivers of re-domiciliation were: the ability for EU institutional investors to invest in offshore funds; the replication of hedge fund strategies in a regulated product; to offer more transparent and diversified hedge funds to investors.

5.4 – Conclusion

In the above sections, the anatomy of the global hedge fund industry was outlined and its changing global operating model was discussed, elaborating on the drivers of this change. Marshall, Porter, and Piore and Sabel have all emphasized the local production and international marketing of products and services in their cluster theories. Marshall (1890) emphasized the importance of related industries concentrating together in order to reduce input costs. However, the hedge fund services industry seems to be undergoing the opposite process, in that firms have been dismantling their current operating structure and replacing them with geographically dispersed activities in order to reduce input costs. The core and periphery model introduced through New Economic Geography (NEG) by Krugman (1991b) illustrates how, with the help of established service links, communication, and other technology-based coordinating activities, the geographical separation of production process fragments can reduce costs and make hedge fund firms efficient and competitive. In this chapter, this process of fragmentation was discussed in detail. Empirical data on trends in the global hedge fund industry were presented and analyzed in order to explain the decentralized operating model that has emerged during the years under review. In the face of limited empirical evidence on the reasons for the Canadian hedge fund industry’s lack of scale, it will be important to evaluate industry players’ views on how to measure and understand this underperformance. Thus, in the following chapter, results from semi-structured interviews with industry players will be presented and investigated.
Chapter Six: Dispersion, Decentralization and Re-composition of the Hedge Fund Industry

The dynamics and location of the hedge fund sector has changed markedly over the ten-year period under review. The majority of the industry players consider ‘the crisis’, ‘technology’, and ‘outsourcing’ as major forces behind these changes. However, there is no one particular force that has solely caused these dispersive changes. Rather, various effects of these forces manifest at different segments of the value chain within the overall global hedge fund industry. Each segment has responded differently to these forces. It is also evident that, within these individual segments, difference of opinions exists among key players as to how these changes should be interpreted. The repercussions of these major events and trends continue to be felt throughout the industry through cost-cutting and the outsourcing of non-value-added activities. Technological advancement has facilitated the decentralization of activities; now, competitiveness is almost perfectly correlated with technological advancement.

This chapter presents a synthesis of the views of major hedge fund industry players, placing them within a longitudinal analysis of the dispersion, decentralization, and re-composition of the hedge fund industry. This first of two analysis chapters focuses on participants’ views on traditional cluster theories (covered in Chapter 2) within the context of the global hedge fund industry. Research questions A and sub question A-1 are addressed in this section. Participants were asked about their thoughts on whether or not it continues to be important in the hedge fund industry to develop agglomeration economies by clustering companies geographically within a nation or region, with a scope of the past ten years. Participants’ views on the measurement of hedge fund clusters were also explored. Major industry changes over the past five years were discussed, including participants’ thoughts on the root causes and impacts of these changes.

This chapter is divided into six sections: the first section reviews the overall role of investment managers, in the changing hedge fund business model. This special emphasis is given to the investment managers since they are, in many ways, used as benchmarks of identity in the cluster. The compositional changes in the investment management cluster have set the stage for the usage of a cluster-based approach to explaining the lack of scale of the Canadian hedge fund industry. Following this initial section, the rest of the chapter focuses on the rest of the industry
players, including administrators, legal counsel, auditors, prime brokers, and operational due
diligence personnel, and ending with concluding remarks.

6.1 – Investment Managers

As with many representatives of financial services businesses, hedge fund managers have
suffered in the global financial crisis. As a result, many asset managers are developing a renewed
focus on their core competencies of product development and investment performance, as well as
outsourcing their operational capabilities in order to reduce operating costs. Especially in the
hedge fund industry, investment managers and firms that have been guiding the process of
change in response to technological innovation and the 2008 crisis have been confronted with a
need to change the way they evaluate outsourcing strategies for niche, high-end functions close
to and within the front office. Outsourcing is becoming increasingly common as a means of
decentralizing and re-forming clusters in order to support asset managers’ strategic business
plans at both macro and micro levels. This is especially true as the industry comes under the
pressures of increasing regulation, the pressures of technological competition, and the pressure to
keep costs low in an uncertain environment. In this section, participants from the investment
management sector’s responses to questions about outsourcing and the hedge fund industry are
explored.

Outsource and diversify the risk. The outsourcing of administration functions is one
common example of what the players considered to represent the ‘dispersion’ of hedge fund
activities. In the years leading up to 2007, investment managers were not segregating
administrative functions like Net Asset Value\(^ {44}\) (NAV) calculation and transfer agency from their
core trading activities. This was especially the case in the U.S. Historically in the past many
hedge funds conducted their own fund administration. This created a number of challenges,
including a lack of job segregation, which has led to fraud and reputational damage within the
industry. There has been a great deal of fraudulent activity in the hedge fund industry over the
last ten years. Many participants witnessed the mismanagement of funds through the collapse of
Long-Term Capital Management L.P. in 1998, as well as Ponzi schemes like that of Bernie
Madoff in 2009, and that of Norshield Canada. The participants agreed that these issues could

\(^ {44}\) Net Asset Value represents the price of a unit of hedge fund.
have been averted by implementing a sound fund governance regime, wherein an independent administrator would lead the operations of hedge funds. Spurred by these (and other) necessities, institutional investors began to insist that investment managers ‘outsource’ the administration of hedge funds to a third party.

Using outside administrators for hedge funds is a relatively recent development. For example, Citadel, a Chicago-based hedge fund, sold its sophisticated fund management system, Omnium, to Northern Trust in 2011 and became a hedge fund client. By seeking the services of an independent administrator, hedge fund providers and managers are better able to attract capital from large institutional investors, since these institutions are more comfortable with institutional standards provided by an outside hedge fund manager. Recently, there has been an increasing trend in ‘shadowing’ fund administration, by using an additional administrator. Bridgewater Associates, one of the largest hedge funds in the world with $120 billion in assets, uses Northern Trust to shadow its outsourced fund administration work. Ernst & Young’s (2012) global hedge fund and investor survey showed that 89% of managers favoured a certain degree of account shadowing by another administrator. Although using two administrators’ increases costs, this practice rewards investors with top-quality accounting, full independence, and complete backup of records from the middle office to the back office. In the long run, this attracts more capital into the fund.

There has also been an increasing tendency to outsource some of the front and middle office functions. Formerly administered in-house by investment managers, these functions are now increasingly being moved to a third-party administrator. Michael Sleightholme, Global Head of Hedge Fund Operations for Citigroup Hedge Fund Services, states that since Citi acquired its hedge fund-servicing business from BISYS Group in 2007, it has broadened upstream to encompass middle- and some front-office functions. In a recent interview by Hedge Week (Aug 8, 2013), he says: “Much of the new businesses that we are winning at the moment are being driven by those outsourced middle-office services. Anyone who has outsourced to us is able to peer into what we do, as if they were sitting next to us, but electronically via the internet” (p. 16). Sleightholme continues on to say: “Clients are able to demonstrate that they do have control and oversight” (p. 16).
Since the 2008 financial crisis, hedge funds have used technology to expand their networks to include multiple third parties, particularly multiple prime brokers, in order to diversify counterparty risk. The need for such technology has increased alongside the growth of outsourcing services. “With one prime broker, for example, you’re probably not going to get the best service or rates right across the board” mentions a leading Canadian Bank owned Prime Broker (PB-1). “It may be more expensive for you to trade Japanese equities with a prime broker”, he concludes. Hedge funds began to add second and third primes mainly after the crisis. The use of a multi-prime model has encouraged migration away from centralization and has promoted the de-clustering of the hedge fund industry. The 2008 financial crisis the collapse of Lehman Brothers Holdings Inc. in particular intensified a general hesitancy around concentrating too much in a single counterparty or service provider and a move towards diversification. “Before the collapse of Lehman Brothers, hedge funds could rely on their prime broker for a lot of ancillary services… for nearly everything,” said a leading investment manager (IM-1) in Canada. He continued on to say, “Once Lehman Brothers failed, it was no longer viable to allow your primary trading partner to provide middle and back-office services. The Lehman Brothers collapse was a catalyst moment that forced hedge funds to change how data and processes would be maintained internally”. The general consensus amongst participants was that the increased ability to communicate and the growth of intelligent technologies in the face of rapidly evolving requirements strongly pushed services towards outsourcing.

Another recent development in the industry is the ‘cloud’. A Pershing and Eze Castle (2013) report showed how the building of technology can be the biggest expense faced by a hedge fund. The report goes on to state:

However, after evaluating the high cost of equipment purchases and onsite maintenance, more managers are seeking alternatives. Demand for solutions hosted offsite continues to grow as more technology vendors are exiting the business of hardware sales. Offsite solutions offer special advantages to small and mid-sized funds, which can now access state-of-the-art solutions without extensive commitments of capital and increased costs for IT staff and office space. Even large funds have begun to mix onsite infrastructure with offsite solutions. (p. 4)

45 PB-1 Director- Prime Broker/ Bank (appendix 1)
46 IM- 1 Investment manager-Canadian Hedge (appendix 1)
Technological advancements adopted by hedge fund firms have had a particular influence on the decentralization of clusters. The director of a leading administrative firm, owned by a US bank located in Canada framed his views on data managements in the following way:

It does not make sense to build technology on a one-on-one basis, when a cost-effective infrastructure could be implemented to access information. Cloud services can put the smallest of funds on par with the largest when it comes to technology. Fund managers can access resources provided by a third party via the cloud. Hence, costs are vastly reduced and there is no need to devote time and resources to building heavy infrastructure. (HA-2)47

Data centres across the world host cloud services, where services can be offered at a fraction of the cost that would be required for a ‘one-on-one’ build. Many market participants, particularly the large administrators, view cloud services as the future for outsourcing. This is especially true when it comes to data management and information-sharing among investors.

**Investment managers’ outsourcing of middle office functions.** Recent regulations like the Dodd-Frank Wall Street Reform and Consumer Protection Act in the US, the Markets in Financial Instruments Directive in Europe, and the coming (2016) Solvency II Directive in Europe are helping to blur distinctions between the front, middle, and back office. Fetter (2012) argues that “regulation has become a driving force in a material shift in mindset about the divide between the front office, middle and back office”. The middle office, which bridges the gap between the front-office and back office, where all the trading decisions are made, consists largely of transaction management, including: trade capture, confirmation, communication, corporate actions, cash management, collateral management, portfolio recordkeeping, and over-the-counter derivatives support. In addition, it also includes information management functions like security reference management, investment management, client accounting, performance management, client reporting, and website updates. Although these functions were once centrally done by investment managers and prime brokers, they have been de-bundled and outsourced to administrators in the past ten years, and especially after the crash. This has caused the break-up of functions, which promotes the dismantling of clusters.

The increasing post-crisis attachment of middle office functions to administrators has helped to make administrators an attractive acquisition target for large financial institutions. Marcrum

47 HA-2 Canadian Hedge Fund Administrator International (appendix 1)
(2012), who co-authored Aite’s recent white paper on the ten trends for 2013, predicted that the revenues for outsourcing specialists such as custodian banks, fund administrators, and software firms could rise as high as US$13.7 billion in 2016 from US$10.8 billion in 2013, based on pent-up demand for recordkeeping. She explains: "As the push for transparency increases and performance measurement and risk analytics come under scrutiny, asset managers will look to outsourcing providers to bear the increasingly heavy burden of these typically middle-office functions,” (Marcrum, 2012, p.12). Based on this argument, two prime brokers owned by Canadian banks (PB-1 & PB–2) both agree that the Alternative Investments Fund Managers Directive (AIFMD) and its concomitant depositary liability make attaching custodians to hedge fund administrators through mergers and acquisitions an attractive option. They (PB-1 & PB–2) think that fund administrators that do not offer a multitude of tasks and solutions to client specific requirements will struggle. According to these participants, administrators that have a product suite that integrates with managers’ needs completely, from back to middle to front office, will be much better positioned to compete, invest in scalable solutions, and stamp out the minority competition. Representatives of two large administrative firms (HA–1 & HA-2) agreed that they were better-placed to service the global hedge fund industry as a whole while investment managers outsource middle office functions, which were done internally in the past. They also commented that, in the short-term, independent fund administrators would likely retain their niche, especially among smaller hedge funds. As the funds grow, the administrator might lose the client who would by then look out for a larger administrator. In some cases the smaller administrator is or taken over by a larger financial institution or a comparatively larger administrator. As the de-bundling of the investment management industry continues to be investigated, it is important to touch on a recent development that has contributed to the phenomenon of de-clustering.

Trading desk/front office outsourcing. The outsourcing of investment and trading operations has, until very recently, been restricted to middle and back office processes. Prior to the financial crisis in 2008, the general attitude was that a hedge fund’s trading desk is a core activity and not to be outsourced. However, a new trend that has taken the investment management industry by storm is the practice of de-bundling and outsourcing front office trading to where the actual expertise of that particular investment is. Now, firms that provide services for managers situated in major clusters like the United States and the United Kingdom are dispersed
throughout many different countries. While investment managers based in the United States and the United Kingdom are able to raise more capital, the trading desks in dispersed locations can research and trade in their home territory. An investment manager/investor in Canada (IM-5) belonging to an investment management firm said:

We have outsourced a part of our trading desk. We do not have to deal with the challenges associated with building and maintaining an in-house trading desk any more. We can concentrate on what we do best, which is to identify new opportunities and manage current investments. This move has helped us to keep pace with technology and regulatory changes.

This recent trend of outsourcing front and middle office operations also works to dilute the investment management cluster. Support to this move comes from Teo (2009), where in his research paper called ‘The Geography of Hedge Funds’ analyzes the relationship between the risk-adjusted performance of hedge funds and their proximity to investments, using data on Asia-focused funds. He found that hedge funds with a physical presence in their investment region outperform other hedge funds by 3.72% per year.

Many players in the investment management industry have been outsourcing aspects of deal desk operations in order to become more competitive in today’s market (Buy-Side Technology European Summit, 2014). Many firms, including new start-ups, are likely to outsource a portion of their trading within the next five years, either by geography or asset class (Kentouris, 2014). The leading investment manager participants from Canada (IM-3 and IM-4) both agreed that the process of un-bundling both saves costs and facilitates a globalization strategy and augments the investment management process further, by mixing and matching trading expertise around the world and passing on regulatory burden to third parties. For instance, BNP Paribas Dealing Services has chosen to make their service available to other investment management firms. This model seems to work perfectly for hedge funds, given continuing developments in technology. Additionally, this approach seems to be an aspect of business recovery planning, which is being increasingly demanded by investors and institutions, and quickly becoming an institutional standard. Investment manager (IM-4) who is the head of a leading hedge and mutual fund firm in Toronto argued that this trend seems to have been inevitable, since it has been reinforced by

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48 IM-5 High Net worth Investor/Manager (appendix 1)  
49 IM-3 Investment manager-Hedge/Mutual fund (appendix 1)  
50 IM-4 Investment manager-Hedge/Mutual fund (appendix 1)
rising costs of compliance, lower volumes in recent years, as well as recent regulatory developments in Europe and the United States.

Several interviewees explained that, while the 2008 crisis had significant effects on the hedge fund industry’s organization, its impact on investment manager location was less substantial. The next section focuses on the theme of location and explores interviewees’ perspectives on why the dispersion of investment managers has been minimal since the financial crisis of 2008.

**Geographical location of investment managers.** Interestingly, hedge fund managers have formed major clusters in London, Connecticut, and New York. The crash does not seem to have forced investment managers to move away from their work residence or to shift their operations to another country. In the world of hedge funds, the physical and legal location of financial entities is often separate. The legally distinct investment management firms or partnerships that control the funds are located in the offices in Mayfair or Greenwich. Although many businesses are attracted by low-cost locations, the hedge fund industry choice to reside in some of the world’s most expensive places exhibits one of the most striking examples of concentration. Canadian hedge fund manager IM-1 interprets it this way:

> Running a hedge fund does not take too much space. There is no correlation between rental space in these expensive clusters and the size of the hedge fund. New hedge funds require face-to-face access to specialized services, fundraising consultants, lawyers, and accountants, as well as to the institutions and individuals that supply capital.

Participants IM-1 and IM-251 also pointed out that hedge fund managers tend to move in the same small, concentric circles. When interviewed by Newsweek, Dean Shapiro (executive managing director at CB Richard Ellis, which has offices in both Greenwich and New York), said the following about hedge fund managers: “They’re generally image-conscious, they like to congregate, and credibility is generated by affiliation and by proximity”. The challenge, according to investment manager (IM-3), is that investors who are writing the cheques must meet face-to-face with investment managers. This participant says: “It is almost laughable to see an initial contribution of a million dollar cheque be written by an investor even without the face-to-face contact”. He continues on to say that once trust is established, there is no longer any need for subsequent cheques to be transmitted through face-to-face contact. However, since investors

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51 IM-2 Canadian Pension fund manager (appendix 1)
are High Net Worth individuals with large subscriptions and the number of initial subscriptions is comparatively few, this participant acknowledges that investment managers are often willing to travel in order to allow for face-to-face meetings with key investors once in a while.

O’Brien (1991) argues that “geographical location no longer holds sway in finance” (p. 1). All of the interview participants agree that technology has played a major role in reducing the ‘proximity argument’. Almost half of the interviewees stated that ‘the cluster’ is a historical concept and belongs to the time before virtual markets. IM-4 points out: “I spend most of my time on the computer. Clusters may dissipate over time. If I can live cheaply away from Toronto, and I still can serve my clients, why not?” Technology is thus a key driver in cluster building and dispersion. IM-3 commented: “Once you get to know people and build trust, face-to-face interaction is not needed. Phone is sufficient. If we interact face-to-face, it will be only 10-25% percent more efficient. I easily can get by without it. With the offshore funds I manage… most of the people I have not met”. He continued on to say that “face-to-face interaction is not a necessity. However, it just happens that most of the Canadian hedge industry is here in Toronto”.

Investment manager (IM-1), had a different view on the need for face-to-face interactions. He argued: “You can just walk across the street to your administrator or lawyer. Social gatherings do help to gather information and gain knowledge, which you might not obtain through [the] web”. However, he admitted that sometimes these gatherings can be a real nuisance when service providers are behind you all the time to get your business. “It is a very competitive industry”, he concluded. According to an investment manager (IM-2) it is easier in New York City to walk and see a manager or prime broker, or attend industry events, dinners, and seminars. He said that 60% of global hedge funds are in Connecticut and New York, and that he feels most comfortable meeting these clients face-to-face: “Vital information can be lost through communication through the Web. You can learn many things through body language”. Regardless of fund size, it can be argued that investment managers cluster in certain parts of the world. However, in order to consider whether clusters can be measured based on assets under administration, it is important to establish the players’ views on how the financial crisis affected funds’ assets under management.
**Fund size directly contributing to the size of cluster.** A partner at a prominent Toronto legal firm (L-1)\(^{52}\) argued that “we cannot consider the domicile of hedge funds as a measurement of a cluster”. According to him, domiciliary decisions of hedge funds are driven by a multitude of factors led by the requirements of the targeted investors. Investment manager IM-3 said: “Domicile is only a useful consideration for tax purposes. Determining which jurisdiction best meets the tax advantages criteria for the investor is more crucial”. However, all of the investment managers interviewed agreed that hedge fund domiciles can be used to describe the growth or decline of the hedge fund industry.

Before the financial crisis, comparatively less redemption occurred; so fund size was not reduced through redemptions. One of the most striking developments in the hedge fund world that resulted from the global economic crisis has been the rush by many investors to redeem their holdings. Individual and institutional investors alike engaged in a classic run on the bank. In response, dozens of hedge funds suspended or restricted redemptions, if such actions were authorized by their governing documents. At the peak of the credit crisis, hedge fund ‘gating’ (the administrative limit on how much money hedge fund investors can redeem at any given moment) was adapted by many hedge funds. Interviewee IM-3 explained that each hedge strategy was affected differently during the 2008 crisis. Due to an underlying liquidity mismatch, the most affected category were the fund of funds. This sector has yet to recover from the crash (Lamm, 2013 p 1).

Even single-manager funds suffered during the crisis because of credit mismatch, but to a lesser degree. According to several fund managers interviewed, the financial crisis had some positive outcomes. In particular, hedge funds were pushed during this time to make changes that would improve their reputation and public image. During the initial period post-crunch, hedge funds were viewed very negatively by many commentators, and seemed to be viewed as bringing down the global economy (Global Perspectives 2012 –Shane Brett, Group of Thirty Report 2009: G-30). Thus, in the wake of the crisis, many steps were taken to change the business model of the industry. According to an operational due diligence participant (DD-1)\(^{53}\), post-crash, funds took the time re-evaluate their governance regime, and took some steps to close gaps. A prominent

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\(^{52}\) L-1 Partner-Legal Firm- Onshore/Offshore (appendix 1)
\(^{53}\) DD-1 Director- Operational due diligence (appendix 1)
lawyer, who is a partner at a legal firm in Toronto (L-3) stated: “Liquidity preferences of investors have made fund sizes comparatively smaller and more nimble”. He also indicated that the restructuring of funds during 2007 and 2008, promoted a decrease in fund size, and that the new fund launches were smaller post-crisis.

Historically, the Cayman Islands have always served as a key indicator of growth in the offshore hedge fund industry. The number of new funds has increased in general, but particularly in the Cayman Islands (HFM, 2010). The Cayman Islands can be defined as a concentration of hedge funds based on domicile, but not as a cluster of hedge funds. This is because this area does not meet the criteria of a cluster, which can be defined as a geographic concentration of interconnected businesses, suppliers, and associated institutions in a particular field. According to a legal counsel in Canada (L-2) who spent part of his work life in Cayman, the crash of 2008 did impact Cayman. New launches lessened, restructuring was evident, and growth slowed down. This interviewee explained that it was hard to believe that the growth that was seen in the early 2000s would ever been seen again, since it had become costlier and more difficult to execute strategies using derivatives ever since 2007. Investment manager/investor (IM-5) argued that market forces have not helped the assets to grow either. In his opinion, restrictions on the full implementation of strategies could reduce returns, thus making hedge funds less attractive to investors. Administrator (HA-2)’s view on asset growth is similar: “Since 2008, markets have not helped in terms of growth in AUM. Thus, the administration fees have declined. Seven years ago, it was easier to launch a five to seven billion dollar fund. Now, the funds are becoming smaller”.

In the section above it was demonstrated how the Cayman Islands, as a leading offshore, was not immune to the effects of the crash. However, a prominent legal counsel based in Toronto (L-3) insists that it has bounced back to retain its number one position. While some centres have seen continued success after the crisis, other offshore centres have fared more poorly. In the following section, we discuss the impacts of the crash on offshore financial centres and the consequent effects on hedge funds globally.

