The Impact of Funds: An Evaluation of CDC 2004-12[1]

By

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Abstract: CDC was founded in 1948 as part of the U.K. government's efforts to develop the economic resources of Britain's remaining colonies. Since then, CDC has pursued a series of strategies to "do good without losing money," as its original mission was phrased. Its approach has included agricultural investments, project finance loans, direct private equity investment, lending, investment in and operation of power companies, and fund-of-funds investment. The group also developed an extensive network of offices and experts on the ground in emerging/frontier markets. In 2004, however, CDC was split in two groups: the portfolio of companies and the network went with the privatized fund manager Actis, while CDC remained government-owned and pursued a fund-of-funds strategy. In 2012, CDC's remit expanded to include direct investing and lending. This article represents an effort to learn the lessons of its eight years of funds investment. In short, we determine that funds investment was an efficient method of investing large amounts of money with a small staff to build more businesses in more countries than would have been possible using a direct-investment model. CDC's financial performance exceeded its benchmark MSCI Emerging Markets Index between 2004 and 2008, and in 2010, but restrictions in CDC's investment parameters that were enacted in 2009 made comparisons to broader based indices more challenging. CDC has routinely met its goals for investment allocation by national income and geographic parameters and for third-party fund mobilization. While the dataset provided was truncated and results therefore underestimated, we could credit its investments with 345,056 new direct jobs between 2008 and 2012, $41.6 billion in new revenues, $4.8 billion in increased Earnings before Interest, Taxes, Depreciation and Amortization (EBITDA), and $2.1 billion in new taxes paid. Finally, CDC has played an extensive role in supporting first-time fund managers. Over the evaluation period, it backed 62 first-time managers (50.4% of the total funds in which it invested). Some of these have become leaders in their markets. The organization, in short, has had a transformative effort on its markets of interest.

[1] We were commissioned by CDC to review its performance between 2004 and 2012, and received compensation to do so. Nonetheless, the content of this working paper reflects our opinions, and not those of CDC.

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We reviewed CDCs performance between 2004 and 2012, when it solely invested using a fund-of-funds strategy. The major purposes of this paper are 1) to compare CDC's actual performance during this period against its stated mission and objectives and 2) to draw conclusions based on an analysis of that performance.

Background

CDC was founded in 1948 with the goal of alleviating poverty and fostering development in the colonies—and, later, the Commonwealth countries—of the United Kingdom. As this mandate expanded to address emerging markets in general, the organization's approach to achieving it also evolved. By the 1990s, CDC had become a sophisticated direct investor using direct private equity (PE) investments, project finance, and debt to advance its developmental goals. In 2004, as part of the reorganization sponsored by its government owner, the Department for International Development (DfID), CDC was separated from its direct investment portfolio, which was renamed Actis and became a strictly private sector emerging markets investor. CDC became a fund-of-funds investor targeting the private sector in the emerging markets.

During the ensuing funds investment era, from 2004-2012, CDC used a combination of detailed key performance indicators (KPIs) and more general development impact goals to measure its effectiveness. The KPIs included measurements of investment allocation relative to national income and geographic targets and returns relative to the external MSCI Emerging Markets Index benchmark of public markets. In 2009, as CDC's focus changed, its KPIs did as well, with the national income and geographic targets shifting to focus on low-income countries and Sub-Saharan Africa and the emergence of mobilization of third part capital as a key KPI. In addition, the returns benchmark shifted to an MSCI Emerging Markets Index that was adapted to reflect more closely the countries in which CDC was active.

CDC's mission[2] over this period was based on a theory of change in emerging markets, whereby **financial returns would generate turnover, EBITDA, taxes, and employment, leading to private sector development and broadly shared prosperity**.

To achieve this mission, three objectives emerged as follows:

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[2] CDC's articulation of its mission varied over the 2004-12 period (see CDC Annual Reports for exact wording), but variations of the mission aimed to share prosperity broadly through supporting businesses that would increase their employment, turnover/revenues, EBITDA, and taxes paid.

Objective 1. To attract third-party commercial capital to emerging markets
Objective 2. To provide capital to a broader range of businesses, including those that are harder to access
Objective 3. To build capacity for investing, Development Impact (DI) and ESG by supporting local and regional hands-on PE managers

It was agreed with DfID that these objectives could best be achieved through investing via a funds model.

Approach

To evaluate the impact of CDC's funds investment strategy, we accessed CDC data from its annual reports and other records, in particular data on its fund-level and company-level investments. In 2008, CDC introduced a new evaluation framework, which included the collection of annual development impact data at the company level, on which we have relied for this study. Consequently, the company-level dataset only covers the period from 2008 to 2012, rather than the entire 2004-2012 period. This dataset also contained some recording anomalies such as unrecorded data for employment, revenues, EBITDA, and taxes paid for some funds and companies. Due to the truncated time series and the missing data, our results likely underestimate the impact of CDC's fund investment efforts.

At the same time, we must acknowledge that the following analysis attributes the development impacts (job creation and increases in revenue, EBITDA, and taxes paid) entirely to CDC via the fund managers. While one could argue that these impacts should be allocated across the investors in each fund, possibly relative to the investment each has made, we did not use this approach. Not only is it computationally complex, but such precision ignores the many ways in which a partnership can provide more value as a group than as individuals. An investor with a small capital contribution may yet provide critical assistance to the fund manager or portfolio companies through introductions, advice, domain knowledge, or brand recognition. Thus, we credit CDC with these improvements, while acknowledging the contributions of many others.

To explore CDC's impact on first-time fund managers, we conducted a series of interviews that provided case-study accounts of its role, along with an analysis of the performance of first-time fund managers compared to their more experienced colleagues. Our interviews and case studies also explore the impact of CDC on its fund managers' ESG practices.

Results

CDC exceeded its national income and geographic allocation targets each year between 2004 and 2012. CDC's financial returns relative to its benchmark varied as the organization's mandate directed it to invest in more challenging geographies from 2008 through 2012. Comparing CDC's returns to any benchmark is challenging as the reported metric shifted from gross portfolio gains (to 2008) to net returns (from 2009 to 2012), while the MSCI Emerging Market Index was reformulated in 2009.

In addition to the mandated MSCI Emerging Markets Index, we compared CDC's returns to the MSCI Frontier Market Index, which shares a large number of geographies with CDC's investment targets although it addresses public markets. Another set of benchmarks came from the private markets data provider, Cambridge Associates, which produces a Rest of the World index. Although this benchmark includes some markets that do not match identically with CDC's, it reflects net returns to limited partners (LPs; the investors in the funds) from private funds, which may be thought more analogous to CDC's private fund investments. Table ES-1 summarizes the cumulative annualized returns for the entire period. Overall, CDC, including its portfolio of investments managed by Actis and Aureos, outperformed its official benchmark, the MSCI Emerging Market Index. On an annual basis, unreported in this section, CDC's gross portfolio returns equaled or outperformed the MSCI Emerging Markets Index from 2004 to 2008 and in 2011.

Table ES-1: CDC's Cumulative Annualized Returns Relative to Benchmarks, 2004-2012[3]

Title	**Cum. Annualized % Return**
CDC Returns	**14%**
MSCI Emerging Markets Index	10%
MSCI Frontier Markets[1]	3%
CA Average to LPs	4%
CA Upper Quartile to LPs	16%
CA Median to LPs	2%
CA Lower Quartile to LPs	-9%

CDC also appears to have made a significant developmental impact in terms of achieving its mission and the three related objectives:

CDC's mission was initially to stimulate economic growth by investing successfully in the private sector, by "placing [its] funds with skilled and experienced private equity fund managers" in its target markets.[4] As the funds business developed, CDC backed both experienced fund managers like Actis and Aureos, and first-time teams. We analyzed 123 funds in which CDC invested between 2004 and 2012. Half of these (62, or 50.4%) were first-time teams. While CDC's 2012 annual report noted that the organization had invested in 136 funds, 13 were excluded due to lack of data or the fact that they had not yet made an investment by our cut-off date for analysis.

[3] Please note that we did not audit CDC's fee streams but used the returns figures reported in the annual reports.

[4] CDC *Annual Report & Accounts 2005.*

The first-time fund managers tended to raise small funds (less than $500 million) and the companies in their portfolios created fewer direct jobs and saw lower—but still positive—economic benefits. At the same time, private equity is an apprenticeship business, and CDC's objectives evolved to prioritize putting new fund managers in business. Of 54 non-Actis and non-Aureos first-time fund managers backed by CDC, 31 (57.4%) had by 2013 gone on to raise successor funds and CDC had backed 13 (42%) of these.[5]

In terms of overall job creation, CDC's funds' investee companies created a total of 345,056 new direct jobs between 2008 and 2012, the period under consideration. China and South Asia led in employment growth. Among industry sectors, Consumer Services companies created the most jobs (30% of all direct jobs created).

We also examined the firm-level economic performance data for the companies in CDC's fund managers' portfolios. Between 2008 and 2012, these companies increased their revenues by $41.6 billion, grew EBITDA by $4.8 billion, and paid $2.1 billion more in taxes.

Objective 1. **To attract third-party commercial capital to emerging markets**: In 2009, CDC set a goal of mobilizing twice as much third party capital as it invested, measured on a rolling three-year basis. New CDC investments, in other words, were expected to generate twice that amount in investments by third parties. Between 2009 and 2012, CDC exceeded its third-party capital mobilization goals.

Objective 2. **To provide capital to a broader range of businesses, including those that are harder to access:** To determine whether CDC had reached more businesses and countries with a fund investment model than it could have done with a direct investment approach, we compared CDC's investment deployed per company and per employee, as well as its employee per company metrics to an average of highly regarded emerging market direct investors. We also used Preqin data to examine the number of countries in which emerging market direct investors, Helios and Emerging Capital Partners, had invested, and compared their reach to CDC's. On all counts, CDC's funds strategy allowed it to invest in more companies and countries using less capital and fewer staff than it could have done otherwise.

[5] Of the 31 successor funds raised by 54 first-time fund managers, 13 successor funds were backed by CDC, leaving 18 successor funds not backed by CDC. Of these, eight were largely outside Africa and South Asia, regions that became CDC's focus in 2009. A further 19 first-time fund managers had not raised successor funds by our end-2013 data cut-off. Of these, 10 were recent enough (with a vintage year of 2010 or later) that it was unlikely they would have returned to the market, while the other nine funds dated from 2005 through 2009 and several have raised additional funds after 2013. Finally, a group of four fund managers did raise additional funds but are not considered to have been direct successors of the funds in which CDC invested.

Objective 3. To build capacity for investing, development impact (DI) and environmental, social, and governance impact (ESG) by supporting local and regional hands-on private equity (PE) managers: The case studies show examples of CDC's role in establishing new funds, and its ability to impart sound ESG practices to its fund managers and portfolio companies. In 2007, CDC began distributing a "Business Principles Toolkit" to all current and future fund managers. To support the Toolkit, CDC has provided hands-on training to its fund managers, who then implemented its provisions among their portfolio companies. The case description of three fund managers (African Capital Alliance, AfricInvest, and Caspian Partners' India Financial Inclusion Fund) and Actis' investment in Celtel, the pan-Sub-Saharan cell phone services provider, describe CDC's role in building role-model fund managers and role-model companies in difficult places.

Conclusions

During the funds investing era from 2004 through 2012, CDC exceeded its internal and external investing benchmarks and successfully advanced its developmental goals. As will be seen in greater detail below, the funds investment strategy proved to be an important, effective, and efficient way of achieving CDC's previous mission and remains an important mechanism in achieving its current mission to support "the building of businesses throughout Africa and South Asia, to create jobs and make a lasting difference to people's lives in some of the world's poorest places."[6]

[6] *CDC Annual Review 2012*, overview.

Section 1 Introduction

1.1 History of CDC

CDC's mission at its founding in 1948 was to "do good without losing money."[7] While that mission has not fundamentally changed in the subsequent decades, the tools that CDC has used to achieve it—along with how the organization has struck the desired balance between developmental impact and financial return—have evolved. In the section below, we review CDC's experience as a fund-of-funds investor between 2004 and 2012. Following that discussion, we examine the quantitative results of our analysis.

CDC's eight years as a fund-of-funds investor can be divided into three periods: 2004-2006; 2007-2009; and 2010-2012. The first period was the post-spin-off phase, as CDC became accustomed to its new role, developed new skills as a fund-of-funds investor, and created a new relationship with Actis (spun off in 2004) and Aureos, a joint venture with Norfund that invested in emerging markets small and medium enterprises (SMEs) and was spun off in 2008. Between 2007 and 2009, CDC pursued a slightly different agenda, due in part to the government's ultimate decision not to privatize the operation and the resulting stronger focus on developmental impacts and the move out of Latin America. Starting in 2010, CDC shifted yet again, seeking more direct interaction with its investee groups while moving into more challenging regions and dramatically reducing the emphasis on financial returns in favor of developmental impact. Below, we discuss these periods in greater detail.

1.1.1 2004-2006

The period immediately following the Actis spin-off saw rapid change at CDC as the organization began its metamorphosis from primarily direct investing to exclusively fund-of-funds investing. At the time, only one member of the executive team possessed a fund investing background, and one of the early documents from this period was a guide to the process of due diligence for funds. The 2004 annual report indicates that CDC was invested in a total of 18 funds run by three fund managers: Actis, Aureos, and ShoreCap International. In addition, CDC made a commitment in principle to the Afghanistan Renewal Fund, which sought to raise $20 million.

Despite the changes that were under way, CDC still pursued its pre-spin-off mission: "To generate wealth, broadly shared, in emerging markets."[8] CDC's focused on creating competitive financial returns to attract third-party capital to underserved regions, while conforming to its mandate to invest 70% in funds targeting the poorest countries (with a

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[7] From The Overseas Resources Development Act 1948, which received Royal Assent on 11 February 1948, cited in CDC, http://www.cdcgroup.com/Who-we-are/Our-History/, accessed January 21, 2015.

[8] *CDC Annual Report*, 2004, p.2.

2001 Gross National Income (GNI) per capita of $1,750 or below); with the balance directed toward poor countries (2001 GNI per capita of $9,075 or below). CDC's mandate called for half its investments to be made in South Asia and Sub-Saharan Africa.

CDC did not have explicit developmental goals, on the assumption that increasing the capital available in its target regions would be inherently developmental, especially when combined with the advice provided by equity-owning investors. CDC viewed investing capital in profitable private sector companies as critical to the achievement of this mission.

By 2005, the number of investees had grown to 13 fund managers running 49 funds, and a new challenge had emerged. As CDC deployed its capital across a larger number of managers, it struggled to balance the different strategies of each particular fund—all while maintaining its standards. As a result of the eclectic mix of funds in which it was investing—from $5 million investment platforms to $50 million funds with layers of management—CDC used different approaches to due diligence for different funds by necessity. In the words of one interviewee, "CDC's [due diligence] process depended on the fund's strategy and scope."

CDC's post-commitment involvement with its fund managers was similarly tailored to the individual needs of the funds. As will be seen in greater detail in Section 3.2.5, CDC placed a great deal of importance on staying in close contact with first-time fund managers. Indeed, CDC's support for first-time, local PE funds predates the official shift to fund-of-funds investing in 2004. Between 1992 and 2003, CDC committed capital to 11 first-time African teams, 3 South Asian teams, 2 Asian teams (ex-South Asia), and 1 Latin American team. One staff member observed of CDC's hands-on approach, "It was a real focus; we did a lot of hand-holding."

By 2006, CDC had investments in 32 fund managers running 77 funds. In the annual report, Richard Laing, CDC's then-CEO, announced that he was "delighted to report a highly successful year."[9] The organization's net assets had grown to £2 billion, from £1.2 billion at the time of the spin-off two years earlier, and returns stood at 21% in sterling.

Instilling sound Environmental, Social, and Governance (ESG) practices in its investees was a key component of CDC's developmental mandate. The organization began creating a "Business Principles Toolkit" that would be introduced to all fund managers in 2007. To support the Toolkit, CDC planned a series of tailored training programs for its fund managers, who were then expected to implement it.

As one early example of CDC's ESG impact, Aureos worked closely with one of its portfolio companies, Brookside Dairy in Kenya, to establish new environmental standards. This company processed milk that came primarily from cows owned by small

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[9] *CDC Annual Report*, 2006, p. 6.

farmers and brought by "bicycle boys" to central collection points.[10] With CDC's guidance, Brookside improved its waste management processes and introduced a company-wide recycling program, along with an employee health and safety program.[11]

1.1.2 2007-2009

During this period, CDC began to focus more closely on its development mandate. The 2007 annual report stated, "Our mission is to generate wealth, broadly shared, in emerging markets, particularly in poorer countries, by providing capital for investment in sustainable and responsibly managed private sector businesses."[12] Although it was congruent with the previous goal—"To generate wealth, broadly shared, in emerging markets"—the emphasis had shifted towards employment and ESG.

CDC's geographic focus on poor and poorer countries, with half of its investments to be made in Sub-Saharan Africa and South Asia, was also about to change. Starting in 2008, 75% of new investments would be made in low-income countries (defined as those with a GNI per capital of less than $905) and more than 50% of its capital would be invested in Sub-Saharan Africa. At this time, CDC also produced its first stand-alone report on the development effects of its investments, with increased coverage of development in its annual reports thereafter.

This geographic shift reflected an important tenet of development finance: to evolve the mandate. As certain markets, most notably China, became "more attractive to private sector investors as well as richer,"[13] DfID and CDC determined that its investments should focus on needier regions. Similarly, CDC ceased its Latin American investment program in 2009, although some staff regretted the decision in light of the region's continuing development needs.

In 2008, CDC added an Investment Code to its Business Principles Toolkit. Commented one CDC staff member, "CDC realized it needed to adopt a more hands-on approach and incorporate more capacity building into its PE funds… [which meant] CDC has had an increasing engagement with the funds and their portfolio companies." This change in emphasis partly reflected a change in the market. As the staff member recalled, "In the early 2000s, it wasn't clear how much ESG you could expect from fund managers. Until 2009, it was difficult to demand certain ESG standards that are now considered normal."

With the goal of educating its fund managers, CDC continued to build its in-house capacity for promulgating sound ESG policies in challenging regions. Along with domain

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[10]Abraaj Group, "Brookside Dairy Limited," *www.abraaj.com/images/uploads/.../BROOKISDE.PDF*.

[11] *CDC Annual Report*, 2006, p. 12.

[12] *CDC Annual Report, 2007*, p. 12.

[13] Richard Laing in *CDC Development Report, 2008*, p. 5.

expertise, the organization was deepening its understanding of the differences in regional expectations and practices around ESG issues. As a result, CDC was able to customize its communications and ESG standards depending on the needs of its fund managers. In late 2009, CDC clarified its expectations in a revised Investment Code that was more explicitly tied to international good practice standards on ESG.

During this period, and in response to recommendations from Parliament, CDC also began implementing its system of annual monitoring and mid-point and final evaluations for all of its funds. The heart of the program involved CDC staff—or external evaluators under its direction—conducting a clear-eyed assessment of its funds based on the progress of their portfolio companies. Scores ranging from Successful to Poor were based on metrics such as growth in turnover (revenues), taxes paid, and employment. Whilst more subjective by nature, the evaluations also included a systematic assessment of each fund's ESG performance. The results were assigned numerical ratings (1-6) and aggregated to produce the final rating for the fund. The reporting of development impact in annual reviews from 2009 relied on company-level data on employment and taxes which at the time was unusual for a DFI to collect from its funds investments.

By the end of 2009, CDC's net assets had reached £2.5 billion. It had 65 fund managers and 134 funds invested in 794 companies in 71 countries. The value of CDC's portfolio stood at £1.4 billion, a dramatic recovery from 2008's level of £928 million that reflected the damage caused by the Global Financial Crisis.

1.1.3 2010-2012

The period 2010-2012 was one of substantial upheaval for CDC. In 2010, the organization endured criticism both from the press – which had made an issue of the compensation levels of certain employees and a perceived shift in focus to financial returns – and from the newly elected Conservative government. By the end of 2010, CDC was under government review, with results promised in 2011. Richard Laing, CEO since 2004, submitted his resignation, effective in 2012. A "reconfiguration" would be announced in 2011 and implemented in 2012.

In 2010, the organization substantially revamped its approach to ESG. Having observed the increased value provided by training fund managers on ESG, CDC began to run training workshops to introduce the new approach. In the following years, hundreds of fund managers were trained and the upgraded *ESG Toolkit* became a well-regarded resource on which first-time teams based their ESG management systems.[14] In addition, CDC began a program of due diligence questionnaires and site visits to investee companies, based on their ESG risk rating, and began to require reporting on fatalities from all fund managers. To support these programs, the organization increased its ESG staff. It is worth nothing, however, that a number of funds had existed for a number of

[14] At the time of this evaluation, CDC was in the process of a further major revision of its *ESG Toolkit*.

years by that stage and since there had been less focus on ESG previously, CDC's ability to influence these funds varied significantly.

CDC continued to pursue the strategy first implemented in 2009, adhering to the 75% poorest countries rule and placing at least 50% of its investments in Sub-Saharan Africa. By 2011, CDC had investments in 152 funds and 80 fund managers. Returns for fiscal year 2011, however, were negative 3%, a loss of £72 million. CDC's net assets fell to £2.61 billion.

The year 2012, though, saw dramatic changes. The portfolio recovered from its prior year's losses and posted a gain of 9%, or £223 million, reaching a valuation of £2.24 billion. CDC had investments in 155 funds and 84 fund managers, with 1,250 businesses in 77 countries. During the "reconfiguration," CDC's geographies became exclusively focused on two regions: Africa and South Asia, and within India, a strong preference for the poorest states.

Perhaps the most dramatic change was the reintroduction of direct investing, co-investing, and debt transactions, in addition to the fund-of-funds approach CDC had used for eight years. These changes were incorporated in a new five-year investment policy (2012-16).

The changes were the result of an effort by lawmakers to enable the organization to target its interventions more precisely. One observer noted, "Government has never been comfortable with the funds model as it lacked direct accountability." At the same time, however, it was noted that a funds strategy allowed CDC to invest more broadly and to build the capabilities of local fund managers. Between 2004 and 2012, CDC had invested in 62 first-time fund managers, and for most of them, its participation had been the critical force behind raising the fund.

1.2 Background of this Paper

With £1.8 billion in profit between 2004 and 2012, CDC made important impacts in its countries. This article explores the impact that CDC's fund of funds investment strategy had on the countries, companies, and fund managers in which the organization invested. By analyzing the results of its efforts, we hope to provide CDC with important lessons that can help to guide it as it continues to "support the building of businesses throughout Africa and South Asia, to create jobs, and make a lasting difference to people's lives in some of the world's poorest places."[15] In the following sections, we present our data and methodology, and then consider the results of CDC's fund investment program, with special attention to the degree to which CDC fulfilled its mission and objectives.

[15] *CDC Annual Report*, 2012, p. i.

Section 2 Data and Methodology

The major purpose of this paper is to compare CDC's actual performance against the mission and objectives stated in the reports over time. Below, we describe these metrics and our approach to evaluating CDC's performance against them.

The first effort involved assessing CDC's performance against its Key Performance Indicators or KPIs, as follows:

- Did CDC conform to the rules for its geographical concentrations?
- Did CDC's gross portfolio return exceed its benchmark of the MSCI Emerging Market Index (and later, the customized MSCI CDC-specific Index)?

The second major theme involved examining CDC's developmental impact as defined by its mission to **generate turnover, EBITDA, taxes and employment**, leading to private sector development and broadly shared prosperity, as well as examining three related objectives as follows:

Objective 1. To attract third-party commercial capital to emerging markets;
Objective 2. To provide capital to a broader range of businesses, including those that are harder to access;
Objective 3. To build capacity for investing, development impact and ESG by supporting local and regional hands-on PE managers.

To do this we examined objective data reported by investee company CEOs and fund managers to determine:

- The increase in direct jobs, revenue, taxes paid, and profits that occurred in investee companies;
- CDC's ability to mobilize third-party capital;
- The benefits of the fund strategy relative to a direct investment strategy;
- The numbers and performance of first-time funds as an indicator of increased local and regional PE manager investing and development impact capacity; and,
- CDC's ability to instill sound ESG practices among fund managers and portfolio companies through our three case studies

2.1 Data

To examine CDC's performance against its top-level goals, we relied upon CDC's annual reports and some of its internal analyses, along with the organization's gross portfolio return data, the MSCI Emerging Markets index and several other indices. We also assessed the degree to which CDC's investment patterns conformed to the guidelines, as described below:

- **2004 – 2008:**
  - At least 70% of investments were to be made in the poorest countries in the world (annual gross national income (GNI) per capita less than $1,750), with the remainder to be made in countries classified as poor (annual GNI per capita less than $9,075).
  - At least 50% of CDC's funds were to be focused on Sub-Saharan Africa and South Asia, and no new investments would be made in funds focused on Eastern Europe or Central Asia.
- **2009 – 2011:**
  - At least 75% of new investments would be made in low-income countries (annual GNI per capita below $905).
  - At least 50% of new investments would be made in Sub-Saharan Africa (the 2004-2008 South Asia requirement was dropped).

Starting in 2012, CDC was to invest exclusively in Africa and South Asia.

The analysis of CDC's developmental impact made use of two datasets that the organization provided. One contained CDC's data at the company level, while the other provided information aggregated to the fund level. Where it appeared appropriate, we dug more deeply into possible patterns in CDC's performance.

The company-level datasheet contained information on the changes in financial metrics and jobs that occurred in the portfolio companies in which CDC's fund managers invested. The data included the fund name, company name, region, industry, original cost, realized and unrealized value, multiple of invested capital, IRR, and employment, revenue, operating profits (EBITDA), and taxes paid. Observations included all companies in CDC's fund managers' portfolios starting on January 1, 2008 and concluded with those for which the closing date of the first round of investment occurred on December 31, 2011. Furthermore, the file included assessments of the degree of company support of the operational improvements suggested by CDC, and assessments of the firms' ESG compliance and strategy. Company status was designated as Written Off, Partially Realized, Fully Realized, or Current Investment.

