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The Equity Beta of Telcos Operating in Small Island Nations

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Analysts often use the capital assets pricing model (CAPM) to estimate the cost of equity capital. A key parameter in estimating that cost is the so-called equity beta. Estimates of equity betas for telecommunications firms, or telcos, in small island nations are not readily available, so analysts often rely on estimated equity betas from larger firms in jurisdictions with much larger markets. Doing so may introduce significant errors if the equity risk premium for telcos in large markets differs significantly from those in small markets. In this research note we explore this hypothesis. We find that the equity betas of telcos in small island nations are substantially bigger than those of large telecom companies. Hence we expect a greater cost of equity capital.

The Problem
The CAPM postulates that an investor will demand a premium above the market rate of return to risk its money on a particular business investment. This is expressed as:

\[ E[r_i] = r_F + \beta [r_m - r_F] \]  

(1)

where \( r_i \) is the return on a risky security; \( r_F \) is the return on a risk-free security such as U.S. Treasury bonds; \( r_m \) is the market rate of return, and \( \beta \), commonly referred as the equity-beta, measures the riskiness of that particular investment or security relative to the market.

Estimates of equity betas for large telecom firms are readily available or can be easily computed using publicly available information and expression (1) above. This is not so for telcos in small island nations. To estimate equity betas of those firms we used stock price data of publicly traded telcos that operate primarily in small island nations.

The Sample of Firms
Due to the limited availability of stock price data of telcos in small islands our sample consists of only three firms; there are several reasons for this. First, firms in these markets are generally not publicly traded. Second, some firms in small markets are subsidiaries of large telecom firms that derive most of their revenue from large markets. We exclude those firms as these would bias the beta estimates reflecting the equity risk in those larger markets. For example, Mauritius Telecom and Telecom Vanuatu Limited operate in small island nations and would be candidates for our sample except that both are owned by Orange. Orange derives most of its revenue from its subsidiaries in Europe, Africa and the Middle East, not from its subsidiaries in Mauritius or Vanuatu. As such Orange’s equity beta reflects primarily the risk of operating in those larger markets.

Similarly, Oredo, which has operations in the Maldives, derives most of its revenue from subsidiaries in Northern Africa and the Middle East; so its equity beta would primarily reflect the risk of operating in those larger markets and not in the Maldives.

Eliminating these and similar firms reduced our sample but ensured that our results would reflect more accurately the equity.
betas of telcos serving primarily small island nations.

We found stock price data for three firms: Amalgamated Telecom Holdings from Fiji, Cable & Wireless Communications PLC, and Spark New Zealand. Although Spark New Zealand may arguably not belong to the same group as the other two, we nevertheless decided to include it given its small operation in the Cook Islands.

**Amalgamated Telecom Holdings Limited (ATH)** is an integrated telecom firm that provides a wide array of fixed and wireless telecommunications services to business and residential and government customers through its subsidiaries FINTEL, Telecom Fiji Limited, and Vodafone Fiji Limited. In early 2014 it had over 700,000 mobile subscribers and dominated the market for fixed voice and data services in Fiji. Unlike the other two companies in our sample, ATH derives all of its revenue from a single country, Fiji. ATH is the smallest firm in the sample; it is listed in the South Pacific Stock Exchange.

**Cable & Wireless Communications (CWC)** is also an integrated telecom firm providing a full range of telecommunications services through its subsidiaries. In early 2014 it had more than 3.7 million mobile subscribers worldwide. It operates in Panama, the Caribbean, and Monaco. Most of its revenue originates from operations in Panama and the Caribbean (Antigua, The Bahamas, Barbados, British Virgin Islands, Cayman Islands, Dominica, Jamaica, St. Lucia, St. Vincent and the Grenadines, and Turks and Caicos). CWC is listed in the London Stock Exchange.

**Spark New Zealand (SPK)** is also an integrated telecom firm with operations in Australia, New Zealand, and the Cook Islands. As of June 2014 it had 2 million mobile subscribers. SPK is listed in the New Zealand national stock exchange.