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54 L-3 Partner-Legal Firm- Onshore/Offshore (appendix 1)
55 L-2 Associate-Legal Firm- Onshore/Offshore (appendix 1)
Change in offshore financial centres and the effect on hedge funds. Before the financial crisis, loosely-regulated offshore funds were extremely popular due to their tax neutral status. These funds were launched in offshore jurisdictions, thus contributing to the growth of centres including the Cayman Islands, Bermuda, and the British Virgin Islands. Since the crisis, many of these OFCs were affected, either through regulatory changes facilitating re-domiciliation processes that moved assets to onshore jurisdictions, or through changes in product specifications that were seen as attractive alternatives to hedge funds. Interestingly, as legal counsel (L-3) indicated, Cayman has maintained its dominance even within the post-crisis regulatory regime (including FATCA, TIEA, and KYC). According to a partner at one of the Big Four audit firms (AA-1), Cayman remains the hedge fund capital of the world. Both AA-1 and L-2 unanimously agreed that Cayman had path dependence and a great deal of precedence, and that these aspects helped them through the crash. Participant AA-1 said: “They have seen it all before, through the stock market crash of 1987 and the Asian crisis during 1997 and 1998”.

Cindy Scotland of Cayman Island Monetary Authority (2012) demonstrates that:

There was a decline in the overall number of Cayman-regulated funds in 2008, from over 10,000 in mid-2008 to 9,409 at 30 June 2011, but the total number of registered funds reached to an all-time high of 10,871 as at 30 June 2012, and the jurisdiction also continues to surpass other fund domiciles in registrations. (p. 2)

Although new funds were generally smaller than they were in pre-launch years, most new launches after 2008 were in the Cayman Islands (aside from funds that had to have access to European markets), and there was no exodus away from Cayman to another domicile (HFM, 2010). Cayman remains a dominant force, and several interviewees claimed that its continuing attractiveness can be explained by the quality of services provided. The common perception of the Cayman Islands as a secrecy haven and tax evasion conduit was fully dismissed by two lawyers interviewed (L-2 and L-3). Two investment managers (IM-3 and IM-4), who are Canadians but also manage offshore funds stated that the Cayman Islands’ attractiveness is based entirely on its infrastructure and quality supporting services.

Legal counsel L-2 explained: “Interestingly, fund domiciles are not considered a valid measurement for clusters”. However, according to this lawyer, there is a cluster of specialist lawyers, corporate secretarial services, and knowledgeable consultants in Cayman, which gives it

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56 AA-1 Partner -Big four Audit (appendix 1)
some of the characteristics of a cluster. Significantly, the comparative decline of some offshore financial centres is attributed by some interviewees to the poor quality of services provided there. An investment manager (IM-1) from the top four hedge funds in Canada stated: “It is ridiculous; they do not return our calls. Calling Cayman is no different from calling anyone from New York or Toronto”. According to many administrators interviewed, fund administration has shrunk considerably in Cayman, as in almost all offshore jurisdictions, for two reasons. First, it is hard to reduce costs. Second, there are visa difficulties. “To drive HR expenses down in Cayman is difficult”, said administrator from Toronto (HA-2), who noted that the competition is coming from Toronto and India. In addition, the Cayman government has become less willing to provide visas for non-Caymanians to work there. Lawyer L-2 confirmed that although the Cayman Islands total hedge fund assets under administration were affected by the 2008 crash, it was supported by an increase in new launches, even though these were smaller funds compared to the pre-crash levels. Revenue from new hedge funds being launched still brings in revenue for a domicile’s gross domestic product. Conversely, this lawyer’s view was that Bermuda is expensive, slower to establish a fund, and possesses an overly relaxed attitude that does not help it to compete with the likes of other offshore jurisdictions such as the Cayman Islands. He pointed out that Dublin, Luxembourg, and Delaware have not declined as domiciles, that the British Virgin Islands have matured, and that Malta and other smaller offshore domiciles seem to continue to attract attention by offering a differentiated business model.

As this section has outlined, changes in offshore centres have been an important influence on the reorganization of hedge fund activities. However, such changes cannot be separated from broader and far-reaching developments in technology. The final section of this discussion of the perspectives of investment managers focuses on the virtual marketplace of stock trading.

**Virtual trading and virtual stock exchanges.** Information technology has positively impacted countless industries by increasing efficiency and organization. These developments allow for more sophisticated processes, productivity, and advancement. The stock exchange is no exception, having developed alongside information technology, especially in relation to automated trading systems. It was the end of October 1986 when the Stock Exchange Automated Quotation system replaced the trading floor. This screen-based quotation system was used by brokers to buy and sell stock rather than meeting face-to-face; 90% of the trades made at the
New York Stock Exchange have been done electronically since 1998 (Flinders, 2007) Participant M-5 stated: “It’s nearly impossible to find an aspect of the stock exchange that isn’t impacted by technology”. For example, “In 1987, the London Stock Exchange was transacting as much business in a month as it did in a whole year before 1986, with an average daily value of £1bn. Today, the average daily number of shares traded is 566,000, with an average daily value of £16.6bn” (Flinders, 2007). Participant IM-5 said:

Twenty years ago, in addition to physical presence at the stock exchanges, you could only trade in local stock exchanges. Now, this restriction is no longer present as an obstacle for trading since harmonized rules across the board have made it easier to trade across the globe due to the virtual nature of the exchanges. In addition, IT advancement has reduced transaction costs, increased volumes, and increased velocity of trading.

Participants IM-4 and IM-757 both agreed that proximity to investments is less important now than before. IM-4 said: “No need to be near the investments anymore. The power of social media and the Associated Press has filled the information void”. Both IM-4 and IM-7 mentioned an incident that occurred in April 2014, where hackers broke into the social media accounts of the Associated Press and sent out a false message that the White House was under attack. They noted that, within 13 seconds, the market crashed. Thus, a short-lived hoax on Twitter briefly erased $200 billion of value from U.S. stock markets. Both IM-4 and IM-5 agreed that this reveals the vulnerability of financial markets to computerized trading programs that buy and sell shares without human intervention. However, they both felt that the benefits of automation outweigh the challenges. IM-4 also added: “I deal and trade through Twitter interactions with people I have never met”.

In the above sections, hedge fund players’ views on the impacts that the financial crisis has had on investment management were discussed, in addition to their thoughts on other change drivers, such as outsourcing and technology. In the next segment, hedge fund administration functions will be examined closely in order to compare and contrast the views of the interviewees with respect to the change drivers mentioned above.

57 IM-7 Trader /investment manager Bank
6.2 – Administrators

Consolidation of supporting industries. According to leading administrators (HA-1\textsuperscript{58} & HA-2), compliance and regulatory costs for global hedge funds have risen to unprecedented levels in Canada since 2007. Associated reporting requirements translate into additional work, which can be costly when sub-contracted. According to, a report produced by the Alternative Investment Management Association (AIMA), in conjunction with the Mutual Fund Association (MFA), and KPMG, the average amount spent on compliance in 2013 was at least USD$700,000 for small fund managers, $6 million for medium-size fund managers, and $14 million for large fund managers. Growth in the number of hedge fund administrators can be attributed to the increase in demand for outsourced solutions; administrators have responded by rising up to meet the challenge. According to the 12th annual Q4 Hedge Fund Administrator Survey as of 31 March 2013, conducted by eVestment, “Consolidation among the largest administrators continues, driven by regulation, demand for more sophisticated services, and the rise of direct institutional investment in hedge funds.” HA-1 and HA-2 both agree that increasing consolidation among service providers over the last six years is characterized by overlapping objectives: gaining economies of scale, opportunity to access better technology such as fund accounting, transfer agency, compliance, and client web reporting. In order to gain market share and increase capacity and services, administrators do not seem to be able to offer a comprehensive package of the services demanded by hedge funds, especially at institutional standards, and especially not when operating individually. Administrator HA-2 noted: “It is possible that, within the next five years, there will be six to eight providers carrying out 95% of the hedge fund administration work”. Getting ‘more for less’ seems to be the mantra of the post-credit crunch world. One of the Canadian Administrator participant’s (HA-3)\textsuperscript{59} perspective was that some smaller administrators are charging less simply to survive, but then later must merge with larger institutions in order to compete.

\textsuperscript{58} HA-1 Canadian Hedge Fund Administrator International (appendix 1)
\textsuperscript{59} HA-3 Canadian Hedge Fund Administrator International (appendix 1)
A Bermuda-based boutique administrator (HA-4) said: “The squeeze on profit margins for administrators has been forcing new products, such as insurance-based alternative investments. Many administrators are now offering extra services for free, such as data warehousing”. There has been a move towards a one-stop-shop model of service provision, wherein clients are able to get more useful information directly from administrators, rather than seeking it out from investment managers. For example, an investor’s question about how much their fund lost or gained in a particular period of time can now be answered by an administrator. The increasing consolidation of fund administration in the hands of a few large, wealthy banks makes competition even more intense through the construction of vast economies of scale. On the subject of economies of scale, Administrator (HA-2) said:

The IT costs are huge, but many of fund administration costs, including much of the IT, are fixed costs. So, the more clients the bank gets, the greater the cost recovery. This encourages banks to secure as many clients as possible by charging low fees through economies of scale. The consolidation trend is popular, because it allows the bigger to get even larger and attract more clientele.

In this context, it is becoming more difficult for smaller administrators to survive.

According to the administrator (HA-2), Ultra High Net worth Individuals (UHNWIs) and other large investors, such as pension funds and other institutional investors, have a major influence on hedge fund industry. This has an effect on the decisions of hedge fund managers, who are often persuaded by large investors to use administration services owned by these large firms. This also leaves no choice for the investment manager other than to use services such as prime brokerage offering from these large firms as they are offered as a bundle. JP Morgan and State Street are key examples given by Participant HA-1 of firms who do this. Recent consolidation has included administrators being taken on by banks and other financial institutions so that these institutions can move into other sectors like hedge fund administration and keep abreast with competitors. The two leading administrators (HA-1 & HA-2) shared the view that consolidation can both augment or enhance the existing business and fill gaps in product and service. HA-2 said that their successful acquisition of financial service providers has increased scale, compensated for the business and geographical segment they did not have, brought in similar start-up funds, and expanded the product segment. He continued that they have been able to employ extremely

\(^{60}\) HA-4  Boutique Hedge Fund Administrator –Canada and Bermuda (appendix 1)
high-quality technology and staff by merging sections of acquired businesses. He pointed out that many other administrators have followed suit. “The consolidation is continuing in order to increase AUM or take advantage of technology.” All administrators interviewed unanimously agree that this will continue to be a trend in the foreseeable future.

This consolidation has not meant that niche players are completely eliminated. Administrator HA-2 had some interesting thoughts on the role of the boutique administrator: “Niche players continue to survive in order to service start-ups. This decentralized structure consists of skeletal offices across the globe, picking up scraps from large players, and competing across different planes from the large players”. Participant HA-2 ends by saying succinctly: “boutique administrators take the scraps that are coming off the table”. Canadian Administrator (HA-3) shared this view, and added that smaller administrative boutique services are decentralized around the globe, more involved in corporate and trust, and do not represent the full shelf of services. He (HA-3) continued:

Usually a boutique consists of five to ten people, decentralized and linked through client relationship management, and mainly supporting the smaller start-up hedge funds. They adapt a volume-based approach. If the fund grows, the administrator cannot grow with the fund. So, the funds need to find a larger administrator. Hedge fund administration has to be done by a third party that is independent from the investment manager, and this has to be made mandatory. It creates a level of comfort for the alternative industry.

HA-4 summarizes a view shared by multiple participants, mainly administrators, on the decentralized approach of smaller, boutique-style administration:

There is always a place for the niche provider, though if they diversify too far, they might not survive. They thrive in sweet spots like corporate services and trust. They compete against different space. Now that most clients insist on certifications such as SAS 70 and S 5970, (official, not mandatory), more clients are happy to hire third-party administrators, even if they are small, as long as they are certified. (HA-4)

The following sub-sections consider the effects of regulation on the fund administration industry. In the wake of the financial crisis, as well as scandals like that of Madoff, there has been a multitude of regulatory changes in the industry that have resulted in additional compliance reporting requirements. In the words of administrator (HA-2): “Madoff is our leading sales person. There has been no shortage of work since the scandal. The compliance and reporting requirements have been increased by the regulators and we have still been assigned more tasks
than before the scandal”. This participant (HA-2) argues that, in a regulatory environment where more work is often demanded with no additional fees involved, administrators have had to find increasingly effective ways of meeting these requirements at minimal cost, using technology wherever possible.

**The effects of regulation on hedge fund administration clusters.** The ‘Ten Commandments’ were a set of principles found in Section 864 of the Internal Revenue Code of 1986 that regulated the offshore hedge fund industry, preventing offshore funds from being administered onshore. Since their repeal in 1997, this began to change. Administration began to slowly move away from offshore domiciles and towards the creation of centres of excellence, like Toronto and Halifax. Since the 2008 crisis, hedge funds have attracted considerable negative publicity. Investment manager (IM-1) stated that: “Hedge fund is a dirty word. Hedge fund managers are looked down on as fraudsters”. More significant than general public opinion, however, is investor attitudes. Participant IM-3 explained that investors have become very nervous since 2008, which has resulted in increasing demands on managers for greater transparency. The fund of funds profile was under particular scrutiny, since the liquidity of underlying funds has direct relevance for the holding fund. The increasing demand from investors that management strategies be more regulated and transparent resulted in a sudden influx of regulations and compliance reporting requirements, which were imposed on hedge funds globally. This additional compliance work has had a direct implication on the workload of the hedge fund administrators.

According to a report published by Delloitte (2011), the ever-changing regulatory market may be having a permanent impact on administrator demand. Some of the current regulations impacting the industry include: the Alternative Investment Fund Managers (AIFM) regulations, the hedge fund transparency act of 2009, the undertakings for collective investment in transferable securities (UCITS IV) directive, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the Foreign Account Tax Compliance Act (FATCA), tax reporting requirements, and revised guidelines for global financial reporting. While these new regulations have provided greater opportunity for transparency and reporting capabilities, they have tended to increase the workload for investment managers. “Hedge fund managers face a new and increasingly demanding regulatory environment. With the new regulations come new responsibilities and
requirements for communicating and reporting to both regulators and investors. The recent trend of outsourcing has initiated this work to be transferred to the administrator” (EFront, 2014). Ultimately, in order to capitalize on this growing client demand and changing regulatory environment, hedge fund administrators have expanded their product and service offerings by enhancing reporting, prime custody, and middle office services. The leading Canadian administrator (HA-2) stated: “In order to improve operational efficiencies, there is bound to be consolidations. I would not be surprised if we ended up [like] the audit firms, as the ‘Big Six’. The rise of compliance costs and shrinking margins has forced administrators to consolidate and reduce costs in order to be competitive.

**Outsourcing to lower-cost destinations.** Prior to 2007, the practice of outsourcing hedge fund administration functions was very limited. Since the crisis in 2008, many administrators have attempted to cut costs by outsourcing non-core activities. India has been the chosen destination for many because of its large number of skilled resources and high-quality, low-cost services (Outsource2india, 2012). However, some administrators have resisted this trend. For example, one leading administrator (HA-1) explained that they invested in technology solutions to perform these functions, rather than outsource them. Overall, interviewees observed that outsourcing has had a detrimental effect on administrative centre of excellences, including Toronto, Halifax, and Montreal. During the years between 2005 and 2007, many watched as back office functions were brought into Canada by global administrators and then subsequently de-bundled and sent to relatively lower-cost destinations. However, participants agreed that the administration cluster has been growing in Canadian centres of excellence as the offshore administration centres and high-cost destinations slowly decline. Administrator (HA-1), who favours technological advancement over outsourcing in handling non-value added functions, stated:

I feel no environmental threat from competitors in Canada compared to how I felt in my previous abode of work, Ireland. We attract fantastic staff, low turnover, and longevity of services. It is all worthwhile [in] the end. Compared to Ireland, Toronto is bigger [in terms of] specific areas of administration, but competition is not direct. I think the ones who outsource have a reason to do it, since technology was not supporting these administrators. Technology gives us portability and global infrastructure. Furthermore, we can control the head count, even though we still have to build them and it could be costly.
When asked about her thoughts on the sustainability of this model, Participant HA-1 said: “Our costs are not solely based on HR. We leverage off of the technology. Our staff is an integral part of the success. We use automation, rather than ticking and bobbing. So, the cost is not so high that the operating model is broken”. A different view comes from HA-2, the bank owned administrator:

Unless there is a significant shift in exchange rate, outsourcing to India will continue. Cost pressures are still significant. The outsourcing trend is continuing, but at a slower pace due to technological advancement. Currently, for every two jobs outsourced, one remains. In five years, it could be reduced to one for one.

It is interesting to see how the two leading administrators’ HA-1 and HA-2 have totally contradictory views on the subject of outsourcing. HA-3 confirmed that most fund accounting and transfer agency operations are outsourced. Fund accounting and financial reporting practices tend to be more mobile since the global adoption of the International Financial Reporting Standards, and both HA-3 and HA-2 intend to transition financial reporting to India as well. According to the auditor participant from one of the big four audit firms, (AA-3)\(^1\), this transition would have a limited impact on the industry, since the IFRS are similar to Accounting Guideline AcG-18\(^2\). However, administrator (HA-1) had a different opinion, explaining that there is a substantial gap in the offshoring model: “There is a steady stream of educated immigrants trained up. A client relationship person in Toronto, who acts as [an] intermediary, might not understand the fund accounting done in India”.

In addition to shifting operations to lower-cost locations, administrators have also used technology to manage the cost of service delivery. This is explored in the following section.

**Delivery of services through cyber space.** Leading hedge fund administrators in Canada (HA-1 and HA-2), both feel that technology is a key driver of clustering and declustering. Participant HA-2 states: “Due to changes in technology, there is, incredibly, a major enrichment in work flow. It is less important to have face-to-face interaction with service providers”.

\(^1\) AA-3 Senior manager- Big Four Audit (appendix 1)
\(^2\) Otherwise known as the Canadian Institute of Chartered Accountants (CICA) accounting guidelines.
Before the 2008 financial crisis, the pace of technology advancement was comparatively slower. Since the crash, cloud technology, web portals, daily net asset values/liquidity, and electronic filing have all increased tremendously. Hedge fund and investment management firms are currently (as of 2014) using cloud technologies more than they were a year ago (EzeCastle, 2013). Hedge funds are expected to increase in their spending on compliance technology by 35% between 2012 and 2015 (Aite Group, 2014). The auditor from the Big Four (AA-1) argued that, while technology can help firms manage cost, it can also increase competitive pressures when clients begin to demand the additional services that are now possible. Administrator (HA-2) pointed out that more and more clients are demanding daily processing, which was only an optional function in the past. This has posed a challenge, but also an opportunity to provide a niche service and cut the month-end net asset value (NAV) cycle considerably. This participant went on to say: “If we did business 17 years ago without technology, we would be out of business”. Coming from the one of the largest hedge fund administrator, a statement like this demonstrates the importance of technology in the current administration environment.

Participant HA-2 recognizes that, now, almost everything is web-based. He said further: “When you think about how everything is streamlined, there is a new challenge for risk and compliance. Systems now have to speak to one another”.

Considering that not all parts of an industry are equally affected by changes, the next section moves beyond investment managers and administrators to see how other hedge fund players understand the changing hedge fund landscape in relation to the financial crisis, technology, and offshoring. This section considers the perspectives of legal counsel, auditors, prime brokers, and operational due diligence personnel.

6.3 – Other Support Service Areas

Legal: face-to-face interaction. The regulatory response to the crisis has been a revenue opportunity for lawyers in the hedge fund sector because of the increase in compliance work they have to provide for hedge funds. According to Participant L-363, even though they are geographically dispersed, the top-tier legal firms service their clients online, banking on their

63 L-3 Partner –Legal Firm onshore /offshore (appendix 1)
‘brand’ name. It is interesting to note that outsourcing happens even in professions with specialized knowledge, although there are limits to the work that is suitable for outsourcing. All the legal counsels interviewed confirmed that legal firms use their branch network to service clients wherever possible, when the work does not involve specialized knowledge. Participant L-3, argued that face-to-face contact is important. However, L-1 argues that brand recognition in legal matters is more important than face-to-face interaction. L-1 stated: “we are sending legal jobs to Cayman. We leverage off of each other, but we do not require geographical proximity to our clients in most cases”. A leading legal counsel (L-4) who is a partner at an international legal firm said that they use online processes to create, review, and sign off on fund incorporation documents, supported by conference calls. However, L-4 admitted that face-to-face interactions can sometimes prevent occasional problems caused by ‘noise’, where information is misinterpreted through human error. L-4 explained that they try to mitigate this issue by having a client service manager or the fund launch coordinator act as a separate set of eyes.

According to an article published by Lawbiz (2012), legal firms are forming alliances and becoming globally dispersed in order to accommodate the changing global regulatory regime. This article describes how, in particular, the offshore law firms in the Cayman Islands are finding their clients increasingly interested in setting up funds in low-tax onshore European jurisdictions like Ireland, Luxembourg, and Malta. As a result, smaller European hedge funds and start-ups are beginning to fear that the more regulated environment could make it more difficult for them to raise money in their home market and are thus trying to offer their products to US investors (Risk net 2013). These trends have created a challenge for law firms, which have traditionally operated in jurisdictional silos. In order to be competitive and offer seamless advice to cross-jurisdictional clients, and at the same time be flexible enough to adjust in the face of the ever-changing hedge fund demographics, the major legal brand-name firms have developed a decentralized approach to ensure that they maintain their leading edge. In early 2013, legal practices Seward & Kissel and Simmons & Simmons agreed to work together to provide advice to hedge funds in multiple jurisdictions. In order to ensure that managers have access to expert advice on American and European issues, this alliance placed members of each firm on client

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64 L-4 Partner-Legal Firm-onshore/offshore (appendix 1)
teams (Hedge Fund Review, 2012). This alliance is also seen in legal circles as an effort to stave off competition from Schulte Roth & Zabel, the only top-ranked law firm with a significant hedge fund practice on both sides of the Atlantic. In the offshore world, Maples & Calder has a significant presence in Ireland, having opened a Dublin office in 2006 and been an advisor on approximately one third of all Irish fund structures established in 2011. Others have followed this development. In 2010, Walkers opened a Dublin office, where it now has around 30 lawyers. Ogier is taking a slightly different path. Earlier this year, it became the first major offshore law firm to open an office in Luxembourg, the leading domicile of the onshore European funds industry.