We integrated these data with certain items from a spreadsheet with data on all of CDC's investments by fund. Extracting certain data, such as fund size and first-time fund manager status, we assembled a new spreadsheet that contained information on both company and fund characteristics.

Although the company dataset contained 1,088 total companies, some companies had received investment from multiple funds, resulting in duplicate entries. When duplicates were eliminated, we had a final data set of 919 companies. Furthermore, we made additional adjustments as described in the relevant sections. The data is particularly constrained due to its timing: although CDC has invested in funds since 2004, it only started collecting detailed data about the companies in the funds' portfolios in 2008. Since our time horizon ends at 2012, this means we have only five years of data. This timing cuts off the early history for many of the investments of the 2004-2007 period. While such truncation removes early failures, it also reduces the estimates of the funds' impact on the company-level job, tax, revenue, and profit growth. For instance, a company that received an investment in 2005 when it had 10 jobs, grew to 100 jobs in 2008, and was exited with 120 jobs in 2010 tells a much more compelling direct job creation story over the entirety of its development under the private equity group's ownership than over the last two years that are part of the record. Therefore, there is a good chance that our results will underestimate the true impact of these investments.

In all cases, we relied upon CDC's definitions of the data. We did not recategorize company industries or operational headquarters, for instance, nor did we contest definitions of first-time fund managers.

2.1.1 Data Cleansing

The data posed some challenges. For instance, to determine whether blank cells meant "0" or "Not Available," we contacted CDC for elaboration. Fully realized investments presented other challenges, as the companies often lacked data in the year of the exit, which would have led to the inaccurate assumption that there had been a complete loss of jobs or other performance indicators. In this case, we used the data from the year prior to the exit as "most recent year."

We also identified duplicate data entries, which stemmed from situations when different funds invested in the same companies and thus duplicated records. When we found instances of this situation, we split the data evenly across the funds that invested in the same company. Thus, a company backed by two funds that created 100 direct jobs would have 50 allocated to one fund and 50 to the other. This scheme preserved the characteristics of the different funds (for instance, first-time fund manager status and IRR) while maintaining the integrity of the data. For per-company calculations, the total number of companies has been used (919), not the higher number of invested companies (1,088). We preserved all other information about the investment such as the Original Cost and IRR because different funds invested different amounts at different times.

To analyze the changes in direct jobs, revenue, EBITDA, and taxes paid, we looked at the most recent data and the oldest data, and computed the difference between them, subtracting the observation in the first recorded year from that of the most recent year. However, not all companies reported the same number of years of data. For instance, a company that was exited in 2010 would lack data in the 2011 column — not because its employee count had fallen to zero but because it was no longer in the portfolio. To ensure that we captured accurate data, we constructed an algorithm that would account for the different time horizons over which the information was reported. With this approach, we could precisely determine the change in the relative variables over the 2008 – 2012 period.

To hold this computed "change" variable, we created a "delta" column. The algorithm for the delta column was

Change in variable = (IF(ISBLANK(E1),IF(ISBLANK(D1),IF(ISBLANK(C1),IF(ISBLANK(B1),A1,B1),C1),D1),E1))-(IF(ISBLANK(A1),IF(ISBLANK(B1),IF(ISBLANK(C1),IF(ISBLANK(D1),E1,D1),C1),B1),A1))

assuming that the entry for 2008 was in column A, that for 2009 was in column B, and so forth, with the entry for 2012 in column E.

This algorithm automatically subtracted the oldest entry from the most recent one. Therefore, regardless of the year each company recorded its first and last numbers, the algorithm adjusted to capture the change.

2.1.2 Caveats

Private equity invariably poses data challenges, in part because it is private. Companies are small and thinly staffed; fund managers may prioritize deal-making or fundraising over reporting. These and other difficulties are described below:

- **Timing:** A PE fund's financial results follow a "J-curve," in which the fund initially invests in companies and its own establishment and only later—usually in three or four years—does it start to realize gains from profitable exits. The adage "lemons ripen faster than plums" exacerbates the pattern, as companies often reveal underperformance early in their lifespans. Wise GPs will write these companies off and direct their efforts and further investment to more promising opportunities. Thus, a fund may perform poorly over the first half of its life, only to rebound in its later years. An IRR calculated early in a fund's existence, therefore, can show disappointing results only to have performance surge by the end of its life.

  Moreover, CDC's exclusive funds investment strategy existed between 2004 and 31 December 2011 (note that the group invested in these vehicles prior to 2004 and has continued to do so) and funds from the 2004-2012 period are continuing to make investments and provide realizations. Some of CDC's recent gains, for instance, stem from the discontinued strategy of investing in China. We could not analyze the returns from funds CDC invested in prior to 2004, nor did we track company or fund performance after 2012, because the project was defined as examining the performance and impact of CDC's funds' investments during the period 2008-2012 while it was solely investing in funds.

  It is important, therefore, to recognize that our assessment focuses, for the most part, on the period to 31 December 2011 with occasional extension to 2012. We do not analyze events that occurred after that date.

- **IRRs:** The major financial performance variable in our fund level dataset was Net Internal Rate of Return (Net IRR). Although this metric is widely used throughout the PE literature, it suffers from computational difficulties.[16] The most troubling issue here is its sensitivity to timing because an IRR places a heavier weight on the quick return of a smaller amount of money than on the return of more money later in a fund's life. In emerging markets, exits can be particularly challenging, forcing a PE fund to retain its position in a company longer than would be the case in a well-functioning exit market. At the company level, both IRR and multiple on invested capital (MOIC) were provided.

- **Valuation:** Setting a value on private equity assets is extremely difficult. Because the assets do not have a readily observable price and are undergoing a period of transformation, their value—the price at which a willing buyer and seller could reach agreement—is highly uncertain. Yet fund managers must estimate their value in their reports, which are then incorporated in CDC's portfolio valuation data. Most private equity values are highly uncertain and financial performance data is best viewed as directionally correct rather than precise.

- **CDC's ESG policies**: These changed substantially between 2004 and 2012. Consequently one cannot easily track ESG impacts. Success appeared on a case by case basis, as shown by the case studies in Appendix 5.3. CDC provided numerous resources to help develop its fund managers' capabilities, such as the toolkit, workshops, site visits, and one-on-one support. It did not, however, gather hard data on ESG outcomes with the exception of fatalities, which date from 2010. An independent survey of CDC's ESG activities with fund managers was undertaken in 2013[17] but further analysis does not form a core part of this work.

2.2 **Methodology**

With the cleaned datasheet and the delta information created, we ran a series of cross-tabs to determine patterns in the data. We used pivot tables to visualize the relationships between sets of independent variables. For instance, if we examined the relationship of employment changes by region and industry, the table would show the independent variable "region group" in the rows, and the independent variable "industry group" in the columns with sum of "delta employment" inside the cells.

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[16] For a full discussion of this and other measures of PE performance, please see Josh Lerner, Ann Leamon, and Felda Hardymon, *Venture Capital, Private Equity, and the Financing of Entrepreneurship,* (New York: J. Wiley, 2012), Chapter 4.

[17] http://www.cdcgroup.com/Documents/ESG%20Publications/esgsurvey.pdf

While crosstabs and pivot tables are an effective way to determine and present the patterns between different independent variables, they do not identify causality. We can, however, determine whether the results of the crosstabs originate from chance or a discernable pattern. To do this, we used the ANOVA test of significance.[18] Full details on the test and the results from each of the following analyses can be found in Section 5.2: Appendix: Tests of Significance —ANOVA.

It should be noted that CDC was not alone in its investment in these funds and that the changes in employment, revenue, EBITDA, and taxes are therefore unlikely to stem entirely from CDC's participation whether financial or advisory. Because CDC had not agreed upon a methodology for determining attribution during that period[19] and because such determinations are quite complex, we will recognize the importance of this issue and give implicit recognition to the many other groups that participated in the creation of jobs and economic development improvements that we discuss.

In the next section, we present our evaluation findings. After a discussion of CDC's achievement of its KPIs, we consider the development impact of its fund investments vis-à-vis the organization's mission and explore its three objectives to: attract third party commercial capital; provide capital to a broader range of businesses (by comparing the reach of its funds strategy to the impact of a direct-investment approach); and build capacity for investing, DI and ESG (including the examination of the performance of first-time fund managers relative to more experienced teams). Finally, we consider three case studies as examples of CDC's fund investments, and use these to explore the impact of CDC on its fund managers, including support to build ESG capacity.

[18] R. Lyman Ott and Michael T. Longnecker, *A First Course in Statistical Methods*, (United States: Thompson Brooks/Cole, 2004), 331.

[19] *CDC Annual Review*, 2014, p. 56.

Section 3. Evaluation of CDC's Fund Results

3.1 CDC's Key Performance Indicators

Since its founding in 1948, CDC's overarching mission was to alleviate poverty in the world's poorest countries. From its early days as a lender to private entities—at first primarily in the agriculture sector, then power generators and cement manufacturers in the U.K.'s former colonies—CDC had evolved by the 1990s into a direct equity investor with a wide-ranging and diversified portfolio that included holdings in financials, healthcare, telecommunications, and clean technology.

In 2004, CDC's adoption of the fund of funds strategy was accompanied by a set of broad internal benchmarks for measuring the successful rollout of the new investment policy. There were four metrics or KPIs: 1) an investment ratio based on the national per capita annual income of the target country; 2) an investment ratio based on the geographic location of the target country; 3) a ratio of third-party capital mobilized to CDC capital invested; and 4) performance against the MSCI Emerging Markets Index.

In addition to the national per capita income and geographic criteria that guided its funds investing, described earlier, CDC closely monitored the mobilization of third-party capital, which the organization viewed as key to its mission. As CEO Richard Laing noted in the 2004 annual report, "One measure of our success in promoting growth in the emerging markets will be the impact that we can have on encouraging third party investors to invest alongside us."[20] CDC tracked this information since the beginning of the fund of funds era, but in 2009, the organization published a mobilization target of 200% of its new investments and a "tapering formula" designed to account for third-party capital committed in subsequent fund closings. This target and the tapering formula are described in further detail in Section 3.2.3.

Note that in this section we consider CDC's investment allocation in terms of CDC's national income and geographic targets, and CDC's financial performance. We analyze third- party commercial capital mobilized as one of the three standalone objectives relating to CDC's mission separately in section 3.2.3.

The MSCI Emerging Markets Index was CDC's chosen benchmark for financial performance from 2004-2012, although it was an imperfect measure of the overall performance of the organization's portfolio. The MSCI Emerging Markets Index compiles the performance of publicly traded securities in a basket of 23 emerging markets. Because CDC did not invest in publicly traded securities, and the index's 23

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[20] *CDC Annual Report*, 2004, p. 4.

emerging markets had little overlap with CDC's mandated countries (eventually, only three were in common), the utility of this comparison diminished over time. When considering years of notable under- or over-performance, it is important to keep in mind the many differences between CDC's portfolio, which, for instance, excluded China, South Korea, and Taiwan, and the MSCI product, which heavily weighted all three countries and their active public markets. In 2010, recognizing the divergence between its goals and the underlying components of the MSCI index, CDC arranged for the group to create a custom index for comparison.

As with many of its peers in the development investment community, CDC met with success, as well as some setbacks, between 2004 and 2012. The early years of CDC's focus on fund of funds investing, 2004-2007, saw torrid economic growth in emerging markets[21] as they found appeal as a mainstream investment opportunity.[22] In the wake of the Global Financial Crisis of 2008-2009, CDC occasionally fell short of its financial performance goals, although it consistently exceeded the geographic and economic targets for its investment locations, as will be seen below.

The evaluation of CDC's investment allocation performance against its internal and external benchmarks is divided into two separate sections: 2004-2008, the period during which the original fund-of-funds investment policy was in place; and 2009-2012, the period following DfID's November 2008 announcement of changes to the investment policy. For both of these periods, as described below, the organization exceeded its goals.

3.1.1 2004-2008

CDC's Investment Allocation

CDC computed its performance against its national income and geographic targets as an average over a rolling five year period. Table 3-1 shows the investment ratios from 2004 through 2008, demonstrating that CDC succeeded in meeting or exceeding its targets for both geography and income.

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[21] Among many others, Conrad de Aenlle, "For Emerging Markets, a Move Toward Maturity," *The New York Times*, October 14, 2007 (http://www.nytimes.com/2007/10/14/business/yourmoney/14emerge.html?_r=0, accessed April 14, 2015). Some investment professionals viewed the weakening correlation between developed and emerging market equity indexes in late 2007 as an indication that the performance of emerging markets was no longer directly tied to the health of western economies.

[22] Between 2004 and 2007 inclusive, the MSCI Emerging Markets Index increased by an average of 32.78% annually. http://www.msci.com/resources/factsheets/index_fact_sheet/msci-emerging-markets-index-usd-net.pdf, accessed April 14, 2015.

Table 3-1: National income and geographic investment targets 2004-2008

	2004	2005	2006	2007	2008
Investments in the poorest countries (target: 70% of total investments)	77%	75%	72%	74%	75%
Investments in poor countries (not to exceed 30% of total investments)	23%	25%	28%	26%	25%
Investments in South Asia and Sub-Saharan Africa (target: 50% of total investments)	54%	62%	61%	67%	62%

CDC's Financial Performance

Every fund investor wants to know how its financial performance compares both to public markets and to other private funds. In this section, we review CDC's financial performance relative to its official benchmark and then to several other benchmarks, both public and private, that can help to provide a more nuanced view of its results.

Because CDC's investment mandate shifted between 2004 and 2012, most notably in 2009, we will examine its performance in the two distinct periods, 2004 – 2008 and 2009-2012, and then consider it overall. In its annual reports, CDC compared its financial performance to the MSCI Emerging Markets Index, which "captures large and mid-cap representation across 23 emerging markets."[23]

It is important to note a few details. CDC's returns reflect the results received in each year relative to the returns from the universe of investments received in that same year (for instance, 2004), even though the funds that made those investments may have been raised a few years earlier. CDC's returns include the mix of existing investments managed by Actis and Aureos. Therefore, while CDC's 2004 results stem from cash flows it received in that year, it may have invested in those companies and funds several years before. These results and the benchmark MSCI Emerging Markets Index are shown in the first two lines of Table 3-2.

In the second section of the table, we explore CDC's returns to some other benchmarks. We do this for two reasons. First, because CDC invests in private equity rather than

[23] From the MSCI Fact Sheet. The countries in the MSCI Emerging Markets Index are: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, Philippines, Poland, Russia, Qatar, South Africa, Taiwan, Thailand, Turkey and United Arab Emirates, and the index covers roughly 85% of the freely traded float in each country.

public equity, a comparison to another emerging market private equity index may be illuminating. Second, another interesting comparison would be a public market index that incorporates countries that are more similar to CDC's universe than is the MSCI Emerging Markets Index, where only three countries overlapped. We therefore chose the MSCI Frontier Markets Index and the Cambridge Associates private equity index for the Rest of the World (ROW) as our alternate benchmarks.

It is difficult to find a perfect benchmark. For example, Cambridge Associates benchmarks are derived from the performance results of over 5,000 private partnerships and around 70,000 portfolio company investments covering some 70 asset class/geographical groupings, and yet there is no ideal benchmark for CDC's portfolio 2004-12. This is not unusual for private equity groups as almost every organization has its own unique qualities. As a result, most experts recommend the use of a number of benchmarks, which provide a general framework within which a specific firm's performance can be assessed.[24]

The MSCI Frontier Markets index includes Argentina, Bahrain, Bangladesh, Bulgaria, Croatia, Estonia, Jordan, Kenya, Kuwait, Lebanon, Lithuania, Kazakhstan, Mauritius, Morocco, Nigeria, Oman, Pakistan, Romania, Serbia, Slovenia, Sri Lanka, Tunisia, Ukraine, and Vietnam. The 127 constituent companies reflect roughly 85% of the free float-adjusted market capitalization in each country.[25]

Cambridge Associates is a well-respected provider of advice and performance information on private equity firms. Cambridge Associate's ROW index covers Africa-Emerging, Canada-North America-Developed, Global-Developed (ex U.S.), Global-Emerging, Latin America & Caribbean-Emerging, Middle East-Developed, and Middle East-Emerging. While one would wish that fewer developed regions were included, it was the most applicable private equity index we could find and addressed the largest number of CDC's markets. The number of funds included in the index calculation for each year varied from 114 in 2004 to 251 in 2011.

Another discrepancy must be noted. Until 2009, CDC reported its gross returns—that is, without adjusting for fees and carry. This is a reasonable approach if fees vary widely among funds or if actually paying carry would be unlikely, as it allows simple comparisons across fund managers. Typically, however, PE firms report their returns net of fees and carry, and Cambridge Associates reports that figure. Therefore, these comparisons should be considered directional but not exact. To do a thorough comparison would require adjusting CDC's cash flows for the applicable fees and carry.

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[24] Robert Harris, Tim Jenkinson, and Steven Kaplan. "Private Equity Performance: What Do We Know?" *Journal of Finance* 69: 1851–1882 (http://www.nber.org/papers/w17874).

[25] MSCI Frontier Markets Index factsheet, accessed April 10, 2015.

In comparing CDC's performance to the Cambridge Associates ROW private equity returns, we report the average returns for each year. Private equity, however, has many outliers, both positive and negative, and we also report the upper and lower quartile returns along with the median, which shows the central tendency.

Relative to its mandated benchmark of the MSCI Emerging Markets Index, CDC performed strongly between 2004 and 2008, as shown in Table 3-2. Over the period, it produced a 21% cumulative annualized return. In 2004, which only recorded half a year as an independent organization, CDC's performance matched that of the index. In the following three years, its outperformance ranged from 12 percentage points in 2005 to 22 percentage points in 2008. Admittedly, 2008 was a difficult year for all financial markets, but CDC's losses were substantially less than those of its benchmark. Compared to the Frontier Markets Index, CDC had a slow start but then strengthened its performance. In 2004 and 2005, CDC's results lagged the index's performance—although 2004's difference was only one percentage point. In 2005, CDC performed at 50% of the Frontier Markets' level, but proceeded to exceed that benchmark regularly through the end of 2008. Relative to the Cambridge Associates ROW returns, CDC exceeded the upper quartile return overall and in every year except 2008.

Table 3-2: CDC Gross Return v. MSCI Emerging Markets Index 2004-2008 (bold indicates CDC outperformance)[26]

	Cum. Annualized %	**2004**	**2005**	**2006**	**2007**	**2008**
CDC Gross Returns	**21%**	22%	**42%**	**43%**	**57%**	**-33%**
MSCI Emerging Markets Index	1%	22%	30%	29%	37%	-55%
Alternative Comparisons						
MSCI Frontier Markets[27]	1%	23%	73%	-9%	42%	-54%
Cambridge Assoc. ROW Average Return (Net to LPs)	4%	-3%	2%	11%	10%	-4%
Cambridge Assoc. ROW Upper Quartile Return (Net to LPs)	16%	13%	13%	18%	18%	12%
Cambridge Assoc. ROW Median Return (Net to LPs)	1%	-2%	0%	2%	5%	-3%
Cambridge Assoc. ROW Lower Quartile Return (Net to LPs)	-12%	-19%	-12%	-9%	-7%	-19%

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[26] *CDC Annual Reports* for relevant years. Cambridge Associates data from ThomsonONE accessed April 10, 2015; and MSCI Frontier Markets index.

[27] FM countries include: Argentina, Bahrain, Bangladesh, Bulgaria, Croatia, Estonia, Jordan, Kenya, Kuwait, Lebanon, Lithuania, Kazakhstan, Mauritius, Morocco, Nigeria, Oman, Pakistan, Romania, Serbia, Slovenia, Sri Lanka, Tunisia, Ukraine and Vietnam.

3.1.2 2009-2012

CDC's Investment Allocation

In 2009, CDC's investment policy changed.[28] Table 3-3 shows that CDC consistently exceeded its revised income and geography goals for 2009 through 2011.

Table 3-3: National income and geographic investment targets 2009-2011[29]

	2009	2010	2011
Investments in low-income countries (target: 75%)	100%	92%	91%
Investments in Sub-Saharan Africa (target: 50%)	96%	84%	77%

CDC's Financial Performance

In 2010, CDC and Morgan Stanley developed a more tailored benchmark for financial performance measurement. As CFO Godfrey Davies explained in the 2010 annual report, "The individual country weightings within the MSCI Emerging Markets Index are rather different from the geographical spread of CDC's portfolio."[30] As a result, the MSCI Emerging Markets Index reported for 2010 and thereafter differs from the typically reported version of the index. As in Table 3-2, Table *3-4* compares CDC's performance (this time net returns, rather than gross return) to the adjusted MSCI Emerging Markets Index, the MSCI Frontier Markets benchmark, and the Cambridge Associates' ROW benchmarks for average, upper quartile, median, and lower quartile returns.

CDC's net returns lagged the adjusted MSCI benchmark in three of the four years reported. Because CDC switched to reporting net returns, while public markets report gross returns, some difference between the two measures is unsurprising. Only in 2011 did CDC's -3% performance exceed the -18% result from the broader metric. CDC lagged the MSCI Frontier Markets Index in 2009 and 2010, exceeded it in 2011, and matched it in 2012. This performance generated a cumulative annualized return of 7% for CDC, comparable to the Frontier Markets' 6%. Relative to the Cambridge Associates

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[28] In the wake of the 2009 changes to CDC's investment policy, the organization developed a set of backward-looking metrics to ensure that pre-2009 commitments that were still being drawn down post-2009 were following appropriate per capita national income and geography targets. As noted in the 2010 annual report, "[N]ew investments from commitments made prior to 2009 were 32% in Sub-Saharan Africa and 52% in low income countries, exceeding the targets of 27% and 40% respectively." *CDC Annual Report*, 2010, p. 5.

[29] *CDC Annual Reports* for relevant years.

[30] *CDC Annual Report*, 2010, p. 5.

benchmarks, with which CDC's net returns are more consistent, CDC was firmly in the second quartile for 2009, 2010, and 2012, but in the third quartile in 2011.

Table 3-4: CDC Net Return v. MSCI Emerging Markets Index and other benchmarks 2009-2012

	Cum. Annualized %	**2009**	**2010**	**2011**	**2012**
CDC Net Returns	7%	9%	12%	**-3%**	9%
MSCI Adjusted Emerging Markets Index	**19%**	**75%**	**19%**	-18%	**18%**
Alternative Benchmarks					
MSCI Frontier Markets Index	6%	12%	24%	-18%	9%
Cambridge Assoc. ROW Average Return (Net to LPs)	4%	1%	7%	4%	5%
Cambridge Assoc. ROW Upper Quartile Return (Net to LPs)	16%	15%	19%	14%	15%
Cambridge Assoc. ROW Median Return (Net to LPs)	4%	1%	5%	5%	5%
Cambridge Assoc. ROW Lower Quartile Return (Net to LPs)	-6%	-9%	-4%	-5%	-6%

3.1.3 Summary

Between 2004 and 2012, while CDC pursed a strictly funds investment strategy, the group performed quite well. It consistently met its internal goals for investment in companies in certain geographies and in countries with certain income guidelines. Its capital mobilization between 2009 and 2012 met its goals for that period, as will be described in Section 3.2.3. Furthermore, its financial performance exceeded its external benchmark between 2004 and 2008. Between 2009 and 2012, its more constrained mandate reduced its financial returns in most years relative to both its official benchmark and to the alternate metrics. In comparison to the private equity benchmarks between 2009 and 2012, CDC tended to perform in the second or third quartiles.

Over the period of 2004 to 2012, CDC's cumulative annualized financial results showed that it performed strongly. As shown in

Table 3-5, CDC outperformed the MSCI Adjusted/Unadjusted Emerging Markets Index and all of the other benchmarks, except for the Cambridge Associates Upper Quarter Return.

Table 3-5: CDC's cumulative annualized results relative to benchmarks, 2004-2012

	Cum. Annualized %
CDC Net Returns	**14%**
MSCI Adjusted/Unadjusted Emerging Markets Index	10%
Alternative Benchmarks	
MSCI Frontier Markets Index	3%
Cambridge Assoc. ROW Average Return (Net to LPs)	4%
Cambridge Assoc. ROW Upper Quartile Return (Net to LPs)	16%
Cambridge Assoc. ROW Median Return (Net to LPs)	2%
Cambridge Assoc. ROW Lower Quartile Return (Net to LPs)	-9%

3.2 CDC's Development Impact Mission

This section evaluates CDC's contribution to its development impact mission and three inter-related objectives.

CDC's mission[31] over the 2004-12 period was based on a theory of change in emerging markets, whereby **financial returns would generate turnover, EBITDA, taxes and employment, leading to private sector development and broadly shared prosperity**.

A fund-of-funds investment strategy was expected to be best suited for achieving this mission. The strategy had three objectives, defined below:

Objective 1. To attract third-party commercial capital to emerging markets;
Objective 2. To provide capital to a broader range of businesses, including those that are harder to access;
Objective 3. To build capacity for investing, DI and ESG by supporting local and regional hands-on PE managers.

To view the impact of CDC's investments between 2004 and 2012, we constructed a series of pivot tables to determine the impact of CDC's investments on employment and firms' economic performance in terms of growth in revenue, EBITDA, and taxes paid

[31] CDC's articulation of its mission varied over the 2004-12 period (see *CDC Annual Reports* for exact wording), but variations of the mission aimed to increase turnover, EBITDA, taxes and employment.

among the portfolio companies. We further examined the different impact by region, industry, fund performance, and for first-time fund managers. For CDC's detailed classifications of countries in each region, please see Section 5.2.

For the purpose of our analysis, we will present information for all the regions in which CDC invested from 2004 to 2012. Although CDC no longer invests in Asia ex-South Asia, Latin America, or Europe, we will include those regions under the umbrella "Rest of World" designation in the discussions. China was separated as its own region, as it dominates the Asia results, even though CDC no longer invests in China-focused fund managers.

