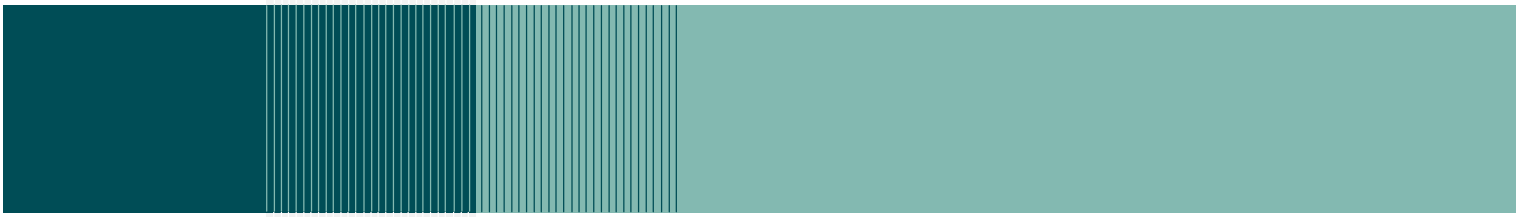
November 2009

Cost of Capital for LIME – A Review of OUR's Proposals

A Report for LIME



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High Level Assessment of OUR's WACC Proposal

LIME (formerly known as Cable & Wireless Jamaica) has commissioned NERA to review the latest proposals of the Office of Utilities Regulation (OUR) on the cost of capital for telecommunications carriers in Jamaica.[1]

The OUR presents a number of different cost of capital estimates that include:

- An overall nominal and real WACC and a separate divisional WACC for Network Interconnection and Retail services for a Global Telecommunications company;
- An overall nominal and real WACC and a separate divisional WACC for Network Interconnection and Retail services for a Jamaican Telecommunications company both in US dollars and in Jamaican dollars.

Although the focus of this report is to assess the OUR's proposed WACC for LIME, we start with an assessment of the OUR's proposed WACC for a global telecom operators since this forms the basis for the Jamaican WACCs.

Plausibility of the OUR's Global Telecom WACC Estimates

The OUR estimates an overall WACC for a global telecom operator by analysis of the costs of capital of integrated listed telecom operators in developed markets including the Eurozone and the US.

The OUR's estimate of the nominal vanilla WACC for a global telecom operator is 7.41%. The OUR then decomposes the 7.41% WACC into an estimate of the Network Interconnection WACC of 5.40% and Retail WACC of 8.69%. Table 1 summarises the key parameters used to derive the WACC.

Table 1
OUR's Nominal WACC for Global Telecom Operators

OUR's Parameter Estimates	Estimate
US Risk-free Rate	3.86%
Market Risk Premium	5.56%
Equity Beta	0.79
Gearing	45.67%
Cost of Debt	6.42%
Cost of Equity	8.25%
Tax Rate	34.40%
Nominal Vanilla WACC	**7.41%**
Network Interconnection WACC	**5.40%**
Retail WACC	**8.69%**

[1] Office of Utilities Regulation (OUR): Estimate of the Weighted Average Cost of Capital for Telecommunications Carries in Jamaica, Second Consultation Document, August 31, 2009.

This report shows that the OUR's proposed WACC numbers for a global telecom operator are implausibly low. Although CAPM is internationally recognised, it can produce a wide range of possible answers, depending upon the input parameters selected by those using it. Therefore, the cost of capital estimated using CAPM is only "robust" if there is widespread consensus over the selected input parameters.

Table 2 below shows the discrepancy between the OUR's proposed global telecom WACC for network interconnection and the network interconnection WACC proposed by other international telecom regulators. The OUR's proposed WACC of 5.4% for interconnection lies substantially below all of the other regulatory decisions for fixed line interconnection and other wholesale activities. This is simply not plausible unless the OUR has evidence that all these other regulatory decisions have been wrong.

Table 2
A Comparison of OUR's Network WACC with Regulatory Decisions

Regulator:	Decision:	Year	Nominal Vanilla WACC
Ofcom (UK)	BT network charges: copper network	2005	7.6%
ARCEP (France)	Fixed line telecoms	2008	7.8%
Comreg (Ireland)	Eircom's fixed line business	2008	9.3%
Ofcom (UK)	BT Openreach	2009	8.0%
Average (wholesale interconnection)			**8.2%**
OUR Proposal	***Global USD WACC for Network Interconnection***		***5.4%***

Source: NERA Analysis of regulatory decisions.

Indeed, the OUR's estimated WACC of 7.4% for an *integrated* global telecommunications business is also lower than all of the allowed WACCs for *network interconnection* shown in Table 2. This is particularly troubling, since – as the OUR itself admits – the overall business risk for an integrated diversified telecom business is higher than the risk of a regulated interconnection business.