Irrespective of where they operate, changing regulations and shifting industry standards have created plenty of work for lawyers in the past year (2013), according to participant (L-1). Not only are the leading legal firms able to cater to clients online, they are changing their operating models in order to diversify their offerings and cater to cross-jurisdictional clients. This move encourages the de-clustering of legal firms and encourages the re-formation of these brands through affiliations and partnerships.

According to Porter (2000), a cluster boundary can range from “a single city or state to a country or even a group of neighbouring countries”, which takes into account the effect of global markets. In this context, auditing is a statutory requirement for hedge funds. In the following section, the auditing perspective is discussed.

**Audits: globally dispersed in order to serve a global industry.** The hedge fund industry is led by four audit firms, often called the ‘Big Four’: Deloitte, PricewaterhouseCoopers (PwC), Ernst & Young, and KPMG. These firms collectively employ about 690,000 globally (HFR, 2013), and are spread out worldwide. The top firm, PwC, employs more than 184,000 people in 157 countries. Mike Serota, co-leader of the global hedge fund practice at Ernst & Young, says "Our ability to provide services to clients no matter where in the world they operate is clearly unique" (HFR, 2013). He continues on to say: "We see this as a global business and we have organised ourselves to work with clients in that way". KPMG, which has a particularly strong hedge fund practice in Europe, had plans to double the size of its alternative investments
business in the US by 2015. Recently KPMG acquired Rothstein and Kass, which was considered as the fifth largest accounting firm, moving to the top spot in the hedge and alternative services industry (Wall Street Journal June 3, 2014). According to Robert Mirsky, global head of KPMG’s hedge fund practice states, the AIFM directive will introduce a new era marked by the cross-border regulation of hedge funds. He adds that KPMG has been seeing a great amount of demand for advice on the directive from managers on both sides of the Atlantic. According to reports published by HFM Week (2013), US managers will soon be able to apply for a ‘passport’ to market funds domiciled in the EU across the 27 member states, starting in 2015. Having many geographically-dispersed offices promotes the de-clustering of financial services offered by the audits. However, based on the perspectives of several participants, as well as information gathered through published sources, geographical dispersion seems to be most common way of coping with competition and ensuring that audit firms consistently retain their spot in the ranks.

The consolidation of the Big Four audit firms happened well before the 2008 financial crisis. However, according to audit participant (AA-3), they have continued to take over specialized firms post-crisis in order to provide a variety of services that are not core to their responsibilities in order to generate revenue. This interviewee also confirmed that clients tend to be price-sensitive. Moreover, it is becoming increasingly well-known that many operations can be done online, which further erodes the advantages of physical branches. A partner from the Big Four (AA-4) said:

Face-to-face interaction can be substituted with good customer service. The auditor model is also outsourcing to other parts of the world by branching out into countries such as India. India is still much cheaper in providing some of the non-value added audit services, such as accounting, financial reporting of transactions and activities, segregation of duties, authorizations and approvals, reviews, and reconciliations. Outsourcing of audits to India is ongoing.

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65 According to a KPMG press release: “KPMG LLP, the U.S. audit, tax and advisory firm, completed its acquisition of certain assets of Rothstein Kass and the admission of most of the former Rothstein Kass principals and employees. The combination brings together KPMG’s expansive alternative investments presence and global reach with Rothstein Kass’s hedge fund industry expertise and personnel. With the addition of Rothstein Kass’s capabilities and team members, KPMG becomes a market leader in providing the highest level of service to hedge funds of every size and at every stage of growth” (KPMG Press release 7/1/2014).
66 AA-4 Partner -Big four audit (appendix 1)
He continued on to say: “for instance, even Canada is still comparatively much cheaper than New York. Clients in the U.S. want Canadian auditors due to costs. Due to price differentials, there is no reason why, internally, we cannot compete”. Participant AA-2, who is based in Toronto, agreed: “we can provide audits cheaper in Toronto. Fund managers in the US, for a Cayman-domiciled fund, will not hire an auditor from Cayman Island due to expense. They prefer either a Canadian or US auditor. The majority of fund managers and decision makers in Canada insist that they want a Canadian auditor”.

The trend of decentralized auditing and financial reporting has been facilitated by recent developments in the accounting world. For example, (AA-3) said that the increasing internationalization of business has sparked a rising interest in the development of a common language for financial reporting. This participant calls this ‘accounting convergence’, which is the process wherein accounting standards are developed so that they are able to lead to the same fact or purpose by highlighting the similarities between national, regional, and international audits and consultancy practices. Participant AA-3 argued that the global IFRS implementation will promote decentralized structure and make it so that audits can be done as per the requirement of the hedge fund domicile, and at a lesser cost. He continues on to say that the existence of the IFRS means that “you do not have to train staff on different accounting rules, such as Canadian GAAP [generally accepted accounting principles]. The transition into IFRS has not been too difficult, but the benefits of using a universal accounting method are priceless”. Furthermore, earlier in 2014, the legacy accounting bodies in Canada, namely the Canadian Institute of Chartered Accountants (CICA), the Certified Management Accountants of Canada (CMA Canada), and Certified General Accountants Association of Canada (CGA Canada) announced that they have merged under a unified organization called ‘Chartered Professional Accountants of Canada’ (CPA Canada). Audit partners from two of the Big Four accounting firms (AA-1, AA-2) both feel that the merger of these three professional accounting bodies (CICA, CMA Canada, and CGA Canada) under common regulations and into a single entity (CPA Canada) lifts the barrier of mobility between regions and possibly surrounding countries for accounting personnel. This is a significant departure from the past, when the requirements required stringency when selecting accounting professionals.

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67 The International Financial Reporting Standards (IFRS) were designed as a common global language in business affairs so that company accounts are understandable and comparable across international boundaries.
Over the past two decades, both national and major regional financial centres have become increasingly international in orientation and function. These centres have grown because of the expanding volume of financial transactions among global banks and institutions like prime brokerage companies, as well as due to the increasing global integration of monetary flows in the context of deregulated markets. According some scholars, the three central ways that these financial institutions have managed to embrace regulatory changes are through technology, product innovations, and product development (Thrift and Leyshon, 1992; Martin, 1994). The prime brokerage industry today is facing challenges brought on by the shifting composition of the hedge fund industry and changing regulatory requirements for banks and dealers. Hedge funds are continuing to diversify their prime broker exposure in order to reduce their counterparty risk. The collapse of several firms during the crisis that accounted for a large share of the prime brokerage business demonstrated the need for funds to spread out their risk. In the following section, the evolution of the prime brokerage industry in the face of events that have reshaped the hedge fund industry will be discussed.

**Prime brokers: using multi-prime brokers to increase supply chain players.** The prime brokerage industry can be defined as the “investment banks which provide financing, securities lending, asset servicing, brokerage, capital introduction and other services to hedge fund managers in all the major financial centres of the world” (Global Custodian trade publication). In recent years and especially after the 2008 crisis, there has been a growing trend of consolidation among prime brokers. New capital regulations, rising costs of derivative trading, low interest rates, and reduced use of leverage have forced smaller players to consolidate. Olar (2012) demonstrates that 74% of prime brokerage firms are based within the United States, 13% in London, 3% in Canada, and 2% each in France, Poland, India, Russia, and Germany. The prime brokerage industry has changed dramatically due to the significant increase in the number of smaller firms, including the so-called mini-primes. In 2006, the top two prime brokers, Goldman Sachs and Morgan Stanley, accounted for 52% of hedge fund assets. In 2012, they accounted for less than 33%. Medium-size prime brokers have been the beneficiaries as hedge funds diversified away from the giants, and international firms such as Deutsche Bank and Credit Suisse have made large inroads in the Americas. (HFR, 2013)
Despite the increase in new, smaller firms, the leading investment banks continue to be major players in the prime brokerage industry (Global Custodian Survey, 2013). According to Ron Suber and Aaron Vermut of Merlin Securities (2010), the prime brokerage business is divided into four tiers of firms, including: major primes (for example, Credit Suisse, J.P. Morgan, Morgan Stanley, Goldman Sachs, and Deutsche Bank AB), big primes (for example, Barclays, BNP Paribas, Bank of America Merrill Lynch, Citibank, Fidelity Investments, and UBS), mid-primes (for example, Jefferies Group and Merlin Securities), and independent mini-primes (for example, Conifer Financial Services and PCS Dunbar Securities). There are also large firms with mini-prime business (for example, BNY Mellon, Royal Bank of Canada, and Lazard). Before the crash, hedge funds mostly dealt with only one prime broker, even though there was a greater risk of this prime broker going under. At this time, there were no restrictions on derivatives, and hedge funds were providing a broader range of strategies. Attitudes changed after the failure of Lehman Brothers and Bear Stearns, prompting investment managers to think more seriously about technology, service levels, and what they want most from their prime broker partners. After the financial crisis and the collapse of Lehman Brothers and Bear, 60% of market shares fell under the ownership of the Big Four (HFR, 2013). In recent years, many hedge funds have begun using a multi-prime model in order to reduce risk, which means that hedge funds have begun to employ multiple prime brokers. Risk has been spread out in order to reduce it. Funds increasingly seek independence from their prime brokers to show their investors that they are autonomous entities and so that they have business continuity in the event of a bank failure.

Supporting industries play a major role in the success of a cluster. Prime brokers no longer need to be geographically close to their clients in order to provide services. Hedge funds continue to rely on prime brokers to clear and report trades, but also want to establish themselves as independent firms that can function successfully with multiple prime brokers. Technology has forced prime brokers to act independently from other supporting industries, including administrators and investment managers. This is evident in many areas, including trading systems, reporting, and risk management, where technology has emerged through both third-party providers and other players within the hedge fund industry to support the operating environment needs of hedge funds. In the absence of stock exchanges and the existence of virtual markets, technological advancement has helped prime brokers and investment managers to easily transport information and execute work seamlessly. It is interesting that all prime brokerage
Interviewees have suggested that proximity is irrelevant in dealings between hedge fund clients and prime brokers. This assumption seems questionable when analyzed closely, because of the nature of the hedge fund industry’s business model. Legal participant (L-3) stated that prime broker relationships with hedge funds create a potential channel for information to pass from investment banks to their hedge fund customers, because hedge funds will often have many transaction brokers that provide investment information in compensation for commission fees. This interviewee also pointed out that prime brokers have recently begun to provide other non-traditional services to hedge fund managers, such as providing office space and capital induction. Speaking about bank-owned prime brokerage in Canada, he confirmed that some major prime broker firms offer office space in their building, provide conference rooms, and give technological support. Furthermore, some prime brokers also assist new hedge fund clients in gathering initial investment assets from their investor contacts and other financial institutions. In some cases, it is not abnormal for the hedge fund client to have invested in the prime broker through a fund of fund transaction. Resultantly, while these hedge fund institutions may be independent financial institutions, they often appear to be and operate as a subsidiary of the prime broker investment banking institution.

Hedge funds have been a consistent source of enormous profits for investment banks (Wall Street Journal, 2010), and increased scrutiny has been paid to their dealings with hedge fund clients, and what they are willing to do to secure their business. Federal regulators in the United States issued the ‘Volcker Rule’ provisions in the Dodd-Frank Wall Street Reform and Consumer Protection Act to prohibit proprietary trading by banking entities, as well as to restrict these entities from sponsoring, investing in, or having certain kinds of financial relationships with hedge funds, private equity funds, and similar funds. This is only one example of initiatives that have been taken to govern hedge fund-related practices in recent years. The Madoff investment scandal and the collapse of Lehman Brothers and Bear Stearns could have arguably been avoided through scrutiny from an independent third party, such as an operational due diligence (ODD) team. In the past five years, there has been a surge of demand for oversight services like ODD, which is a function that can exist in-house or be outsourced to a third party. In the next section, participants’ views on the evolution of the operational due diligence process since the 2008 crash will be discussed.
Operational due diligence: the proximity argument. The 2008 financial crisis revealed some shortcomings that were unrelated to investment professionals but connected to managers’ operations, business, and controls (Corfinancial 2013). Over the past four years, institutional investors have placed an increasing emphasis on a hedge fund’s operational and business infrastructure when deciding whether or not to invest in it. Many institutional investors who act as intermediaries for investors, including hedge fund of funds, endowments, pensions, and investment consultants, have created an internal operational due diligence officer (or team) role. However, an increasing number of fund investors have been outsourcing operational due diligence to third-party service providers. This has created an opportunity for the establishment and growth of operational due diligence firms as supporting players in the hedge fund industry.

Recent research by Capco (2003) has shown that more than 50% of hedge fund failures are caused by operational issues. According to Quinn and Wilson (Feb 2009, Telegraph), the auditors of Bernie Madoff’s USD$50bn exclusive fund were an unknown firm consisting of a 78-year-old retiree living in Florida, one accountant, and a secretary, all technically operating from an 13-foot-by-8-foot office in the north of New York State. This should have greatly alarmed the individuals, charities, and hedge funds that often fought hard to gain access to his consistent 10% to 12% annual returns. The majority of these investors had never met Madoff, yet were willing to hand over their life savings due to the allure of his fund. Many accessed the Madoff machine through so-called ‘fixers’, who then gave access to one of seven feeder funds, each of which had recognised auditors, giving the fund an air of respectability. Unfortunately for these investors, the bulk of the assets were held in Madoff Securities. Widespread familiarity with this fund and its operations could have prevented this occurrence. Developing a familiarity with a fund does not necessarily mean that parties involved must be closely geographically situated. Familiarity can be gained through the process of due diligence. The operational due diligence participant (DD-1) pointed to the importance of distinguishing between familiarity and proximity in the current state of the hedge fund industry. According to her experience, familiarity with the client is more important than being close to them. Using this logic, minimal face-to-face contact coupled with online interaction seems to be a perfect model for the ODD process. A prominent online ODD firm, Due Diligence Online LLC, supports this argument. Dan Bradbary (2012), the CEO of Due Diligence Online, a company that specializes in virtual data room services, states: “Investors need to perform due diligence on every aspect of an investment strategy and not just
the investment itself, but the brokerage firm, bank, accountant, and anyone else who might have access to or control over an investor’s money”. Offshore directors are meant to be ‘watchdogs’ on behalf of the investors. However, investors are beginning to question fund managers with respect to fund governance, especially in light of recent hedge fund frauds, liquidations, and missteps. Bradbary continues on to say:

Since the financial crisis, concerns about hedge fund governance have focused on transparency, operational practices, and the growing view is that fund directors do not effectively monitor fund managers. An analysis of thousands of United States securities filings by The New York Times shows that dozens of directors sit on the boards of 24 or more funds in the Caymans, which individually are supposed to be overseeing tens of billions of dollars in assets. Some hold more than 100 directorships and one particularly busy director sits on the boards of about 260 hedge funds.

The Toronto lawyer (L-3) proposed that proper internal resource allocation and management oversight in hedge fund operations could have prevented insider trading scandals like that of Galleon Group in 2009:

The benefits to a hedge fund’s proper operation of internal resource allocation and management oversight are crucial. This can be reaffirmed by using an ODD firm, who will be able to probe into the operations of the hedge fund provider and expose any inefficiency that could result in the failure of the hedge fund. Relying on the FBI or the Securities and Exchange Commission to do the job is not enough. It is an expensive lesson to learn.

Job segregation is an integral part of a corporation’s internal controls, and this is no different for hedge funds. The participant (DD-1) argued that, when considering operational due diligence processes, the possibility of conflicts of interest in the provision of operational due diligence services to both hedge funds and investors should be considered. Having an independent third-party consultant assisting with operational due diligence reviews can add to the already extensive regulatory and compliance costs faced by hedge funds currently, but the benefits can be numerous.

Before the financial crisis, hedge funds returns were high and fund governance was not a priority for most investors. Since the crisis, fund governance and ODD firms have become a major supporting industry, forming a cluster where geographical proximity has taken prominence. Participant DD-1 said: “Face-to-face contact is important in operational due diligence. Toronto is
close to New York, and that is the reason why you can find ODD firms in Toronto. Co-sourcing also exists, where internal contacts will work with an external ODD”. DD-1 stated: “ODD is part of the fund governance regime”. In the next five years, a shift will likely occur towards increasing corporate governance issues, applying more stringent corporate secretarial services, and requiring experienced fund directors for even smaller funds that are starting up. The dangers of over-reliance on hedge fund regulation to compensate for an investors’ own lack of due diligence efforts should be frequently considered. There is a strong likelihood that, in the near future, having an external team performing ODD functions could become a mandatory requirement in order to reduce the over-reliance on hedge fund regulation. Resultantly, even more third-party ODD firms could soon join the hedge fund service cluster.

Directors are quickly becoming a crucial part of the industry. The current trend is to pay a nominal amount to buy an independent director’s services, just for the sake of satisfying the regulators. This move is often called ‘using rented directors’, and is not welcomed by institutional investors. Smaller service providers are often not considered to be ‘institutional quality’ by institutional investors. ODD participant DD-1 stated:

We are serving both global clients and Canadian clients, and investing in global funds. Face-to-face contact is very important. We are able to be in touch with clients on a regular basis. Clients also sit in meetings with us. We have [a] global footprint. We have offices and presence everywhere. It does not matter where you are located. We market to global allocations. In addition, after the Madoff scandal, more US managers have been adopting third-party administrators, whereas five years ago only a handful had an ODD team. Currently, every single investor is doing ODD, at least on some level.

ODD can be performed online through virtual data room (VDR) technology, which are online data repositories that provide clients with secure document-sharing and storage solutions geared toward operational due diligence. Firms offering VDRs first appeared in the early 1990s. Dan Bradbary (2012), the president of Due Diligence Online LLC, which is part of V-Rooms, a virtual data room company, said: “Adoption rates were slow at first, but in the last several years the technology powering VDRs has become very robust, and penetration rates have increased significantly”. Market statistics published by IBIS World Canada (2012) show that this industry’s revenue is close to a billion in the US. Furthermore, as of 2013, there are 213 companies within the industry with a growth rate of 16% per annum, which support corporations
like Merrill Lynch. Because VDRs enable firms to communicate with clients easily and securely, they are being used in an increasingly wide variety of applications. For example, VDRs are now being used extensively by financial and legal professionals to facilitate mergers and acquisitions transactions, corporate restructurings, and other financial and litigation-related matters. Security practices are similar to those used in online banking. Clients tend to appreciate the increased trust and disclosure levels that VDRs enable. IBIS World Canada (2012) anticipates the industry to continue to grow strongly, even in the face of weak financial markets.

6.4 – Conclusion

Under the pressures of global competition, deregulation, and technological innovation, a wave of merger activity, consolidation, and concentration has been sweeping through financial and capital markets, reshaping the monetary landscape in the process. While the central trend of these processes seems to be the centralization of financial systems, institutions and flows, it can also be viewed as a process of dispersion. Upon analysis of the industry experts and participants’ views, there seems to be no indication that a cluster is being developed or retained in the Canadian hedge fund industry. In fact, the perspectives of these key industry players seem to tend more towards the interpretation that the industry is experiencing a process of de-clustering. Investment managers seem to de-bundle their work load by outsourcing middle office tasks and trading desks, as well as by employing third-party administrators. Administrators have been outsourcing many non-value added functions. Accounting firms, who have had their practices seriously restricted by the Sarbanes-Oxley Act in the United States, are seeing this regulation relax. They have been branching out globally and using low-cost branches to do non-value added audit work. Legal service providers use technological advances wherever possible to reduce face-to-face interaction, thus saving travel costs. Fund managers are diversifying their counter-party risks by employing multi-prime brokers. Newer players such as operational due diligence personnel are beginning to play a large role in the industry.

Regulations force the implementation of controls; however, creating an environment with automated controls is expensive, since a great deal of technology is required. Since they are able to afford automated controls, the implementation of controls tends to favour larger players, which makes it increasingly impossible for small niche funds to survive. Regulations and compliance mechanisms that are forced on the industry places more pressure on fund managers
that then gets passed on to third-party administrators. Today, almost all aspects of the value chain can be performed without face-to-face interactions and online. According administrator (HA-2): “Ten years ago, if we were to do the same work [that we are doing] now, there would have been pressure from [a] fee standpoint”. The operating model of the hedge fund industry has become quite complex in the past six years, which means that cluster policies often fail to identify and account for it. In order to evaluate the lack of scale of the Canadian hedge fund industry, it is crucial to further investigate variables that are specific to Canadian financial centres and identify factors that may be causing the industry’s lack of growth.
Chapter Seven: Evaluation of the Canadian Hedge Fund Industry Cluster

In the previous chapter, a definition of hedge fund clusters was provided and some answers to two of the present study’s research foci were reviewed: i) the usefulness of cluster theories for understanding changes in the hedge fund industry, and ii) to what extent we could use traditional cluster theory to identify and measure scale. The discussion focused on three main external drivers that influence the Canadian hedge fund industry – changes in technology, the 2008 financial crisis, and outsourcing – and explored how they could be used to explain changes in the size and growth of hedge fund clusters worldwide. The goal of the present chapter is to provide specific answers to the rest of the research questions through data collected through interviews with major players of the hedge fund industry and through published secondary data. This chapter will move from a general discussion of cluster theories towards a more concrete focus on the Canadian hedge fund industry. A systematic inquiry will be undertaken in order to discover and examine the factors directly causing the industry’s lack of scale.

The first half of the chapter will explore the key indicators that explain the Canadian hedge fund industry’s failure to create a sizeable competitive cluster relative to its peers. Lack of scale will be considered in relation to fund size, industry size, and investor demand. This will be followed by some possible reasons for the lack of growth in scale, based on the feedback of interviewees, in order to isolate and segregate the underlying themes. The latter half of the chapter will focus on the second research question, which assesses the cluster competitiveness of the Canadian hedge fund industry in order to highlight required institutional and policy changes. Interviewee’s perspectives on the interconnectivity of factors and their overall effect on the cluster will be examined in order to put forward prescriptions for what could make hedge funds in Canada a successful cluster. The implications of these potential changes will be analyzed, and their possible effect on the government and other players will be scrutinized.

In the following segment, the claims of participants will be validated against published empirical data that suggests ways to measure the lack of scale of the Canadian hedge fund industry.

7.1 – Measurements of Scale of the Hedge Fund Industry in Canada

The scale of the Canadian hedge fund industry in comparison to other similar jurisdictions can be understood using several measures. Fund size is one such indicator. A micro-level indicator
could be the growth of Canadian domiciled funds in comparison to other funds across the globe, while a macro-level view could examine industry size. Lastly, accentuation on investors, who are a vital element for the growth potential of the hedge fund industry, gives an overall indication of the attractiveness of the hedge fund cluster. Thus, a scale measurement exercise for the Canadian hedge fund industry must be carefully conducted, considering the objectives of the industry and then comparing relevant metrics to the global arena in order to evaluate its performance against these objectives. All of the above-listed measurement variables and practices will be reviewed in detail below.