It is clear that CDC created a significant impact through its funds investing. In total, our data show that between 2008 and 2012, companies supported by CDC's fund managers added 345,056 direct jobs, increased revenues by $41.6 billion and profits by $4.8 billion, and paid $2.1 billion more in taxes. Please note that as discussed earlier, these data underestimate the true impact of CDC's investments due to the truncated period over which these changes are assessed. Additionally, the final entry of many companies that were successfully exited was not supplied, and thus our analysis did not represent the full impact of the investment. The distributions are displayed in Table 3-6, below.

Table 3-6: Overall distribution of development impact (Direct Employment, Revenue, EBITDA, and Taxes in $USD millions)

By Region	Direct Employment Chg.	Revenue Chg.	EBITDA Chg.	Tax Chg.
Africa	40,501	5,234.1	1,399.8	629.4
China	125,238	18,803.8	1,591.7	754.7
Rest of World	61,972	8,582.2	722.1	491.2
South Asia	117,345	9,026.4	1,121.0	247.6
Total	345,056	41,646.5	4,834.6	2,123.0

By Industry	Employment Chg.	Revenue Chg.	EBITDA Chg.	Tax Chg.
Agribusiness & Food	28,289	4,505.8	222.3	-34.4
Consumer Services	102,632	8,381.9	839.2	184.0
Education	29,915	699.2	173.9	18.3
Extractive industries	23,128	-1,795.8	-696.1	170.4
Financials	72,549	8,756.9	1,443.6	469.8
Health care	13,043	2,199.6	25.4	261.9
Industrials	22,917	6,317.7	516.1	246.9
Information & communications technology	21,869	-333.4	-468.4	454.9
Infrastructure	26,731	9,189.7	1,859.4	208.3
Real Estate	3,983	3,724.9	919.3	142.9
Total	345,056	41,646.5	4,834.6	2,123.0

By Fund Level IRR	Employment Chg.	Revenue Chg.	EBITDA Chg.	Tax Chg.
-100% - -90%	-453	17.2	-0.5	0.0
- 60% - -50%	-384	4.5	0.6	-0.1
- 40% - -30%	281	138.6	12.4	0.3
-30% - -20%	4,632	673.7	35.1	1.2
-20% - -10%	23,544	249.1	55.3	22.3
-10% - 0%	82,681	5,234.8	-152.6	23.9
0% - 10%	134,253	22,229.1	2,805.1	1,227.6
10% - 20%	29,778	5,584.5	1,146.4	516.6
20% - 30%	4,632	2,459.7	807.6	167.1
30% - 40%	34,312	2,834.3	36.3	3.7
40% - 50%	31,765	2,211.7	85.4	159.2
90% - 100%	16	9.4	3.8	1.3
Total	345,056	41,646.5	4,834.6	2,123.0

The following sections will discuss these findings. For detailed analysis of the impact of first-time fund managers, please refer to the Appendix in section 5.1.

3.2.1 Change in Employment

The need for additional jobs in emerging markets is severe. In 2012, the World Bank estimated that global economy needed to have created 600 million more jobs between 2005 and 2020 to “absorb young people entering the work force, spur development, empower women, and prevent unrest."[32] CDC's theory of change stated that successful companies employ and train people and boost tax revenues for their local governments.[33] Below, we explore the distribution of direct job[34] creation across regions, industries, fund performance, and first-time fund managers.

3.2.1.1 By Region and Industry

We start by examining job creation by region, studying Africa, China, South Asia, and the Rest of World, and industry to determine which sectors created the greatest number of direct jobs.

Table 3-7: Total change in direct employment by region and industry

Region Group	Agribusiness & Food	Consumer Services	Education	Extractive industries	Financials	Health care
Africa	2,448	8,354	0	5,040	15,191	442
China	12,008	**60,332**	22,405	-750	3,324	5,595
Rest of World	5,463	2,609	306	17,976	26,774	-557
South Asia	8,370	31,337	7,204	862	27,260	7,563
Total	28,289	**102,632**	29,915	23,128	**72,549**	13,043
Percentage of Global Total	8.2%	29.7%	8.7%	6.7%	21.0%	3.8%

Bold > 50,000

[32] *IFC Jobs Study*, World Bank Group, 2013, www.ifc.org/jobcreation.

[33] *CDC Annual Review* 2008: 5.

[34] Note that this looks specifically at jobs created *directly* by portfolio companies in their own businesses, it does not consider jobs created *indirectly* in their supply chain or in the broader economy (e.g. due to the higher spending power of new employees). For this and other reasons, including timeframe of the analysis, these results should not be compared to those published in CDC's *2014 Annual Report*.

Region Group	Industrials	Information & communications technology	Infrastructure	Real Estate	Total	Percentage of Global Total
Africa	323	1,059	6,597	1,047	40,501	11.7%
China	12,902	4,820	1,787	2,815	**125,238**	36.3%
Rest of World	5,352	3,064	895	90	**61,972**	18.0%
South Asia	4,340	12,926	17,452	31	**117,345**	34.0%
Total	22,917	21,869	26,731	3,983	**345,056**	
Percentage of Global Total	6.6%	6.3%	7.7%	1.2%		

Bold > 50,000

In summary, of the total of 345,056 direct jobs created between 2008 and 2012, Chinese companies supported by CDC's fund managers created 125,238 (36.3% of total); followed by South Asia with 117,345 (34.0 %), Rest of the World with 61,972 (18.0%), and Africa with 40,501 (11.7%). Overall, the sector that created the most direct jobs was Consumer Services with 102,632 jobs (29.7% of the total), followed by Financials with 72,549 jobs (21.0%).

It is instructive, however, to examine direct jobs created per company, as 100,000 Consumer Services companies may have created only one job each. Thus, we created Table 3-8 with the average direct jobs created per company.

Table 3-8: Average change in direct employment per company by region and industry.

Region Group	Agribusiness & Food	Consumer Services	Education	Extractive industries	Financials	Health care
Africa	98	**557**	0	120	241	49
China	**667**	**1,676**	**5,601**	-250	**475**	**430**
Rest of World	**420**	79	102	**1,240**	**609**	-56
South Asia	**492**	**729**	**1,441**	57	**634**	199
Average	**388**	**808**	**2,301**	310	**462**	186

Bold > 375

Region Group	Industrials	Information & communications technology	Infrastructure	Real Estate	Average
Africa	10	46	**440**	55	165
China	243	151	112	**402**	**663**
Rest of World	149	204	66	23	333
South Asia	67	**646**	426	3	**392**
Average	123	243	313	95	375

Bold > 375

Overall, the average increase in direct employment per company was 375 jobs. The sector that created the most direct jobs per company was Education with 2,301 jobs per company (more than six times the average). Consumer Services had the second highest change in direct employment per company with 808 jobs on average (double the average).

When the regions were ranked by direct jobs/company, China led, followed by South Asia, Rest of the World, and finally Africa. The following section will analyze which two industries created the most direct jobs per region.

Between 2008 and 2012, Chinese companies created the most direct jobs per company at 663/company. Within China, the Consumer Services sector created 60,332 total direct jobs (1,676/company), while China's second-best performing sector, Education, added 22,405 total direct jobs (5,601/company).

In South Asia, companies created 392 direct jobs/company, on average. The best performing industry was Consumer Services, which created 31,337 total direct jobs (729/company). Indicating the volatility of the consumer services sector, its leading job creator added 32,287 jobs, while three other companies lost more than 1,000 employees each. The second-best performing sector in South Asia was Financials with a total of 27,260 direct jobs created (634/company). A single company in this sector directly created 14,881 jobs.

Companies in the rest of the world directly created 333 jobs/company on average. The best performing sector was Financials with 26,774 total direct jobs created (609 jobs/company). The second-best performing sector was Extractive Industries with 17,976 total jobs created (1,204 jobs/company).

African companies directly created 165 jobs/company on average. The best performing African industry was the Financials sector, which created 15,191 total direct jobs (241/company). The second-best performing sector was Consumer Services, which added a total of 8,354 direct jobs (557/company). The best- performing company in Africa added 7,054 direct jobs.

3.2.1.2 By Fund-Level IRR

We also examined the data according to the net IRR on the fund level to provide an alternative perspective on the impact of fund success on direct employment growth. The IRRs were the funds' net IRRs grouped by 10% bands.

Table 3-9 shows the total change in direct employment relative to the IRR bands, the number of companies in each band, and the average increase in direct jobs per company. As mentioned before, to account for duplicate companies, the "count" of companies was divided by the number of funds invested in a given company. Therefore, there may be portions of companies allocated to IRR bands.

Table 3-9: Change in total and average direct employment, and number of companies by fund-level IRR.

IRR	Change in Direct Employment	% of Total	Average Change per Company	Number of Companies	% of Total
-100% - -90%	-453	-0.1%	-453	1	0.1%
-60% - -50%	-384	-0.1%	-96	4	0.4%
-40% - -30%	281	0.1%	33	8.5	0.9%
-30% - -20%	4,632	1.3%	**662**	7	0.8%
-20% - -10%	23,544	6.8%	359	65.6	7.1%
-10% - 0%	**82,681**	24.0%	**434**	**190.3**	20.7%
0% - 10%	**134,253**	38.9%	314	**427.9**	46.6%
10% - 20%	29,778	8.6%	244	**122.3**	13.3%
20% - 30%	4,632	1.3%	110	42.2	4.6%
30% - 40%	34,312	9.9%	**1,002**	34.3	3.7%
40% - 50%	31,765	9.2%	**2,541**	12.5	1.4%
90% - 100%	16	0.0%	5	3.5	0.4%
Total	**345,056**		375	**919**	

Significant at 5%[35] *Bold > 50,000* *Bold > 375* *Bold > 100*

In general, companies that were in the portfolios of funds with IRRs between -10% and 10% created almost 217,000 total direct jobs, or 63% of the total direct job change. Because of the relatively large number of companies in the 0% - 10% band, the average number of direct jobs created per company backed by funds performing in this band, 314, was only 84% of the overall average of 375.

Companies where the fund managers had IRRs between 30% and 50% created almost 20% of the total number of direct jobs. Companies in funds with IRRs between 30% and 40% directly created 1,002 jobs each, while companies in funds with an IRR between 40% and 50% directly created 2,541 jobs each.

3.2.1.3 By First-Time Fund Manager Status

We also analyzed the direct employment growth of companies of first-time fund managers compared to those of non-first-time fund managers. Overall, there were 392 companies in first-time managers' portfolios, and 527 in non-first-time managers'

[35] Change in employment when categorized by IRR was significant at the 5% level. Please refer to Section 5.2: Appendix: Tests of Significance —ANOVA for more details.

portfolios. Companies with first-time fund managers directly created 136,404 jobs (348/company), whereas companies with non-first-time fund managers created a total of 208,652 direct new jobs (396/company).

By IRR

We analyzed the relationship between IRR bands and the overall direct job creation performance of first-time fund managers. Table 3-10 shows the full results below.

Table 3-10: Total change in direct employment of companies in the portfolios of first-time managers by IRR.

IRR	First-Time	Non-First-Time	Total	Difference (First-Not)[a]	Percentage of Total
-100% - -90%	-453	0	-453	-453	-0.1%
-60% - -50%	-384	0	-384	-384	-0.1%
-40% - -30%	281	0	281	281	0.1%
-30% - -20%	3,902	730	4,632	3,172	1.3%
-20% - -10%	36	23,508	23,544	-23,472	6.8%
-10% - 0%	31,120	**51,561**	**82,681**	-20,441	24.0%
0% - 10%	49,700	**84,553**	**134,253**	-34,853	38.9%
10% - 20%	9,795	19,983	29,778	-10,188	8.6%
20% - 30%	2,544	2,087	4,632	457	1.3%
30% - 40%	8,098	26,214	34,312	-18,116	9.9%
40% - 50%	31,765	0	31,765	31,765	9.2%
90% - 100%	0	16	16	-16	0.0%
Total	**136,404**	**208,652**	**345,056**		

Bold > 50,000 a: Negative differences indicate worse performance by first-time funds.

IRR	First-Time	Non-First-Time	Average[a]	Difference
-100% - -90%	-453	0	-453	-453
-60% - -50%	-96	0	-96	-96
-40% - -30%	35	0	33	35
-30% - -20%	**1,301**	183	**662**	1,118
-20% - -10%	10	379	359	-368
-10% - 0%	340	**523**	**434**	-183
0% - 10%	239	384	314	-146
10% - 20%	239	246	244	-7
20% - 30%	162	79	110	83
30% - 40%	**2,159**	**859**	**1,002**	1,300
40% - 50%	**2,541**	0	**2,541**	2,541
90% - 100%	0	5	5	-5
Average	348	396	375	

Bold = Greater than respective column average.

a: Negative differences indicate worse performance by first-time funds.

In four bands, companies of first-time managers created more direct jobs than did those of non-first time fund managers. In two bands, first-time managers' companies lost jobs. This finding may demonstrate that companies suffered from the inexperience of first-time managers. The results may also suggest that the first-time fund managers may have raised smaller funds and could not adequately support their companies. The other two bands in which first-time fund managers outperformed their more experienced peers were relatively high IRRs (20%- 30%, 40% - 50%), suggesting that companies of first-time fund managers also have the potential to generate stunning returns.

Companies of non-first-time fund managers in the middle of the distribution—with IRRs between -20% and 20%—created more total jobs than did companies of first-time fund managers with the same IRRs by at least 10,000 jobs, as shown by the difference column. This finding suggests that more experienced fund managers may create more jobs and more stable IRRs, but, at least in this sample, were less likely to create super star performers. For a detailed analysis on the distribution of first-time fund managers with respect to region and industries, please refer to Section 5.1.

3.2.1.4 Summary

CDC's portfolio of investee businesses created a minimum of 345,000 direct jobs around the world between 2008 and 2012. China and South Asia led in this employment growth. The Consumer Services industry created almost 30% of all jobs. Overall, companies of non-first-time fund managers created more direct jobs than did those of first-time fund managers. In general, better performing funds created consistently created more direct jobs. However, companies with first-time fund managers had a high risk, high reward dynamic where they could end up with a substantially negative IRR and job losses, but could also create great returns and significant direct job gains.

3.2.2 Firm-Level Economic Performance

The next part of the analysis focuses on the economic performance of the companies in the private equity groups' portfolios, measured by the changes in revenues, EBITDA, and taxes paid by these companies between 2008 and 2012. In total, revenues increased by \$41.6 billion (\$45.3 million/company), EBITDA increased by \$4.8 billion (\$5.3 million/company), and taxes paid increased by \$2.1 billion (\$2.3 million/company). As discussed earlier, the time period over which the data were analyzed is abridged, which means these results do not fully represent the impact of CDC's fund investments.

3.2.2.1 By Region and Industry

Below, we analyze the growth in revenue, EBITDA, and taxes paid across regions and industries, and consider it relative to fund performance and fund manager experience level. Table 3-11, below, displays the total and average change in firm economic performance across regions and industries.

Table 3-11: Total and average change in firm-level financial performance by region and industry in \$USD millions

Total	Agribusiness & Food			Consumer Services			Education		
Region Group	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.
Africa	45.7	30.0	-3.3	349.7	306.9	62.5	0.8	0.0	0.0
China	**3,356.1**	344.3	-4.6	**3,276.2**	124.1	156.8	341.0	90.7	13.0
Rest of World	664.2	50.0	7.7	**2,448.9**	212.6	29.6	247.9	41.0	6.3
South Asia	439.8	-201.9	-34.2	**2,307.1**	195.6	-64.8	109.5	42.2	-1.0
Total	**4,505.8**	222.3	-34.4	**8,381.9**	839.2	184.0	699.2	173.9	18.3
Percentage of Global Total	10.8%	4.6%	-1.6%	20.1%	17.4%	8.7%	1.7%	3.6%	0.9%

*[36]*Bold > 1,000*

[36] Change in total respective financial variables when categorized by regions and industries were all statistically significant at least at the 10% level. For a detailed explanation, please refer to Section 5.2, Appendix: Tests of Significance —ANOVA.

	Extractive industries			Financials			Health care		
Region Group	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.
Africa	**1,954.6**	400.7	72.7	**1,450.7**	429.4	157.5	397.7	53.8	4.0
China	-2.5	-3.5	0.0	284.5	-80.0	-16.7	**1,591.7**	-29.9	238.2
Rest of World	-3,999.9	-1,141.2	141.2	**5,140.2**	276.5	131.8	-235.6	3.9	0.6
South Asia	252.0	47.9	-43.5	**1,881.5**	817.7	197.3	445.8	-2.5	19.2
Total	-1,795.8	-696.1	170.4	**8,756.9**	**1,443.6**	469.8	**2,199.6**	25.4	261.9
Percentage of Global Total	-4.3%	-14.4%	8.0%	21.0%	29.9%	22.1%	5.3%	0.5%	12.3%

Bold > 1,000

	Industrials			Information & communications technology			Infrastructure		
Region Group	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.
Africa	612.3	34.6	-19.5	439.5	245.8	340.9	-28.2	-112.3	14.2
China	**4,212.6**	198.5	199.6	**1,927.8**	7.0	13.1	199.2	61.5	14.1
Rest of World	-193.2	140.5	6.9	**2,015.9**	670.6	103.4	**2,407.5**	463.9	61.8
South Asia	**1,686.1**	142.6	59.9	-4,716.5	-1,391.8	-2.4	**6,611.2**	**1,446.3**	118.2
Total	**6,317.7**	516.1	246.9	-333.4	-468.4	454.9	**9,189.7**	**1,859.4**	208.3
Percentage of Global Total	15.2%	10.7%	11.6%	-0.8%	-9.7%	21.4%	22.1%	38.5%	9.8%

Bold > 1,000

	Real Estate			Total Change			Percentage of Global Total		
Region Group	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.
Africa	11.4	10.9	0.5	**5,234.1**	**1,399.8**	629.4	12.6%	29.0%	29.6%
China	**3,617.2**	879.0	141.3	**18,803.8**	**1,591.7**	754.7	45.2%	32.9%	35.5%
Rest of World	86.4	4.4	2.1	**8,582.2**	722.1	491.2	20.6%	14.9%	23.1%
South Asia	9.8	25.0	-0.9	**9,026.4**	**1,121.0**	247.6	21.7%	23.2%	11.7%
Total	**3,724.9**	919.3	142.9	**41,646.5**	**4,834.6**	**2,123.0**			
Percentage of Global Total	8.9%	19.0%	6.7%						

Bold > 1,000

Average	Agribusiness & Food			Consumer Services			Education		
Region Group	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.
Africa	1.8	1.2	-0.1	23.3	**20.5**	**4.2**	0.8	0.0	0.0
China	**186.5**	**19.1**	-0.3	**91.0**	3.4	**4.4**	**85.2**	**22.7**	**3.2**
Rest of World	**51.1**	3.8	0.6	**74.2**	**6.4**	0.9	**82.6**	**13.7**	2.1
South Asia	25.9	-11.9	-2.0	**53.7**	4.5	-1.5	21.9	**8.4**	-0.2
Average	**61.7**	3.0	-0.5	**66.0**	**6.6**	1.4	**53.8**	**13.4**	1.4

Bold = Greater than respective total average.

	Extractive industries			Financials			Health care		
Region Group	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.
Africa	**46.5**	**9.5**	1.7	23.0	**6.8**	**2.5**	44.2	**6.0**	0.4
China	-0.8	-1.2	0.0	40.6	-11.4	-2.4	**122.4**	-2.3	**18.3**
Rest of World	-275.9	-78.7	**9.7**	**116.8**	**6.3**	**3.0**	-23.6	0.4	0.1
South Asia	16.8	3.2	-2.9	43.8	**19.0**	**4.6**	11.7	-0.1	0.5
Average	-24.1	-9.3	2.3	**55.8**	**9.2**	**3.0**	31.4	0.4	**3.7**

Bold = Greater than respective total average.

	Industrials			Information & communications technology			Infrastructure		
Region Group	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.
Africa	18.6	1.0	-0.6	19.1	**10.7**	**14.8**	-1.9	-7.5	0.9
China	**79.5**	3.7	**3.8**	**60.2**	0.2	0.4	12.4	3.8	0.9
Rest of World	-5.4	3.9	0.2	**134.4**	**44.7**	**6.9**	**178.3**	**34.4**	**4.6**
South Asia	25.9	2.2	0.9	-235.8	-69.6	-0.1	**161.3**	**35.3**	**2.9**
Average	33.8	2.8	1.3	-3.7	-5.2	**5.1**	**107.5**	**21.7**	**2.4**

Bold = Greater than respective total average.

	Real Estate			Total Avg. Change		
Region Group	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.
Africa	0.6	0.6	0.0	21.4	**5.7**	**2.6**
China	**516.7**	**125.6**	**20.2**	**99.5**	**8.4**	**4.0**
Rest of World	21.6	1.1	0.5	**46.1**	3.9	**2.6**
South Asia	0.8	2.1	-0.1	30.2	3.7	0.8
Average	**88.7**	**21.9**	**3.4**	45.3	5.3	2.3

Bold = Greater than respective total average.

Revenue

Overall, revenues for the companies in CDC's funds' portfolios rose by $41.6 billion. The region with the most revenue generation was China with a total increase in revenue of $18.8 billion (45.2% of total, $99.5 million/company). South Asian companies generated a total increase of $9.0 billion in revenue (21.0% of total, $30.2 million/company). Revenues for companies in the rest of the world rose by $8.6 billion (20.6%, $46.1 million/company). The total increase in revenues for African companies was $5.2 billion (12.6% of total, $21.4 million/company).

In China, the Industrials sector showed the greatest revenue growth, with a total increase of $4.2 billion ($79.5 million/company). Real Estate was the second-best performing sector with $3.6 billion in total revenue ($516.7 million/company). Two other sectors also had increases in total revenue above $3 billion: Agribusiness and Food with $3.3 billion ($186.5 million/company) and Consumer Services with $3.2 billion ($91.0 million/company).

South Asia's best performing sector was Infrastructure with a $6.6 billion increase in total revenue ($161.3 million/company). The two most successful investments generated $5.8 billion in additional revenue, combined. Its second-best performing sector was Consumer Services with an increase of $2.3 billion in total revenue ($53.7 million/company).

The best performing sector in the rest of the world was Financials, which showed an increase of $5.1 billion in total revenue ($116.8 million/company). The second-best performing sector was Consumer Services, with a $2.4 billion increase in total revenue ($74.2 million/company).

In Africa, Extractive Industries boosted total revenues the most, with an increase of $1.9 billion ($46.5 million/company). The second-best performing industry in Africa was Financials, with $1.5 billion ($23.0 million/company).

EBITDA

EBITDA for the companies in which CDC's funds invested grew by $4.8 billion between 2008 and 2012. When ranked by total EBITDA change, Chinese companies had an overall increase of $1.6 billion in total EBITDA (32.9%, $8.4 million/company). African companies followed closely behind, with a total increase of $1.4 billion in EBITDA (29.0% of total, $5.7 million/company). South Asian companies had a total increase of $1.2 billion in EBITDA (23.2%, $3.7 million/company).The rest of the world increased total EBITDA by $722.1 million (14.9%, $3.9 million/company).

China's best performing sector was Real Estate, with a total increase of $879.0 million ($125.6 million/company). Its second-best performing sector was Agribusiness and Food with a total increase of $344.2 million ($19.1 million per company).

The best performing African sector for EBITDA growth was Financials with a total increase of $429.4 million ($6.8 million/company). The second-best performing sector was Extractives with $400.7 million total increase ($9.5 million/company). One particular Nigerian company had a $1.2 billion increase in EBITDA, which was the best EBITDA overall, and the only company to have EBITDA grow by more than $1 billion.

South Asia's best performing sector was Infrastructure with a total increase of $1.4 billion ($35.3 million/company). Ranked next was Financials with $817.7 million total increase in EBITDA ($19.0 million/company).

The rest of the world's best performing sector was Information and Communications Technology with a total increase of $670.6 million ($44.7 million/company). Its second-best performing sector was Infrastructure with a total increase of $463.9 million ($34.4 million/company).

Taxes

Increased tax revenues represent a critical benefit for emerging market governments. Overall, companies backed by CDC's funds paid a total of $2.1 billion in taxes between 2008 and 2012. Chinese companies led the regions, with a total increase of $754.7 million in taxes (35.5% of global total, $4.0 million/company). For African companies, the tax bill grew by $629.4 million in total (29.6% of total global, $2.6 million/company). For the rest of the world, total taxes increased by $491.2 million (23.1% of global total, $2.6 million/company). South Asian companies paid $247.7 million more in total taxes (11.7% of global total, $0.8 million/company).

In China, the Healthcare sector had the highest tax increase, with $238.2 million paid ($18.3 million/company). The Industrials sector came in second with $199.6 million paid ($3.8 million/company).

In Africa, the sector with the highest increase in total taxes paid was Information and Communications Technology with $340.9 million ($14.8 million/company), followed by Financials with $157.5 million ($2.5 million per company).

In the rest of the world, Extractive Industries had the highest growth in taxes, with $141.2 million paid ($9.7 million/company). The second highest was Financials with $131.8 million ($3.0 million/company).

In South Asia, the Financials sector saw the largest increase in total taxes paid with $197.3 million ($4.6 million/company). The sector with the second highest increase was Infrastructure with $118.2 million ($2.9 million/company).

3.2.2.2 By Fund-Level IRR

We next examined firm economic performance with respect to fund IRR to see if there was a correlation between these metrics and the fund IRRs. As before, we grouped the companies into bands according to fund-level IRR by 10% increments, and then we examined the changes in firm economic performance. Table 3-12 displays the total and average changes in the firm economic performance across all companies according to fund IRR. The discussion follows the tables.