**Data**

We used weekly stock price returns for each firm. For the market rate of return we used market indices from the corresponding stock exchanges. The source of each company’s stock price data is the stock exchange in which the company is listed.

As the risk-free rate of return we used the yield on 10-year U.S. Treasury bonds; the source is the US Federal Reserve Bank of Saint Lois. All data cover the period from June 1, 2012 through December 12, 2014.

**Results**

We used ordinary least squares to estimate equation (1) and find the equity beta of each firm. We rearranged terms and used as a dependent variable the difference between the return on the firm’s equity minus the risk-free rate of return \((r_i - r_F)\), and regressed this against the market premium rate of return \((r_m - r_F)\) to obtain the equity beta for each firm.

To test our model’s robustness we tested two different market indices for each firm. The beta estimates with these two models are reported. To test for robustness we tried the yield on the 20-year US Treasury Bond as the risk-free rate of return but this did not change the results in any significant way. Finally, we tested whether using monthly data would affect the beta estimates. For the most part, conclusions still hold whether we use monthly or weekly data.

**Amalgamated Telecom Holdings**

We used two broad market indices from the South Pacific Stock Exchange because this would reflect more closely the market rate of return for ATH’s shareholders. We used the Total Market Return Index (STRI) and the Market Capitalization Weighted Stock index (MCWPI). We used the yield on a 10-year US Treasury bond as the risk-free rate of return. The estimated equity beta is 2.18, on average, when using weekly data, and 2.22 when using monthly...
Cable & Wireless

We used two market indices, the FTSE100 index from the London Stock Exchange and the S&P500 index. CWC’s estimated equity beta is 1.18, on average, using weekly data and 1.26 using monthly data. These values are substantially lower than ATH’s, reflecting CWC’s lower risk premium due to its exposure to more diversified telecom markets. The beta estimates are all statistically significant at a 99 percent confidence level.

Spark New Zealand

We used two broad market indices from the New Zealand stock exchange; the weighted market index of the 50 largest and most liquid companies (NZX50) and the NZX ALL index, which includes all the listed companies weighted by market capitalization. SPK’s equity beta is 1.13, on average, using weekly data, and 1.29 using monthly data. All estimated betas are significant at a 99 percent confidence level.

Final Remarks

Our estimated equity betas for small island telcos are significantly larger than those estimated for large telecom companies. For example, Thore Johnsen’s comprehensive analysis of 13 integrated European telcos finds an average equity beta of 0.59 over a five-year period (2008-2013). The values for the 13 telcos range from a high of 1.13 for Hellenic Telecom (Greece) to a low of 0.12 for KPN (Netherlands). In comparing the average beta for the 13 EU telcos to our estimates we find that our beta estimate for ATH is 3.7 times larger (2.18 against 0.59); for CWC it is twice as large, and for SPK it is 1.9 times larger.

Therefore, using equity betas from large telcos to estimate the cost of equity capital for small island telcos would significantly underestimate the true cost of equity capital for those telcos. To illustrate this, we present two values for the cost of equity capital for ATH, CWC, and SPK in the table below. One uses our own beta estimates and the other uses the average beta for the 13 EU telcos as a benchmark; in this latter case, the cost of equity capital is significantly underestimated.

Analysts often address the lack of reliable equity beta estimates for small island nations by adjusting the return on equity in a somewhat arbitrary way that avoids estimating the equity beta of comparable firms. Here we provide reliable equity beta estimates for three telcos operating in small islands.

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1 Thore Johnsen, NHH. “Cost of Capital for Norwegian Mobile Operators.” Oslo, Feb. 21, 2013. The 13 EU telcos are: Telia Sonera, TDC, Elisa, British Telecom, KPN, Deutsche Telekom, France Telecom, Telecom Italia, Portugal Telecom, Telefonica, Telecom Austria, Swisscom, and Hellenic Telecom.
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