**Fund size.** The size of a hedge fund can speak to its ability to draw in investors and retain them. Heinz (2013), president of Hedge Fund Research (HFR) and a leading authority on the global hedge fund industry, argues that hedge funds domiciled in Canada are nowhere near the point where their scalability is in question (HFR 2013). He points out that there is tremendous room for asset growth and predicts that this will continue to be strength for Canadian funds in the future. Heinz also contends that the Canadian-managed futures industry is only in its infancy and that there are some extremely talented managers in Canada. Hirsch (2012), CIO of Blumont Capital, the manager of one of the leading hedge funds in Canada, takes a different perspective; she argues that small funds have limited appeal for institutional investors, who need proof of scalability and for investors in general, who associate size with safety (Opalesque Canada Roundtable, 2012, p13).

IM-2, a pension fund manager in Canada, states that “hedge Fund in Canada is a ‘cottage industry’. No large-name investment managers are here to validate and attract capital”. An opposing view is held by IM-3, a leading investment manager in Canada, who asserts that the industry’s growth can also be related to the increase in hedge fund managers in Canada. At a recent conference held in October 2014, Gary Ostoich (AIMA) stated that Canadian hedge funds have been attracting more talented managers in recent years from the trading desks of large financial institutions in Canada. Historically, this could have been attributed to the ‘path dependence’ of the hedge fund industry’s performance since its inception. Today, it is prudent to consider the overall hedge fund industry when evaluating its scale.

**Industry size.** A look at industry size compares the global ranking in terms of assets under management (AUM) of a hedge fund industry with others in the same cluster category.
Globally, hedge funds’ AUM total $2.4 trillion as of October 2013 (Barclay Hedge 2014). By the end of 2012, Canadian hedge funds totalled approximately $30 billion AUM, while their counterparts in the United States had a cumulative AUM of over $1.5 trillion (HFM 2013). It is also important to note that the population of United States is roughly ten times more than that of Canada (HFM Oct 2013), but its hedge fund managers oversee roughly 45 times more than the average Canadian hedge fund size. These discrepancies indicate that there is likely a serious lack of scale within the industry in Canada.

Sindberg (2012), the Managing Director at Donville Kent, (Opalesque Canada Roundtable, 2012, p13) explains, that Canada was ‘late to the party’. He stated: “The hedge fund industry did not really emerge here until the mid-1990s. As with any industry, it takes time for participants as well as service providers to mature and catch up with global peers”. Sindberg’s view of the relationship between population and number of hedge funds is that, at 35 million people, Canada’s population is relatively small, and the investor base can only support an appropriate number of funds. Home to only about 200 hedge funds, he believes that Canada’s disproportionate number of extremely talented managers could easily be managing ten times the assets if they were based in New York or London.

Each of the four administrators interviewed for the present research agreed that there is a cluster of service providers in regions like Toronto and Halifax. All leading administrators – including CACEIS, Citco, Citi, Columbus Avenue Consulting, Commonwealth Fund Services, Goldman Sachs Group Inc., State Street Corporation, SS&C Technologies, Pinnacle Fund Administration, Prime Management Group, Apex Investment Management, and UBS – have opened up offices in Toronto in the last ten years. They each have head offices outside of Canada, but handle their core functions from Toronto. Mitsubishi UFJ Trust and Banking Corporation, Citco, and Conifer Financial Services each have offices in Halifax, and Maples Fund Services has offices in Montreal. However, participant HA-1 points out, administrators generally support the hedge fund industry as a whole and not just the country in which they are located. For example, this participant’s firm supports only a few hedge funds domiciled in Canada, the rest being onshore and offshore funds that are domiciled elsewhere in the world. In evaluating the strength of the Canadian hedge fund cluster, this composition of administrators can be considered as concentrations in their own right.
**Investor groups.** Hirsch (2012) agrees with the general consensus of the interview participants that Canadian investors are very conservative and seem to prefer funds distributed by large, well-recognized, brand name institutions like banks or established mutual fund companies (Opalesque 2012). She states that this conservative approach is certainly an impediment to the growth of independent hedge fund companies in Canada.

According to Prequin (2013), a record 66% of global hedge fund assets under management now come from institutions. Majit (2012) from Neuberger Berman states:

> Institutions such as Canadian pension funds, some of which in the past had hedge fund investment, have been slow to put their money into the domestic industry. They prefer to pick and choose from a much larger pool of managers in New York, Boston and elsewhere.

Notably, four of the country’s largest public pension plans with combined assets exceeding $440 billion do not allocate at all to Canadian hedge funds. According to participant IM-2, the pension fund manager, institutional investors tend to not be confident that Canada is ‘Institutional Standard’. A white paper published by one of the leading hedge fund administrators SEI (Feb 11, 2008) defines “Institutional Standard” as follows: “where managers fail to separate the roles of chief compliance officer and COO, absence of a quality business continuity planning, substandard technology infrastructure and consist “not that polished” investor relations teams” - This has significant impacts; for example, almost all of the $10.4 billion that the Canadian Pension Plan Investment Board (worth $170.1 billion) gives to external public market managers goes to non-Canadian hedge funds (Pension Pulse, 2013). Quebec's $159 billion Caisse de depot et placement pension fund and the $117.1 billion Ontario Teachers’ Pension Plan have also traditionally looked abroad for their hedge fund exposure. IM-2, the pension fund manager, said that while pension plans like the Ontario Teachers’ Pension Plan (OTPP) once frequently gave money to Canadian hedge funds, they currently seem to be overexposed to ‘alternatives’ in the Canadian market.

In the segment above, the scale was segmented for the purpose of defining it categorically. In addition to the general change factors affecting the global industry – technology, the crash, and outsourcing – that are outlined in Chapter 6, there also seem to be internal factors that are

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68 Examples of ‘alternative’ investments include: real assets (including real estate, real estate land, and infrastructure), commodities, private equity, and structured products (including credit derivatives).
specific to Canada. These variables are viewed by the present study’s participants as probable causes for the Canadian hedge fund industry’s lack of growth. These specific factors are discussed in detail in the following section.

7.2 – Reasons for the Lack of Scale

The lack of scale of the Canadian hedge fund industry could be caused by one or a combination of multiple drivers. It could be a challenge to accurately quantify the effects of a specific driver on a particular determinant of scale as each driver could disproportionately affect each constituent of a cluster. In this section, participants’ perspectives on potential explanations for the lack of scale are explored in order to estimate the effects of each driver on the issue at hand.

Provincialized regulations. Most interview participants agreed that increased regulations on hedge funds could be considered as a pull factor for financial centres. IM-4, argued that these high levels of regulation are what makes Canada’s regions some of the most sought-out financial centres in the world. However, participants agreed that, in some ways, provincialized regulations can impede the growth of Canadian hedge funds. Participant IM-3 stated: “Regulations are viewed by investment managers as barriers of entry into individual provinces”. He elaborated that many new launches are now being inundated with audits by provincial regulators like the Ontario Securities Commission even before being launched.

Two investment managers, IM-1 and IM-5, stated that the provinces generally oppose harmonization at a federal level, since each province has its own mandate. IM-1 explained that harmonization could lead to loss of revenue for the provinces. IM-1 elaborated:

Investors across provinces cannot invest in other province other than their own, unless the investment manager registers in that particular province resulting in increased costs of registration and compliance. The hedge fund managers are not willing to recruit managers from outside of Canada to co-manage their funds as they have to register in Canada if they were to provide their services in Canada.

The two investment management respondents generally agreed that the provincialized structure of current regulations governing hedge funds seems to contribute to the lack of scale of Canadian hedge fund industry.
IM-4 admitted that Canada regulation and oversight can be pretty strenuous. He acknowledged that the regulations reduce the number of Ponzi schemes, but also indicated that they do slow the growth of hedge funds overall. However, he admitted that “the rest of the world is just catching up with the regulations which Canada had implemented proactively a while ago”. He concluded by pointing out that growth in the hedge fund industry worldwide might not be $2.4 trillion if other countries were as tightly regulated as Canada.

**Investor attitude.** Porter (1990) argues that the sophistication of demand is much more important than the size of demand. When a sector operates in a sophisticated and demanding domestic market it is compelled to innovate and sell higher quality goods because the market requires it. As mentioned in section 7.1, Canadians seem to be conservative in nature when it comes to investing. However, this trend does not explain why the High Net worth Individual (HNWI) segment of the population tends to be averse to Canadian hedge funds but not to other, riskier alternative investments. According to participant IM-5, an investor who also manages investments for private clients says HNWIs tend to invest in investments such as private equity, real estate, and venture capital. IM-5 also confirmed that multi-family offices (MFOs69) in Canada invest heavily in investments like exchange-traded funds and real estate, but not in hedge funds. IM-1 explained this by saying: “Hedge funds are designed to hedge against the risk to provide uncorrelated, absolute returns, or in simple terms, not to lose money when everyone else does. This has not been the case during the crash”. As mentioned in section 7.1 above, the major pension funds in Canada tend to shy away from Canadian hedge funds, and explain this by pointing to hedge funds’ supposed lack of institutional standards.

Morris (2012), CEO of Ewing Morris, gives one explanation as to why the ‘long only’ model typical of mutual funds seems to flourish in Canada. “Traditional long-only investment managers are compensated as a fixed percentage of assets and incentivized to go about gathering as many assets as possible”. He indicates further that the products being offered to potential investors might not even include hedge funds.

It can be concluded from these responses that the lack of scale in question can be attributed to a general lack of demand for Canadian hedge funds. There are indications that this could be a

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69 Multi-family offices are usually independent organizations that support multiple families in managing their entire wealth.
reputational issue, stemming from the perceived quality of managers and other supporting players in the industry.

**Competition and rivalry through banks.** Participant IM-4, said: “Canadian banks are major competitors for hedge funds and promote mutual funds alone. The Big Five are not interested in hedge and thus do not offer hedge funds through their banking platform”. Thus, the lack of scale could be explained by the constellation of financial actors in Canada that disadvantage hedge funds relative to large banks. The distribution network Fundserv through which all mutual funds are distributed is owned by the major Canadian banks. There is a minimum asset requirement to get onto this distribution platform in order to distribute funds among investors. As noted in section 7.1 above, most Canadian hedge funds have less than the required assets to qualify. There are a number of other barriers of entry created by the banks, such as the track record of funds, which stops hedge funds from being able to use this bank-owned distribution network.

Participants IM-1 and IM-3 both agreed with the idea that the banks offer the most competition for hedge funds. They are both of the opinion that cartel behaviour among banks, either direct or indirect, has had an undeniable impact on the scale of the Canadian hedge fund industry. Additionally, banks seem to own many administration firms and all major Canadian prime brokers, who both form hedge funds’ value chain.

It is important to evaluate the strength of the banking sector in Canada in order to gauge what the hedge fund industry is faced with as competition. One might have expected that competitiveness of financial services in Canada would positively influence the strength of the hedge fund cluster. On the contrary, the strength of the Canadian banking system and its competitiveness in the financial services sector seems to have substantially contributed towards the lack of scale of hedge fund growth in Canada. Fig-24 & 25 illustrates how Canadian banks compare to banks in other parts of the world based on competitiveness and variety of service offerings.

In Canada alone, mutual funds represent $920 billion (IFIC, 2014), as compared to hedge funds which sit at $30 billion. Comparatively, in the United States, the mutual fund industry is a $11.5 trillion industry, (Forbes 2013) with hedge funds amounting to $1.7 trillion (Prequin 2013). Participant IM-4 pointed out that most banks in the United States and other parts of the world
offer hedge funds as part of their product offering. Most major banks in the US generate considerable profits by selling hedge funds. Conversely, Canadian banks do not own or distribute hedge funds. Among the products offered through Canadian banks, retail mutual funds form a substantial measure. Hedge funds that are part of large financial institutions tend to perform more strongly than hedge funds that are run as stand-alone operations (Simmons, 2013).

Banks’ indifference to hedge funds was a concern amongst the Canadian hedge fund managers interviewed for the present study. Many felt that banks were much more concerned with the retail distribution of mutual funds, which is under their control. According to Participant IM-4, as long as mutual funds continue to bring in profit for banks, they will do little to resolve the problem of the hedge fund industry’s competitiveness. Olin (2012) of Vision Capital states that: “success for the Canadian hedge fund industry will depend on a better reception from Canadian banks, which have not traditionally steered clients into that sector”.

This is discouraging, since Porter has emphasized the following for several decades: “If a strategy is misconceived, more talent or more research won’t help: the talent and the research will end up being wrongly directed on short-term gains, not redressing competitiveness”.

**Participation of government and policymakers.** 60% of investment management participants believed that policymakers like the Ontario Securities Commission and the Canadian Securities Administrators have limited knowledge on hedge funds, yet expertise in mutual funds. There was widespread concern about high labour turnover at provincial-level security regulators. As Participant IM-4 argues:

The main mandate of regulators is risk reduction and investor protection. Promoting capital markets is secondary. Hedge funds are less risky than mutual funds and cheaper comparatively, and policy makers seem to ignore this fact totally in their decision-making processes.

Participant IM-3 remarked on regulators’ indifference to hedge funds, saying: “The name ‘hedge’… they [OSC] do not want to hear it. OSC has said they do not like the retailization of hedge funds, and they do not like complex strategies”. He continued on to say: “The modernization of investment fund product regulation proposals by the CSA is one example, where significant modifications to the regulations have forced the closure of closed-end retail hedge funds”.
The reduction in hedge fund structures through the modernization of investment fund product\textsuperscript{70} regulation, wherein closed-end (non-redeemable) hedge funds are removed, clearly indicates that policymakers do not favour hedge funds. Participants IM-1 and IM-3 both considered National Instrument 31-103 to be yet another regulation targeted specifically at hedge funds, where the outcome of the regulatory reform made the industry look less attractive, not more.

**Level of education on hedge funds.** The mandate of the Alternative Investments Management Association (AIMA) is to educate the public on alternative investments. This organization has been a strong force advocating for better education on hedge funds overall and the need for support from all the players in the industry in order to increase knowledge, especially among the investors. A recent history filled with fraudulent activities, scandals, and the economic crash seems to have cast a shadow on hedge funds. Participant IM-4 argued that “there is a perception that hedge funds are undesirable and hedge fund managers are criminals. This aspect has to be addressed through education”.

Legal participant L-1 had a sympathetic view on the perception of hedge funds. He commented on the impacts of investment fund industry frauds as follows:

> The investors are relating the name ‘hedge’ to the frauds such as the Madoff scandal. The frauds which are ongoing in the retail space in Canada do not get exposed, due to the comparatively smaller magnitude of each investment (as opposed to large investments in hedge), thus leading the investor to the impression that the retail space is safe from fraud.

L-3 and DD-2\textsuperscript{71} said that investors lack education on the risk reduction capabilities of hedge funds, and should be taught to begin considering investment vehicles other than mutual funds.

Participant PB-1, identified two frauds (both minor compared to the Madoff scandal) that have tainted the image of hedge funds in Canada. These frauds are Norshield and Portus, which both occurred in 2004). However, legal counsel participants L-1 & L2 both acknowledged that, in

\textsuperscript{70}The mandate of the Modernization Project (CSA) is to review the product regulation of publicly offered investment funds and to consider whether current regulatory approach sufficiently addresses product and market developments in the Canadian investment fund industry, and continues to adequately protect investors. The types of investment funds included in the Modernization Project are publicly offered mutual funds and non-redeemable investment funds (closed end funds).

\textsuperscript{71}DD-2 Educator AIMA (appendix 1)
comparison to the United States and some offshore jurisdictions, fraud in Canada is minor. These participants believed that this can be credited to Canada’s tighter regulations.

Participant IM-2, the pension fund manager, stated that education among service providers is vital in order to be able to meet “institutional standards”. Administrators and service providers interviewed unanimously agreed that the strength of regional clusters like Toronto lies in their steady inflow of quality, trainable personnel. HA-1 one of the leading administrator said:

   Education is crucial in order to stimulate growth within the hedge fund industry. Investment managers are looking for solutions and do not oppose to work being transferred out of their offices into third party administrators in the context of cost reduction. However, they expect the administrators to be competent in servicing their funds.

This participant also pointed out that there is no accredited education for hedge fund administration in Canada that could enhance the knowledge of their staff. He acknowledged that most formal training focuses on investment management, not administration, and confirmed that administrators (themselves included) tend to acquire in-house training at their own expense.

**Taxation.** 70% of the respondents felt that taxation is complex in Canada. However, AA-1 and AA-3 agreed that tax deferring strategies may act as deciding factors on whether or not to invest in hedge funds for individuals who are non-tax exempt. AA-3 explained:

   The investment vehicles which can save taxes (TFSA, RRSP, CPP, and Insurance) evolve around retail mutual fund products in Canada. Dividend tax credits also involve Canadian companies. Most hedge funds are not eligible for tax saving schemes.

Investment managers IM-3 and IM-4 highlighted the lack of initiative by regulators in imposing rules pertaining to taxation on foreign income. After almost 15 years in the making, legislation transforming Canada’s approach to taxing Non Residents (Non Residents Tax-NRT) received royal assent on June 26, 2013 (PWC bulletin 12/2013). FIE rules, since its proposal in 1999 never got enacted. Instead Offshore investment fund (OIF) rules have been enacted PWC

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72 Dividend tax credits are the amount a Canadian resident applies against their tax owing on the grossed up portion of dividends received from Canadian corporations.

73 The current offshore investment fund property rules require Canadian taxpayers to include in their income a calculated annual return on “offshore investment fund property”.


memo #2012-52). Pursuant to the 2010 Federal Budget everything proposed since 1999 with respect to the FIE Rules has been eliminated.

Participant AA-2 added:

Proposed foreign investment entity rules (FIE or OIF)\(^{74}\) and non-resident taxation (NRT)\(^{75}\) rules are complex, and Canadians unknowingly might not declare all their foreign income. The tax information exchange agreement (TIEA) might overcome this situation going forward, but what has been done in the past could be lost.

Participant IM-3 pointed to the importance of linking taxation in Canada to the growth of hedge funds, saying:

A steady growth in mutual funds is normal on an annual basis (excluding market fluctuations) due to their popularity among taxable investors. But as for hedge funds, the fund managers have to depend on institutional investments and capital introduction programs in order to grow their assets.

He reiterated that there are no tax incentives for foreign investors to invest in Canadian hedge funds, either. It can be generally gleaned from the remarks of these respondents that taxation, which is considered as a driver for growth for bank-offered mutual funds, could impede the growth and performance of hedge funds in Canada.

**Investment management attitudes about growth and fee generation.** Among their family of funds managed, many investment management firms seem to manage both hedge portfolios and also retail mutual funds. Additionally, they often have their own individual clients who compensate them for managing their private money. Based on these findings, it is imperative to note that inter-segmental conflict is bound to arise within the hedge fund investment management industry, where the personal interests of investment managers vitally contribute to the industry’s lack of scale.

Furthermore, there seems to be a direct correlation between fund size and fees generated. IM-1 claimed: “mutual Funds charge 2.5% fees and they basically are giving it away. 2.5% is not

\(^{74}\) Foreign investment entity rules impute income to investors in certain non-resident entities (NREs) for Canadian income tax purposes, irrespective of whether the NRE actually paid any income to the investor.

\(^{75}\) The general rule of non-resident taxation is that an NRT that is deemed resident in Canada under the rules is subject to tax in Canada on its worldwide income and capital gains in respect of all of its property, whether contributed by Canadians or not.
going to pay the bill unless you are a bank”. He indicated that larger funds come with the possibility of a performance fee compensation, which could act as an incentive to grow the fund irrelevant of the returns. Interestingly, this view on the practice of growing funds to generate fees was counter-argued by some respondents.

IM-4 agreed that some investment managers are satisfied with maintaining a certain size of fund in order to maximize its revenue. He indicated that a certain ‘sweet spot’ must be reached in this scenario, since the fund could gain regulatory costs, thus impacting returns, if it grows past a certain point. He asserted that a great deal of this comes down to the individual manager’s perspective on fund size:

If I can consistently deliver returns and derive the performance fee to cover the infrastructure and keep the clients happy with satisfactory returns, I can make a very good living with small funds. You go for the growth if you were to be market to institutions.

This participant also pointed out that most pension funds do not pay performance fees, due to side letters and preferential treatment. In some ways, this acts as a counterpoint to Participant IM-1’s claim about incentive fees acting as motivator for growth.

Participant IM-3 predicted that smaller funds will eventually disappear when they are unable to meet the costs of compliance demands. He added:

It is true that the bigger the fund is, the nimbleness is less and the return could suffer. However, it is hard to employ wider strategies and create alpha\textsuperscript{76} if the funds are not larger. After the crisis most of the funds went to large funds. But there are small funds with talented people who have outperformed the larger ones. So, we have to find the medium.

IM-3 found this trend to be a sign of a lack of sophistication inherent within the industry itself and argued that investment managers’ attitudes toward growth contribute to this lack of scale.

**Barriers of entry.** Sindberg (2012), President and CEO of Donville Kent Asset Management, attributes the lack of growth of the industry in Canada to relatively high barriers to entry. He stresses that regulatory overlay acts as a disincentive for talented managers to take the steps required to launch hedge funds in Canada. Sindberg expresses a sentiment shared by many of the investment managers interviewed for the present study:

\textsuperscript{76} Alpha is a measure of an investor’s ability to generate excess returns without assuming more risk.
It is not easy to start a hedge fund in Canada. Canadian funds must register with provincial regulators regardless of size, there are strict capital requirements that must be maintained at all times, and portfolio managers must be licensed. In order to obtain a license, individuals must apprentice under another portfolio manager for several years and must also complete a number of educational requirements.

Participant PB-1 asserts the current provincial structure and regulatory regime as a barrier to entry against foreign competition. “This can’t be good for the consumer or the future of the Canadian marketplace”, he states.

Participant IM-6\textsuperscript{77} agreed that there are some great managers in Canada who are deserving of global attention, and that barriers of entry like bank-owned distribution platforms seem to act as a disincentive for new launches and the entry of investment managers into the industry. He argued: “a hedge fund is a success as far as it can be effectively distributed through appropriate channels”, and that the rising costs of compliance since the crash have forced some hedge funds to consolidate or close down. He estimated that start-ups now require a minimum of $300k to cover start-up and ongoing costs. Starting at a cost disadvantage may result in investment managers’ demotivation in the early stages of launch if they are unable to attract capital locally.