Table 3-12: Total and average change in firm economic performance by fund IRR in $USD millions

IRR	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Percentage of Total		
-100% - -90%	17.2	-0.5	0.0	0.0%	0.0%	0.0%
-60% - -50%	4.5	0.6	-0.1	0.0%	0.0%	0.0%
-40% - -30%	138.6	12.4	0.3	0.3%	0.3%	0.0%
-30% - -20%	673.7	35.1	1.2	1.6%	0.7%	0.1%
-20% - -10%	249.1	55.3	22.3	0.6%	1.1%	1.0%
-10% - 0%	**5,234.8**	-152.6	23.9	12.6%	-3.2%	1.1%
0% - 10%	**22,229.1**	**2,805.1**	**1,227.6**	53.4%	58.0%	57.8%
10% - 20%	**5,584.5**	**1,146.4**	516.6	13.4%	23.7%	24.3%
20% - 30%	**2,459.7**	807.6	167.1	5.9%	16.7%	7.9%
30% - 40%	**2,834.3**	36.3	3.7	6.8%	0.8%	0.2%
40% - 50%	**2,211.7**	85.4	159.2	5.3%	1.8%	7.5%
90% - 100%	9.4	3.8	1.3	0.0%	0.1%	0.1%
Total	**41,646.5**	**4,834.6**	**2,123.0**			

Statistically significant at the 10% level.[37] *Bold > 1,000*

[37] Change in total taxes when categorized by IRR was statistically significant at the 10% level. Please refer to Section 5.2, Appendix: Tests of Significance —ANOVA for the full details.

IRR	Revenue Chg.	EBITDA Chg.	Taxes Chg.
-100% - -90%	17.2	-0.5	0.0
-60% - -50%	1.1	0.1	0.0
-40% - -30%	16.3	1.5	0.0
-30% - -20%	**96.2**	5.0	0.2
-20% - -10%	3.8	0.8	0.3
-10% - 0%	27.5	-0.8	0.1
0% - 10%	**51.9**	**6.6**	**2.9**
10% - 20%	**45.7**	**9.4**	**4.2**
20% - 30%	**58.3**	**19.1**	**4.0**
30% - 40%	**82.8**	1.1	0.1
40% - 50%	**176.9**	**6.8**	**12.7**
90% - 100%	2.7	1.1	0.4
Average	45.3	5.3	2.3

Bold = Greater than respective column average.

In general, there was a relatively normal distribution shape where the majority of the revenue/EBITDA/taxes originated from companies backed by funds that performed in the 0% - 10% IRR range. The extreme IRR bands generated smaller changes, possibly because they contained smaller numbers of funds and thus companies. For each of the variables—revenue, EBITDA, and taxes— the two best performing bands by total change will be discussed. For all three variables, companies in funds with IRRs between 0% and 10% had the greatest increase, while companies in funds with IRRs between 10% and 20% had the second-best performance.

Companies where the fund managers' IRR was between 0% - 10% increased their total revenues by $22.2 billion (53.4% of total, $58.3 million/company). When the fund IRR was between 10% - 20%, the companies increased their total revenues by $5.6 billion (13.4% of total, $45.7 million/company).

The best performing EBITDA category included companies with funds-level IRRs between 0% and 10%, with $2.8 billion (58.0% of total, $6.6 million/company). The second-best performing band was the 10% - 20% range with $1.1 billion (23.7% of total, $9.4 million/company).

In taxes paid, the best performance came from companies in funds with an IRR between 0% and 10%, at $1.2 billion (57.8% of total, $2.9 million/company). The second-best performing category was companies with a fund level IRR between 10% and 20%, where taxes grew by $516.6 million paid (24.3% of total, $4.2 million/company).

3.2.2.3 By First-Time Fund Manager Status

We also examined revenue, EBITDA, and taxes paid for companies with respect to first-time fund managers. As mentioned earlier, a total of 392 companies were held in funds managed by first-time managers; a total of 527 companies were managed by non-first-time mangers.

Table 3-13: Total and average change in revenue, EBITDA, and taxes of companies by first-time fund managers in $USD millions

Total	Revenue Chg.	EBITDA Chg.	Tax Chg.
First-Time	11,450.9	1,311.9	836.8
Non-First-Time	30,195.6	3,522.8	1,286.2
Total	41,646.5	4,834.6	2,123.0

Average	Revenue Chg.	EBITDA Chg.	Tax Chg.
First-Time	29.2	3.3	2.1
Non-First-Time	57.3	6.7	2.4
Average	45.3	5.3	2.3

Overall, companies with non-first time managers created more total revenue, EBITDA, and taxes paid. Companies with first-time managers generated $11.5 billion in total revenue ($29.2 million/company) compared to $30.2 billion ($57.3 million/company) for companies with non-first-time managers. Companies with first-time managers also generated less EBITDA— a total increase of $1.3 billion ($3.3 million/company) — compared to $3.5 billion ($6.7 million/company) for companies invested by non-first time funds. Companies with first-time managers also paid less in total taxes with $836.8 million ($2.1 million/company), compared to $1.3 billion for companies with non-first-time managers ($2.4 million/company). For a full detailed analysis on the breakdown of distribution of firm economic performance by regions, industries, and IRR bands with respect to first-time and non-first time status, please refer to Section 5.1.

3.2.2.4 Summary

Overall, CDC's fund managers supported companies that increased revenues by $41.6 billion, EBITDA by $4.8 billion, and taxes paid by $2.1 billion. In terms of the best performing region, China had the largest increase in total revenue, EBITDA, and taxes paid. In terms of industry, Financials and Infrastructure were the two industries that had the highest total change in revenues and EBITDA. For taxes paid, Financials and Information & Communications Technology had highest changes.

When categorized by IRR bands, the 0% - 10% band generated at least half of the total change for each financial variable. Funds that performed better would tend to generate higher financial returns, and funds that had negative IRRs generated smaller financial returns. Finally, when separated into companies managed by first-time mangers and those of non-first-time mangers, companies of non-first-time fund managers performed better. We would suggest that companies of non-first-time fund managers would perform better because of the fund manager's experience—but whether that stems from better initial choice of company, more funds to support their growth, or better operational expertise, we do not know. For more details, please refer to Section 5.1.

3.2.3 Objective 1: To Attract Third Party Commercial Capital to Emerging Markets

CDC began tracking the amount of third-party capital mobilized in 2005, the first full year of its role as a fund-of-funds investor. Information for 2004 reflects performance only from July of that year when the split from Actis was complete. During this period, CDC did not have an official benchmark for capital mobilization, and thus did not report a moving average as it did starting in 2009. Between 2004 and 2008, CDC committed £1.46 billion and an additional £1.75 billion was committed by third party investors, suggesting a mobilization rate ratio of 1:1.2.

In 2009, CDC articulated a goal for third-party capital mobilized: 200% of its own new investments over a three-year rolling period. In other words, the organization believed that a CDC investment should generate at least twice that amount in capital from third-party investors, but it accepted that such mobilization might only occur over time.

CDC had realized that its work at increasing the capacity of its fund managers, particularly first-time funds, often played a critical role in the fund's formation and served as a "seal of approval" to other investors, particularly DFIs. Moreover, the organization also provided important guidance for fund structure, interaction with LPs, and processes for investment and ESG performance. Finally, the results from this intense guidance persisted, albeit with a diminishing impact, over the following funds. Therefore, instead of its earlier measurement for mobilization, which simply considered non-CDC capital raised by funds in a given year relative to CDC's contribution to those funds, CDC and its shareholder DfID developed a metric that captured the long-term impact of its investment in these managers that accounted for its initial formative role. This metric credited CDC with mobilizing capital in first time funds and tapered its role in the subsequent funds. The formula worked as follows:

- CDC received credit for the entire value of third-party capital invested in a manager's first fund.
- To reflect the growing importance of the fund manager's track record and the diminishing catalytic effect of CDC's involvement in subsequent funds, its

"credit" for investments in second funds raised by the same manager was reduced by 25%;
- Third-party investments in third funds raised by the same manger were tapered 50%; and
- Investments in the same manager's fourth and subsequent funds were tapered by 75%.
- Percentages were computed on a rolling three-year basis.

As an example, let us consider the following example shown in Table 3-14, which assumes that CDC only invested in three funds in 2009, 2010, and 2011: a first-time fund, a second fund raised by a fund manager in which CDC had invested earlier, and a third fund that CDC had helped to establish. Each type of fund raised the same amount of money in each year ($50 million for first-time funds, $150 million for second funds, and $300 million for third funds) and CDC invested the same amount in each fund type ($12 million, $15 million and $18 million respectively). The first panel shows this information, and the second panel shows how CDC's credit for third-party mobilization is calculated, as explained in the bulleted section above, ending at the third year.

Table 3-14: Example for calculating CDC's third-party mobilization figures

	2009		**2010**		**2011**	
	Total $M	**CDC $M**	**Total $M**	**CDC $M**	**Total $M**	**CDC $M**
First time	50	12	50	12	50	12
2nd fund	150	15	150	15	150	15
3rd fund	300	18	300	18	300	18
Total	500	45	500	45	500	45
CDC Mobilization Credit						
	Calculation	**Result**	**Calculation**	**Result**	**Calculation**	**Result**
First time	(50-12)	38	(50-12)	38	(50-12)	38
2nd fund	(150-15)*.75	101.25	(150-15)*.75	101.25	(150-15)*.75	101.25
3rd fund	(300-18)*.5	141	(300-18)*.5	141	(300-18)*.5	141
Total		280.25		280.25		280.25

CDC's fund mobilization figure in 2011, then, would be the average of its mobilization credits since 2009, each of which is adjusted to account for CDC's role in establishing the fund, relative to the $45 million it invested each year. The calculation would be:

Mobilization Percentage: (3* (38 + 101.25 + 141))/ ((3*(12+15+18)/3; or 208% in this example.

Table 3-15 shows CDC's third-party capital mobilization, using the three-year rolling average method described above. CDC regularly exceeded its goal of 200% capital mobilization. Please note that due to the tapering impact of funds raised in earlier years, the entries in the last row in *Table 3-15* cannot be calculated using the data in the upper two rows.

Table 3-15: Third-party capital mobilized 2009-2012[38]

	2009	**2010**	**2011**	**2012**
Third-party capital mobilized (GBP millions)	767	891	496	252
CDC new investments (GBP millions)	359	420	364	397
Third-party capital mobilized as a percentage of CDC new investments, 3-year rolling avg. (target: 200%)[39]	278%	378%	480%	385%

This 'tapering formula', while reasonable on the whole, could arguably over-state the credit for third party funds raised by third, fourth, and later funds. CDC would have played an undoubted role in early funds and its backing in a second and even a third fund sends an important message of support to potential LPs. As the fund manager seeks backing from classic institutional investors, however, CDC's impact may become more mixed. Commercial LPs often view the presence of DFIs in private equity funds with misgivings due to fears of conflicting goals that might lead the fund manager to sub-optimize the fund's financial results. Over time, the fund manager's performance will be far more important in attracting capital than would the initial role played by CDC.

Moreover, this algorithm classed all third party capital – both public (other DFIs) and private sector money invested - as funds mobilized. Starting in 2014, in agreement with DfID, CDC will only track the amount of investment by private sector investors, excluding that of other DFIs. This metric will thus compare CDC's capital to the third-party *private* capital mobilized.

3.2.4 Objective 2: To Provide Capital to a Broader Range of Businesses

One of CDC's primary questions of this analysis was whether it had been able to invest in a broader range of businesses and countries through a fund of funds strategy than would have been possible otherwise. We broke the analysis into two parts. First, "Was CDC able to invest in *more* companies through a fund of funds strategy than it would have been able to invest in had it pursued a direct strategy?" Then we considered whether CDC was able to invest in a broader range of businesses—defined as more countries—than had it used a direct strategy.

To answer the first part of the question—could CDC through a funds strategy invest in more companies or more efficiently than had it pursued a direct strategy—we needed a

[38] *CDC Annual Reports* for relevant years.

[39] Percentages calculated on a three-year rolling basis.

comparative CDC with the characteristics of the real CDC, including its small staff, emerging market mandate, and remote location. Essentially, we wanted a CDC that had all the characteristics of the real CDC except its funds strategy.

One might suggest that CDC's comparison should be the World Bank Group's International Finance Corporation (IFC). Both indeed have a widespread presence across emerging markets. Yet IFC has a number of characteristics that impede its ability to function as a good counter-factual for CDC. First, despite its base in Washington D.C., it has a significant network of offices throughout the emerging world. Second, IFC itself invests extensively through funds, in addition to providing debt. Only in 2009 did it create its third-party direct investment and lending operation, IFC Asset Management Company (IFC AMC).[40] Third, IFC is vastly larger than CDC. IFC AMC's first fund, the 2009-vintage IFC Capitalization Fund, had $3 billion under management. As of 2012, IFC had 3,400 employees, compared to 65 for CDC in that same year.[41] Finally, IFC is a donor-funded organization. As such, it will occasionally create programs that reflect donor concerns, which may differ from CDC's chief goal of poverty alleviation. Thus, IFC was both too similar, in its use of funds investment, and too different, in its size, on-the-ground presence, and donor-funded structure, to be a good counter-factual. In addition, most other DFIs also pursue funds strategies, complicating our search for a counter-factual.

Because there was no single clearly comparable organization to use as a comparison, we created a synthetic amalgam. We found information on several direct investors that focused on a multitude of emerging markets, rather than country-specific funds over portions of the 2004-2012 period of interest. Our variables of interest were dollars invested, numbers of companies, and employees. We averaged these results to create a fictional comparison firm doing direct investment in these regions.

We then had to make some assumptions about the performance of CDC, had it adopted a strategy of direct investment. These are described below:

- CDC had the same number of employees and invested the same amount of money per year as it did in reality.
- The "amount invested per year" equaled the drawdowns that CDC provided to its funds.
- The direct-investing CDC invested in the same number of companies each year as had the fund managers. Thus, if CDC's fund managers invested in 185 companies in 2007, we assume that the direct-investing CDC invested in the same number of companies in the same year.

[40] http://www.ifcamc.org/.

[41] IFC 2014 Annual Report, http://www.ifc.org/wps/wcm/connect/CORP_EXT_Content/IFC_External_Corporate_Site/ Annual+Report/2014_Online_Report/FinancialHighlights/

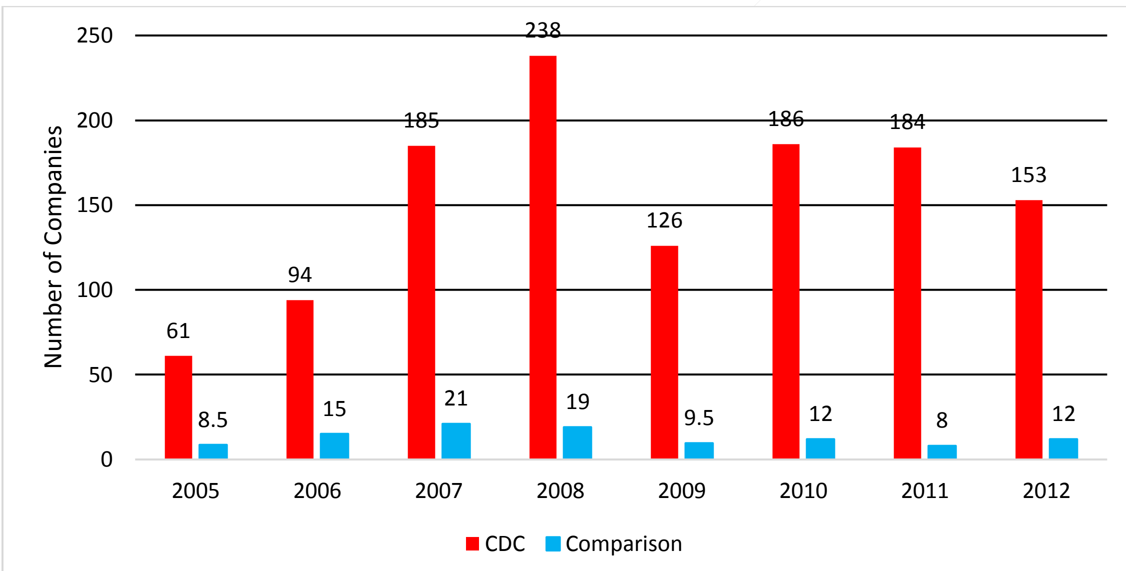
With this information, we calculated simple ratios showing how many millions of dollars were invested per company and per employee, and the number of companies invested in per employee.[42]

Below, we explore the results of this analysis.

Results

Figure 1 shows the differences in the total invested company count for CDC and the average of its comparison group of emerging market fund managers. CDC's investment pace is substantially larger than that of its comparison group—in fact, between six and 15 times the number of companies as the direct investors.

Figure 1: Total companies receiving investment per year



With CDC's far larger investment numbers, it is not surprising that it was investing more capital than its comparison group as shown in Figure 2. Direct investors must source and diligence their deals, and then negotiate the terms of the investment. As may be expected, this process takes substantial amounts of time. Because CDC had multiple fund managers, each working on their own deals, CDC could effectively invest more capital in more companies than if it had to source, diligence, and negotiate each deal with its own small staff. Between 2005 and 2012, CDC consistently invested more money—

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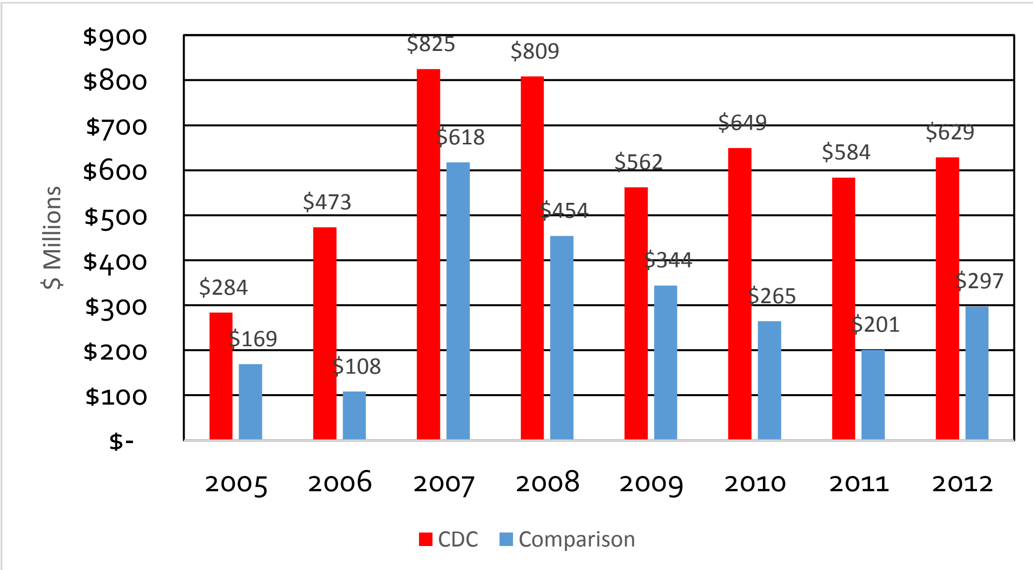
[42] We are aware that in most private equity funds, the number of employees is greater (usually double, for reasonably sized funds) the total number of investment partners due to the presence of back-office support staff. Because we could not reliably split back office and investment professional staff in our data, we use the full employee number.

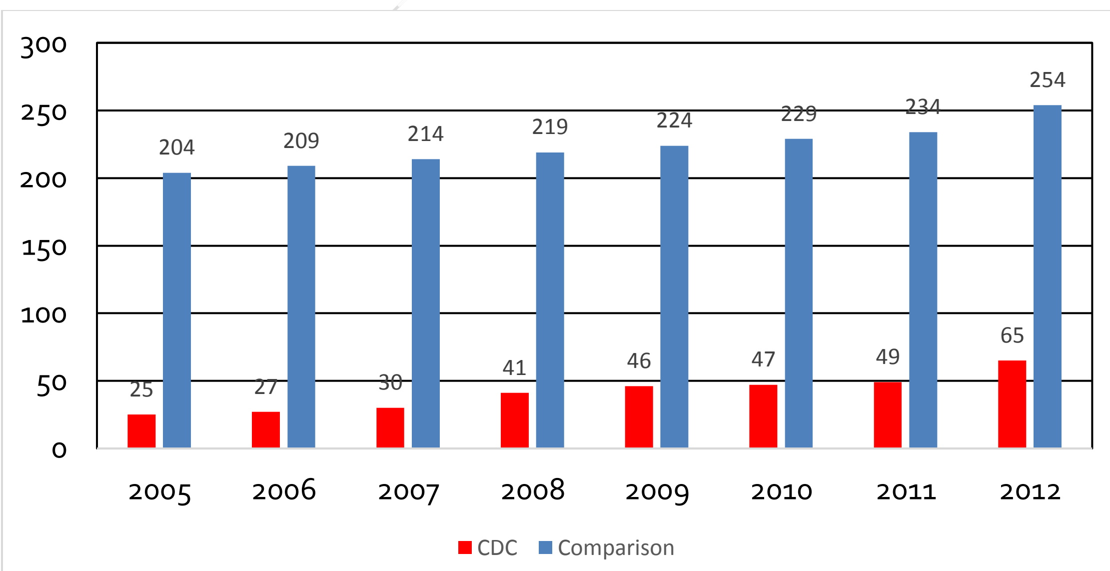
sometimes substantially more, as seen in 2008 and 2010 onward, than the average invested by PE fund managers that pursued a direct strategy.

Figure 2: Total US$ million invested per year



One must ask whether the comparison group might have had a smaller workforce to diligence and manage its investments. We therefore assembled the data on employee counts. Figure 3 shows, however, that CDC's employee counts far trailed its direct investing comparison group.

Figure 3: Total employees each year



According to the analysis above, then, CDC had fewer employees yet invested more total capital and in more companies than did PE funds that pursued a direct investment strategy over this period. It is thus infeasible that CDC could function as stand-alone fund and still achieve this performance.

Analysis by Company

To examine CDC's efficiency in greater detail, we analyzed CDC's performance on a more detailed basis. First, we considered the amount of capital invested per company, then the money deployed per employee, and finally the number of companies that each employee would have managed. These are simple ratios.

*Table 3-16*Table *3-16* shows that CDC invested less capital per company than did its comparison. Part of this is undoubtedly a different mix of development stages in the portfolio companies—especially in 2010, when the comparison set spent almost 20 times for its average company than did CDC. Yet it also indicates that CDC spread its capital across a greater number of companies (as shown in Figure 1), thus demonstrating that the fund-of-funds model allowed CDC to invest in more companies, in part through smaller allocations of capital to each company.

Table 3-16: Investment ($Ms) per company

	Comparison	**CDC**
2005	$ 7.87	$ 4.66
2006	$ 18.41	$ 5.04
2007	$ 23.49	$ 4.46
2008	$ 21.39	$ 3.40
2009	$ 19.88	$ 4.46
2010	$ 67.72	$ 3.49
2011	$ 33.69	$ 3.17
2012	$ 24.04	$ 4.11

While CDC invested less per company than did its comparison on average, we must consider the number of employees available to make the investment. After Actis was set up, CDC lost its international network and its staff number dropped from close to 200 to 25.

Figure 3 shows that the direct investing firms, on average, had employee counts many times CDC's. By doing funds investing, CDC invested more money – and in far more companies – per employee than did the comparison group, as shown in Table 3-17. In each year, a single employee in the comparison was responsible for less than 1/10th of a company, or, put another way, more than 10 employees were involved in each investment. CDC's employees, on the other hand, were figuratively investing in between two and six companies each.

Table 3-17: Companies invested in per employee

	Comparison	CDC
2005	0.041	2
2006	0.061	3
2007	0.077	6
2008	0.063	6
2009	0.024	3
2010	0.038	4
2011	0.024	4
2012	0.032	2

Again, such a discrepancy emphasizes the efficiency of funds investing vis-à-vis direct investing, because it allows for more companies to be reached and more capital to be deployed with fewer employees.

Analysis by country

The second part of the question was whether CDC's funds strategy allowed the organization to invest in a broader range of companies than would have been possible using a direct approach. Using the number of countries as a proxy for "broader range," we answered this question as follows:

- We first sorted CDC's company level data by investment date, to identify the number of companies that received investment in each year.
- We next noted the number of discrete countries that were labeled "Locations for Operations" for the investee companies in each year.
- We then summed the number of countries. Some companies—fewer than five annually—noted that their operations spanned a region. A region was counted as one country, to reflect the possibility that the company might operate in a country that was not recorded elsewhere. Several occurrences of the same region (that is, three occurrences of Africa Region), however, would only be counted as a single occurrence of another country to reduce double-counting. Many countries, most especially India and China, were home to multiple investee companies, but each country was counted as occurring only once. For example, in a year where CDC's funds invested in nine companies in China and eight in India, the number of countries would only be counted as two, one distinct occurrence of each.

Table 3-18 shows the results of this assessment.

Table 3-18: *CDC's countries of investment per year*

Year	2004	2005	2006	2007	2008	2009	2010	2011
Countries	6	22	27	40	44	35	37	38

The year 2004 understandably shows relatively few countries because CDC was just starting its fund of funds program. As the stable of funds became larger, the number of companies accessed grew correspondingly and reached its height in 2008.

Finding a comparison in this case is also challenging. Many emerging market fund managers focus on one region or country to reap maximum benefit from their local networks. An India-focused fund will, by definition, invest in a single country. An Africa-regional fund such as Helios or Emerging Capital Partners (ECP) will invest in more countries but may do fewer deals per year due to personnel constraints. Preqin reports that Helios' 2010 fund has invested in five African countries over the fund's life to date. Perhaps a better comparison, according to Preqin, is ECP, a U.S.-based pan-African fund manager, which has invested in 25 countries since its first fund, a 1997 vintage. CDC exceeded that performance every year after 2005, as shown in Table 3-18. These differences are substantial enough to conclude that CDC definitely invested in a larger number of countries through its funds business than had it relied upon direct investment.

Summary

Clearly, the funds model offered CDC broader reach into companies and countries than would a direct investment approach. Furthermore, it was more efficient in terms of personnel, a critical concern given CDC's sharply reduced workforce. CDC's fund investments reached roughly one country per employee per year, very different from the performance of even the widest ranging direct investor we considered, which reached 25 countries over 17 years.

3.2.5 Objective 3: To Build Capacity for Investing, DI and ESG by Supporting Local and Regional Hands-On PE managers

To evaluate CDC's effectiveness in supporting local and regional PE managers to build their capacity for investing and creating development impact (DI), we consider first-time fund managers, which given CDC's geographies are often a necessary first-step to building the broader market. To have a broader understanding on the evolution of successive funds, we wanted to view a larger time frame because the life span of a fund can last about ten years. Therefore, we examine CDC's participation with first-time fund managers from 1992 to 2013.

In our following analysis of the performance of first-time fund managers relative to non-first-time managers, however, we return to the 2004-2012 time frame. To maintain consistency with the earlier first-time funds analysis in Section 3.2, we follow the discussion of successive fund investment that spans the longer period with more detailed analysis over the 2004-2012 timeframe. Additionally, ESG capacity building is covered in Section 5.3 with anecdotal evidence from three case studies.

Building the Capacity of First-Time Fund Managers

In interviews, CDC staff said one of the firm's major achievements was building the capacity of first-time fund managers. First-time fund managers would increase the financing options within its countries of interest. As fund managers increased their abilities and thus their returns, their ability to mobilize third-party funds would rise. Furthermore, on-the-ground fund managers would be well-placed to create better deal flow.

To explore the degree to which CDC actually increased the capacity of its first-time fund managers, we extended the analysis done earlier in the report, where we considered the firm level economic performance of the portfolio companies in which first-time fund managers invested. We determined that in many cases, more experienced fund managers had more consistent returns than their more novice counterparts. However, first-time fund managers tended to have more extreme results, with IRRs that were usually much lower or much higher than that of non-first-time fund managers. In this section, we explore the characteristics of these two sets of fund managers, seeking to identify patterns from CDC's investment history.

First, we must make some notes on the data and assumptions employed. The data came directly from CDC's records, spanning 1992 to 2013 and indicated which funds were raised by first-time teams. We start with the 1992 date to account for the vintage year of the first fund investment that CDC made (Ghana Venture Capital Fund Ltd). We took CDC's assessment of the first-time status at face value. Similarly, CDC invested in a number of funds managed by Actis and Aureos, some of which were classified as first-time managers. We did not presume to second-guess these classifications and we included these funds in the analysis.

Secondly, in exploring whether CDC had invested in a subsequent fund managed by a first-time fund manager, in most instances, we looked for the same fund name with a subsequent fund number. Thus, if CDC had invested in first-time fund manager's Fund I and then invested in a later fund with the same name and a later number, identified as a non-first-time fund manager, we noted it as a subsequent investment. In one instance, CDC skipped the second fund, but committed capital to the third fund. This situation was counted as a backing a successive fund. Finally, in a few instances, first-time managers created a successive fund without a subsequent fund number where the name of the fund changed slightly, often with a different geographic focus. For example, Grofin raised Grofin East Africa Fund in 2006, and then Grofin Africa Fund in 2008. Cases like these were considered as investment in two first-time fund managers. We did not investigate whether the fund manager had changed the name of its fund, created a new team, or spun out members of the existing team into a new fund.

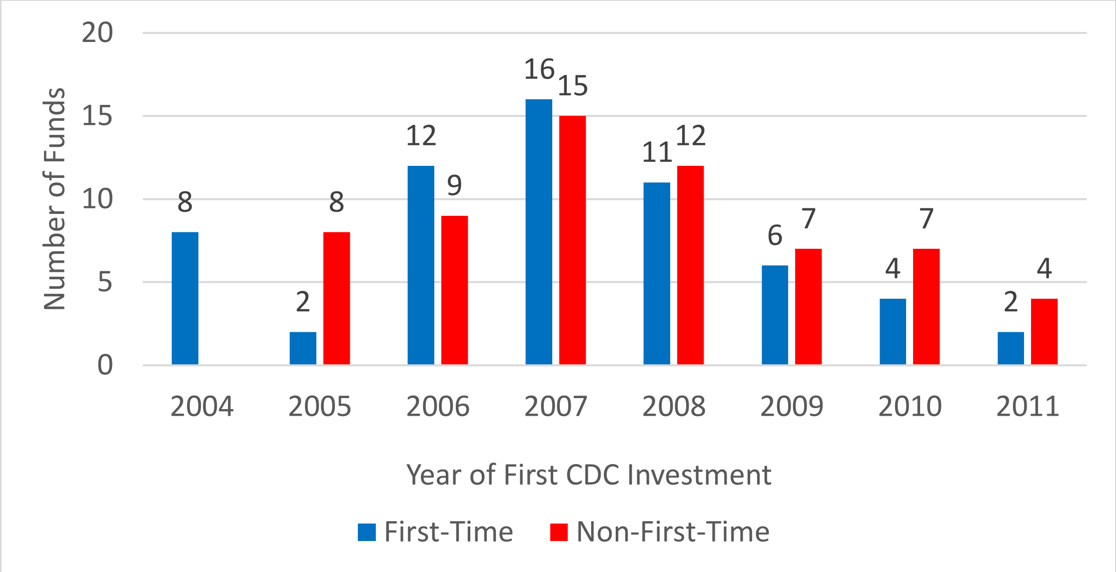
Between 1992 and 2013, CDC invested in 182 separate funds. Of these, 56% (102) were first-time fund managers; 44% (80) were managers with non-first-time funds. Over the shorter 2004-2012 period, CDC invested in 123 funds, practically evenly split between first-time (62) and non-first-time (61) managers. This dataset differs from the 136 funds in which CDC had invested by 2012[43], because 13 had not yet made an investment or had not yet reported on it. Half of these (62, or 50.4%) were managed by first-time teams; 61 (49.6%) were managed by non-first-time teams.

We further analyze the results of these more recent fund investments below.

Results

In the following section, we examine data from 2004 to 2012 by years, region, fund capital size, and IRR performance. Looking at its fund manager choices over time, CDC initially invested in a large percentage of first-time fund managers, as shown in Figure 4. In 2004, all of its fund managers were first-time. Over time, the ratio varied between 25% (2005) and 52% (2007) first-time teams.

Figure 4: First-time and non-first-time fund investments by year

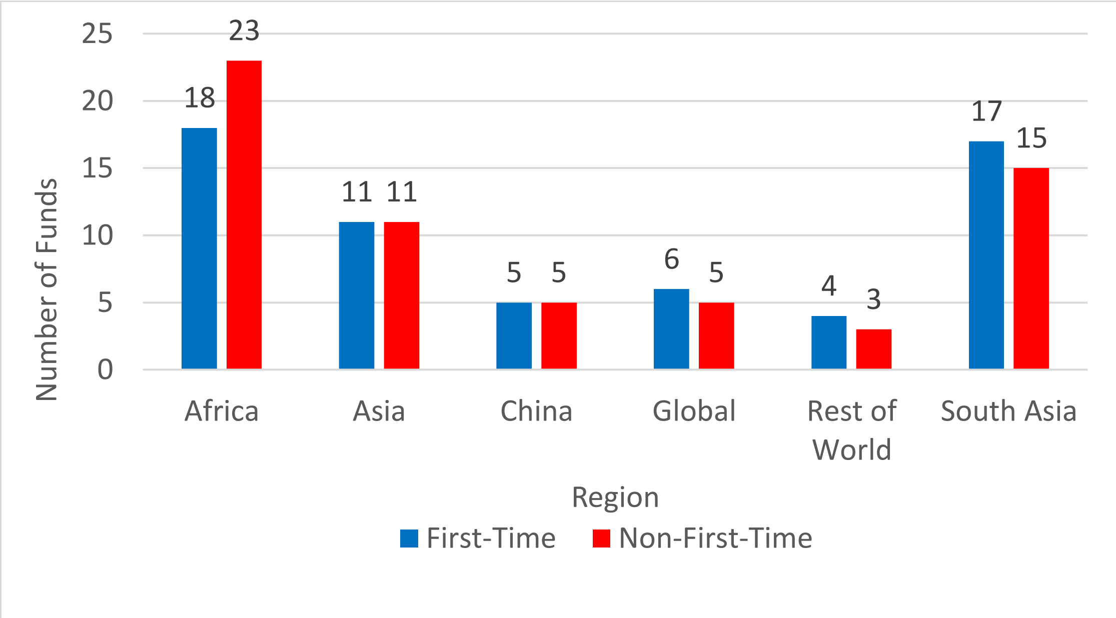


A subsequent question can be the location of these fund managers. In Figure 5, we show the fund managers by region. With 41 funds, Africa had the largest number of funds as

[43] *CDC Annual Report*, 2012.

well as first-time and non-first-time managers. South Asia, with 32 funds, had the second-highest number of funds, of which 53% of which were first-time managers.

Figure 5: First-time and non-first-time fund managers by region



First-time fund managers tended to raise smaller funds than their more experienced colleagues did. This is not surprising, given the difficulty in raising a first-time fund even in developed markets. Preqin reported that of the funds that closed globally in 2013 and 2014, only 7% in each year were first-time funds.[44] Figure 6 shows that 56 of CDC's first-time fund managers (90%) raised funds under $500 million, while 46 of the more experienced managers (75%) raised funds of that size. Eight non-first-time fund managers raised funds between $500 million and $700 million, while two first-time and three non-first-time managers raised more than $1 billion.

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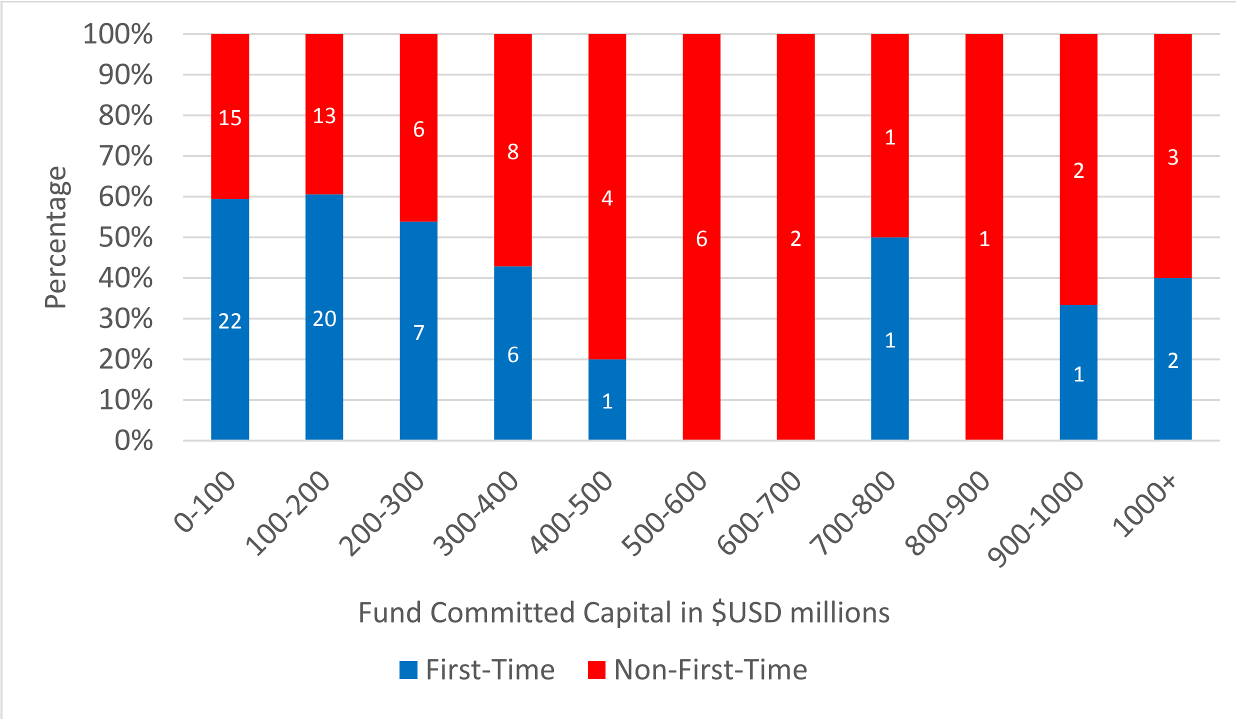
[44] Preqin, *2014 Global PE Report* (London: Preqin, 2014), and Preqin, *2015 Global PE and VC Report* (London: Preqin, 2015).

Figure 6: Fund size for first-time and non-first time fund managers in $USD millions



The next question involves performance. Here, we are limited by the nature of the calculation, because IRRs tend to over-value gains or losses achieved early in a fund's life. In addition, some IRRs include unrealized values for portfolio companies, which can change dramatically as the company evolves. As a result, these data should be viewed as directional rather than absolute indicators.

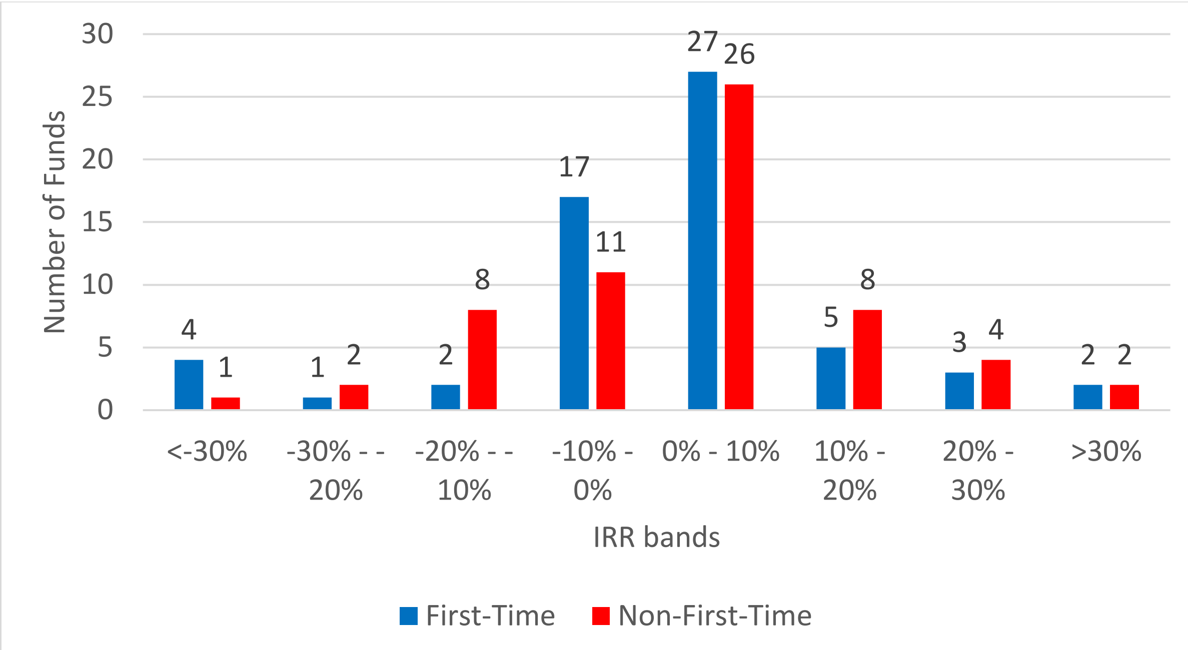
As shown in Figure 7, non-first-time fund managers tended to have higher IRRs than did first-time fund managers. In the 0% - 10% band, the number of first-time and non-first-time managers was fairly even. However, as the IRR band gets higher, the number of non-first-time managers edge out the number of first-time managers. In the -10% - 0% IRR band, first-time managers account for 61% of funds. This performance, as noted earlier, may reflect lack of experience but may also indicate that their typical fund size may have excluded them from promising if expensive deals.

Research by Josh Lerner and colleagues has shown that the performance of PE firms tends to rise with later funds. Additionally some poor performance from funds may lie in their larger fund sizes. As the teams become more experienced, their returns increase only when fund size does not grow substantially.[45] Dramatic growth in fund size creates a

[45] Lerner, Leamon, and Hardymon, *Venture Capital, Private Equity, and the Financing of Entrepreneurship*, (NY, NY: J. Wiley, 2012): Chapter 12.

number of challenges for the fund manager, among them the issue of managing more companies or recruiting additional partners and the possibility of moving into larger deals that put different demands on the investment professionals.

Figure 7: IRRs of first-time and non-first-time fund managers



We realize that CDC has set goals regarding the mobilization of third party capital. This, combined with the excitement of a fund-manager who can raise a larger subsequent fund, may create a situation that encourages fund-managers to expand beyond their infrastructure's ability to support strong performance. Given the caveats regarding IRRs, this observation should be taken as a possibility rather than a strong statement of cause and effect, but CDC may wish to keep it in mind.

CDC's Participation in Successor Funds

Part of CDC's efforts to create the capacity of local fund managers can be judged by the number of first-time fund managers that raised successor funds. In this analysis, we explored CDC's investment in the later funds raised by their first-time fund managers between 1992 and 2013.

Of CDC's 54 non-Actis and non-Aureos first-time fund managers, 31 (57.4%) raised a subsequent fund. Of these, CDC invested in the successor funds of 13 managers: African Capital Alliance, African Lion, Ambit Pragma Ventures, Avigo Capital Partners, Development Partners International, Equator Capital Partners, European Financing Partners, Grofin, Helios Investment Partners, IDFC Project Equity, India Value Fund Investors, Kendall Court, and Lok Capital.

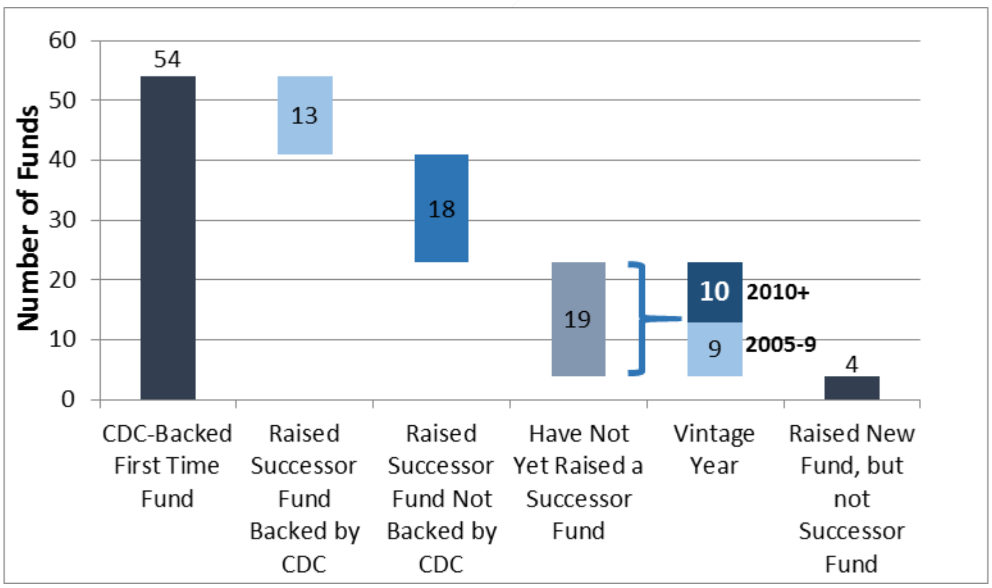
CDC did not invest in successor funds raised by 18 of its first-time managers, eight of which were outside Africa and South Asia, regions that became CDC's focus in 2009. These successor funds ranged from $7 million to $1.35 billion in size, with an average size of $350.2 million. The fund manager that created the largest successor fund was FountainVest Partners, which closed its second fund in 2013 at $1.35 billion.

There were 19 funds (35.2%) that had not raised a successor fund by the end of 2013. Ten of these had a vintage year of 2010 or later, so the fund manager might raise another vehicle in the future. The remaining nine funds had vintage years between 2005 and 2009 and may have delayed their fund-raising (indeed, we are aware that several have raised successor funds since 2013), been merged with other funds, or otherwise avoided our screen. In some cases, departing team members of funds may have gone on to set up their own funds. There were also fund managers whose track record from their first fund did not warrant a successor.

Finally, four fund managers (7.4%) created new funds, but did not meet the guidelines of this study to be classified as a successor fund. We reiterate that a fund manager may have created a new fund, just not a successor fund, according to the criteria. These four fund managers were placed in their own category, because they raised additional funds with such a change in strategy that they could not be considered successor funds to those in which CDC had originally invested.

Figure 8 below shows the distribution of the various categories in graphical form.

Figure 8: Successor funds raised by CDC's first-time fund managers



3.3 *Case Studies*

To further examine CDC's achievement of its mission and related objectives, we undertook four case studies of the organization's fund- and company-level investments. These cases can be found in Section 5.4. Each describes a specific instance of CDC's involvement with a first-time or recently established local PE fund management team and illustrates various aspects of CDC's efforts to meet these objectives.

We chose the funds based on several criteria. We wanted funds representative of CDC's current geographies, Africa and South Asia, and we sought a range of results and CDC impacts. In addition, the fund managers needed to be amenable to sharing information about their experiences working with CDC. After significant discussion, we selected the following three funds and a company case study:

- **African Capital Alliance (ACA), Capital Alliance Private Equity (CAPE) I, Nigeria**: ACA, the first indigenous Nigeria PE fund, started raising its CAPE I fund in 1998. CDC participated in the fund's first close and helped the general partner establish its organization and structure. Thanks in part to CAPE I's investments in the telecommunications sector and CDC's support to a first-time fund manager, ACA has now become the leading domestic PE firm in Africa's largest economy.

- **AfricInvest, Maghreb Private Equity Fund II (MPEF), North Africa**: Founded in 1994 as Tuninvest, AfricInvest raised a number of funds investing in North Africa and across the continent. CDC invested in the 2010 second close of AfricInvest's MPEF II. CDC helped AfricInvest adopt more rigorous ESG practices, and the case demonstrates CDC's ability to create value in a fund where another DFI, FMO, also played a leading role.

- **Caspian Impact Investment Advisor, India Financial Inclusion Fund (IFIF)**: CDC's participation in this 2008-vintage microfinance fund played a critical role in its successful fund-raising. In addition, CDC provided important assistance as the fund weathered a difficult regulatory situation.

- **Celtel, investment of Actis, Africa Fund I, Sub-Saharan Africa:** Celtel, a pan-Sub-Saharan Africa cell phone service provider, was acquired by the Kuwait Telephone Company (MTC) for $2.9 billion in 2005. This transaction represented Kuwait's first investment in Africa. CDC/Actis, which invested in Celtel in 2005, played a pivotal role in the company's evolution and in the development of Sub-Saharan Africa's telecommunications infrastructure. The transaction demonstrated that private equity investment could create a world-class company in Africa and that it could exit with impressive returns.

It is impossible to capture the full range of CDC's work in four short cases. Nevertheless, we believe these cases do provide some valuable, if largely situation-specific and inherently qualitative, insights of how CDC achieved its objectives in these examples.

Below, we summarize three themes we found in these cases:

1. Responsible regulatory oversight creates opportunities, while lax, chaotic, or unpredictable regulatory environments imperil opportunities: MTNN, the marquee success of ACA's CAPE I fund, along with the disappointing results of the IFIF at its mid-point, together provide an object lesson in the power of the state to create or destroy investment opportunities.

As the Government of Nigeria began moving toward the deregulation of the formerly state-dominated telecommunications sector, the Nigerian Communications Commission (NCC), the regulatory oversight body, successfully created a transparent auction process for spectrum licenses that conformed to best practices. The result was a level playing field in which well-capitalized firms were able to purchase valuable licenses and compete on the merits of their business plans. By contrast, the largely unregulated Indian microfinance sector—and the stunning pace of unconstrained growth—gave rise to the Andhra Pradesh Crisis, a public backlash against the entire industry, and the failure of several firms.

2. Early participation enhances CDC's Catalytic Effect and Value Add: CDC's decision to participate early—and as the first DFI—in CAPE I and IFIF generated powerful catalytic effects, helped the GPs in question meet their fundraising goals, and enabled CDC to make meaningful, "ground-floor" contributions to both GP and portfolio company ESG practices. By contrast, CDC's participation in the second close of MPEF diminished its potential catalytic effect. To be sure, participating in the first close of a fund—especially one managed by a first-time team—is riskier, as one lacks the validation of investments by other informed institutions. While CDC cannot expect to play a leading role in all of its funds, acknowledging and accepting these trade-offs helps to set expectations.

3. Funds with sector strategies considered to be highly developmental can be risky: **-** IFIF, which focused on financial inclusion, suffered from the Andhra Pradesh crisis, which impacted the microfinance sector across India and directly impacted the IFIF portfolio. Subsequently, however, surviving microfinance companies have improved their financial and social performance (via the SMART principles).

In summary, CDC has played an important role for each of these funds—and for the others it has backed. ACA has grown to be the pre-eminent domestic Nigerian PE fund. AfricInvest plays an important part in the African PE landscape and adopted CDC's ESG policies. As one of IFIF's anchor investors, CDC helped create the fund and helped it weather the microfinance industry's ills. The Celtel investment played an important role in creating a demonstration effect to CEOs, limited partners, and fund managers in proving that implementing world-class governance and serving bottom-of-the-pyramid consumers could generate significant financial returns. CDC's knowledge of funds investing and its existing networks in the space position the organization to build on its expertise and continue to play an important role as a limited partner in emerging and frontier market funds.

Section 4. Conclusion

In conclusion, let us revisit the mission and objectives on which CDC's 2004-2012 funds investment strategy was based. **CDC's mission**[46] was based on a theory of change in emerging markets, whereby **financial returns would generate turnover, EBITDA, taxes and employment, leading to private sector development and broadly shared prosperity**.

A fund-of-funds investment strategy was adopted to pursue this mission, and three objectives pursued:

Objective 1. To attract third-party commercial capital to emerging markets;
Objective 2. To provide capital to a broader range of businesses, including those that are harder to access;
Objective 3. To build capacity for investing, DI and ESG by supporting local and regional hands-on PE managers.