All five investment managers interviewed agreed that Canadian hedge funds do not display the same kind of complexity in their strategies as compared to hedge funds around the world. Almost 90% of strategies employed since the introduction of hedge funds in Canada were long/short and focused mainly on Canadian resource stocks (Canadian Hedge Watch 2013). Ostoich (2014) argues that this is rapidly changing, however, as Canadian investment managers are moving away from a Canadian resource focus and starting to employ more diversified strategies. He states: “This change is good for the sector, but it is not happening fast enough to promote faster growth in hedge funds sector”.

Now that the industry’s lack of scale has been addressed, the overall strength of the hedge fund cluster in relation to other clusters will be discussed next, in relation to the following research question segment: how can cluster analysis be used to inform policy so that the cluster competitiveness of the Canadian hedge funds industry can be improved? In the following section, Porter’s diamond model will be applied to the overall financial services industry in Canada and the hedge fund cluster will be evaluated as part of this discussion. The ultimate aim

\textsuperscript{77} HNW Investor-Manager (appendix 1)
of this exercise is to evaluate the cluster competitiveness and strength of the Canadian hedge
fund industry. A detailed synthesis will be required in order to analyze some of the inter-cluster
tensions between the financial services cluster in Canada discussed throughout the previous
sections.

7.3 – Cluster Competitiveness of the Financial Services Industry in Canada

In previous chapters it was argued that Porter’s cluster theory may not fully explain the life cycle
of the financial service cluster. However, Porter’s diamond model can help to highlight Canada’s
competitive advantages, the dynamic interplay between industry players and the ‘habitat’ in
which organizations operate. The model assists to identify how much change is needed in order
to make the transition from a low-scale industry into a globally competitive economic cluster.

Innovative, world-beating clusters result from the interaction of four elements: factor conditions;
supporting industries; demand conditions; and firm strategy and rivalry (Porter, 1990). The
government can also be added as an additional fifth factor, since it performs a crucial role within
the financial services industry. Toronto is one regional cluster in Canada. According to the
Toronto Financial Services Alliance (TFSA),

A regional financial services cluster in Canada such as Toronto benefits from
solid related and supporting industries, especially in business services,
information providers, and computer and communications services, in addition to
adequate demand and sophistication across segments. (Toronto Financial Services
Alliance, 2007)

When asked about the Toronto financial services cluster, where there is an inherent and
emerging hedge fund cluster, many views of the industry participants emerged. These
perspectives are compared and contrasted below.

**Factor conditions.** Generalized and specialized factors both encourage competitiveness
and innovation in clusters together (Porter, 1990). It was unanimously agreed by the participants
that Canada has generalized factor conditions (pull factors), including an advantageous
geographic location, stable government, stable banks, and well-educated employees. However, it
has also been argued that these strengths can act as inter-cluster tensions working against the
hedge fund cluster within financial services.
Unquestionably, human capital has contributed tremendously towards the success of financial services in Canada. IM-1 cites, Investment management is the driver of hedge funds, and concentration of investment management can be used as a measurement of the cluster”.

IM-3, agrees with this sentiment. He states: “yes, there is an investment management concentration and it is at King and Bay. And a few dominate, more visibly in the closed-end funds base”.

Participant L-1, counsel, pointed out that Canada has long been a dominant player in the global mineral, oil, and gas industries since the 1920s (The Canadian Centre for Energy Information, 2012). This has contributed to the development of a pool of managers with strong expertise in specific commodities, as well as in the resource sector as a whole. However, he agrees with a comment made by Ostoich (2014) earlier in 7.1 that there are talented new emerging managers in Canada who are moving into the hedge fund space from trading desks of large financial institution and employing wider strategies than narrowly focusing on commodities and resources.

Some regions in Canada have become centres of excellences for hedge fund administration over the past ten years. HA-1, an administrator, commented that:

Canada has access to qualified staff. Surrounded by a large, recognized University pipeline, it has a steady flow of newly-qualified graduates. It has a great market for business perspective and a good environment to be set up. We have operated successfully for 21 years, not on cost benefit, but culture. We are independent. Staff wants to live here. Most think of Halifax as a natural extension of Toronto. Both financial services and hedge funds benefit by the quality of trainable staff attainable from regions within Canada.

According to Hayes (2012), a partner at KPMG and National Director Alternative Investments, Halifax is the fastest growing hedge fund administration centre in Canada. In KPMG’s Competitive Alternatives 2012 Report, Halifax ranked number one out of all Canadian and U.S. cities surveyed for lowest business operating costs in the international financial services sector. Hayes (2012) states that:

Halifax continues to attract new financial services firms to the region with their promise of competitive cost advantages, financial incentives and an established financial services cluster. Strong educated labour supply supported by technology seems to be the driving factor
These factor conditions undeniably support the overall financial services industry, and hedge funds as part of that. However, these factors seem to be allocated with the aim of promoting the retail mutual fund industry instead of the hedge funds industry. Some allocation realignment must occur in order to remove the inter-cluster tension tendencies between the retail mutual fund and hedge fund sectors.

**Supporting industries.** Hedge fund administration has been a key growth area in Canada over the last ten years. Administrators have grown to become an integral part of the hedge fund industry. Laurelli (2012), Vice President and Head of Industry Research of eVestment states that “the rise of regulations globally, and subsequent compliance reporting requirements, have forced hedge funds to lean on their administrative partners more and more”.

The average growth for hedge fund administrators worldwide over the past ten years was 14.15% (HFM, 2013). Participant HA-3 pointed out that the hedge fund administration industry has grown in ways that are unconnected to the growth in the hedge fund assets under administration during 2013.

Toronto, Canada’s leading financial centre has been a centre of excellence for the last ten years. In addition to hedge fund administration firms, there are companies supporting the hedge fund industry by providing services such as legal, accounting, due diligence, risk management, and consulting. The administration cluster in Toronto thrives through technology. However, the outsourcing of non-value added back office functions to lower-cost destinations like India has contributed to the declustering effects of the industry in recent years. Supporting industries are connected virtually through the internet to their outsourced partners. This fact was put towards the participants to consider.

**Demand conditions.** Domestic buyers are important contributors to the strength of traded clusters such as hedge funds (Porter, 1990). As Porter observes, demand size and buyer sophistication drive competition and innovation in clusters. He believes that firms can gain competitive advantage if domestic buyers are, or are among, the world’s most sophisticated and demanding buyers for the product or service. A high volume of local demand encourages the development of domestic providers of financial services and products. Greater sophistication among local buyers drives healthy competition, which in turn can lead to innovation in products
and processes. As of 2013, personal consumption of financial services per capita is low in Canada than in the United States (Statistics Canada, 2014). However, the household demand seems fairly sophisticated in ways that are comparable to the United States.

Demand for hedge funds can come from households, corporations, and governments. Participant IM-2 argued that Canada has robust and sophisticated capital markets, although there are relatively few players compared to the United States. He also pointed out that the AUM held by Canadian hedge fund managers is approximately 3% of the AUM in Canadian mutual funds, while in the U.S. this figure is approximately 6-7%. Furthermore, he indicated that, on average, the percentage that hedge funds represent in the investment portfolios of Canadian institutional investors is significantly lower than the corresponding U.S. percentage.

IM-1, contended that Canadian hedge funds have not attracted major capital in the past few years. HA-1, also agreed that they had not seen noticeable new contributions coming into Canadian hedge funds in the past two years. L-3, the legal participant stated: “There is a limited pool of Canadian investors who are interested in investing in Canadian hedge funds, and thus managers who wish to raise additional assets naturally look to the larger and more mature U.S. and European investment markets”.

As discussed in section 7.1, in order to create and attract sophisticated buyers, product offerings should also cover a wide range of strategies. This has not been the case in the past ten years. Participant AA-2, was convinced that Canada has limited segments to offer to international investors. His view was that Canada could not offer the variety required to be competitive, and that this lack of variety could be blamed for the lack of capital flowing into funds required to execute complex strategies.

IM-1 argued that there must be other ways of stimulating demand through the government and policymakers. In order to stimulate demand for hedge funds, it is imperative that potential investors have access to the products with minimal restrictions. The vast majority of alternative investment and hedge fund products in Canada are distributed by limited market dealers (LMDs)
to accredited investors. PB-4\textsuperscript{78} a Mutual fund distributor, pointed out that ten of Canada’s top performing funds were only available to accredited investors. He said:

More regulation of the sector is acceptable only if this means opening up educated choices to more of the public. Ultimately, if Canadian hedge funds are to be part of a global industry, this means the regulators should be working proactively with the industry to responsibly increase public access to new products through the bank distribution platforms.

Firm strategy and rivalry. Porter (1990) argues that “the pattern of rivalry in the domestic market plays an important role in upgrading firms’ competitive advantages and their prospects for international success. Vigorous domestic rivalry creates pressure on firms to improve and innovate”.

Financial services have been dominated by the six major Canadian banks\textsuperscript{79} over the last 25 years. As indicated in a research paper published by the Bank of Canada:

The Canadian banking system can be reliably considered to be a case of monopolistic competition. The empirical results suggest that regardless of the substantial structural changes that took place in the past 25 years, Canadian banks have behaved consistently in a monopolistically competitive fashion over this period. However, Canadian banks do not exercise monopoly or collusive-oligopoly power. (Allen & Engert, 2007)

The investment managers (IM-1, IM-3 and IM-5) strongly agreed that banks do not encourage foreign financial institutions to compete domestically. Foreign bank entities residing in Canada do not have the authorization to fully operate in the same ways that the ‘Big Six’ do, by offering a full range of financial services that includes funds. This curtails innovation in Canadian financial service clusters. As discussed in section 7.2 above, hedge funds are offered through United States banks as one of their core offerings; this is not permitted in Canada. However, all of the major Canadian banks have their own retail mutual funds, which they distribute to retail investors through their own distribution networks. Collectively, Canadian banks manage approximately $3.6 trillion of the nation's assets (OSFI March 2012).

\textsuperscript{78}PB-4 Manager of a Bank-mutual fund distribution (appendix 1)
From respondents’ perspective, it seems that this strategy, as employed by banks and the government, does not accommodate hedge funds. This works in two ways: firstly, by promoting mutual funds and ignoring hedge funds, and secondly, by disallowing competition with foreign banks offering hedge fund products. According to a report by Toronto Financial Service Alliance:

> Competitive advantage can be gained by creating different value propositions for customers. The intensity of competition is determined by the degree to which companies have distinctive strategies defined by different customer segments, services offerings, and price levels. Positive sum competition is the outcome, where there is increased variety and choices and new markets are created (page 25).

Based on what has been explored in this segment, the limited strategies employed by hedge funds in Canada could be related to a lack of competition and innovation. Most respondents seemed to see Canadian banks’ mutual fund offerings as Canadian hedge funds’ main rival.

**Government.** The government has influence over each of the four determinants of cluster competitiveness. Every policy and regulation made by policymakers at all levels of government has the capacity to either benefit or adversely influence Canada’s competency. There are a variety of policies that impact the determinants of cluster competitiveness in different ways, including capital market regulations, subsidies and financial incentives, taxation, and education policies. Canadian securities regulations are managed through laws and agencies established by Canada's 13 provincial and territorial governments and coordinated by the Canadian Securities Administration (CSA). Canada does not have a securities regulatory authority at the level of federal government.

The terms ‘political lock-in’ and ‘institutional sclerosis’ that were introduced in Chapter 2 are particularly relevant in considering these multiple layers of policy. All five investment managers interviewed for the present study agreed that local policymakers seem to actively oppose change when their dominant positions are threatened (Olson and Tilly, 1983; Grabher, 1993). A conservative culture in the provinces of long-standing relations between vested players like large firms and public authorities results in income-seeking behaviour among themselves and active opposition of a common regulatory body (Hill et al. 2012). Amin & Thrift (1994) call this
“institutional thickness”, which can cause rigidity among regional clusters. Hassink (1997) stresses:

In order for a cluster to survive it is vital that inter-institutional interaction and synergy, collective representation by many bodies within clusters, a common industrial purpose, and shared cultural norms and values exist. (p. 10-11)

Provinces can become impacted by institutional lock-in when the institutional structure is entirely focused on the specific needs of the province itself.

In the next section, ways for cluster policies and other initiatives to be adapted in order to support industrial renewal and structural change in service of increasing Canada’s competitiveness will be explored. The importance of cooperation between participants, businesses, and knowledge institutions will be emphasized.

7.4 – Regulations, Tax Rules, and Institutional Policy Changes

Developing and upgrading clusters is an important project for governments, companies, and other institutions. The development of clusters through efficient regulation, cost reduction measures, and innovation is crucial to catalyze the Canadian hedge fund industry’s growth. In this segment, regulations, tax rules, and institutional policy changes that could be adopted in order to encourage hedge fund growth in Canada will be explored in an attempt to satisfy sub-question B-1 of the final research question.

It is fairly apparent that having at least one national regulator with hedge fund growth in their scope is vital for the growth of the Canadian hedge industry. Participant L-3 commented that “the implementation of one national regulator for the securities industry could change the Canadian hedge fund landscape for the better, but it could be many years from now”. L-3 elaborated on this comment by saying:

There have been several efforts over the years to consolidate Canadian Securities Regulation at the federal level, but this has met with resistance from certain provinces. The CSA (Canadian Securities Administrators) the umbrella organization for the provincial and territorial securities regulatory authorities has attempted to reduce the amount of duplication and inconsistencies within the Canadian Regulatory System through the publication of NI (National Instruments) and Policy Statements, but, in spite these efforts, local discrepancies still remain.
Over the past 45 years (which is considered by some respondents to be an extensively long period of time), the vast majority of studies by independent experts and academic analysts have come out in favour of establishing a Canadian securities regulator (Porter Report (1964), Kimber Report (1964, 1965), Wise Persons Committee (2009), the Crawford Panel (2006), The Expert Panel on Securities Regulation (2009)). On July 9th, 2014, Saskatchewan and New Brunswick both signed an agreement to participate with British Columbia, Ontario, and the federal government to establish the Cooperative Capital Markets Regulatory System. The CCMRS will be a common, self-funded securities regulator for participating jurisdictions in Canada. Together, the four participating provinces represent approximately 55% of Canadian market capitalization. This new regulator is scheduled to commence operations in the fall of 2015, and draft legislation relating to this regulator is expected to be published by August 29th, 2014.

It is also important that regulations are equally fair to all investment products within a sector. For example, L-1, who sits on most of the panels commenting on proposed regulations, said: “Policies imposed for investor protection and aimed towards mutual funds, have adversely affected hedge funds. A government that protects domestic firms from foreign competition is not encouraging improvements in productivity or quality”.

Policy changes at federal level that could encourage effective competition are considered to be effective to initiate a positive change for the industry and its participants. Governments must work to develop competitive environments and encourage companies to innovate (Porter, 1990). Participant L-1 felt that Canada’s regulatory framework has reduced the benefits of external forces to stimulate greater differentiation among the banks. He explained:

> If regulation is changed to allow foreign banks to enter the Canadian market and undertake essentially all of the activities undertaken by domestic banks, and more such as hedge fund offering, this could open paths for hedge fund industry in Canada to grow.

The “widely held rule” for large banks prevents foreign financial institutions from acquiring a controlling interest in a large Canadian bank. Narrowly-focused competition in the domestic market has resulted in a reduced incentive for Canadian banks to develop world-beating strategies that can translate into greater innovation and global leadership.

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80 The ‘widely held rule’ is a regulation in the Bank Act in Canada that prevents ownership of the country’s largest banks from being concentrated in the hands of one person or company.
Another policy change could take the form of government support. Participant HA-2 reasoned that “government subsidies and similar incentives, if done right, can provide a foundation for sustainable economic growth and the way forward to greater prosperity”. Some businesses claim that they cannot survive economically without the support of the government. However, which businesses the government will continue to support through subsidies and other incentives is a question that remains to be answered.

Participant IM-3 argued that regulations favour retail mutual funds:

> Regulatory environment curtails banks from taking risks. If the goal of the regulators is to protect investors, they can also perform this task through hedge funds. Hedge funds have proven to provide better risk-adjusted returns in many cases, and their average leverage is well under 2.

Participant IM-3 asserted that the accredited investor\(^{81}\) rule can be a major drawback, since it restricts investors who would otherwise invest in hedge funds. He felt that the rule hampers the retailization of hedge funds in Canada, pointing to the connection between the retailization of hedge funds in Europe through UCITS and the subsequent growth of the industry as justification for this belief.

Additionally, there seemed to be uncertainty amongst participants about how the Canadian tax regime relates to the hedge fund industry. IM-4 understood the success of offshore jurisdictions to be linked to their tax-friendly status: “Canada is not an offshore jurisdiction. We need lighter taxation and flexible regulatory touch, to attract investment managers. Admitting that the provincial securities commissions or the federal government have no intention of turning Canada into an offshore jurisdiction, he concluded by saying: “We will never become one”.

Participant AA-2, had a different view. He stated: “Taxation is not a barrier of entry. It is a level playing field for mutual funds as in hedge funds”. He argued that both domestic and foreign investors receive the same treatment, since the latter must report their worldwide income to their relevant countries and domicile of funds does not impact taxation.

\(^{81}\) Wherein the Subscriber, or one or more beneficial purchasers for whom the Subscriber is acting, is (i) a resident of, or the purchase and sale of securities to the Subscriber is otherwise subject to the securities legislation of one of the following: British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Québec, Newfoundland and Labrador, Nova Scotia, New Brunswick, Prince Edward Island, North West Territories, or Nunavut, and the Subscriber is (and will at the time of acceptance of the Subscription be) an accredited investor within the meaning of National Instrument 45-106 Prospectus and Registration Exemptions (“NI 45-106”) because the Subscriber falls under one of the following categories listed under the OSC Website listed below: http://www.osc.gov.on.ca/en/21943.htm.
Registered retirement savings plans (RRSPs) are one of the vehicles through which Canadians invest for their retirements. Currently, 90% of these investments are directed to mutual funds alone. AA-1, the audit participant, is convinced that tax returns and tax exemptions on mutual funds attract taxable investors due to the tax relief they can provide. This is not the case for most Canadian hedge funds. Limited Partnerships, which are the preferred structure for Canadian hedge funds, are not permitted to accept RRSP money. Participants IM-1 and IM-3 both agreed that lifting barriers to investing in hedge funds through RRSPs is one way for the hedge fund industry to grow.

Institutional policy changes could also trigger the stimulus required to boost the hedge fund cluster in Canada. This could be initiated by educating investors, investment managers, consultants, and (most importantly) the regulators (see section 7.2 for more details). Participant DD-2 argued that there is a general lack of initiative around educating investors about regulatory environments and risk/return on hedge fund investments in Canada.

DD-2, a representative and educator from the Alternative Investment Management Association Canada (AIMA), believed that an independent rating agency for hedge funds could help investors to make an educated decision and invest with confidence.

7.5 – The Implications of Encouraging Growth in the Canadian Hedge Fund Cluster

This section will focus on the last sub-question of research question B relating to the implications of encouraging the growth of the Canadian hedge fund cluster.

This thesis has identified more major implications for hedge fund growth in Canada. Firstly, the greatest change will perhaps be in relation to goal congruence amongst industry players, including policymakers. Most investment managers have their own portfolio management services to supplement their income. Hedge fund advisers often have substantial conflicts of interest, both with hedge fund and non-hedge fund investors. In such an environment, it may be a challenge to prioritize hedge funds.

Secondly, a growth in hedge funds could trigger exposure to pension plans, universities, endowments, foundations, and other charitable organizations. This could shift focus away from HNWI investors. Pension plans were among the earliest hedge fund investors. An increase in
capital inflow could trigger a move towards institutional standards. This is already visible in larger hedge funds in Canada.

Thirdly, inter-provincial harmonization of regulations could occur. This could manifest as the implementation of a common securities regulator at a federal level. Participant IM-1 predicted that the implementation of a harmonized regulatory regime among provinces or one unified governing body could lead to significant reduction in revenue for federal and provincial governments. Harmonization could lead to another overhaul of the regulatory regime, which could potentially have a significant effect on the landscape of Canadian hedge and mutual funds. Participant L-3 pointed out that after a strong period of harmonization in 2009, the Canadian Securities Association (CSA) developed another set of regulations in 2011, with additional changes to the previous Section 31-103. However, a concerted effort will be needed from all sides of the industry in order to move forward.

Fourthly, the retailization of hedge funds could be imminent. Morris (2012), CEO of Ewing Morris, believes that there should be more hedge funds made available for retail distribution and that they should be ‘incentive based on performance’ funds, as in traditional hedge funds, so that managers are motivated to promote these types of funds. He argues that this could be a positive move towards the retailization of hedge funds. Participant IM-4 supports retailization, stating that this may be the only way that the hedge fund industry in Canada can grow. However, he pointed out the lack of support from regulators: “The Ontario Securities Commission (OSC) has signalled they do not like the retailization of hedge funds. They do not like complex strategies and that is why the modernization proposal is on the table”. He continued on to say that the OSC always approaches investment funds with retail mutual funds, not hedge funds, in mind. He maintained that they find hedge funds more challenging and their biases towards mutual funds are apparent through their actions.