After this analysis, we must conclude that CDC's funds strategy has been successful. The organization met its KPIs for allocation by income and geographies during this period. Overall, its cumulative annualized return of 14% between 2004 and 2012 exceeded its benchmark MSCI Emerging Market Index by 4 percentage points, or 40%. By individual year, CDC exceeded its benchmark between 2004 and 2008 and in 2011. The underperformance in the later years is likely due to CDC's shifting geographic mandate and the divergence of the organization's metrics (the change from gross return to net returns) from the public market performance reflected in the MSCI Emerging Markets Index.

In terms of developmental impact, CDC's returns are clearly understated due to the truncated dataset. Even so, CDC-backed funds supported companies as they created more than 345,000 direct jobs, increased revenues by $41.6 billion, EBITDA by $4.8 billion, and taxed paid by $2.1 billion rise in the poor and poorest countries of the world.

In terms of its objectives, we can also conclude that CDC performed well, as discussed below:

Objective 1. To attract third-party commercial capital to emerging markets.

> CDC met the objective for mobilizing capital both in the 2004-2008 period, when it was expected to match its own capital commitments, and between 2009 and

[46] CDC's articulation of its mission varied over the 2004-12 period (see CDC Annual Reports for exact wording), but variations of the mission aimed to increase turnover, EBITDA, taxes and employment.

2012, when it was expected to mobilize 200% of its committed capital on a rolling three-year basis.

We were asked to assess the algorithm that CDC and DfID had agreed to calculate its third-part funds mobilization: namely, full credit for third party funds mobilized in the original fund in which CDC participated; a 25% reduction for third party capital in the next fund; 50% for second fund after CDC's participation; and 75% reduction for the third and subsequent funds. These figures were computed on a three-year rolling average basis. While we find it reasonable on the whole, we would suggest that credit for the third, fourth, and later funds might be over-stated. CDC would have played an undoubted role in early funds and its backing in a second and even a third fund sends an important message of support to potential LPs. As the fund manager seeks backing from classic institutional investors, however, CDC's impact may become more mixed. Commercial LPs often view the presence of DFIs in private equity funds with misgivings due to fears of conflicting goals that might lead the fund manager to sub-optimize the fund's financial results. Over time, the fund manager's performance will be far more important in attracting capital than would the initial role played by CDC. Moreover, this algorithm classed all third party capital – both public (other DFIs) and private sector money invested – as funds mobilized. From 2014 the calculation changed and CDC now tracks the amount of investment by private sector investors only, excluding other DFIs. The new metric compares CDC's capital investment to the private third party capital mobilized.[47]

Objective 2. To provide capital to a broader range of businesses, including those that are harder to access.

While it is impossible to create an alternate universe in which CDC did not pursue its fund-of-funds strategy, we tried to view CDC's performance against that of an average of well-regarded emerging market private equity fund managers with global funds. Through its funds strategy, CDC invested more money in more companies and with fewer staff than did its comparison. It also reached a far wide span of countries—as many as 44 in one year—compared to other global emerging market investors, which had invested in 25 over a 10-year time frame.

Objective 3. To build capacity for investing, DI, and ESG by supporting local and regional hands-on PE managers.

CDC clearly succeeded in finding and supporting first-time fund managers. Over the 1992 to 2013 period, first-time managers made up 102 (56%) of its fund investments, while over the shorter 2004-2012 timeframe, they represented just

[47] *CDC Annual Review*, 2014, p.58.

> over 50% of the total. Of the 102 first-time managers, fully 35% have raised additional funds, and another 19 (19%) are new enough that they may not have started fundraising.
>
> Of 54 non-Actis and non-Aureos first-time fund managers backed by CDC, 31 (57.4%) went on to raise successor funds by our 2013 cut-off, with CDC backing 13 (42%) of them. Of the 18 successor funds that were raised without CDC's participation, eight targeted geographies that were outside CDC's mandate at the time of fund-raising. A further 19 first-time fund managers had not raised successor funds by end-2013. Of these, 10 were recent enough (with a vintage year of 2010 or later) that it is unlikely they would have returned to the market. The other nine funds dated from 2005 through 2009 – and several have raised additional funds after our 2013 cut-off. Finally, a group of four fund managers raised additional funds that we did not consider to be direct successors of the funds in which CDC originally invested.
>
> CDC's presence in many of these first-time funds catalyzed their closing, underscoring the organization's role in mobilizing third party capital. Moreover, its ESG principles, transmitted through its toolkits and training programs, educated the managers of funds and through them, companies. As demonstrated in the Celtel case, companies with best-practice ESG strategies could achieve best-practice results.

One noteworthy gap in this analysis is the lack of a counterfactual or comparison set to suggest what would have happened in the absence of CDC's investment. Thus, we suggest that CDC consider employing experimental or quasi-experimental techniques in future evaluations.[48] There has been much debate about the applicability of such techniques to private equity investing due to the difficulties of randomizing investments. One possibility, however, would be that CDC might collaborate with other DFIs. CDC reviews many investment opportunities to invest in African and South Asian funds. While CDC might not pursue certain opportunities, other groups might participate in these offerings. It may be possible to track the performance of the most promising opportunities that did not receive CDC's backing by collaborating with these organizations. Such an approach would require that the program be set up ahead of time to generate such information.

Overall, however, CDC underwent a substantial metamorphosis between 2004 and 2012, learned a new skill quickly, and deployed it successfully. This evaluation broadly demonstrates the value of fund investing as an effective tool in CDC's then-mission of generating wealth, broadly shared, in emerging markets. The use of funds led to substantial job creation, while increasing firm financial performance, in a cost-effective and time-efficient manner. It also helped build the domestic tax base, local investment

[48] See Jaffe (2002) for a discussion of such techniques.

capacity, and adoption of ESG in over 40 countries. We have identified the value of this approach and hope that CDC will continue to employ it as it invests to achieve its new mission to "make a lasting difference to people's lives in some of the world's poorest places."[49]

[49] *CDC Annual Review*, 2012, frontispiece.

Section 5. Appendices

5.1 Appendix: Detailed Results of First-Time Fund Managers

In Appendix 5.1, we explore in detail the results of first-time fund managers with respect to employment change, revenue, EBITDA, and taxes.

By region

We examined the job creation of companies with first-time managers with respect to region. Table 5-1 shows the full results. The "Difference" column is the result of the first-time column minus the non-first-time column. Therefore, a positive number indicates that companies with a first-time fund manager created more direct jobs, whereas a negative number indicates that companies with a non-first-time fund manager created more direct jobs.

Table 5-1: Total and average change in direct employment of first-time fund managers by region.

Total by Region Group	First-Time	Non-First-Time	Total	Difference	Percentage of Global Total
Africa	18,234	22,267	40,501	-4,034	11.7%
China	**57,490**	**67,749**	**125,238**	-10,259	36.3%
Rest of World	24,510	37,462	**61,972**	-12,952	18.0%
South Asia	36,172	**81,174**	**117,345**	-45,002	34.0%
Total	**136,404**	**208,652**	**345,056**		

Bold > 50,000

Average by Region Group	First-Time	Non-First-Time	Total	Difference
Africa	201	144	165	57
China	**1,036**	**507**	**663**	528
Rest of World	246	**434**	333	-187
South Asia	247	**532**	**392**	-285
Average	348	396	375	

Bold = Greater than respective total average.

Every region had a negative difference for total change in direct employment, meaning that companies with non-first-time fund managers created more direct jobs. In South Asia, companies with non-first-time managers directly created 45,002 more jobs

(285/company) than companies of first-time managers. In Rest of the World, the difference was 12,952 jobs (187/company).

In China, companies with non-first-time fund managers directly created 10,259 more jobs. However, on a per-company basis, Chinese companies with first-time funds created 528 more direct jobs per company on average than those of non-first-time fund managers. In Africa, companies with non-first-time managers created 4,034 more direct jobs than did those with first-time managers. On a direct jobs-per-company basis, African companies with first-time managers created 57 more jobs than did those with non-first-time fund managers.

By industry

Table 5-2 presents the results of our analysis of direct job creation by first-time fund managers by industry.

Table 5-2: Total and average change in direct jobs; first-time fund managers by industry.

Total by Industry Group	First-Time	Non-First-Time	Total	Difference	Percentage of Total
Agribusiness & Food	12,565	15,725	28,289	-3,160	8.2%
Consumer Services	**51,367**	**51,265**	**102,632**	102	29.7%
Education	11,751	18,165	29,915	-6,414	8.7%
Extractive industries	4,738	18,390	23,128	-13,651	6.7%
Financials	30,827	41,722	**72,549**	-10,895	21.0%
Health care	204	12,839	13,043	-12,635	3.8%
Industrials	14,158	8,759	22,917	5,399	6.6%
Information & communications technology	2,444	19,425	21,869	-16,981	6.3%
Infrastructure	7,348	19,384	26,731	-12,036	7.7%
Real Estate	1,004	2,979	3,983	-1,975	1.2%
Total	**136,404**	**208,652**	**345,056**		

Bold > 50,000

Average by Industry Group	First-Time	Non-First-Time	Average	Difference
Agribusiness & Food	**375**	**398**	**388**	-23
Consumer Services	**815**	**801**	**808**	14
Education	**3,357**	**1,912**	**2,301**	1,445
Extractive industries	200	362	310	-162
Financials	**349**	**608**	**462**	-259
Health care	10	258	186	-248
Industrials	201	75	123	125

Average by Industry Group	First-Time	Non-First-Time	Average	Difference
Information & communications tech.	81	324	243	-242
Infrastructure	159	**495**	313	-336
Real Estate	77	103	95	-25
Average	348	396	375	

Bold = Greater than respective total average.

There were only two industries, Industrials and Consumer services, where companies of first-time fund managers created more total direct jobs than did those of non-first-time fund managers. Industrial companies managed by first-time fund managers created 5,399 more direct jobs (125 jobs/company) compared to companies with non-first time fund managers. Companies in Consumer Services with first-time fund managers created 102 more direct jobs (14/company). However on a per-company basis, the Education sector created more direct jobs per-company with first-time fund managers, even though although companies of non-first-time managers created more direct jobs in total.

On the other hand, in the Financials, Healthcare, Information & Communications Technology, and Infrastructure sectors, direct job creation per company by companies with non-first-time fund managers exceeded those with first-time fund managers by more than 200 jobs.

Regional impact on firm financial performance

In this section, we examine the effect of first-time fund managers on revenue, EBITDA, and taxes. Table 5-3 shows the results of a firm's financial performance with respect to its fund managers' experience level, by region.

Table 5-3: Total and average change in firm economic performance for companies of first-time fund managers by region in $USD millions

Total	Revenue			EBITDA			Taxes Paid		
Region Group	First-Time	Non-First-Time	Diff.	First-Time	Non-First-Time	Diff.	First-Time	Non-First-Time	Diff.
Africa	247.6	**4,986.5**	-4,738.9	-414.5	**1,813.3**	-2,226.8	128.5	500.9	-372.4
China	**6,001.8**	**12,802.0**	-6,800.2	385.0	**1,206.7**	-821.6	494.7	260.1	234.6
Rest of World	**2,356.3**	**6,225.9**	-3,869.7	736.8	-14.7	751.4	177.8	313.4	-135.6
South Asia	**2,845.2**	**6,181.2**	-3,336.0	603.6	514.4	86.1	35.8	211.8	-176.0
Total	**11,450.9**	**30,195.6**		**1,311.9**	**3,522.8**		836.8	**1,286.2**	

Significant at the 5% level[50] *Bold > 1,000*

[50] Please refer to Section 5.1: Appendix: Appendix: Tests of Significance —ANOVA for full details.

Total	Total			Percentage of Total		
Region Group	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.
Africa	**5,234.1**	**1,399.8**	629.4	12.6%	29.0%	29.6%
China	**18,803.8**	**1,591.7**	754.7	45.2%	32.9%	35.5%
Rest of World	**8,582.2**	722.1	491.2	20.6%	14.9%	23.1%
South Asia	**9,026.4**	**1,121.0**	247.6	21.7%	23.2%	11.7%
Total	**41,646.5**	**4,834.6**	**2,123.0**			

Bold > 1,000

Average	Revenue			EBITDA			Taxes Paid		
Region Group	First-Time	Non-First-Time	Diff.	First-Time	Non-First-Time	Diff.	First-Time	Non-First-Time	Diff.
Africa	2.7	32.3	-29.6	-4.6	**11.7**	-16.3	1.4	**3.2**	-1.8
China	**108.1**	**95.9**	12.2	**6.9**	**9.0**	-2.1	**8.9**	1.9	7.0
Rest of World	23.7	**72.0**	-48.4	**7.4**	-0.2	7.6	1.8	**3.6**	-1.8
South Asia	19.4	40.5	-21.1	**4.1**	3.4	0.7	0.2	1.4	-1.1
Average	29.2	57.3		3.3	6.7		2.1	2.4	

Bold = Greater than respective average.

Average	Overall		
Region Group	Revenue Chg.	EBITDA Chg.	Taxes Chg.
Africa	21.4	**5.7**	**2.6**
China	**99.5**	**8.4**	**4.0**
Rest of World	**46.1**	3.9	**2.6**
South Asia	30.2	3.7	0.8
Average	45.3	5.3	2.3

Bold = Greater than respective average.

For total revenue, in all four regions, companies with non-first-time fund managers performed better. For total EBITDA, companies of first-time fund managers in Rest of the World and South Asia performed better, whereas those of non-first-time fund managers in Africa and China performed better. In total taxes paid, companies of first-time fund managers in China performed better, whereas those of non-first-time fund managers performed better in Africa, Rest of the World and South Asia.

In all four regions, companies of non-first-time fund managers generated more total revenue than did those of first-time fund managers. African companies with non-first-time fund managers generated $4.7 billion more in total revenue ($29.6 million/company) than those of first-time fund managers. Chinese companies in non-first-time funds generated $6.8 billion more in total revenue; companies in the Rest of World with non-first-time fund managers generated an additional $3.9 billion ($48.4 million/company); and South Asian companies in non-first-time funds generated $3.3 billion more total revenue ($21.1 million/company). On a per-company basis, the only region where companies managed by first-time fund managers generated higher average revenue was China ($12.2 million/company).

In EBITDA, African and Chinese companies with non-first-time fund managers had higher EBITDA both in total and on average, whereas South Asian and Rest of the World companies with first-time fund managers had higher total and average EBITDA. Companies with non-first-time fund managers in Africa generated $2.2 billion more in total EBITDA ($16.3 million/company). In China, companies of non-first-time fund managers generated $821.6 million ($2.1 million/company) more EBITDA in total than did those in the portfolios of first-time fund managers. Companies with first-time fund managers in Rest of the World generated $751.4 million more ($7.6 million/company), and companies in South Asia with first-time fund managers generated $86.1 million more ($0.7 million/company).

In terms of the amount of taxes paid, companies with non-first-time fund managers in Africa, Rest of the World, and South Asia paid more total and average taxes, whereas Chinese companies with first-time managers paid more in total and average taxes. In Africa, companies with non-first-time fund managers paid $372.4 million more total taxes ($1.8 million/company) than those of first-time managers. Companies with non-first-time fund managers in Rest of the World paid $135.6 million more in total taxes ($1.8 million/company), and in South Asia, companies of non-first-time managers paid $176.0 million more ($1.1 million/company). China was the only region where companies with first-time fund managers paid more in total taxes than those with non-first-time managers ($234.6 million more total taxes, $7.0 million/company).

Firm economic performance by industry

Another lens through which to view the performance of first-time fund managers is industry. When the data were analyzed by industry, Financials and Infrastructure were the two sectors where non-first-time fund managers demonstrated the largest difference in additional revenue, as shown in Table 5-4.

Table 5-4: Total and average change in firm economic performance of first-time fund managers by industries in $USD millions.

Total	Revenue			EBITDA			Taxes Paid		
Industry Group	First-Time	Non-First-Time	Diff.	First-Time	Non-First-Time	Diff.	First-Time	Non-First-Time	Diff.
Agribusiness & Food	-98.8	**4,604.6**	-4,703.4	-162.4	384.7	-547.1	-29.9	-4.5	-25.4
Consumer Services	**2,758.8**	**5,623.0**	-2,864.2	233.3	605.9	-372.5	152.0	32.0	120.0
Education	188.8	510.5	-321.7	43.6	130.2	-86.6	-1.2	19.5	-20.7
Extractive industries	**1,517.4**	-3,313.2	**4,830.6**	561.6	-1,257.7	**1,819.3**	111.4	59.0	52.3
Financials	**1,212.7**	**7,544.3**	-6,331.6	444.3	999.2	-554.9	125.9	343.9	-218.0
Health care	**1,354.9**	844.6	510.3	-58.7	84.1	-142.7	239.8	22.1	217.7
Industrials	**3,079.4**	**3,238.4**	-159.0	206.9	309.2	-102.2	66.3	180.6	-114.4
Information & communications technology	-901.8	568.5	-1,470.3	-720.5	252.1	-972.7	74.6	380.4	-305.8
Infrastructure	**1,622.7**	**7,567.0**	-5,944.3	500.0	**1,359.4**	-859.3	11.5	196.8	-185.4
Real Estate	716.9	**3,008.0**	-2,291.1	263.6	655.7	-392.1	86.5	56.4	30.2
Total	**11,450.9**	**30,195.6**		**1,311.9**	**3,522.8**		836.8	**1,286.2**	

Bold > 1,000

	Total			Percentage		
Industry Group	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.
Agribusiness & Food	**4,505.8**	222.3	-34.4	10.8%	4.6%	-1.6%
Consumer Services	**8,381.9**	839.2	184.0	20.1%	17.4%	8.7%
Education	699.2	173.9	18.3	1.7%	3.6%	0.9%
Extractive industries	-1,795.8	-696.1	170.4	-4.3%	-14.4%	8.0%
Financials	**8,756.9**	**1,443.6**	469.8	21.0%	29.9%	22.1%
Health care	**2,199.6**	25.4	261.9	5.3%	0.5%	12.3%
Industrials	**6,317.7**	516.1	246.9	15.2%	10.7%	11.6%
Information & communications technology	-333.4	-468.4	454.9	-0.8%	-9.7%	21.4%
Infrastructure	**9,189.7**	**1,859.4**	208.3	22.1%	38.5%	9.8%
Real Estate	**3,724.9**	919.3	142.9	8.9%	19.0%	6.7%
Total	**41,646.5**	**4,834.6**	**2,123.0**			

Bold > 1,000

Average	Revenue			EBITDA			Taxes Paid		
Industry Group	First-Time	Non-First-Time	Diff.	First-Time	Non-First-Time	Diff.	First-Time	Non-First-Time	Diff.
Agribusiness & Food	-2.9	**116.6**	-119.5	-4.8	**9.7**	-14.6	-0.9	-0.1	-0.8
Consumer Services	**43.8**	**87.9**	-44.1	**3.7**	**9.5**	-5.8	**2.4**	0.5	1.9
Education	**53.9**	53.7	0.2	**12.5**	**13.7**	-1.2	-0.3	2.1	-2.4
Extractive industries	**64.1**	-65.2	129.3	**23.7**	-24.7	48.5	**4.7**	1.2	3.5
Financials	13.7	**109.9**	-96.2	**5.0**	**14.6**	-9.5	1.4	**5.0**	-3.6
Health care	**67.1**	17.0	50.1	-2.9	1.7	-4.6	**11.9**	0.4	11.4
Industrials	**43.7**	27.8	15.8	2.9	2.7	0.3	0.9	1.6	-0.6
Information & communications technology	-30.1	9.5	-39.5	-24.0	4.2	-28.2	**2.5**	**6.3**	-3.9
Infrastructure	**35.0**	**193.2**	-158.2	**10.8**	**34.7**	-23.9	0.2	**5.0**	-4.8
Real Estate	**55.1**	**103.7**	-48.6	**20.3**	**22.6**	-2.3	**6.7**	1.9	4.7
Average	29.2	57.3		3.3	6.7		2.1	2.4	

Bold = Greater than respective column average.

	Overall		
Industry Group	Revenue Chg.	EBITDA Chg.	Taxes Chg.
Agribusiness & Food	**61.7**	3.0	-0.5
Consumer Services	**66.0**	**6.6**	1.4
Education	**53.8**	**13.4**	1.4
Extractive industries	-24.1	-9.3	2.3
Financials	**55.8**	**9.2**	**3.0**
Health care	31.4	0.4	**3.7**
Industrials	33.8	2.8	1.3
Information & communications technology	-3.7	-5.2	**5.1**
Infrastructure	**107.5**	**21.7**	**2.4**
Real Estate	**88.7**	**21.9**	**3.4**
Average	45.3	5.3	2.3

Bold = Greater than respective column average.

For total revenue, the only two sectors where companies of first-time fund managers earned more were Extractive Industries and Healthcare. Only in Extractive Industries did companies of first-time fund managers produce more EBITDA than those of non-first-time managers. In total taxes paid, companies of first-time fund managers in Consumer Services, Extractive Industries, Healthcare, and Real Estate paid more than those of non-first-time fund managers.

When the data were examined by industry and total revenue generated under first-time fund managers, companies with first-time managers outperformed those of non-first-time managers in two of the ten industries: Extractive Industries ($4.8 billion more, $129.3 million/company), and Healthcare ($510.3 million more, $50.1 million/company). On a per-company basis, companies of first-time-fund managers in Education generated $0.2 million/company more than those of non-first-time fund managers. Additionally, companies of first-time-fund managers in Industrials generated $15.8 million more. The industry in which companies of non-first-time fund managers most outperformed those of first-time fund managers in total revenue was Infrastructure, with a difference of $5.9 billion ($158.2 million/company).

In terms of EBITDA, companies with first-time fund managers only outperformed those of non-first-time fund managers in one sector: Extractive Industries ($1.8 billion, $48.5 million/company). On a per-company basis, both Extractives and Industrials saw first-time fund managers out-perform non-first-time fund managers. The industry in which companies of non-first-time fund managers most outperformed those of first-time fund managers in terms of EBITDA was Information and Communications Technology, with $972.7 million more in EBITDA ($28.2 million/company).

In terms of taxes paid, companies with first-time fund managers outperformed those of non-first-time fund managers in four industries: Consumer Services ($120.0 million more, $1.9 million/company), Extractive Industries ($52.3 million more, $3.5 million/company), Health Care ($217.7 million more, $11.4 million/company), and Real Estate ($30.2 million more, $4.7 million/company). The sector where non-first-time fund managers paid most taxes relative to those of first-time managers was Information and Communications Technology sector with $305.8 million ($3.9 million/company).

Firm economic performance by fund IRR

Finally, we examined the firm economic performance of companies of first-time fund managers with respect to fund level IRR bands.

Table 5-5 below shows the full results.

Table 5-5: Total and average change in firm economic performance of first-time fund managers by IRR in $USD millions

Total	Revenue			EBITDA			Taxes Paid		
IRR	First-Time	Non-First-Time	Diff.	First-Time	Non-First-Time	Diff.	First-Time	Non-First-Time	Diff.
-100% - -90%	17.2	0.0	17.2	-0.5	0.0	-0.5	0.0	0.0	0.1
-60% - -50%	4.5	0.0	4.5	0.6	0.0	0.6	-0.1	0.0	-0.1
-40% - -30%	135.5	3.2	132.3	12.9	-0.5	13.4	0.3	0.0	0.3
-30% - -20%	703.9	-30.3	734.2	28.3	6.8	21.5	1.2	0.0	1.2
-20% - -10%	19.7	229.4	-209.7	7.2	48.1	-40.9	0.0	22.3	-22.3
-10% - 0%	**1,769.0**	**3,465.8**	-1,696.8	219.0	-371.6	590.7	-11.6	35.5	-47.0
0% - 10%	**3,134.3**	**19,094.8**	-15,960.5	229.1	**2,576.0**	-2,346.9	285.0	942.7	-657.7
10% - 20%	**1,648.0**	**3,936.5**	-2,288.5	33.3	**1,113.1**	-1,079.8	243.1	273.5	-30.5
20% - 30%	**1,682.5**	777.2	905.3	660.4	147.2	513.3	156.1	11.0	145.1
30% - 40%	124.6	**2,709.7**	-2,585.1	36.3	0.0	36.3	3.7	0.0	3.7
40% - 50%	**2,211.7**	0.0	**2,211.7**	85.4	0.0	85.4	159.2	0.0	159.2
90% - 100%	0.0	9.4	-9.4	0.0	3.8	-3.8	0.0	1.3	-1.3
Total	**11,450.9**	**30,195.6**		**1,311.9**	**3,522.8**		836.8	**1,286.2**	

Bold > 1,000

	Total			Percentage		
IRR	Revenue Chg.	EBITDA Chg.	Taxes Chg.	Revenue Chg.	EBITDA Chg.	Taxes Chg.
-100% - -90%	17.2	-0.5	0.0	0.0%	0.0%	0.0%
-60% - -50%	4.5	0.6	-0.1	0.0%	0.0%	0.0%
-40% - -30%	138.6	12.4	0.3	0.3%	0.3%	0.0%
-30% - -20%	673.7	35.1	1.2	1.6%	0.7%	0.1%
-20% - -10%	249.1	55.3	22.3	0.6%	1.1%	1.0%
-10% - 0%	**5,234.8**	-152.6	23.9	12.6%	-3.2%	1.1%
0% - 10%	**22,229.1**	**2,805.1**	**1,227.6**	53.4%	58.0%	57.8%
10% - 20%	**5,584.5**	**1,146.4**	516.6	13.4%	23.7%	24.3%
20% - 30%	**2,459.7**	807.6	167.1	5.9%	16.7%	7.9%
30% - 40%	**2,834.3**	36.3	3.7	6.8%	0.8%	0.2%
40% - 50%	**2,211.7**	85.4	159.2	5.3%	1.8%	7.5%
90% - 100%	9.4	3.8	1.3	0.0%	0.1%	0.1%
Total	**41,646.5**	**4,834.6**	**2,123.0**			

Bold > 1,000

Per Company	Revenue			EBITDA			Taxes Paid		
IRR	First-Time	Non-First-Time	Diff.	First-Time	Non-First-Time	Diff.	First-Time	Non-First-Time	Diff.
-100% - -90%	17.2	0.0	17.2	-0.5	0.0	-0.5	0.0	0.0	0.0
-60% - -50%	1.1	0.0	1.1	0.1	0.0	0.1	0.0	0.0	0.0
-40% - -30%	16.9	6.3	10.6	1.6	-1.1	2.7	0.0	0.0	0.0
-30% - -20%	**234.6**	-7.6	242.2	**9.4**	1.7	7.7	0.4	0.0	0.4
-20% - -10%	5.6	3.7	1.9	2.1	0.8	1.3	0.0	0.4	-0.4
-10% - 0%	19.3	35.1	-15.8	2.4	-3.8	6.2	-0.1	0.4	-0.5
0% - 10%	15.1	**86.8**	-71.8	1.1	**11.7**	-10.6	1.4	**4.3**	-2.9
10% - 20%	**40.2**	48.4	-8.3	0.8	**13.7**	-12.9	**5.9**	**3.4**	2.6
20% - 30%	**107.2**	29.3	77.8	**42.1**	5.6	36.5	**9.9**	0.4	9.5
30% - 40%	**33.2**	**88.8**	-55.6	**9.7**	0.0	9.7	1.0	0.0	1.0
40% - 50%	**176.9**	0.0	176.9	**6.8**	0.0	6.8	**12.7**	0.0	12.7
90% - 100%	0.0	2.7	-2.7	0.0	1.1	-1.1	0.0	0.4	-0.4
Average Across IRR Bands	29.2	57.3		3.3	6.7		2.1	2.4	-0.3

Bold = Greater than respective column average.

	Overall		
IRR	Revenue Chg.	EBITDA Chg.	Taxes Chg.
-100% - -90%	17.2	-0.5	0.0
-60% - -50%	1.1	0.1	0.0
-40% - -30%	16.3	1.5	0.0
-30% - -20%	**96.2**	5.0	0.2
-20% - -10%	3.8	0.8	0.3
-10% - 0%	27.5	-0.8	0.1
0% - 10%	**51.9**	**6.6**	**2.9**
10% - 20%	**45.7**	**9.4**	**4.2**
20% - 30%	**58.3**	**19.1**	**4.0**
30% - 40%	**82.8**	1.1	0.1
40% - 50%	**176.9**	**6.8**	**12.7**
90% - 100%	2.7	1.1	0.4
Average Across IRR Bands	45.3	5.3	2.3

Bold = Greater than respective column average.

Overall, the companies of better performing funds, whether first-time or non-first time, tended to create greater improvement in economic variables. When examining the distribution of total revenue, of the twelve IRR bands, companies of first-time fund managers outperformed those of non-first-time managers in six bands. For total EBITDA, companies of first-time fund managers in seven of the twelve bands outperformed those of non-first-time. Finally for total taxes paid, companies of first-time fund managers outperformed those of non-first-time managers in six bands. Below, we will discuss the performance in more detail.

With respect to revenue, companies of non-first-time fund managers most outperformed those of first-time fund managers in the band of IRRs between 0% and 10%, with $16.0 billion more in revenue ($71.8 million/company). The second-best performing IRR band was the 30% - 40% group with $2.6 billion more in revenue ($55.6 million/company). The IRR band where companies of first-time fund managers most outperformed those of non-first-time fund managers was the 40% - 50% IRR where first-time fund managers helped to create $2.2 billion ($176.9 million/company).

For EBITDA, the 0% - 10% IRR band was also the one where companies of non-first-time fund managers that had the highest EBITDA with $2.3 billion greater ($10.6 million/company) than those of first-time-fund managers. The second-best performing IRR band for companies of non-first-time fund managers was the 10% - 20% band with $1.1 billion ($12.9 million/company) greater than those of first-time fund managers. The IRR band where companies of first-time fund managers most outperformed those of non-first-time was the -10% - 0% with $590.7 million ($6.2 million/company) more.

In taxes paid, companies of non-first-time fund managers with IRRs between 0% and 10% most outperformed those of first-time fund managers with similar performance, providing $657.7 million ($2.9 million/company) more in taxes paid. The second-best performing IRR band was -10% - 0% where companies of non-first-time fund managers paid $47.0 million ($0.5 million/company) more in taxes. The group where companies of first-time fund managers paid more taxes than those of non-first-time fund managers was the 40% - 50% band with $159.2 million ($12.7 million/company).

5.2 *Appendix: Tests of Significance —ANOVA*

To test whether the differences we observed in our analyses were statistically significant—that is, due to systematic differences, rather than merely chance— we used the analysis of variance (ANOVA) technique. ANOVA is a statistical test that analyzes the variation within and across group averages.[51]

In our tests, the dependent variables were changes in employment, revenue, EBITDA, and taxes paid. The independent variables were region groups, industry groups, fund-level IRR, and first-time fund manager status.

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[51] R. Lyman Ott and Michael T. Longnecker, *A First Course in Statistical Methods*, (United States: Thompson Brooks/Cole, 2004), 331.

ANOVA splits the independent variables into groups. In some cases, the groups were inherent (such as region groups, industry groups, and first-time manager). For the fund level IRR, which is continuous, we created groups of 10% increments.

Using ANOVA, we then calculate the differences across the means of the various groups to determine statistical significance. In general, if the differences *within* each group vary less widely and differences *across* groups are more pronounced, then the overall test will likely be statistically significant. If, however, the differences within each group have more variance and differences across groups are smaller, then the overall test will likely not be significant and the differences between the groups deemed to be due to chance.

In our analysis, we used both one-way ANOVAs and two-way ANOVAs. A one-way ANOVA examines the impact of one independent variable on the dependent variable. For example, a one-way ANOVA might calculate the impact of education level on income. A two-way ANOVA examines the effect of two or more independent variables on the dependent variable; for instance, the impact of education and gender on income. This two-factor design allows us to examine the interaction of the two independent variables on the dependent variable.

We used four one-way ANOVAs: changes in employment with fund level IRR groups, changes in revenues with IRR groups, changes in EBITDA with IRR groups, and changes in taxes paid with IRR groups. For our other tables (all 16 combinations of changes in employment, revenue, EBITDA, and taxes, with region and industry, region and first-time fund manager, industry and first-time fund manager, IRR and first-time fund manager) we used two-way ANOVAs to accommodate for the two independent variables.

Unlike a regression, ANOVA does not elucidate the relationship between the independent and dependent variables. It simply confirms that at least two of the groups are unique, but says nothing about causation. Therefore, a statistically significant result cannot be used as direction for future investing purposes.

We ran ANOVA tests on all of the results tables for changes in employment, revenue, EBITDA, and taxes paid. We describe the tables that yielded statistically significant results below. We have starred the statistically significant tables with "*" at the 10% confidence interval, "**" at the 5% confidence interval, and "***" at the 1% confidence interval.

Table 3-9:

When examining the ANOVAs for the changes in employment, the change in employment by fund-IRR groups had a statistically significant result. When examining the 1088 data points of the IRR groups with respect to change in employment, there was a significant result with $F(11, 1076) = 2.21$, $p = 0.012$**. This result demonstrates that when the changes in employment are categorized by IRR bands, the resulting groups are distinct.

Table 3-11:

We ran a two-way ANOVA on a sample of 1088 data points to examine the effect of region groups and industry groups on the changes in revenue. The independent variables had an effect on changes in revenue that was significant at the 10% level, with F (27, 1048) = 1.46, p = 0.06*.

To examine the effect of region groups and industry group on changes in EBITDA, we ran a two-way ANOVA on a sample of 1088 data points. The result was significant at the 5% level with F (27, 1048) = 1.62, p = 0.02*.

Finally, when the effect of the intersection of region and industry was examined on the changes in taxes paid, the result was statistically significant rat the 1% level. Our two-way ANOVA ran on a sample of 1088 data points and produced F (27, 1048) = 2.03, p = 0.002***.

These results demonstrate that when the changes in revenues, EBITDA, and taxes are grouped by both region and industry, the averages of the groups are different at a statistically significant level with at least a 10% confidence level. For example, the Chinese education group's average is statistically different from the African agribusiness average—that is, there is only a 10% likelihood that it is due to chance. However, the ANOVA simply tells us that the averages across these groups are distinct. It does not indicate causation, nor does it help us predict where to invest in the future.

Table 3-12:

Our analysis determined that IRR and change in taxes was significant at the 10% level. Using a one-way ANOVA that ran on a sample of 1088 data points examining the effect of IRR on the changes in taxes paid, the result was F(11,1076) = 1.63, p = 0.08*. This result shows the change in taxes paid by a portfolio company will vary non-randomly depending on the IRR band of the fund that invested in it. Note that we cannot say the direction of this change.

Table 5-3:

A two-way ANOVA that ran on a sample of 1088 data points examining the effect of region group and first-time manager on the changes in taxes paid was statistically significant at the 5% level, with F(3,1080) = 3.56, p = 0.01**. This result indicates that the average amount of taxes paid will have a distinct variation depending on the region group and whether a fund was managed by a first-time manager. For example, the change in taxes paid by companies in funds run by a first-time manager in South Asia showed distinct differences from the change in taxes paid by companies in the portfolio of a non-first-time manager from Africa.

5.3 *Appendix: CDC's Classification of Countries in Each Region*

The full list comes from the World Bank list of countries by region. ***Bold*** *indicates countries in which CDC's funds have invested between 2004 and 2012. The Rest of the World column indicates countries that were part of CDC's mandate but are no longer included. They are not sorted by region.*

Africa	China	Rest of the World	South Asia
Algeria	**China**	**Argentina**	Afghanistan
Angola		**Azerbaijan**	**Bangladesh**
Benin		**Belarus**	Bhutan
Botswana		**Belize**	**India**
Burkina Faso		**Brazil**	Maldives
Burundi		**Cambodia**	Myanmar
Cape Verde		**Colombia**	Nepal
Cameroon		**Costa Rica**	**Pakistan**
Central African Republic		**Dominican Republic**	**Sri Lanka**
Chad		**Ecuador**	
Comoros		**El Salvador**	
Congo, Dem. Rep.		**Fiji**	
Congo, Rep		**Guatemala**	
Côte d'Ivoire		**India**	
Djibouti		**Indonesia**	
Egypt, Arab Rep.		**Jamaica**	
Eritrea		**Kazakhstan**	
Ethiopia		**Kyrgyzstan**	
Gabon		**Malaysia**	
Gambia, The		**Mexico**	
Ghana		**Mongolia**	
Guinea		**Papua New Guinea**	
Guinea-Bissau		**Peru**	
Kenya		**Philippines**	
Lesotho		**Russia**	
Liberia		**Samoa**	
Libya		**Serbia & Montenegro**	
Madagascar		**Tajikistan**	
Malawi		**Thailand**	
Mali		**Tonga**	
Mauritania		**Turkey**	
Mauritius		**Ukraine**	
Morocco		**Vanuatu**	
Mozambique		**Vietnam**	
Namibia		**Yemen**	
Niger			

Africa	China	Rest of the World	South Asia
Nigeria **Rwanda** São Tomé and Principe **Senegal** Seychelles **Sierra Leone** Somalia **South Africa** South Sudan **Sudan** Swaziland **Tanzania** Togo **Tunisia** **Uganda** **Zambia** **Zimbabwe**			

Source: CDC and World Bank.

5.4 *Appendix: Cases of ACA, AfricInvest, Celtel, and Caspian (IFIF)*

5.4.1 ACA (CAPE I)

Summary:

In 1999, CDC invested $5 million[52] in CAPE I, the first fund of the pioneering native Nigerian PE firm African Capital Alliance (ACA). The CAPE I investment was a departure from CDC's direct investment strategy at that time. The rationale for the shift in strategy, according to Richard Laing, CDC's chief executive from 2000-2012, stemmed in part from CDC's faith in the expertise of local business communities. "CDC was investing in locally based teams, people on the ground aware of the particularities related to those specific territories. Poorer countries didn't need outsiders telling them how to invest."

Investment Rationale:

ACA represented an important opportunity for CDC to further its development objectives in Sub-Saharan Africa.

ACA's founders, while untested operating together in a private equity setting, were successful, prominent businessmen. A mix of Nigerians and Westerners, they included the country's former interim president, the executives of two respected banks, and the Harvard-educated, Kansas-born managing partner of Arthur Andersen's Nigerian operations, who had been deeply involved in efforts to reform the military government and encourage Nigeria's private sector development. They recruited two individuals with private equity experience: the American founder of an emerging markets PE fund and his lieutenant, the first Nigerian to win top honors at Harvard Business School, who joined as ACA's CEO.

Nigeria, with its huge population and enormous, pent-up demand for products and services after years of incompetent government control over the economy, offered a promising, largely untapped market. Yet, entrepreneurs in 1999 Nigeria faced tight credit conditions and a pronounced shortage of risk capital. It was, in short, an extraordinarily difficult environment in which to launch a new business or grow an existing one. CDC believed that ACA could play an important role in demonstrating the viability of private equity in Nigeria and spurring its economic growth.

[52] All figures in USD unless otherwise noted.

CDC also believed a successful ACA investment would encourage other DFIs and PE firms to invest in the region, through the demonstration effect. "We wanted to demonstrate that investing in emerging markets could produce good financial and developmental returns that will eventually attract private capital," said Mr. Laing.

CDC's Advisory Role:

CDC's hands-on advisory role at ACA was rooted in its understanding that first-time PE teams cannot raise significant capital until they establish a successful track record. CDC thus believed its most important contribution would be helping ACA establish that track record, both by advising the firm and providing a type of "quality assurance" that would enable other investors—Western and African—to become comfortable committing capital to CAPE I and to ACA's future funds. In addition, CDC hoped that once ACA established a solid track record, a catalyzing effect would set in that would contribute to the evolution of a robust Nigerian financial ecosystem.

Initially, CDC held a seat on CAPE I's eight-member investment committee (IC), a relatively unusual role for an LP but one that ACA welcomed. From its IC seat, CDC helped ACA evaluate proposals and suggested investment ideas to the founders. CDC also held a seat on CAPE I's advisory committee.

One of CDC's significant contributions was helping ACA as the firm developed best practices around reporting, a burdensome task, particularly for a new team. CDC also provided resources—including a toolkit and in-person training—designed to instill sound environmental, social, and governance practices within CAPE I's portfolio companies.

Results:

CDC's evaluations of its CAPE I investment were varied but favorable overall:

- **Firm economic performance: Exceptional.** CAPEM, ACA's first fund and the DFI investment vehicle, had a net IRR of 40% and a net multiple of 7.1x at the time of the final evaluation in January 2009.
- **Economic Performance: Successful.** EBITDA rose in five of the ten portfolio companies; turnover rose in six portfolio companies, and employment across the portfolio increased from 999 to 7,721. Tax payments in 2007 were $567 million, with $565 million of that total paid by MTNN.
- **ESG Performance: Satisfactory.** Corporate governance practices across the portfolio improved during the investment period. Notably, MTNN's parent, MTN, established The MTN Foundation to improve education, economic empowerment, and health care in Nigeria and the other markets in which it operates.
- **Private Sector Development: Exceptional.** The PE industry was all but unknown in Nigeria until CAPE I pioneered the sector. The powerful demonstration effect was a direct result of CDC's early and ongoing support of ACA and the CAPE I fund.

- **CDC Value Add: Satisfactory.** CDC's transition to a fund-of-funds investor during the life of CAPE I resulted in a greater value-add to the fund in its later years.
- **Catalytic Effect: Below Expectations.** CDC's $5 million investment in the CAPEM fund came relatively late in the fundraising process and did not have a significant impact on CAPE I. As an early investor in ACA's subsequent funds, including CAPE II, CAPE III, and CAPIC, CDC's catalytic effect has been stronger.

The standout CAPE I investment was MTNN, the telecoms startup that would evolve into the largest mobile phone operator in West Africa with 55 million subscribers as of January 2015.[53] On that investment alone, CAPE I realized an IRR of 76.7%, not to mention the developmental benefits that more reliable and affordable communication has provided to Nigeria.

As of December 2013 CAPE I had exited all its portfolio investments via strategic sale, listing, or, in one case, a write-off.

In the wake of CDC's involvement with CAPE I, the organization participated in ACA's two subsequent PE funds, 2005's CAPE II, which raised $100M, and 2008's CAPE III, which raised $400 million. In addition, ACA has raised a $165 million real estate fund, the Capital Alliance Property Investment Company (CAPIC), which invests in commercial and residential properties in West Africa.

5.4.2 AfricInvest (MPEF II)

Summary:

In 2008, CDC invested $27.3 million[54] in Tunisia-based Maghreb[55] Private Equity Fund II (MPEF II), a North African fund managed by AfricInvest,[56] one of the oldest private equity firms in the region with approximately $550 million under management at that time. With a 14-year track record of investing in North Africa and backing by a number of established DFIs, including the Dutch development bank FMO, AfricInvest appealed

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[53] http://www.mtnonline.com/about-mtn/corporate-information, accessed January 6, 2015.

[54] All figures in USD unless otherwise noted.

[55] Maghreb refers the region of northwestern Africa, particularly the countries of Morocco, Algeria, Tunisia, and Libya.

[56] During the events depicted in this section, AfricInvest was known by its former name, Tuninvest. Where it appears in quotations or other cited matter, "Tuninvest" has been changed to "AfricInvest" for clarity. Founded in 1994, Tuninvest partnered with FMO, the Dutch DFI, in a joint venture dubbed "AfricInvest" in 2004. See http://www.emrc.be/Documents/Document/20100517160802-3_-_Tuninvest_-_Khaled.pdf, accessed March 23, 2015.

to CDC as a relatively low-risk inaugural fund-of-funds investment in the region. CDC participated in the second close of MPEF II, which sought to raise $161 million.

Investment Rationale:

For much of its post-colonial history, a handful of industries dominated the Tunisian economy, particularly petroleum exploration and production and phosphate mining. Tourism had also been a significant source of income. Despite Tunisia's turbulent history, its economy had consistently been one of the healthiest in Africa and had shown promising improvements between 1987 and 2014. During this period, GDP increased 4.3% per year on average, and GDP per capita nearly quadrupled from $1,280 to $4,440. Population grew from 7.6 million to 11.1 million people, and life expectancy increased from 67 to 75 years.[57]

CDC viewed its investment in MPEF II as serving three principal development goals: helping AfricInvest build investment capacity; creating a healthy environment for follow-on fundraising; and improving the firm's policies and practices around environmental, social, and governmental (ESG) risk management within its portfolio firms. With its established track record, AfricInvest had no need for specialized first-time team support, and the demonstration effect was already evident in the extensive involvement of DFIs such as FMO in the firm.

In considering the MPEF II investment, CDC was impressed by AfricInvest's regional expertise and hands-on approach with its portfolio companies, predominantly small and medium-sized enterprises (SMEs)—including pharmaceutical, IT, and agribusiness firms—operating in Morocco, Algeria, and Tunisia. MPEF II's SME-focused approach was an important opportunity, CDC believed, to improve ESG standards and reporting at some of the most dynamic and rapidly growing businesses the region.

CDC's Advisory Role:

As part of its extensive due diligence process, CDC spent three days visiting sample companies in the Maghreb region. CDC helped instill a similarly rigorous approach to due diligence and ESG policies in AfricInvest from its position on MPEF II's advisory committee.

In 2008, just as CDC was finalizing its investment, the Global Financial Crisis disrupted markets in both Africa and around the world. CDC forged ahead with its $27.3 million investment and played an important role in helping the firm manage this crisis. The Arab Spring, which began in Tunisia in 2010, was also an unforeseen risk that generated turmoil in the region. AfricInvest responded to this unrest by increasing the depth and frequency of its reporting and conducting specific studies to gauge the impact of the

[57] World Development Indicator Database: Tunisia. *The World Bank*. http://data.worldbank.org/country/tunisia?display=graph accessed January 19, 2015.

turmoil. Fortunately, there were no substantial setbacks from either of these developments.

Results:

The overall performance of the fund was solid. Out of a portfolio of 17 companies, 13 companies showed EBITDA growth, 14 improved their turnover, and 15 increased their employment:

- **Firm economic performance: Satisfactory.** IRR in 2011 was less than half the estimated level, but several individual portfolio companies had performed well, and CDC expected that the firm economic performance would improve as AfricInvest began to exit some of its positions.[58]
- **Economic Performance: Excellent.** This umbrella variable reflected the overall strong performance of the portfolio companies. Turnover, EBITDA, employment, and tax payments all grew substantially.
- **ESG Performance: Successful.** CDC helped AfricInvest refine its Environmental and Social Management System in areas such as water consumption, working conditions, and management oversight. Portfolio companies in the fund adopted CDC's rigorous rating system to improve their performance.
- **Private Sector Development: Successful.** The success of this fund led to the creation of MPEF III, which closed at $110 million, attracting even more capital to the region.
- **CDC Value Add: Successful.** CDC substantially improved the due diligence process for AfricInvest by improving allocation of resources, encouraging a clearer relationship between funds, and fostering discussions among the Advisory Committee members.
- **Catalytic Effect: Below Expectations.** This rating was unsurprising. CDC joined the fund at the second close and investors such as IFC, FMO, and Proparco had already committed to the fund. Because CDC was late in backing MPEF II, it understood that it could not be a trendsetting example as it had been for other funds.

In 2011, AfricInvest raised a total of $194 million for MPEF III, which would focus on larger deals in the Maghreb. CDC's decision not to invest in MPEF III reflected the organization's desire to focus on markets that were less mature than MPEF III's targets.

[58] *CDC Midpoint Evaluation*. 2011: 6.

5.4.3 Caspian Advisors (IFIF)

Summary:

In 2008, CDC committed $20 million[59] to Caspian Advisors' India Financial Inclusion Fund (IFIF), whose mandate was to invest in innovative Indian microfinance institutions (MFIs).[60] CDC, along with the Global Microfinance Equity Fund (GMEF), which committed $30 million at first close in 2008, served as IFIF's anchor investors. After four subsequent closes, IFIF raised a total of $89 million and had invested $72.2 million by September 2012. Non-DFI investors included responsAbility, the Omidyar-Tufts Microfinance Fund, the Gray Ghost Microfinance Fund, and the Triodos Microcredit Fund. The only other DFI investor was FMO, which committed $10 million.

Although CDC viewed the microfinance sector as a promising area both in terms of developmental impact and investment return, macroeconomic factors along with an unexpected and drastic shift in the regulatory environment in a key Indian microfinance market soon dimmed IFIF's prospects.

The Global Financial Crisis had placed additional financial pressure on already marginal, bottom of the economic pyramid microfinance debtors, and in October 2010, the government of Andhra Pradesh, one of India's poorest states and an epicenter of MFI activity, passed a series of laws sharply curtailing MFI operations within the state. The ensuing industry shakeout, dubbed the Andhra Pradesh (AP) Crisis, effectively put several MFIs out of business, including two IFIF portfolio companies: Trident Microfin Private Ltd and Bhartiya Samruddhi Finance Ltd. In addition, a prominent firm and IFIF investee, Sahayata Microfinance Private Ltd, collapsed in 2012 after investigators discovered extensive fraud by the company's top executives. IFIF ultimately wrote off these three investments, which represented 16.5% of its committed capital.

Investment Rationale:

CDC viewed an investment in IFIF as serving three principal development goals:

1. **Building financial capacity:** CDC's $20 million investment in IFIF (along with GMEF's $30 million commitment) was the foundation of the fund's financial capacity. IFIF's managers sought to create a fund with a large enough capital base to address the

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[59] All figures in USD unless otherwise noted.

[60] In its Eleventh Five Year Plan, released in 2007, the Planning Commission of the Government of India took direct aim at the problem of India's huge unbanked population and noted that one of the most attractive solutions lay in MFIs, which extended small amounts of credit (usually $200 or less) to traditionally unbanked clients, and did so at costs roughly 20% less than commercial banks would incur.

problem of India's huge number of unbanked citizens, some 470 million people, according to a 2008 estimate by the Reserve Bank of India.

2. **Enhancing future fundraising:** IFIF was the second MFI-focused fund from Caspian Advisors, and there was every reason to believe the firm would continue to mobilize private capital in subsequent funds targeting the MFI sector. Not only was the Indian MFI market potentially enormous, microfinance as an investable sector had attracted increased PE interest after MFI pioneer Muhammad Yunus won the 2006 Nobel Peace Prize. With $89 million under management at final close, IFIF was more than four times larger than its predecessor, Caspian's $20 million Bellwether Fund.[61] CDC viewed its involvement as key to the continuation of this upward trend.

3. **Improving ESG performance:** Caspian had developed relatively sophisticated ESG risk management practices while managing Bellwether, and IFIF's managers intended to build upon and pass along this knowledge to their own portfolio companies. This approach to working closely with portfolio companies in managing ESG risk was congruent with CDC's mission to impart ESG best practices to entrepreneurs in challenging environments such as India. CDC believed it could help IFIF build on Bellwether's success.

In terms of prospective financial return, CDC viewed Caspian's track record in the Indian microfinance sector via the Bellwether Fund as a significant asset. Caspian's focus on the smaller end of the MFI scale also appealed to CDC, particularly since large firms such as SKS Microfinance, which by 2010 had grown into a behemoth with net interest income of $111 million[62] and was readying its IPO, were attracting much of the overseas private capital flowing into the sector. Caspian, CDC believed, understood how to find promising firms that were either too small or too geographically remote to attract the attention of larger investors.

CDC's Advisory Role:

IFIF's leadership viewed CDC's assistance and advice during the fund's formative stage as its most important contribution. "They acted as a true partner, a strong shareholder who gave us their full support," said Mona Kachhwaha, IFIF's manager. "It wasn't a traditional GP-investor relationship; we worked very closely together and CDC actively helped us navigate through all sorts of issues."