The retailization of hedge funds could mean that mutual funds qualifying as hedge products with decreased minimum thresholds of initial investments are increasingly offered to the public and institutions. The ‘accredited investors rule’ could change, and a uniform qualification for investors across provinces may be introduced. In addition, more funds of funds could invest in hedge funds, thus bypassing the restrictions involved in investing in hedge funds.
7.6 – Conclusion

This chapter reported the interview findings, coupled with published secondary information. These findings suggest that a major overhaul of the Canadian hedge fund industry’s landscape is required. Players within the industry identified that changes to regulations, tax rules, and institutional policy are all needed. A number of specific interventions were identified by participants as potentially providing a foundation upon which to build fairer and more effective industry. These findings must be considered in light of the strategies for improving the Canadian hedge fund industry that were presented in preceding chapters. In this chapter, methods for measuring lack of scale based on fund size, industry size, and investors group were discussed. Then, some explanations for this lack of scale were evaluated. After this, the Porter’s diamond framework was applied to the financial services industry and hedge fund industry in Canada to assess cluster competitiveness. Finally, the implications of encouraging the growth of hedge fund cluster in Canada were discussed. The findings revealed that the hedge fund cluster, as measured by assets under management, is impacted by a combination of factors, including inter-cluster tensions between financial services, non-goal congruence among participants, lack of education, and political lock-in caused by the current regulatory regime. This chapter also highlighted poor government performance in relation to the balanced development of the financial services cluster. Most respondents expressed a low level of satisfaction with the support given by the government towards the development of hedge funds in Canada. The results gathered overwhelmingly suggested that the current provincialized regulatory environment was not conducive to hedge fund development. The majority of respondents seemed to simply tolerate the negative impacts of competition and the bank monopoly. In Chapter 8, a detailed assessment of the potential impacts of these findings as well as recommendations for improving the hedge fund industry in Canada will be considered.
Chapter Eight: Conclusions and Future Directions

This chapter summarises the main findings of this study, drawing out some conclusions on the lack of scale in hedge funds in Canada and the implications of such. It aims to enrich our understanding of the status of hedge funds in Canada, while demonstrating the value of an analytical approach towards its value chain activities. Using a mixed method approach, this study highlights the effects of major determinants of change, such as the crash of 2008, technological development, and offshoring, and the effects of these on global hedge fund cluster formation, sustenance, and decline. It concludes that the analytical approach, which focuses on micro-level factors specific to Canada, remains relevant in explaining the scale of the domestic hedge fund industry. In a world of constant techno-social innovation, the de-clustering of core industry functions has initiated an erosion of the sustainability of clustered financial services, irrespective of any favourable conditions. A number of factors, notably inter-cluster tensions between those sectors within a cluster, and a lack of goal congruence between major players, seem to account for the lack of scale in the hedge fund industry. Interestingly, various factors contributing to the growth of retail mutual funds had an opposite impact on the scale and growth of the hedge fund industry in Canada. This research evaluates these conditions, and develops cluster-based policy recommendations for the local hedge fund industry.

As the general theoretical literature on the scale of the hedge fund industry is inconclusive on several fronts, this research has sought to use cluster theory to describe changes in the industry’s scale in Canada. Given the aims and limits of this research, further work is required to develop more complete answers to all the research questions stated below. In this chapter, the initial research questions are addressed using a synthesis of empirical findings contextualized in the conceptual framework, followed by an outline of various limitations and mitigating factors. The academic relevance of these contributions is then outlined, highlighting under-researched areas of the hedge fund industry of Canada. This is followed by a reading of the contributions of practitioners, and a synopsis of some implications for industrial scale. Finally, some areas for further research are noted, along with some conceptual challenges which might stem from such.

This thesis attempts to address the following research questions:

A: How can cluster theory be used to understand changes in the hedge fund industry?
A-1: To what extent can traditional cluster theory be used to identify and measure a hedge fund cluster?

A-2: How can cluster theory be used to understand why the scale of the Canadian hedge fund sector remains under-developed?

B: To what extent can cluster analysis be used to encourage policy change so that the competitiveness of the hedge funds industry in Canada can be improved?

B-1: What regulations, tax rules, and institutional policy changes could encourage hedge fund growth in Canada?

B-2: What are the implications of encouraging the growth of the hedge fund industry in Canada?

8.1 – Analysis of Main Findings

This thesis presents research results obtained from semi-structured interviews with the major players in the hedge fund industry in Canada and using secondary analysis developed with publicly available information. The main results are compared with the conclusions of well-established methods and theories.

The first major research question seeks to explain changes in the hedge fund industry using cluster theories. Cluster theories can only be used to a limited extent in explaining the emergence, survival, and decline of financial centres. This study frames the hedge fund sector as existing in a complex environment with deeply porous technological and geographic boundaries. According to Porter (1990), a cluster can be sectoral or transnational. The geographical extension process of a given cluster forces it to re-materialize in new spatial forms. Where some key findings of this research could not fit into orthodox understandings of cluster frameworks, they have been buttressed by newer cluster theories, mainly from economic geographers and institutional theorists.

As discussed in Chapter 2, clusters progress through common life cycles. Hedge fund clusters evolve over a number of stages, namely: birth, growth, development, and evolution. The birth of a cluster requires a champion, such as the state. Through growth and development, industrial
actors and structures co-evolve in the cluster-building process. The evolutionary stage is generated after prolonged interaction between structures and actors within the cluster. Each stage is dominated by a particular activity, and new technical and social constituents are added and integrated into a constituency-building process. One of the findings of this research was that the seeming irreversibility of a declining cluster can be countered by the ability of investors and managers to change their perception of the level of success of the hedge fund industry. By directly applying this life cycle model to Canadian hedge funds, it was feasible to identify at which stages major players within the industry failed to support hedge fund clusters and contributed to their lack of scale.

Michael Porter (1990) comprehensively demonstrated the importance of competition in cluster development. However, the nature of inter-cluster competition seems to have changed - nations and regions now compete with each other, as opposed to the earlier model of inter-firm competition in a localized industry. Competitive pressures seem to have scaled up with globalization, and cluster competition seems to have taken an increasingly complex, knowledge-based, and dynamic form. The concept of clusters itself is defined now in scalar terms - viewed as either “mini-clusters” or “concentrations” specializing in a specific ‘activities’ as opposed to a more amorphous, traditional ‘industry’. A mini-cluster can be defined as a specific group of specialized firms (such as hedge fund administrators) concentrated in a city, potentially situated miles away from the industry it services. Outsourced back office functions promote specialized firms in distant locations, where they become a mini-cluster or a concentration of firms. The development of this dynamic has also meant that a new range of competitive advantages are being developed through collaboration and partnerships, which in turn may require new cluster concepts. This is particularly true when looking at the dispersion and decentralization of clusters, a major topic addressed in the following section.

The first sub question seeks to understand to what extent we can use cluster theory to identify and measure a hedge fund cluster. As was elaborated in Chapter 3, the dispersion of supply chain activities has made it much more challenging to differentiate between the decline of an industry and its de-clustering and reformation. Financial services are transactional and revolve around intermediation. This distinguishes them from manufacturing industry clusters, where the driving forces are more likely to be access to resources, common products, or highly specialised
innovations. The mobility of factors of production through technology seems to have, in many ways, initiated the dispersion of hedge fund supply chains, contributing to the break-up of hedge fund clusters.

**Identification of clusters: challenges due to the declustering of financial services.** The empirical evidence in this longitudinal study demonstrates that a cluster does not remain static, but rather is highly dynamic. While the application of classic cluster theories may seem adequate, the measurement of different clusters consistently poses a challenge, due to unidentifiable cluster boundaries. The players in the hedge fund industry have unanimously agreed that cluster borders have become difficult to identify, with technological advances progressively undermining the significance of geopolitical boundaries (Harvey, 1990). Major advances in communications seem to have made it possible for companies to deliver hedge fund services easily across borders. Face-to-face meetings are being replaced by conference calls and webinars, and a substantial reduction in travel times seems to have significantly weakened the importance of physical service clustering. The spillover knowledge from traditional cluster theories (Marshall, 1890) seems to have a diminished importance, due to increased spatial and temporal compression. Most nation-states have opted to liberalize domestic rules and relax international capital controls, which has only deepened this spatial dispersion tendency.

These technologically-induced changes have generated shifts within the hedge fund industry in how, where, and when services are offered, while also affecting decisions on which products and services to produce (and who to deliver them to). This reduced reliance on geographical proximity has reduced transportation costs, while similar cost-cutting through outsourcing and dis-agglomeration has generated negative externalities and unleashed various centrifugal forces, encouraging hedge fund clusters to disperse and re-form in peripheral locations. In Canada, and particularly in the Toronto area, the main sectoral experience of resisting such dynamics was in service provision and investment management. However, as mentioned in Chapter 7, even these concentrations seem to have relented to cost pressures and centred some of their non-core functions. Overall, the findings confirm that it has become increasingly difficult to identify financial cluster boundaries, thus making them almost impossible to measure.

The second sub question seeks to clarify how we can use cluster theory to understand why the scale of the Canadian hedge fund sector has not improved. Interestingly, drivers of change such
as the crash of 2008, technological change, and outsourcing, all of which have had significant effects on the global hedge fund market, seem not to have contributed significantly to the lack of scale in this industry. The findings indicate that cluster development is twofold. On the one hand, it recognises that cluster development is influenced by exogenous factors, such as economic structures, technology, and market conditions. On the other, it confirms the importance of endogenous factors in particular internal strategies and actions by players in Canadian hedge fund clusters in determining the causes of stagnancy. In this section, findings which seem to directly confirm the importance of the lack of scale are discussed in detail.

**Inter-cluster tensions: competition and rivalry through mutual funds.** Firms with common immediate interests tend to collaborate in achieving common goals. As Brodkin (1997) has pointed out, the main cause for inter-cluster tensions is when policies do not align to achieve these goals. She asserts that when policies substantially conflict, unresolved tensions are often passed from the political to the administrative arenas, in the form of vague, or even contradictory, policy directives.

Inter-cluster tensions arise between two or more sub clusters within a main cluster, where both sub clusters have different policy mandates dictated by their respective policymakers. For example, within financial services (a main cluster), there could be inter-cluster tensions that contribute to the decline of one sub cluster at the expense of another. A common example, not incidentally, is hedge fund sector growth, which is often impeded by the retail mutual funds sector in Canada. Mutual funds pose the most significant competition to hedge funds. Hedge funds within growing financial services clusters (e.g., New York, London) seem to grow alongside other financial services, including retail mutual funds. This does not seem to be the case in Canada - demand for retail mutual funds seem to be the driving force for the growth of that sector. Through RRSPs (Registered Retirement Savings Plan), Canadians tend to invest into mutual funds. Hedge fund structures are mostly organized into limited partnerships, which are not eligible for RRSP contributions.

Toronto, as one of the leading global financial centres (11th in the Global Financial Centres Index) has experienced a lack of scale in hedge fund development, whereas retail mutual funds have grown in the past ten years. My findings indicate that there is direct competition between mutual funds and hedge funds - the growth of one seems to have a negative effect on the other.
**Barrier of entry: competition and rivalry between banks.** The Canadian banking industry tends towards oligopolistic behaviour. They are an essential contributor to the economic growth and well-being of Canada, but government policymakers (following a herd mentality) tend to be drawn to the promotion of similar products, such as mutual funds (Martin and Sunley, 2003). Canada’s five largest domestic banks have their head offices in Toronto, and all are deeply interwoven (rather than being competitive) – part of this oligopolistic behaviour is their unanimous promotion of retail mutual funds. In addition, the big five banks own almost 44% of mutual fund assets reported by the Investment Funds Institute of Canada (see Chapter 5). Retail mutual funds distribution are both directly or indirectly owned and controlled by banks. Fundserv, the platform for Canadian funds distribution, is the single platform for trading in these products. The minimal assets size (400 million) required to use this platform creates a barrier of entry - the majority of hedge funds in Canada are below the required asset size threshold. If hedge fund managers want to sell their product, they have to go through the banks; the high barriers of entry therein seem to work against them.

Prime brokers, which are part of the value chain of hedge funds, are owned by banks. Hedge funds depend on prime brokers for capital introduction, among other functions. A number of participants indicated that even though they do not depend on Canadian prime brokerage for their service, the capital introduction function was invaluable. This ownership structure contributes to absolute inter-cluster tensions, as mentioned above.

**Absence of goal congruence among industrial actors.** A major contributor to the lack of growth in the industry seemed to be the lack of congruence on goals between the major industrial players. There seems to be a conflict between government and actors within the hedge fund industry. Favourable institutional characteristics and relationships are essential conditions for stimulating the cluster-building process in a given region (Porter, 1990; Lundvall, 1996). This truism was apparent when speaking to my interview participants. The inter-cluster tensions described above can be differentiated here - a lack of goal congruence in most financial services tend to occur between two sub clusters, whereas a lack of goal congruence in the hedge fund sector tends to occur among the players themselves. Conflicts in defining goals are seen to compromise performance by creating conditions under which actors seem to minimize their exposure to risk and pursue individual, rather than organizational, interests (Thompson, 1967).
Achieving goal congruence is difficult, because goals serve multiple purposes within complex organizations, from defining organizational missions to establishing measures of success (Scott, 1993; Hall, 1996). While the provincial government’s vision was known to some participants in the industry, some did not agree with it; many stakeholders thought the vision was not conducive to the prosperity of industry as a whole.

In the research there were several instances where investment managers, in the process of rationally protecting their businesses, pursued individual goals rather than those favouring the growth of the overall hedge fund industry. Investment managers could potentially limit the growth of a hedge fund at a level which could bring optimum revenues. In some cases the managers preferred to maintain smaller funds in order to enhance returns. A study conducted by Chartered Alternative Investments Association (Feb 18, 2013) has proven that smaller hedge fund managers outperform the larger ones by 254 basis points and 220 basis points per annum over five and ten years, respectively (All About Alpha -2014). Some investment managers do manage private clients, which could bring additional money to their business - there could be potential conflicts of interest in these situations.

Scholars of public policy implementation have drawn conclusions on the importance of goal congruence and clarity for both policy implementation and achievement; however, it can be exceedingly difficult to achieve goal clarity in complex organizational and multi-organizational systems such as those of the Canadian hedge fund industry. There seem to be multiple interests at play, most of them uncoordinated, and often contentious.

The second major research question seeks to explain to what extent cluster analysis can be used to encourage policy change, so that the hedge fund industry’s competitiveness can be holistically improved. One element in the success of efforts in increasing cluster competitiveness of the hedge funds industry in Canada depends on aligning the interests of multiple players (and their staff) with new policy goals. For successful cluster building to take place, policymakers should focus on stimulating the processes of cluster formation (birth), including training participants in new approaches, and building towards the alignment of goals and capabilities of industrial actors, while facilitating the integration of the major actors’ interests and demands with policy.

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82 A unit that is equal to 1/100th of 1%
programmes. Below are my findings that describe what might impede the competitiveness of the industry, and where focus can be given to encourage policy change.

**Regulations as a centrifugal force.** Canada has a provincial regulatory framework, which is in the eyes of many players detrimental to the growth of hedge funds in Canada. Each province seems to have turf to protect; a harmonized regulatory regime could lead to a significant reduction in government revenues. Current provincial regulations promote fee income through the registration of each segment of hedge fund assets. These types of inter-provincial/jurisdictional conflicts increase the cost of compliance of the industry. In addition, the cost of compliance continues to rise as managers are subject to high levels of global regulation, such as Dodd-Frank Act, Foreign Account Tax Compliance Act (FATCA), and Alternative Investment Fund Managers Directive (AIFMD). This additional layer of compliance is out of the control of the local hedge fund industry, but nonetheless discourages start-ups by increasing the cost of operating a hedge fund.

**Education and investor attitudes.** The education level on these issues among hedge fund actors (more so than other areas of the financial sector) seemed alarmingly low among stakeholders. Educating investors, investment managers, consultants, and most importantly, regulators, is important. Education is critical to investment, but education on hedge funds is not promoted in Canada, other than through non-governmental associations such as the AIMA (Alternative Investment Management Association). Toronto is home to three of the world’s 50 largest pension funds – the Canada Pension Plan (CPP) Investment Board, the Ontario Teachers’ Pension Plan, and Ontario Municipal Employees Retirement System (OMERS) – which, when combined, have more than $400 billion in assets under management. Toronto’s large pension funds have a worldwide reputation for excellence in governance, risk management, and innovative approaches to asset management – even so, Canadian pension funds do not invest in Canadian hedge funds.

The hedge fund industry in Canada seems to be fraught with difficulties, primarily due to a structural misalignment between the perceptions and pursuits of policymakers and the interests of industry members. First and foremost, the practicality of implementing policy changes has to be considered at every juncture in which they are recommended. The cooperation of
policymakers is of utmost importance if a cluster initiative is to be successful, and the non-participation of policymakers in my research process indicates this could be a major challenge.

The first sub question of the second major question seeks to expand on what regulations, institutional policy, and tax rule changes could encourage hedge fund growth in Canada.

**Regulations.** There is widespread concern that provincial mandates are incongruent with the national response required to address developments in capital markets that are increasingly national and international in scope. Layers of regulations could introduce rigidity in the views of these policymakers, leading to institutional thickness (Amin and Thrift, 1994). Effectively addressing systemic risk requires the coordination and collaboration of all financial sector regulators in Canada, as well as effective coordination with international counterparts. It is hard for multiple provincial and territorial securities regulators to work effectively as part of a national systemic risk management team. The structural challenges of this setup will likely compromise its ability to be proactive, collaborative, and generally effective in helping to address larger capital market issues on a timely basis. This could have a detrimental impact on the integrity of Canada’s capital markets as a whole. Each jurisdiction dedicates a different level of resources to securities regulation, which causes the intensity of policy development, supervision, and enforcement activities to vary across Canada.

**Institutional policies.** To succeed in a price-sensitive environment such as the hedge fund industry, a cluster has to choose a few areas, and devote sustainable resources and effort to them, to allow them to surpass their global competitors. Porter’s diamond model of cluster competitiveness illustrates that most cluster initiatives are dependent on public funding (Porter, 2001). This becomes challenging when Canadian securities regulation is managed through laws and agencies established by Canada's 13 provincial and territorial governments. Each province and territory has a securities commission or equivalent authority, as well as particular provincial or territorial legislative regimes. Unlike any other major federation, Canada does not have a securities regulatory authority at the federal level. While national policies shape the overall regulatory environment, the development and implementation of institutional policies and strategies by the provinces most directly impact a given region’s performance. In order to achieve goal congruence, federal and provincial policies are expected to work in the same direction. This is particularly difficult given that provincial jurisdiction is mainly in the
implementation of securities regulations and policies. According to the findings, there seems to be a clear need for institutional policy changes (such as one common regulator) in Canada to improve the scale of Canadian hedge fund industry.

Government can decide to participate in the development of a cluster, using its substantial resources and regulatory strength as support. For this to work, those companies targeted for development are expected to be receptive to incentives given by the government and use them towards the formation of a cluster. There were indications of this strategy concretizing in Halifax, when hedge fund administration was targeted and developed. Even so, it was confirmed by my interview participants that most administrative firms cater mainly to global hedge funds. Interestingly, further research on policy changes revealed that the Ontario Securities Commission’s “modernization project” and the federal budget of 2014 (see Chapter 7) could affect the retail distribution of hedge funds.

**Taxation.** The general consensus from participants indicated that taxation is not a determining factor in an individual’s (non-tax exempt) decision on whether to invest in hedge funds or not. Tax exempt institutional investors (i.e., pension funds), however, can invest in Canadian hedge funds, but do not appear to be interested in doing so. The investment vehicles which can save taxes (TFSA, RRSP, CPP, and insurance) evolve around retail mutual funds in Canada. Dividend tax credits are also employed by Canadian companies. Almost 90% of investments are geared towards tax saving strategies, which would seem to create a demand for retail hedge funds - most hedge funds are not eligible for tax saving schemes. Taxation cannot be considered to be a centripetal force, as there are no tax incentives for foreign investors to invest in Canada generally. The FIE and NRT rules (see Chapter 7) have taken many years to implement, creating uncertainty for investors across the board. Taxation (or rather, tax incentive strategy) is another area where further research could benefit the industry.

The second sub question of the second major question seeks to address what the implications are for encouraging the growth of hedge fund clusters in Canada. The implications of developing one federal governing body for the Canadian financial system (such as CCMR, see Chapter 7) could provide a remedy to the notorious lack of Canadian scale by providing better and more consistent protection for investors. Some possible outcomes of this
type of directive could be: improved regulatory and criminal enforcement to reduce securities-related crime; new tools to better support the stability of the Canadian financial system; faster policy responses for market shocks; simpler processes for businesses; streamlined processes to lower costs for investors; and more effective international representation for Canadian finance. However, as various participants were wont to point out, provinces would then be required to forego their share of income, and the resulting consolidation and centralization of activities would result in job losses in every province.

Across Canada, there seems to be competition between retail mutual funds and hedge funds. Both sectors compete for the same pool of investors. If hedge funds were to be promoted, the funds slated to go towards retail mutual funds would move towards alternative investments, such as hedge funds. One of the ways to promote hedge funds is to develop public education strategies on investing in hedge funds – this could lead to a shift in investor attitudes towards an entire sector. More forcefully, mandatory allocation into Canadian hedge funds could force Canadian pension funds to invest locally as opposed to seeking markets outside of Canada for their alternative investment requirements.

Amendments to taxation rules could make hedge funds eligible as investments options for retirement plans, enhancing hedge fund market demand. Promoting the retailization of hedge funds could encourage policymakers to accept innovative hedge fund structures, allowing retail investors to invest in hedge funds through their retirement plans.

A reduction in entry requirements for bank-owned distribution platforms would encourage smaller hedge funds to increase their scale. Smaller hedge funds are not focused on marketing - exposure through ‘Fundserv’ types of platforms could increase their visibility.

8.2 – Academic Contribution

This research attempts to contribute to the growing body of scholarly work on financial services clusters. Cluster theory has rarely been used to analyze the growth of the hedge fund sector. The study helps to understand hedge fund clusters and their dynamics in an increasingly borderless, technologically advanced environment where agglomeration economies seem to be decreasing in importance. The findings presented here raise serious questions about existing policy on clusters, and suggest potential action strategies.
Applying traditional cluster theories to financial services/hedge funds. Traditional cluster theories focus on agglomeration economies based on geographical proximity. While researching the attributes of a hedge fund cluster through four themes (geography, knowledge production, institutional configuration, and network dimensions), it concluded that geographical proximity is of minimal importance for the success of a hedge fund cluster. This study supports conclusions as to the diminished relevance of geographical proximity as an ingredient for success, by applying concepts based on technological advances through virtual, online markets to the hedge fund industry, making traditional cluster theories of limited use here. Throughout this study, the effect of technology on transport (services) costs in the industry is highlighted, which buttresses the conclusions made by the “New Economic Geography” (Krugman, 1990a). Knowledge sharing through virtual means has been long been studied (Fujita, 1986) in hedge fund services, nullifying the traditional view of knowledge spillover (Marshall, 1890).

Decentralization of hedge fund services. The decentralization of financial services clusters due to business process outsourcing, as well as the functional segmentation of tasks between dispersed locations, was made possible with recent technological developments. Dispersion economies are playing an increasingly important role in today’s global economy – here, I have focused on the de-clustering effect of such on hedge fund services through cost reductions tied to the globalization of supply chains. This study highlights that decentralization does not clearly lead to the decline of an industry. However, it does reiterate that decentralization contributes to the breakup of clusters, noting that efficiencies can be gained through decentralization (which conflicts with traditional agglomeration economy arguments). Still, these findings do confirm the importance of technology in flexible production systems (see Piore and Sabel, 1984) where computers and information management systems are used not only to reduce costs, but also to disperse them along the supply chain.

Endogenous factors of change. This study assembled insights from different academic disciplines to clarify that not only exogenous factors of change, but endogenous factors specific to the industry should be considered in order to effectively identify the causes of success and failure in clusters. One of my key findings was on the inter-cluster tensions phenomenon, where a segment of financial services can prosper while others wither (e.g., mutual funds vs. hedge funds).
Another key finding was the non-goal congruence within the hedge fund industry in Canada, which was found to be one of the causes for the lack of scale of the industry. This weakness should be attributed to each of the players in the industry, so said players have a better understanding of the issue at hand and their role in it. This could facilitate a dialogue between the industry and government, allowing for more appropriate policies to be designed in building the cluster.

The extensive literature review on financial services clusters and their life cycle laid the groundwork for future researchers and policy analysts to relate hedge funds to cluster theory. Existing cluster literature fails to demonstrate how clusters perform in a weak economy. Flexibility and resilience in clusters in difficult times is an important consideration, especially in financial services, as this relates directly to the “innovative” ability of a cluster to survive external shocks. Throughout my research, the crash of 2008 was considered to be a critical external shock that altered the dynamics of the hedge fund industry and its clusters. Cluster dynamics in financial services, and their differences from their industrial counterparts, have been clearly defined throughout this research. I have reiterated that theories specifically designed to explain industrial clusters cannot be used to describe the formation, sustainability, and decline of financial service clusters. The traditional literature on cluster theories, which mainly supports manufacturing industries, was extended and supported by contemporary theories to explain the life cycle of financial services – this is an area requiring further development.

8.3 – Limitations

The semi-structured interviews ran up against limits that need to be considered. Three major aspects of these limits were discussed in this chapter, but bear repeating - first, the absence of policymakers as interview subjects influenced the process with existing participants. Second, the lack of goal congruence among different players contributed to differences in positions. While this is not an inherent limit, it could always skew a holistic understanding of the industry, if that possibility exists. Finally, the lack of information using micro-level analysis of the industry made the study of the causal factors of the lack of scale difficult. Each of these limitations is discussed in more detail below.
Absence of policymaker/government participation. Earlier, I identified the major players in the Canadian hedge fund industry, as well as the relative importance of their roles. Though policymakers and the government more broadly have been referred to repeatedly, their direct perspective has not been illustrated in this thesis, due to a lack of response or availability among those individuals contacted. This group is underrepresented within the whole sample. This could lead to selection bias which may skew the study in a positive or negative direction. In addition, it is possible that due to a lack of counter-arguments from this absent player, the published results of this thesis could be biased in the direction that the researcher (consciously or unconsciously) wishes them to point (publication bias). Interpreting and presenting data usually involves a substantial degree of judgement on the part of the researcher; consciously or unconsciously, a researcher may present data in the most favourable light, according to his or her general point of view. To counter this problem, the questions were extended specifically to cover an information gap that otherwise could have been bridged by interviewing policymakers and reflecting their positions in other interviews.

Additionally, published government policy documents figured prominently in this research. In order to defend my findings where policymakers or government are referenced, subsequent conversations with the Alternative Investment Management Association of Canada (AIMA) was conducted to seek a more unbiased view. Information obtained through these various sources was validated through subsequent attendance at events and informal discussions with industry participants in seminars and conferences such as WAISC 2014 (World Alternative Investment Summit) and the Canadian Hedge Fund Awards of 2014.

Differences of opinion among interviewees. The hedge fund industry is price-sensitive - the price charged to the consumer must be competitive. This is where a cluster has to choose a few key areas and devote substantial, long-term resources and effort to them to allow them to move ahead of their global competitors through specialization. The universal nature of technologies has also contributed to this specialisation trend. In this context, minimizing cost through outsourcing (as opposed to automation) has become a topic of contention. For instance, two leading administrators had directly opposing views on outsourcing to offshore centres. One administrator was against offshoring, but depended on IT spending and automation, while the other had built up their business through consolidation and offshoring/near shoring. The absence
of company-specific data on these two leading administrators made for a limited capacity to validate their success claims. However, based on their profitability and financial statements, including their standing in the industry, this limitation was mitigated.

**Absence of information at the micro level.** Important information pertaining to micro-level analysis on the hedge fund industry and its firms was absent in this research. A micro-level study of individual firms within the Canadian hedge fund industry may help us to understand the psychological character of these actors, their organisational structures, and their mode of operation. In cases where hedge funds were controlled by both mutual funds and hedge funds, the participants were non-committal in promoting a single type of fund. The substantialization of their views was done through secondary research and statistical data. However, the cultural aspects of these firms could not be effectively researched.

These limitations highlight the importance of extending research horizons in this area, seeking to incorporate some of the relevant insights developed in this study. In addition, the choice of a framework, in particular an understanding of the complications of this approach due to the wide range of concepts used, may cause difficulties in comprehension for the end users of this thesis, thus limiting its effectiveness in shifting new policy and practice regimes.

**8.4 – Practitioner Contributions**

The research undertaken in this project is geared towards directing and informing change in the hedge fund industry in Canada. My motivation for this thesis was the possibility of adding a distinct contribution to professional practice or policy. Interaction between theory and practice can improve cluster theory, policy, and management practices. Additionally, it is important that policymakers and players in the industry work together to understand how cluster dynamics can be changed. The success of the existing mutual fund sector is a clear example of policymakers seeming to work together with the sectoral players. The development of the hedge fund industry is and will be a collaborative effort - it is imperative that cluster players be knowledgeable in supporting government actors while developing cluster formations. This lacunae was evident in my interviews - those findings obtained directly from participants could improve the scale of the industry dramatically. The aim of this thesis is to increase awareness of specific conditions in the
industry, with the goal of informing political action at the provincial and federal levels of government.

The evolutionary nature of cluster development also implies that cluster promoters will have changing roles as development proceeds. The roles of government at different stages of cluster development can take various forms. In the initial birth stages it can act as an instigator, supporter, or leader; at the growth stage, as a partner, facilitator, or motivator; and, finally, at the mature stage, as a coach. Government may perform all these roles simultaneously, but the relative importance of each role varies at different phases of the cluster’s development.

The development and upgrading of clusters is an important policy directive for governments, companies, and other institutions, which is apparent in successful financial centres such as the London and New York. Cluster initiatives could be effective tools for countries aiming to improve their overall international competitiveness. An increase in the scale of hedge funds in Canada could increase Canada’s competitiveness in the financial services industry more broadly, and improve its standings in the GFCI rankings, particularly with regards to London and New York. There are different initiatives that can lay the ground work for the hedge fund industry in Canada. One way is to mirror steps which successful financial services clusters (e.g., New York, London) have taken to promote hedge funds in their financial services markets. Governments promote the industry through focused policy measures, which grant priority to the growth of hedge funds. Government intervention, through policy measures and incentives, can reduce the entry barriers for new hedge funds, such that more investment managers are motivated to launch domestic hedge funds.

A redesign of the regulatory framework was highlighted by many participants as desirable; in particular, the creation of a single regulator which could encourage the growth of hedge funds. Provincial regulations currently prevent investment managers from attracting capital from other provinces. Investment manager registration in the provinces acts as an entry barrier for US managers as well. Attempting to remove this requirement generate stiff opposition from the provinces, as this would reduce much-needed licensing revenue. However, over the past 45 years, the vast majority of studies by independent experts and academic analysts have come out in favour of establishing a single federal Canadian securities regulator as a Cooperative Capital Markets Regulatory (CCMR) system. As a result, in September 2013, British Columbia and
Ontario (two of 13 provinces) agreed to move towards the establishment of a CCMR system, while the federal government invited the rest of the provinces and territories to participate. The target date set to operationalize the CCMR is July 1st, 2015. The CCMR will pave the way to the harmonization of regulations governing capital markets in Canada, which will promote further goal congruence.

The oligopolistic behaviour of the Big Five banks seems to be a contributing factor to the lack of scale in the hedge fund industry. Inter-cluster tension between mutual funds (owned by banks) and the hedge fund industry highlights some limits inherent in using bank-owned distribution platforms. The investment management participants in this study overwhelmingly pointed to the high barriers of entry to these bank-owned distribution channels as purposefully restricting the effective distribution of domestic hedge funds.

The retailization of hedge funds can make it easier for investors to access hedge funds. Policymakers could make a conscious effort to accept innovative hedge fund structures, much like notional leverage in the mutual fund industry - a strategy that has proved successful, but has been curtailed by policymakers so retail investors can invest in hedge funds through their retirement plans. If a change in policy such as this were to be introduced in order to develop the hedge fund cluster, it would have to go through a cumulative approach. The practicality of this approach is of major concern, due to some likely challenges in getting the cooperation of cluster participants and other players. The implementation and measurement of policy is a major undertaking, as it involves measuring results against key performance metrics. Goal congruence is also crucial - however, as discussed earlier in the chapter, non-goal congruence was identified through the research as a major cause for the lack of scale of hedge funds.

8.5 – Directions for Future Research

My longitudinal study of cluster building processes demonstrated that a cluster does not remain static over time, but rather is constantly evolving. This evolutionary process is caused by a prolonged interaction between structures and actors in the cluster. This dimension of cluster studies requires further research on a longitudinal basis. As observed, there is certain irreversibility to clusters, which are the legacy of numerous historical developments; this makes them resistant to change. This irreversibility has constrained certain aspects of hedge fund
development, including the ability of investors and managers to change their perceptions on the level of success of the hedge fund industry. However, the actors’ strategies and the dynamics induced by their collective actions can help modify this irreversibility and thoroughly reshape cluster formation dynamics. History has proven that established clusters can change, both in terms of their structural characteristics and the perception of the actors within them. The scale of this research is therefore extensive and multifaceted, and widely applicable among the players of the hedge fund industry in Canada. To generate achievable policy strategies and development targets amenable to the growing hedge fund industry in Canada, there needs to be a concerted effort among all players involved over the coming years. Continuous research, feasibility studies, and cost-benefit analyses are needed on this subject in order to access hedge funds in Canada, and these should be directed in an organized manner so that momentum is maintained.

The core of future research could be focused on cluster measurement and definition, as a starting point. As discussed in this work, dispersion activities, the majority centered on cost reduction through supply chain decentralization has made it harder to identify cluster borders and made it difficult to assess successes and failures over the long-term. Cluster theories alone do not seem to be able to explain the life cycle of a financial service cluster. The production chain of hedge fund services is often fragmented by new technology, making it very difficult to draw cluster borders or otherwise effectively measure their formation. In the wake of cloud technology, this will only become more difficult. Hedge fund industry clusters are weighted on a macro scale by their contribution to the GDP, their employment concentration, and the sustainability of the industry as a whole. Even so, it is becoming difficult to use economic indicators as an accurate measurement of financial services clusters; cluster analysis would need to be buttressed by more intricate cluster mapping. A cluster mapping project specifically designed for hedge funds should be initiated.

8.6 – Conclusion

This study initially focused on technology, outsourcing, and the recent global financial crash as possible causes of the lack of scale in the Canadian hedge fund industry. The findings indicated that there is more at play than these three factors. Cluster theory was used in order to evaluate the lack of scale of the industry, but was not sufficient as an explanatory tool. Cluster analysis offers simple explanations, as well as clear directives, but provides almost no guidance on how to
actually develop a successful cluster (Motoyama, 2008). By interviewing some actors in the industry, the causes which directly contributed to this situation were made clearer. It was surprising that, within the financial service industry more broadly, the factors which contributed to the growth of the mutual funds industry were in fact stifling the growth of hedge funds.

In addition to the complexity of measuring hedge fund clusters, the thesis extensively considered the decentralization tendencies of the industry. The empirical data revealed that the decision to locate a company is dominated by commercial considerations, such as the presence of a market or reduced costs. Technology has and will continue to fundamentally change the delivery of financial services. Given that individual firms are receptive to outsourcing, specialized service firms often have increasing advantages over in-house service provision, with the most important causes for such being information technology and automation (which increases overall productivity). Services can be offered remotely from the buyer, and firms can centrally manage many dispersed branches. In other words, technology has allowed participants in the financial sector to engage in regulatory arbitrage. Foreign sources seem to be available at any time if a local supplier’s financial products seem to be non-competitively priced. This has facilitated the unbundling and repackaging of individual financial products. Some of the interdependencies generated through technological development have reduced the importance of mobility in the factors of production. Investors can be serviced in a global production network. The decentralization aspect had to be discounted so that the endogenous reasons for the lack of scale (such as inter-cluster tensions and non-goal congruence) could be identified.

Canada is one of the few countries in the world that governs this type of industry through provincial regulation. It is very unlikely that this would scale up to a national regulatory regime any time soon. However, a focused intervention from the federal government could ensure that the overall financial services cluster is not eroded; strong policies can increase productivity and the prosperity of different clusters. Policies which promote the reduction of inter-cluster tensions should be introduced, so that each cluster can be supported impartially. This type of cluster development might improve the hedge fund industry and have an adverse effect on other elements in a broader financial services cluster, which includes retail financial services. This implies that a government seeking to build a cluster should design a holistic policy and adopt a systemic perspective to manage the linkages between various components. Once a critical mass
has been established, and once hedge fund companies truly commit themselves to the development of their industry as a whole in Canada, they may generate a ‘cumulative effect’ and develop sufficient momentum to break the existing structural trajectory. This momentum can help accelerate the innovation process, and could lead to the rise of a new phase in hedge fund development in Canada. Broadly speaking, in order to build a cluster successfully, government policies should focus on the re-alignment of various actors and tendencies in the industry, and pursue a long-term incremental policy programme to deal effectively with the issues of major concern to said actors.

If a cluster programme is to be successful, the potential measures needed to implement it could involve sacrifices that relevant players may resist. Those companies participating in the cluster need to internalize a common set of rules as part of their routine business. These companies also have a role in upholding the long term development of a cluster by maintaining constant communication with the government and other actors; the government can be an excellent arbiter of any problems that arise. Frequent communication between the government and these actors also enables policymakers to understand the emerging trends, allowing governments to readjust their approach as needed. In short, though a government would be the main instigator of cluster policies, companies can play a crucial role by cooperating in the constituency-building process. The future research directions laid out in this chapter are crucial for the Canadian hedge fund industry, and must comprehensively involve policymakers and other government actors.
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398.


Figure 1: Operating Model for Hedge Funds

Fig-1 Operating Model for hedge funds (Source: Hedge week)
Figure 2: Hedge Fund Value Chain

- Investment Management
- Hedge Fund Administration
- Prime brokerage and global custody
- Legal
- Audit
- Operational due diligence

SUPPORT
Figure 3: Global Hedge Fund Assets Under Management by Investor Type

Source: KPMG International, 2012
Figure 4a: Standalone Structure (Onshore)

Figure 4b: Side-by-Side Structure (Onshore and Offshore)
Figure 4c: Master-Feeder Structure (Onshore and Offshore)

- Taxable Domestic investors
- General Partner LLP
- Domestic hedge fund LP
- Investment manager LP
- Offshore hedge fund LTD
- MASTER FUND LTD/LP
- Investments
- Tax exempt & non Domestic investors

General partner/Investment manager LLC

Domestic investors

Investments
Figure 5: Functions of a Hedge Fund Administrator

Source: Prime Finance, 2010
Figure 6: Prime Broker Operating Model

Traditional prime broker industry workflow

OTC Markets
- Loans
- Derivatives

Exchanges
- Securities
- Futures & Opt

Investment Banks
- Broking
- Market

Executing Broker
- Broking
- Market Making

Hedge Fund
- Trading Strategy
- Portfolio Management
- Reporting

Administrators
- Clearance & Settlement
- Margin & Cash Management
- NAV & Reports
- Accounting
- Investor services

Prime Brokers
- Position trading
- Margin lending
- Securities loans
- Repos
- Clearance & Settlement

Source: Thomson Reuters
Figure 7: Hedge Fund Industry Assets Under Management

Source: Barclay Hedge
Figure 8: Number of HNWIs Worldwide

Source: Capgemini (2012)
Figure 9: Largest HNWI Populations by Country (2011)

Source: Capgemini (2012)
Figure 10a: Hedge Fund Investors (Europe)

Source: Prequin 2012

Figure 10b: Hedge Fund Investors (North America)

Source: Prequin 2012
Figure 10c: Hedge Fund Investors (Asia)

Source: Prequin 2012

Figure 10d: Hedge Fund Investors (Other)

Source: Prequin 2012
Figure 11: Global Hedge Funds by Source of Capital

Source: Hennessee Group LLC, FSA, The City UK estimates
Figure 12: Management Location (%) of Global Hedge Fund Assets Based on Assets under Management

Source: The City UK - Hedge Fund Intelligence, 2012
Figure 13: Position of NY and UK Fund Managers Between 2001 and 2011

Source: the City UK Estimates Hedge Fund Intelligence 2012
**Figure 14: Hedge Fund Administrators Ranked by Assets Under Administration (as of June 2012)**

<table>
<thead>
<tr>
<th>Hedge Fund Administrators</th>
<th>A.U.A $ Bill</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citco Fund Services</td>
<td>$ 667.00</td>
<td>23%</td>
</tr>
<tr>
<td>State Street Alternative Investment Solutions</td>
<td>$ 609.00</td>
<td>21%</td>
</tr>
<tr>
<td>BNY Mellon Alternative Investment Services</td>
<td>$ 347.00</td>
<td>12%</td>
</tr>
<tr>
<td>SS &amp; C Fund Services</td>
<td>$ 304.00</td>
<td>10%</td>
</tr>
<tr>
<td>Citi Hedge Fund Services</td>
<td>$ 180.00</td>
<td>6%</td>
</tr>
<tr>
<td>Northern Trust</td>
<td>$ 154.00</td>
<td>5%</td>
</tr>
<tr>
<td>Morgan Stanley Fund Services Inc.</td>
<td>$ 140.00</td>
<td>5%</td>
</tr>
<tr>
<td>SEI</td>
<td>$ 89.00</td>
<td>3%</td>
</tr>
<tr>
<td>JP Morgan</td>
<td>$ 64.00</td>
<td>2%</td>
</tr>
<tr>
<td>Other</td>
<td>$ 344.00</td>
<td>12%</td>
</tr>
<tr>
<td>Total</td>
<td>$ 2,898.00</td>
<td></td>
</tr>
</tbody>
</table>

Source: HFM
Figure 15: Operation Flow of a Hedge Cloud Environment

**Hardware**
- Hedge Fund 1.0: Installed on-site created & maintained by external providers
- Hedge Fund 2.0: Purchased & installed or built on-site
- Hedge Fund 3.0: “Infrastructure as a service” with hardware maintained off premises

**Software**
- Hedge Fund 1.0: Maintained on-site in systems or in personal data center
- Hedge Fund 2.0: On-site in systems or data center/ off premises data center
- Hedge Fund 3.0: “Software as a service” hosted on Manager’s selected infrastructure provider

**Fund data**
- Hedge Fund 1.0: Primarily accommodated by on-site tape back ups
- Hedge Fund 2.0: Housed in off-premises data center
- Hedge Fund 3.0: Housed in off-premises data center

**Disaster Recovery**
- Hedge Fund 1.0: Hedge Funds data held off premises in provider’s data centers
- Hedge Fund 2.0: Hedge Fund’s data held off premises in provider’s data centers
- Hedge Fund 3.0: Hedge Fund’s data held off premises in provider’s data centers

**PPP & PB P.B & HFA Service Providers**

**Note A:** Proliferation of Data Centers & cheaper bandwidth

**Note B:** Proliferation of Managed Service Providers

Source: Eze Castle Integration, 2012
Figure 16: Use of Cloud for Infrastructure or Application Services

Source: Eze Castle Integration (2012)
Figure 17: Current Use of Cloud Technology (2011)

- Basic Business/Office Functionality: 65%
- Financial Applications Hosting: 50%
- Complete IT Outsourcing: 22%
- Other Infrastructure App Services: 35%
Figure 18: Gordon’s (2005) Onion Layer Model of Outsourcing
Figure 19: Hedge Fund Administration Functions

Hedge Fund Administration Functions

- Fund Set-up: 19%
- Accounting & Finance: 15%
- Investor relations: 14%
- Technology: 16%
- Middle & Back office functions: 15%
- Securities reference data management: 9%

Source: FSOkx
Figure 20: Functions Outsourced as of 2012

Source: FSOkx
Figure 21: Outsourcing (Receiving) Destinations as of 2012

Source: FSOkx
Figure 22: Global Hedge Funds Based on Domiciles

Source: Euro Hedge (2011)
Figure 23a: Hedge Fund Redomiciliation Statistics

Hedge Funds Redomiciliation statistics

- 49% Not redomiciling
- 24% Considering redomiciliation
- 27% Had redomiciled

Source: KPMG (2012)