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[61] The Bellwether Fund had been active in India since 2005 and ultimately made 14 MFI investments. Many members of the Bellwether management team went on to occupy leadership roles in IFIF. http://www.microcapital.org/microfinanceuniverse/tiki-index.php?page=Bellwether, accessed January 19, 2015.

[62] http://indiamicrofinance.com/wp-content/uploads/2010/07/sks-ipo-angel-broking.pdf

CDC's help was particularly important as IFIF responded to the AP Crisis that began in October 2010. At the time, IFIF's portfolio held two companies—Trident and BSFL—that had significant operations within Andhra Pradesh, and the fund ultimately wrote off both investments. As the crisis peaked in 2012, GMEF, facing pressure primarily from some European pension funds that had lost faith in the investment case for Indian MFIs, sought to withdraw from IFIF. CDC's willingness to help accommodate GMEF's wishes helped prevent what would have been a significant blow to the fund at a moment of profound uncertainty for the Indian MFI sector. "Together with the other major investors, CDC offered to buy them out and ultimately convinced them to stay on board," recalled Viswanatha Prasad, Caspian's Founder and Managing Director.

In addition, IFIF's leadership appreciated CDC's clarity and transparency in communicating its requirements along with the training it provided in how to fulfill those expectations. "There is no understanding gap on our end; we know exactly what is expected from us and how we need to act as fund managers," said Ms. Kachhwaha, who appreciated CDC's willingness to talk through issues as they arose. Indeed, many of the most valuable exchanges of ideas took place in more casual settings. "We participated in many helpful discussions that weren't necessarily defined as formal training sessions but helped us understand the evolution of CDC's thinking."

Results:

Given the chaos in the MFI sector and the added dislocation in the Indian economy between 2008 and 2012, IFIF faced significant challenges, which were reflected in the ratings from its mid-point survey. Since the mid-point survey, however, the MFI sector has recovered. IFIF's portfolio has similarly strengthened. The specific ratings for IFIF compiled at the 2012 midpoint are described below, updated with more recent information that shows the recent turnaround:

- **Firm Economic Performance: Unsatisfactory as of mid-point; valued at 41% over invested capital as of March 2015**. In the wake of the AP Crisis and the rapidly deteriorating fortunes of the Indian MFI sector in late 2010, IFIF struggled as it attempted to preserve the value of its investments. With improved performance of the sector, IFIF's performance has revived.
- **Economic Performance: Below Expectations as of mid-point; since then, it has strengthened substantially.** As of the mid-point, seven portfolio companies exhibited modest increases in EBITDA and five showed an increase in employment, but total turnover declined by $11.8 million. As of March 2015, the nine existing companies are growing well.
- **ESG Performance: Satisfactory**. Caspian had a sound ESG management system and an experienced team to oversee ESG risk management at IFIF's portfolio companies. The rating reflects the high social impact of IFIF's portfolio companies, despite the fraud at Sahayata that destroyed the value of that

investment. Subsequently, IFIF has been ranked in the top quintile of Global Impact Investment Rating System (GIIRS), for ESG performance.[63]

- **Private Sector Development**: **Below Expectations as of mid-point; since then, IFIF's portfolio companies have strengthened and received multiple favorable impact ratings.** The fund's contributions to financial inclusion were significant, but the mid-point evaluation noted that IFIF appeared to have difficulty identifying truly innovative companies operating in the MFI sector. With the sector's recovery, IFIF's portfolio companies have received strong ratings from impact assessment efforts such as the Global Impact Investment Rating System (GIIRS) and the Impact Business Model (IBM). Overall, the companies have a four-star (out of five) rating from GIIRS. Seven of the nine had five-star ratings, and eight had received "Platinum" ratings from IBM.[64]
- **CDC Value Add: Satisfactory**. CDC made significant contributions to fund formation and a successful fundraise. But for the "below expectations" private sector development outcome, CDC's value add would have rated "Successful."
- **Catalytic Effect: Successful**. CDC's presence as an anchor investor and its $20 million commitment at first close helped IFIF reach critical mass.

Further Involvement with Caspian:

As of March 2015, CDC remained invested in IFIF and had made direct investments in three of its portfolio companies, but had not participated in subsequent Caspian funds. Since the mid-point evaluation in 2012, the AP Crisis had ebbed, and investor interest in the Indian MFI sector underwent a renaissance. Shares of pioneering MFI SKS Microfinance, for instance, closed at INR 460.00 in late January 2015. Although nowhere near its September 2010 all-time high of INR 1,396.00 per share, the stock has traded well above its 52-week low of INR 165.00.

5.4.4 Celtel, Portfolio Company of Actis (Africa Fund I)

Summary:

In August 2001, Actis' Africa Fund I (AF1) participated in a $72.5 million financing round for a rapidly growing pan-African mobile telecom company, Celtel International B.V. AF1 invested alongside the International Finance Corporation, the private equity arm of South Africa's Old Mutual plc, and Germany's development finance institution, DEG, and would go on to participate in two subsequent fundraisings. By 2005, Actis had invested $77 million in Celtel and was the firm's second-largest shareholder with a 9.3% equity stake. Only Celtel's founder, Mohamed (Mo) Ibrahim, owned a larger share of the

[63] Caspian/IFIF, "IFIF Social Performance Management Report," p. 19.

[64] Caspian/IFIF, "IFIF Social Performance Management Report," p. 20.

company.[65] Celtel was AF1's largest holding and was among CDC's 10 largest investments prior to its sale to Kuwait-based Mobile Telecommunications Company (MTC)[66] in 2005.

Investment Rationale:

The deregulation of the African telecommunications sector, a process that began in earnest in many Sub-Saharan African nations in the 1990s, created an opening for entrepreneurs who understood both the challenges and the opportunities of the African market to meet an enormous pent-up demand for basic services. Celtel's founder, a Sudanese-born engineer educated in the UK, was just such an entrepreneur.

Mo Ibrahim founded his telecommunications consulting firm, Mobile Systems International (MSI), in 1989 after earning his Ph.D. in pre-cellular telecommunications in England and designing the first mobile system for British Telecom. In 1998, MSI began bidding for mobile spectrum licenses in Africa and acquiring the small, single-country operations that Ibrahim and MSI would eventually stitch together to form Celtel.[67]

Celtel held the promise of significant developmental impact along with a healthy return on investment. Given the unreliability of fixed-line telecommunications networks on the continent, a legacy of underinvestment and inefficient government monopoly control, mobile phones were not a luxury in Africa. By 2003, there were 25.1 million fixed-line subscribers in all of Africa, half the number of mobile phone subscribers (51.8 million).[68] Mobile phone market penetration, however, stood at just 6%, compared to the world average of 22%.

In addition to the spectacular growth potential of the African mobile phone market and its promise of sound financial returns, the developmental impact of improved telecommunications appealed to CDC/Actis. Improved telecommunications was powerfully developmental in emerging economies in that it created new economic opportunities and enabled markets to function more efficiently. With reliable mobile phone service, a Tanzanian fisherman, for instance, could find the buyer willing to pay the best price for his catch. CDC/Actis believed an investment in Celtel could be transformative in some of the poorest countries in the world.

CDC's Advisory Role:

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[65] http://people.stern.nyu.edu/igiddy/cases/mtc-celtel.htm, accessed April 13, 2015.

[66] MTC was rechristened "Zain," an Arabic word meaning "beautiful," in 2007.

[67] In 1998, MSI's telecommunications operations were placed in a holding company domiciled in Amsterdam named MSI-Cellular Investments. This company was later renamed "Celtel."

[68] Press release, "Africa: The World's Fastest Growing Mobile Market," *International Telecommunication Union*, April 25, 2004, www.itu.int/newsroom/press_releases/2004/04.html, accessed April 13, 2015.

Jonathon Bond, who in 2001 was CDC Capital Partners' Managing Director of fundraising and investor development, joined Celtel's board of directors in October 2002. From its position on the board, CDC/Actis participated actively in Celtel's management and helped shepherd the company through several key growth phases. By leveraging both its public and private sector contacts, Actis helped Celtel win license bids, mobilize funding, and make important acquisitions, including Kencell, the second-largest telecom company in Kenya.[69]

Indeed, CDC/Actis was instrumental in helping Celtel transition from an entrepreneurial start-up to an operational telecommunications firm[70]. Celtel's CEO from 2001-2003, Sir Alan Rudge (the former Deputy CEO of British Telecom), recalled the transition as a difficult one. "The company had to move on from doing a lot of exciting deals to actually running and developing a group of mobile networks."

CDC/Actis had welcomed the fact that Celtel offered an investment that was both developmental and offered good financial returns.[71] As a growing firm in a market space known for corruption, Celtel zealously guarded its reputation, refusing to participate in ethically compromising situations and delivering top-quality service. In many ways, Celtel became a model African private equity deal for investors interested not only in growing their portfolio companies (and reaping the financial benefits), but also in propagating ESG best practices in the emerging world.

To fend off requests for bribes, Celtel's founder and major shareholders built a large board of directors that included former government ministers and prominent executives from the development finance community, including CDC and the World Bank.[72] MTC's purchase of Celtel was its first African transaction. The Kuwaiti firm's comfort with moving into Africa stemmed in no small part from Celtel's transparency and strong governance.

As Celtel grew and assumed a more prominent role in the communities in which it operated, it built a robust social responsibility program. Notable projects included increasing AIDS awareness and prevention, organizing medical clinics, and improving road safety.

Results:

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[69] "Actis to sell stake in African Telco Celtel," *Actis press release*, March 29, 2005, http://act.is/pressrelease/92.

[70] Felda Hardymon, Josh Lerner, and Ann Leamon, "Celtel International B.V." *HBS Case No. 805-061* (Boston: HBS Press, 2005), p. 7.

[71] Ibid, p. 4.

[72] Ibid, p. 5.

On March 29, 2005, Actis announced that it was exiting its investment in Celtel following the acquisition of the company by MTC. By 2005, Celtel was the largest mobile phone operator in Africa outside South Africa, with a coverage area that encompassed 30% of Africa's population. Celtel was an important early mover in the African mobile telecommunications sector, a key to future growth on a continent characterized by poor communications. It was a sector that had drawn much of CDC/Actis' attention. Of the $600 million the organization invested in the African private sector between 1998 and 2005, $120 million was in telecoms.

The financial and developmental benefits CDC/Actis had anticipated had emerged; performance along both of those metrics was excellent. As CDC's Chairman, Malcolm Williamson, noted in the 2005 annual report,

> Back in 1998, for example, the African mobile telephony market was by no means an obvious target for investment. Nor was it seen as a mainstream development opportunity. Nonetheless, the setting up, development and eventual sale of Celtel, in which CDC was a pioneer investor, was one of the great successes of the last few years.[73]

Celtel had become an important corporate citizen in the nations in which it operated. The company was, for instance, the largest taxpayer in the Democratic Republic of Congo in 2005, and its profits were being recycled back into developing economies. The Celtel exit generated GBP 130 million in cash[74] for CDC (4.5x) and an IRR of 56%.[75]

Paul Fletcher, Actis' Senior Managing Partner, said at the time, "The combination of a world-class management team at Celtel, pent-up demand for access to efficient and available telephony, often assisted by our own presence on the ground in Africa has created a terrific investment."

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[73] *CDC Annual Report,* 2005, p. 4.

[74] *Ibid,* p. 7.

[75] *Ibid,* p. 23.

Glossary

DFI: Development Financial Institution

DfID: Department for International Development. The branch of the U.K. government that oversees CDC.

EBITDA: Earnings Before Interest, Taxes, Depreciation, and Amortization. This calculation generally reflects operating income.

ESG: Environmental, Social, and Governance [impacts]. Sometimes abbreviated as ES, or Environmental and Social.

GP: General Partner. The group that invests in private companies. Also known as fund managers.

IRR: Internal Rate of Return. A common calculation of return from private equity funds that takes into account the time the money is held. Most IRR figures in the PE context are calculated "net to LPs," which indicates that they reflect the returns that LPs received, absent the fees and carry paid to the GPs.

LP: Limited Partner. The investors (usually institutional) that contribute capital to private equity funds.

MFI: Microfinance Institution. An organization that makes very small loans.

MOIC: Multiple of Invested Capital. A common calculation of return from private equity funds that reflects the amount of money returned relative to the amount invested but does not consider the holding period. Thus, if an investment of $50 million returns $100 million, the MOIC is 2x regardless of whether the money was returned in a week or a decade.

Net IRR: *see IRR*.

PE: Private equity. Shares that are not traded on a public market or, more broadly, investments for which there is no readily liquid market on which the investor can exit at an objectively determined price.

SME: Small and medium-sized enterprise.

Bibliography

Abraaj. *Brookside Dairy Ltd.* Nairobi: The Abraaj Group, 2013, http://www.abraaj.com/images/uploads/davos_files/Brookside_Dairy_Ltd.pdf.

———. *Press Release: Abraaj Successfully Completes 15 Exits in 2013 Across Global Growth Markets*: The Abraaj Group, 2013.

Actis Press Release. Actis to Sell Stake in African Teleco Celtel: Actis, March 29, 2005, http://act.is/pressrelease/92.

Agrawal, Vaibhav. *SKS Microfinance*: Angel Broking, July 2010, http://indiamicrofinance.com/wp-content/uploads/2010/07/sks-ipo-angel-broking.pdf.

Alabi, Reuben Adeolu, Joy Alemazung, Hans Bass H., Achim Gutowski, Robert Kappel, Tobias Knedlik, Osmund Osinachi Uzor, and Karl Wohlmuth. *Africa and the Global Financial Crisis: Impact on Economic Reform Processes*. Berlin: LIT Verlag, 2011.

Alsina, Albert. "Private Equity in the North African Region: Case Study of Morocco, Tunisia, and Algeria." *European Institute of the Mediterranean* (2013): 1-50.

AltAssets. "Aureos Exits Zambia Egg Producer Golden Lay for $24m." AltAssets, accessed January 30, 2015, https://www.altassets.net/private-equity-news/by-news-type/deal-news/aureos-exits-zambia-egg-producer-golden-lay-for-24m.html.

Aminu, Ayodele. "Hayatu-Deen Steps Down as FSB." *This Day News*, June 14, 2004, accessed January 1, 2015, http://news.biafranigeriaworld.com/archive/2004/jun/14/016.html.

Ben Jilani, Khaled. *Views on Investing in Africa*: AfricInvest, December 2009, http://www.emrc.be/Documents/Document/20100517160802-3_-_Tuninvest_-_Khaled.pdf.

Biggs, Tyler, Manju Shah, and Pradeep Srivastava. "Technological Capabilities and Learning in African Enterprises." *World Bank Technical Paper* no. 285 (1995).

Bloom, Nicholas, Benn Eifert, Aprajit Mahajan, David McKenzie, and John Roberts. "Does Management Matter? Evidence from India." *The Quarterly Journal of Economics*. vol. 128(1): 1-51.

Cambridge Associates. *Global Ex U.S. Developed Markets and Emerging Markets Private Equity & Venture Capital Index and Selected Benchmark Statistics*: Cambridge Associates LLC, 2013.

Carter, Rhyddid and Eddie Buckley. *CDC Makes New Investment to Boost Indian Infrastructure*: CDC Group, 2013.

Caspian/IFIF. *IFIF Social Performance Management Report*: Caspian, 2014.

CDC Group. "1948." 2015, http://www.cdcgroup.com/Who-we-are/Our-History/.

———. *Annual Report*. London, 1999.

———. *Annual Report*. London, 2004 - 2012.

———. *Toolkit for Fund Managers*: CDC Group, 2010.

———. *Statement from the Chief Executive: CDC Development Report*: London: CDC Group, 2008.

Chen, Greg, Stephen Rasmussen, Xavier Reille, and Daniel Rozas. "Indian Microfinance Goes Public: The SKS Initial Public Offering." *The Consultative Group to Assist the Poor (CGAP)* no. 65 (September 1, 2010): 1-15.

Chen, Lilyan, Ryan Mac and Brian Solomon. "Alibaba Claims Title for Largest Global IPO Ever with Extra Share Sales." *Forbes*, accessed January 30, 2015, http://www.forbes.com/sites/ryanmac/2014/09/22/alibaba-claims-title-for-largest-global-ipo-ever-with-extra-share-sales/.

CIA, "Nigeria." *CIA World Factbook*, 1999.

Cornelli, Francesca and Oved Yosha. "Stage Financing and the Role of Convertible Securities." *Review of Economic Studies* 70, no. 1 (2003): 1-32.

Cumming, Douglas, Grant Fleming, and Armin Schwienbacher. "Legality and Venture Capital Exits." *Journal of Corporate Finance* 12, no. 2 (2006): 214-245.

de Aenlle, Conrad. "For Emerging Markets, a Move Toward Maturity." *The New York Times*, October 14, 2007, accessed April 14, 2015, http://www.nytimes.com/2007/10/14/business/yourmoney/14emerge.html?pagewanted=print.

Economist Intelligence Unit. *India Country Report*. London: Economist Intelligence Unit, 2012.

———. *Tunisia Country Report*. London: Economist Intelligence Unit, 2012.

EMPEA, *Industry Statistics Q3 2014*: EMPEA, 2014.

Gharbi, Moez. "Challenges and Opportunities in the Tunisian Private Equity Sector." *MIT Sloan School of Management* (2012): 1-99.

Giddy, Ian. "The Acquisition of Celtel: New York University, 2006," accessed April 13, 2015. http://people.stern.nyu.edu/igiddy/cases/mtc-celtel.htm.

Golden Lay Table Eggs. "About Us." accessed January 30, 2015, http://www. goldenlay. co.zm/ about_us/.

Gupta, Prashant, Rajat Gupta, and Thomas Netzer. *Building India: Accelerating Infrastructure Projects*. Mumbai: McKinsey & Company, 2009.

Harris, R., T. Jenkinson, and S. Kaplan, 2014, "Private Equity Performance: What Do We Know?," *Journal of Finance* 69, 1851–1882 (http://www.nber.org/papers/w17874).

Hardymon, Felda, Josh Lerner, and Ann Leamon. "Celtel International B.V." *HBS Case No. 805-061* (Boston: HBS Press, 2005).

Hardymon, Felda, Josh Lerner, and Ann Leamon. "Motilal Oswal Financial Services Ltd.: An IPO in India." *Harvard Business School Case 807-095* (2007)

Harris, R., T. Jenkinson, and S. Kaplan, "Private Equity Performance: What Do We Know?," *Journal of Finance* 69, (2012), 1851–1882, http://www.nber.org/papers/w17874.

Hinshaw, Drew and Patrick McGroarty, "Nigeria's Economy Surpasses South Africa's in Size," *The Wall Street Journal*, accessed January 30, 2015, http://www.wsj.com/articles/SB10001424052702304819004579485360572851126

Hochberg, Yael V., Alexander Ljungqvist, and Yang Lu. "Whom You Know Matters: Venture Capital Networks and Investment Performance." *Journal of Finance* 62, no. 1 (2007): 251-301.

Howell, Sabrina. "Financing Constraints as Barriers to Innovation: Evidence from R&D Grants to Energy Startups," *forthcoming*, January 23, 2015.

IFC. *IFC Jobs Study*: World Bank Group, 2013, www.ifc.org/jobcreation.

Independent Evaluation Group. *Independent Evaluation of IFC's Development Results: Knowledge for Private Sector Development*. Washington D.C.: The World Bank Group, 2009.

ITU. *Africa: The World's Fastest Growing Mobile Market*: International Telecommunication Union, April 25, 2004, accessed April 13, 2015, www.itu.int/newsroom/press_releases/2004/04.html.

Iwuagwu, Obi. "Telecommunications Reform in China and Nigeria: Same Result, Different Strategies." *The Journal of International Social Research* 7, no. 32 (August, 2014).

Jaffe, Adam. "Building Programme Evaluation Into the Design of Public Research-Support Programmes." *Oxford Review of Economic Policy*, 18, no. 1, (2002): 22-34.

Jouanjean, Marie-Agnes and Dirk Willem te Velde. "The Role of Development Finance Institutions in Promoting Jobs and Structural Transformation: A Quantitative Assessment." *Overseas Development Institute Working Paper* 377, (March, 2013): 1-51.

Kaplan, Steven N., Frederic Martel, and Per Stromberg. "How do Legal Differences and Experience Affect Financial Contracts?" *Journal of Financial Intermediation* 16, no. 3 (2007): 273-311.

Kim, Rene and Steward Redqueen. "Maghreb Private Equity Fund II (MPEF II)." *CDC Midpoint Evaluation* (2011): 1-32.

Klapper, Leora and Christine Richmond. "Patterns of Business Creation, Survival and Growth." *The World Bank Policy Research Working Paper* no. 5828 (2011).

Knowledge@Wharton. *Why are Private Equity Firms Looking Hard at India? Ask Warburg Pincus*. Philadelphia: University of Pennsylvania, 2005.

Leahy, Joe. "CDC to Invest in Indian Property." Financial Times, accessed January 30, 2015, http://www.ft.com/intl/cms/s/a721299a-413f-11dd-9661-0000779fd2ac,Authorised=false.html?_i_location=http%3A%2F%2Fwww.ft.com%2Fcms%2Fs%2F0%2Fa721299a-413f-11dd-9661-0000779fd2ac.html%3Fsiteedition%3Duk&siteedition=uk&_i_referer=#axzz3O9j14fII.

Leamon, Ann, Josh Lerner, and Susana Garcia-Robles. "The Evolving Relationship between LPs & GPs." *IADB Reports* (2012).

Lerner, Josh. "The Syndication of Venture Capital Investments." *Financial Management* 23, no. 3 (1994): 16-27.

Lerner, Josh and Anna Kovner. *Doing Well by Doing Good? Community Development Venture Capital*: Federal Reserve Bank of New York, 2012.

Lerner, Josh and Antoinette Schoar. "Does Legal Enforcement Affect Financial Transactions? The Contractual Channel in Private Equity." *Quarterly Journal of Economics* 120, no. 1 (2005): 223-246.

Lerner, Josh, Ann Leamon, and Felda Hardymon. *Venture Capital, Private Equity, and the Financing of Entrepreneurship*. New York: J. Wiley, 2012.

Lerner, Josh, Felda Hardymon, and Ann Leamon. "CDC Capital: 2000." *Harvard Business School Case 801-333* Boston: HBS Press, 2000.

McWilliam, Michael. "Reinventing the Commonwealth Development Corporation Under Public-Private Partnership: Reflections on the Privatisation of CDC." *Centre for the Study of Financial Innovation* no. 43 (2000).

MSCI Emerging Markets Index Fact Sheet: MSCI, 2015, https://www.msci.com/resources/factsheets/index_ fact_sheet/msci-emerging-markets-index-usd-net.pdf.

MSCI Frontier Markets Index Fact Sheet: MSCI, 2015, https://www.msci.com/resources/factsheets/index_fact_sheet/ msci-frontier-markets-index.pdf.

MTN. *Corporate Information*: MTN, 2014.

Organisation for Economic Co-operation and Development. *"*Aid to Developing Countries Rebounds in 2013 to Reach an All-Time High." Washington D.C.: OECD, August 2014.

Ott, R. Lyman and Michael T. Longnecker. *A First Course in Statistical Methods*. United States: Thompson Brooks/Cole, 2004.

Petty, Jeffrey, S. and Marc Gruber. "In Pursuit of the Real Deal": A Longitudinal Study of VC Decision Making." *Journal of Business Venturing* 26, no. 2 (2011).

Phatisa. *The African Agriculture Fund Concludes an Investment of US$24 Million in Zambia (Sub-Saharan Africa)*: EMPEA, 2012.

Planning Commission Government of India. "Eleventh Five Year Plan (2007-2012)" *Agriculture, Rural Development, Industry, Services and Physical Infrastructure Volume III*, (2008): 1.

———. *Towards Faster and More Inclusive Growth: An Approach to the 11th Five Year Plan*: Planning Commission Government of India, 2006.

Prasad, Viswanatha. *Bellwether*: MicroCapital, 2014.

Preqin. *Buyout Deals Analyst: Tunisia from 2008-2010*: Preqin, 2014.

———. *2014 Global Private Equity Report*. London: Preqin, 2014.

———. *2015 Global PE and VC Report*. London: Preqin, 2015.

Priority Sector Credit & Rural Development Department. *Financial Inclusion*. Mumbai: Bank of India.

Rastello, Sandrine. "World Bank Says 600 Million New Jobs Needed Over 15 Years," *Bloomberg.com*, October 1, 2012, http://www.bloomberg.com/news/articles/2012-10-01/world-bank-says-600-million-new-jobs-needed-over-15-years, accessed April 13, 2015.

Redqueen, Steward. "CDC ESG Survey among Fund Managers." *Steward Redqueen*, 2013, http://www.cdcgroup.com/Documents/ESG%20Publications/esgsurvey.pdf.

Sinha, Frances. *State of Microfinance in India*: Institute of Microfinance, 2009.

SKS Microfinance: Prosperity to Masses: Angel Broking, 2010.

Smart, Geoffrey, H. "Management Assessment Methods in Venture Capital: An Empirical Analysis of Human Capital Valuation." *Venture Capital: An International Journal of Entrepreneurial Finance* 1, no. 1 (1999).

Teten, David and Chris Farmer. "Where are the Deals? Private Equity and Venture Capital Funds' Best Practices in Sourcing New Investments." *The Journal of Private Equity* 14, no. 1 (2010): 32-52.

The Economist. "India's Love Affair with Public-Private Partnerships Faces a Stern Test." *The Economist*, accessed January 30, 2015, http://www.economist.com/news/finance-and-economics/21568397-indias-love-affair-public-private-partnerships-faces-stern-test-rippp.

Thompson, Gavin. *CDC Group Plc (Formerly the Commonwealth Development Corporation)*: Parliament, 2011.

World Bank. *Doing Business Indicators: Registering Property June 2012*, 2012.

———. *Enterprise Surveys*: World Bank, 2013.

———. *World Development Indicator Database: India*: The World Bank, 2014.

———. *World Development Indicator Database: Tunisia*: The World Bank, 2014.