Figure 23b: Redomiciliation Destinations

Redomiciliation destinations

- France: 8%
- Austria: 8%
- Ireland: 33%
- Lux: 50%

Source: KPMG (2012)
Figure 25: Variety of Financial Services

<table>
<thead>
<tr>
<th>Assets under administration as of Dec 2011</th>
<th>North America (billion)</th>
<th>Europe (billion)</th>
<th>Asia (billion)</th>
<th>Brazil (billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citco Fund Services</td>
<td>$356.00</td>
<td>75.42%</td>
<td>$96.00</td>
<td>20.34%</td>
</tr>
<tr>
<td>State Street Alternative Investment Solutions</td>
<td>$297.00</td>
<td>72.62%</td>
<td>$66.40</td>
<td>16.23%</td>
</tr>
<tr>
<td>BNY Mellon Alternative Investment Services*</td>
<td>$220.34</td>
<td>75.17%</td>
<td>$33.59</td>
<td>11.46%</td>
</tr>
<tr>
<td>Goldman Sachs Administration Services</td>
<td>$162.57</td>
<td>82.82%</td>
<td>$16.34</td>
<td>8.32%</td>
</tr>
<tr>
<td>Citi Hedge Fund Services</td>
<td>$133.37</td>
<td>78.04%</td>
<td>$34.75</td>
<td>20.34%</td>
</tr>
<tr>
<td>SS&amp;C Fund Services</td>
<td>$106.00</td>
<td>82.81%</td>
<td>$18.00</td>
<td>14.06%</td>
</tr>
<tr>
<td>Northern Trust*</td>
<td>$90.09</td>
<td>49.37%</td>
<td>$91.52</td>
<td>50.15%</td>
</tr>
<tr>
<td>SEI</td>
<td>$63.00</td>
<td>73.26%</td>
<td>$23.00</td>
<td>26.74%</td>
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<tr>
<td>J.P. Morgan Global Fund Services</td>
<td>$39.42</td>
<td>68.38%</td>
<td>$17.81</td>
<td>30.89%</td>
</tr>
<tr>
<td>Butterfield Fulcrum</td>
<td>$34.13</td>
<td>96.00%</td>
<td>$4.64</td>
<td>100.00%</td>
</tr>
<tr>
<td>BNP Paribas</td>
<td>$36.30</td>
<td>86.40%</td>
<td>$1.81</td>
<td>4.02%</td>
</tr>
<tr>
<td>UBS</td>
<td></td>
<td></td>
<td>$10.52</td>
<td>20.06%</td>
</tr>
<tr>
<td>Maples</td>
<td></td>
<td></td>
<td>$1.96</td>
<td>13.75%</td>
</tr>
<tr>
<td>CACEIS Investor Services</td>
<td></td>
<td></td>
<td>$17.56</td>
<td>56.12%</td>
</tr>
<tr>
<td>RBC Dexia</td>
<td></td>
<td></td>
<td>$4.64</td>
<td>20.11%</td>
</tr>
<tr>
<td>Apex</td>
<td></td>
<td></td>
<td>$3.34</td>
<td>20.45%</td>
</tr>
<tr>
<td>NAV Consulting</td>
<td></td>
<td></td>
<td>$3.25</td>
<td>9.09%</td>
</tr>
<tr>
<td>Total</td>
<td>$478.00</td>
<td>100%</td>
<td>$434.00</td>
<td>100%</td>
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<tr>
<td>2011 Dec- Fund of Funds</td>
<td></td>
<td></td>
<td>$434.00</td>
<td>100%</td>
</tr>
<tr>
<td>Citco Fund Services</td>
<td>$69.00</td>
<td>56.56%</td>
<td>$53.00</td>
<td>43.44%</td>
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<tr>
<td>State Street Alternative Investment Solutions</td>
<td>$73.80</td>
<td>95.10%</td>
<td>$2.50</td>
<td>4.90%</td>
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<tr>
<td>BNY Mellon Alternative Investment Services*</td>
<td>$92.50</td>
<td>89.50%</td>
<td>$10.49</td>
<td>10.15%</td>
</tr>
<tr>
<td>Unity</td>
<td></td>
<td></td>
<td>$20.18</td>
<td>68.85%</td>
</tr>
<tr>
<td>Citi Hedge Fund Services</td>
<td>$55.52</td>
<td>93.73%</td>
<td>$0.09</td>
<td>0.15%</td>
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<tr>
<td>SS&amp;C Fund Services</td>
<td>$28.00</td>
<td>71.79%</td>
<td>$8.00</td>
<td>20.51%</td>
</tr>
<tr>
<td>Northern Trust*</td>
<td></td>
<td></td>
<td>$20.18</td>
<td>68.85%</td>
</tr>
<tr>
<td>SEI</td>
<td>$52.00</td>
<td>74.29%</td>
<td>$18.00</td>
<td>25.71%</td>
</tr>
<tr>
<td>J.P. Morgan Global Fund Services</td>
<td>$28.00</td>
<td>69.36%</td>
<td>$25.04</td>
<td>70.63%</td>
</tr>
<tr>
<td>Butterfield Fulcrum</td>
<td>$30.19</td>
<td>88.88%</td>
<td>$22.86</td>
<td>100.00%</td>
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<td>$35.30</td>
<td>91.07%</td>
<td>$2.76</td>
<td>7.12%</td>
</tr>
<tr>
<td>UBS</td>
<td>$44.30</td>
<td>63.30%</td>
<td>$29.06</td>
<td>36.92%</td>
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<tr>
<td>JD Clark</td>
<td>$15.60</td>
<td>100.00%</td>
<td>$16.26</td>
<td>77.13%</td>
</tr>
<tr>
<td>CACEIS Investor Services</td>
<td></td>
<td></td>
<td>$16.26</td>
<td>77.13%</td>
</tr>
<tr>
<td>RBC Dexia</td>
<td>$7.33</td>
<td>82.61%</td>
<td>$0.62</td>
<td>7.00%</td>
</tr>
<tr>
<td>Apex</td>
<td></td>
<td></td>
<td>$0.16</td>
<td>13.92%</td>
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<tr>
<td>Vastardis Capital Services</td>
<td>$17.48</td>
<td></td>
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<tr>
<td>Total</td>
<td>$242</td>
<td>100%</td>
<td>$222.86</td>
<td>100%</td>
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Table 1: Global Hedge Fund Administrators Ranked by Assets Under Administration (2011)
Table 2: Centralization of Hedge Fund Administration Services (2011)

<table>
<thead>
<tr>
<th>Purchaser</th>
<th>Event</th>
<th>Seller</th>
<th>Date</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobepa</td>
<td>Majority Stake</td>
<td>SGG Corporate Service</td>
<td>Q4/10</td>
<td>n/a</td>
</tr>
<tr>
<td>Equinoxe AIS</td>
<td>Acquires</td>
<td>MadisonGrey Holdings</td>
<td>Q4/10</td>
<td>n/a</td>
</tr>
<tr>
<td>Credit Suisse</td>
<td>Acquires</td>
<td>Prime Fund Solutions</td>
<td>Q2/10</td>
<td>n/a</td>
</tr>
<tr>
<td>Otco</td>
<td>Partnership</td>
<td>Ophedge</td>
<td>Q2/10</td>
<td>n/a</td>
</tr>
<tr>
<td>Lacrosse Fund Services</td>
<td>Acquires</td>
<td>Bank of America FS</td>
<td>Q2/10</td>
<td>n/a</td>
</tr>
<tr>
<td>Trident</td>
<td>Acquires</td>
<td>Fidomes</td>
<td>Q2/10</td>
<td>n/a</td>
</tr>
<tr>
<td>Bank of New York</td>
<td>Acquires</td>
<td>PNC Financial Services</td>
<td>Q1 '10</td>
<td>$2.3 B</td>
</tr>
<tr>
<td>State Street</td>
<td>Acquires</td>
<td>Mournant</td>
<td>Q4/09</td>
<td>n/a</td>
</tr>
<tr>
<td>OBC Mellon</td>
<td>Acquires</td>
<td>Felcom Data Services</td>
<td>Q4/09</td>
<td>n/a</td>
</tr>
<tr>
<td>TMF Group</td>
<td>Acquires</td>
<td>Kingsway Talz Fund Administration</td>
<td>Q3/09</td>
<td>n/a</td>
</tr>
<tr>
<td>UMB Fund Services</td>
<td>Acquires</td>
<td>J.D. Clark &amp; Co.</td>
<td>Q2/09</td>
<td>$23.0 M</td>
</tr>
<tr>
<td>SS&amp;C Technologies</td>
<td>Acquires</td>
<td>Evare, LLC</td>
<td>Q1 '09</td>
<td>n/a</td>
</tr>
<tr>
<td>Praxis Fund Services</td>
<td>Purchase</td>
<td>Investec Administration Services</td>
<td>Q1 '09</td>
<td>n/a</td>
</tr>
<tr>
<td>Alter-Domus</td>
<td>Merger</td>
<td>Skye Fund Services</td>
<td>Q1 '09</td>
<td>n/a</td>
</tr>
<tr>
<td>Acquiline Capital Partners</td>
<td>Capitalization</td>
<td>HedgeServ (minority stake – est. 20%)</td>
<td>Q1 '09</td>
<td>n/a</td>
</tr>
<tr>
<td>ALPS Fund Services</td>
<td>Purchase</td>
<td>Price Meadow s</td>
<td>Q2 '08</td>
<td>Est. $20M</td>
</tr>
<tr>
<td>Equity Fund Services</td>
<td>Merger</td>
<td>Custom House</td>
<td>Q2 '08</td>
<td>n/a</td>
</tr>
<tr>
<td>Deutsche Bank</td>
<td>Purchase</td>
<td>HedgeWorks</td>
<td>Q1 '08</td>
<td>Est. $55M</td>
</tr>
<tr>
<td>CAIES</td>
<td>Purchase</td>
<td>Olympia</td>
<td>Q1 '08</td>
<td>n/a</td>
</tr>
<tr>
<td>Public Market - LSE Listed</td>
<td>IPO</td>
<td>GlobeOp Fund Services</td>
<td>Q3 '08</td>
<td>£261.9M</td>
</tr>
<tr>
<td>State Street Bank and Trust Company</td>
<td>Purchase</td>
<td>Investor Bank &amp; Trust</td>
<td>Q3 '07</td>
<td>$4.1B</td>
</tr>
<tr>
<td>Citigroup</td>
<td>Purchase</td>
<td>Bisys Group</td>
<td>Q2 '07</td>
<td>$1.47B</td>
</tr>
<tr>
<td>BNP Paribas</td>
<td>Purchase</td>
<td>RBS International Security Services</td>
<td>Q2 '07</td>
<td>n/a</td>
</tr>
<tr>
<td>SS&amp;C Fund Services</td>
<td>Purchase</td>
<td>Investors Financial Service Corp</td>
<td>Q1 '07</td>
<td>$4.5B</td>
</tr>
<tr>
<td>Bank of New York</td>
<td>Purchase</td>
<td>DPM Mellon</td>
<td>Q4 '06</td>
<td>$16.5B</td>
</tr>
<tr>
<td>Bank of New York</td>
<td>Purchase</td>
<td>AIB Bank plc</td>
<td>Q4 '06</td>
<td>50% AIB</td>
</tr>
<tr>
<td>JPMorgan</td>
<td>Purchase</td>
<td>Threadneedle Investments</td>
<td>Q1 '06</td>
<td>n/a</td>
</tr>
<tr>
<td>JPMorgan</td>
<td>Purchase</td>
<td>Paloma Management (Operations Lift-out)</td>
<td>Q1 '06</td>
<td>n/a</td>
</tr>
<tr>
<td>SS&amp;C Fund Services</td>
<td>Purchase</td>
<td>Cogent Management, Inc.</td>
<td>Q1 '06</td>
<td>12.25B</td>
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<tr>
<td>Fortis Fund Services</td>
<td>Purchase</td>
<td>Hedge Fund Services (BV1)</td>
<td>Q1 '06</td>
<td>n/a</td>
</tr>
<tr>
<td>RBC Dexia</td>
<td>Merger</td>
<td>Royal Bank of Canada and Dexia</td>
<td>Q4 '05</td>
<td>n/a</td>
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<td>Otco Management Team (Buyout)</td>
<td>Buyout</td>
<td>CITCO Fund Services</td>
<td>Q3 '05</td>
<td>$1.3B</td>
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<td>Northern Trust</td>
<td>Purchase</td>
<td>Baring FSG</td>
<td>Q3 '05</td>
<td>£260M</td>
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<tr>
<td>Mellon Bank</td>
<td>Purchase</td>
<td>Derivatives Portfolio Management</td>
<td>Q1 '05</td>
<td>n/a</td>
</tr>
<tr>
<td>SS&amp;C Fund Services</td>
<td>Purchase</td>
<td>EisenerFast</td>
<td>Q1 '05</td>
<td>$25.3M</td>
</tr>
<tr>
<td>BISYS Hedge Fund Services</td>
<td>Purchase</td>
<td>RK Consulting</td>
<td>Q1 '05</td>
<td>$65M</td>
</tr>
<tr>
<td>CAIES</td>
<td>Merger</td>
<td>Crédit Agricole Group and Groupe Caisse d'Epargne's</td>
<td>Q1 '05</td>
<td>n/a</td>
</tr>
<tr>
<td>JP Morgan</td>
<td>Purchase</td>
<td>Trident</td>
<td>Q3/04</td>
<td>28 M</td>
</tr>
<tr>
<td>JPMorgan</td>
<td>Purchase</td>
<td>Tranaut</td>
<td>Q2/04</td>
<td>n/a</td>
</tr>
<tr>
<td>HSBC</td>
<td>Purchase</td>
<td>Bank of England International Fund Services</td>
<td>Q1 '04</td>
<td>n/a</td>
</tr>
<tr>
<td>Butterfield</td>
<td>Purchase</td>
<td>Deerfield</td>
<td>Q1 '04</td>
<td>n/a</td>
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<tr>
<td>UBS (Cayman)</td>
<td>Purchase</td>
<td>ABN-AMRO Trust (Cayman) Ltd.</td>
<td>Q4 '03</td>
<td>n/a</td>
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<td>SS&amp;C Fund Services</td>
<td>Purchase</td>
<td>AMCORP Fund Services NV</td>
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<td>HSBC Fund Services</td>
<td>Purchase</td>
<td>Bank of Bermuda</td>
<td>Q4 '03</td>
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<td>TA Assoc.</td>
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<td>GlobeOp Fund Services (minority stake - est. 35%)</td>
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<td>Citigroup</td>
<td>Purchase</td>
<td>Forum Fund Services</td>
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<td>International Fund Administrators</td>
<td>Q3 '02</td>
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<td>International Fund Services</td>
<td>Q3 '02</td>
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<td>Purchase</td>
<td>MeesPerson Fund Services</td>
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<td>n/a</td>
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<td>BISYS Hedge Fund Services</td>
<td>Purchase</td>
<td>Hemisphere</td>
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<td>CITCO Fund Services</td>
<td>Purchase</td>
<td>Tudor Systems</td>
<td>Q1 '01</td>
<td>n/a</td>
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# Appendix 1

## List of Interviewees

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<th>Code</th>
<th>Detail</th>
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<td>1</td>
<td>AA-1</td>
<td>Partner - Big four Audit</td>
</tr>
<tr>
<td>2</td>
<td>AA-2</td>
<td>Partner - Big Four Audit</td>
</tr>
<tr>
<td>3</td>
<td>AA-3</td>
<td>Senior Manager - Big four audit</td>
</tr>
<tr>
<td>4</td>
<td>AA-4</td>
<td>Partner - Big audit</td>
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<tr>
<td>5</td>
<td>PB-1</td>
<td>Director - Prime Broker / Bank</td>
</tr>
<tr>
<td>6</td>
<td>PB-2</td>
<td>Director - Prime Broker / Bank</td>
</tr>
<tr>
<td>7</td>
<td>PB-3</td>
<td>Director - Prime Broker / Bank</td>
</tr>
<tr>
<td>8</td>
<td>PB-4</td>
<td>Manager - Bank / Mutual Fund Distribution</td>
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<tr>
<td>9</td>
<td>L-1</td>
<td>Partner - Legal Firm - Onshore / Offshore</td>
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<tr>
<td>10</td>
<td>L-2</td>
<td>Associate - Legal Firm - Onshore / Offshore</td>
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<td>L-3</td>
<td>Partner - Legal Firm - Onshore / Offshore</td>
</tr>
<tr>
<td>12</td>
<td>L-4</td>
<td>Partner - Legal Firm - Onshore / Offshore</td>
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<tr>
<td>13</td>
<td>DD-1</td>
<td>Director - Operational due diligence</td>
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<tr>
<td>14</td>
<td>DD-2</td>
<td>Educator - AIMA</td>
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<td>15</td>
<td>IM-1</td>
<td>Investment manager - Canadian Hedge</td>
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<tr>
<td>16</td>
<td>IM-2</td>
<td>Canadian Pension fund manager</td>
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<tr>
<td>17</td>
<td>IM-3</td>
<td>Investment manager - Hedge / Mutual fund</td>
</tr>
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<td>18</td>
<td>IM-4</td>
<td>Investment manager - Hedge / Mutual fund</td>
</tr>
<tr>
<td>19</td>
<td>IM-5</td>
<td>HNW Investor / Manager</td>
</tr>
<tr>
<td>20</td>
<td>IM-6</td>
<td>HNW Investor / Manager</td>
</tr>
<tr>
<td>21</td>
<td>IM-7</td>
<td>Trader / Investment Manager (Bank)</td>
</tr>
<tr>
<td>22</td>
<td>HA-1</td>
<td>Canadian Hedge Fund Administrator (International)</td>
</tr>
<tr>
<td>23</td>
<td>HA-2</td>
<td>Canadian Hedge Fund Administrator (International)</td>
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<td>24</td>
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<td>Canadian Hedge Fund Administrator (International)</td>
</tr>
<tr>
<td>25</td>
<td>HA-4</td>
<td>Boutique Hedge Fund Administrator (Canada / Bermuda)</td>
</tr>
</tbody>
</table>
Appendix 2

Interview themes

Changes in the Global Hedge Fund Industry

- General view of the interviewees based on their experience of changes within hedge Fund Industry during the past five years and what they think might happen to the industry in the next five years.
- Direct questions on Global hedge fund industry in terms of geography. What do they think as a geographical location of the hedge fund industry? Once the measure is established (such as AUM) Discuss the change in geography of the industry in relation to their growth, decline, or stability. What are the reasons they think for some hedge fund locations to grow where as others decline.
- The current trends of participants being moved around the globe – Which players are moving locations? What are the effects of these moves and how do they relate to the decline of one financial centre at the cost of another. Questions about the stability of these newly created segments, whether they think they can be sustained or are they transitional in nature.

Drivers

- What are the key drivers which encourage the changes in the hedge fund industry to select the locations for each participant of the industry? Once settled, what are the factors which influence the participants to move again? (Outsourcing etc.). The questions that follow will flow from the answers (elaborate)
- The drivers mentioned in point one- Do they create a permanent and sustainable change in the hedge fund industry or they transitional?
- How are the hedge fund players coping with the changes in the drivers (e.g. Technology, regulation )
- How the Interviewees perceive the importance of proximity within the hedge fund players. Probing questions to evaluate if agglomeration economies exist in hedge fund industry or not. Has technological advancement an effect towards agglomeration economies and if so to what extent?

Canadian hedge fund industry

- General discussion on hedge fund industry in Canada and the view on how it should be categorized/ measured (Investors, Administrators, Investment Managers, Assets, etc.). What does the interviewee think is happening in the hedge fund industry in Canada?( product life cycle)
- Leading questions on where does Canada stand as far as hedge fund activity is concerned, compared to the rest of the world? (Prominence). What are the key push and pull factors for Canada / Toronto in attracting hedge fund activity and what is
Canada good at concerning hedge funds. Where do its strength/ weakness lie? Where should they concentrating and try to build activity? What do they think the prospects are for Canada to become one of the leading hedge fund domiciles? What are the obstacles/ competition? Have there been challenges in the industry in the past years? Are there any signs of changes in the industry? If so why is it changing and in what direction- better or worse?

- Are Canadian provinces considered as centre of excellence for hedge fund financial services? Is status of Centre excellence permanent (can relate the questions to first theme)? Are there any threats from outside of Canada to the COE status?

**The interview population**

Administrators (4), Investment Managers (4), Bank Trader (1), Prime Brokers (3), Mutual Fund Distributer (1), Investors Institutional (1), Investors HNW (1), Operational Due Diligence (1), Education Institution (1), Accountants (4), Legal (4)

**Specific questions**

**Administrators:** What effect has Consolidation of administrators (take over by Banks) contributed towards growth of assets under administration? What are the trend on outsourcing to India and its effect on Centre of excellence such as Toronto? What is the effect of technological advancement and virtual servicing on face to face contact in client servicing and customer relationship management? Have there been changes in client servicing (extra tasks such as Middle Office and Risk reporting) and if so how are they being handled (centralized or outsourced)? View on changing regulations and impact on location of administrators? Are there any challenges faced by administrators by not being close to the investment manager or the investors and if so how are they being mitigated? Are there any developing trends which could create a major change in servicing the clients (leading question?)

**Investment Managers:** Canadian investment managers’ preference between managing Domestic hedge funds and offshore hedge funds and what is the rationale of preference? What are the challenges in attracting capital within Canada compared to other parts of the world and reasons? Is the Investor demography changing and what are the reasons? What is their opinion on regulatory reforms and effect on hedge fund industry globally and in Canada? How is Canada as a hedge fund domicile compared to other parts of the world? What/ who are the main threats for hedge fund growth in Canada? View on proximity to the investors and other players, future trends.

**Prime Brokers:** Has there been change in operating model since the crash, and if so what changes? If they do not bring up any of the following and effects on the hedge fund industry being de centralized then specifically asks about the use of multi – prime model, middle office functions being shared with administrator, change in counter party risk management, sub-custody model, technological advancement in trade execution and real time reporting
Institutional Investors & High Net Worth Individuals: Investor attitude towards hedge funds Vs. mutual funds in Canada, what do they prefer and the reasons, view on compulsory third party administrator, Direct question on offshore investing vs. domestic hedge funds- what do they prefer and why? The investor views on the taxation in Canada and ask if they consider tax as a key driver for investing in hedge funds? Are there any regulatory changes in the past which has encouraged them in allocating more towards hedge funds? The one main reason for the use of foreign hedge funds as opposed to Canadian hedge funds (in their view) and their view on returns of Canadian Hedge Funds and if it is a deciding factor in investing?

Banks: What do average Canadian investors invest in, if they are not investing in hedge funds? What steps taken by bank to attract retail and HNWI towards less risky funds? Does the bank promote hedge funds? If so how? If not, why? Do Conflicts of interest situations arise? What is the Banks view on growth of hedge funds in Canada in the future?

Government and other Policy makers: How do they measure hedge fund industry in Canada? Reason for GFCI index ranking for Toronto (12th), what is the policy maker doing in Canada and its provinces to advance in GFCI rankings, Are there any flexibility in current policies, are they making changes in policies to attract more funds to Hedge Funds in Canada, What measures are being taken to promote growth of hedge fund services in Canada? Are there any initiatives to promote foreign investors to invest in Canadian hedge funds? What is their view on the growth of hedge fund industry in Canada?

Accountants: Direct questions on taxation on Canadian investors and its effects on hedge fund investing in Canada, Investing offshore as opposed to domestic- advantage and disadvantages, their view on hedge fund regulatory reporting requirements in Canada compared to other parts of the world, paperless auditing and its effect on hedge fund services, accounting harmonization and its effects on decentralization of hedge funds.

Legal: How do the current hedge fund structures in Canada promote/ hinder hedge fund growth, Canadian hedge fund regulatory framework compared to other parts of the world. Their view on growth and change in investor demography in Canada and the drivers, what is to change in order for pension funds and institutional investors to allocate more to hedge funds? Are there regulatory exemptions which can be used to promote hedge funds in Canada? Are there restrictions in marketing hedge funds?

Intermediaries: What is the role of IT in developing distribution channels? How do the regulations help/ hinder distribution of hedge funds among local/ foreign individuals- Regulation as a driver of growth of Canadian hedge fund industry, what is their view on future of retail hedge funds and what is being done to accommodate the distribution (Fundserv)
Capital Introduction and hedge fund promoters: Who/ what are their main competition? Is Canadian economy inclined to promote hedge fund growth? Do they have to adjust? View on regulatory changes elsewhere in the world which could have a positive or negative effect on attracting hedge fund capital into Canada.