Key Errors in the OUR's Global WACC Analysis

The main errors in the OUR's methodology that have led to their implausible conclusions on the overall Global WACC can be summarised as follows:

- ***Implausibly Low Beta Assumption***: The OUR's implied asset beta of 0.432 is around 0.15 lower than the average asset beta allowed by international regulators for fixed line businesses. This difference leads to a downward bias in the global cost of equity in the range of 0.5-1.0%.
- ***Inconsistencies in Risk Free Rate and Market Risk Premium Data.*** The OUR's estimate of the risk free rate is based on short term historical data over the last two years whereas the MRP is based on data over a much longer period from 1990. There is widespread evidence that global interest rates in the last two years have been persistently

[2] Asset beta is obtained by un-levering the proposed equity beta of 0.79 at the chosen level of gearing of 45.67%.

below the long run trend level of interest rates due to factors such as the global financial crisis, illiquidity and/or supply side factors such as low government bond issuance. If a short-term risk free rate is used, then to ensure internal consistency, it should be combined with a short term measure of the MRP which is currently around 2% higher than the OUR's chosen estimate.

- ***Incorrect Methodology for Disaggregating WACC Estimates for Network Interconnection and Retail:*** The OUR derives separate divisional WACCs for regulated Network Interconnection and Retail services by applying a "heuristic approach" developed by the Boston Consulting Group (BCG) which assesses the relative riskiness of the individual divisions of the firm by ranking the divisions on a number of qualitative dimensions. The approach adopted by the OUR lacks transparency and produces results which are implausible in magnitude. The OUR's proposed nominal WACC for network interconnection services of 5.40% is lower than the assumed cost of debt of 6.42%. This suggests that the cost of equity for network interconnection is *lower* than the cost of debt, which cannot be true (since the cost of equity is always higher than the cost of debt due to the fact that debt has a prior claim on a company's assets and cash-flows). Instead of disaggregating the overall WACC into retail and wholesale based on an assessment of the difference in risk, the OUR should have disaggregated the asset beta into retail and wholesale. For instance, this is the approach adopted by Ofcom in the UK.

These key errors along with other material errors in the OUR's global WACC approach are explained in more detail in the report.

Accounting for Sovereign Risk and Currency Risk

The OUR convert their estimates of a global telecom WACC into a Jamaican Telecom WACC by the addition of a sovereign risk premium and a currency risk premium.

- To calculate a Jamaican Telecom cost of equity in USD, the OUR adds a sovereign risk premium of 4.5% to the estimated cost of equity for a Global Telecom;

- To calculate a Jamaican Telecom cost of equity in JMD, the OUR further adds a currency risk premium of 9.0% to the USD-denominated WACC;

The main problem with the OUR's assessment of the Jamaican sovereign risk premium is that the OUR estimates the sovereign risk premium using evidence over a 2 year period. However, S&P downgraded Jamaica's credit rating three times in 2009 with the most recent downgrade to CCC on November 2nd, increasing the required returns for Jamaican government bonds. To provide the most up-to-date assessment of country risk, only current evidence on sovereign risk should be used. This error leads to a downward bias in the Jamaican USD WACC of around 3%.

Small Company Premium for LIME

The OUR's estimate of the equity beta for a Jamaican telecom operator is the same as for a global telecom Operator. This is unlikely to be appropriate because investors face additional costs and risks when investing in a small company operating in a small emerging economy, which will not be captured in the cost of equity for a large diversified telecom in a mature market.

The need for a small company premium arises because of the relative size of LIME compared to larger telecoms in developed markets. LIME with a market cap of just 90m USD is substantially smaller than the OUR chosen comparators which have market caps in the range of 20-150bn USD. To account for this difference, investors will require a premium for the extra trading costs associated with transacting in such an illiquid stock as LIME. In addition, smaller firms face higher transaction costs in accessing debt and equity markets. Firms incur fixed costs in raising external finance which are proportionately larger for smaller firms.

It is common for international regulators to either use a higher estimate of the beta for smaller operators such as LIME or to explicitly acknowledge the need for a small company premium for smaller-sized regulated firms.

Inadequate Compensation for Inflation

The OUR's approach to the WACC and asset base does not compensate an investor for Jamaican inflation. The OUR's 'currency adjuster', which is used to index the regulatory asset base, is equal to 6.94%. By contrast, the inflation figure implicitly used to derive the real WACC is equal to 8.77%.[3] This means that under the OUR's proposed approach, an investor can only expect to earn a nominal return which lies on average 1.8% below the intended allowed nominal WACC.

[3] The OUR state the nominal vanilla WACC (JMD) at 19.92% and the real vanilla WACC at 10.25%. Using the Fisher equation, the implied inflation rate is 8.77% (8.77% = (1+19.92%)/(1+10.25%)-1).

1. Structure of the Report

The rest of this report sets out our detailed critique of the OUR's proposals and highlights the main shortcomings in the regulator's approach to estimating the cost of capital.

This report is structured as follows:

- Section 2 examines the methodology and estimates of the underlying components of the OUR's WACC for a Global Telecom operator;
- Section 3 reviews the OUR's parameters used to derive the WACC for a Jamaican Telecom operator;
- Section 4 examines the need for a small company premium on the cost of capital for LIME vis-à-vis global telecom operators;
- Section 5 comments on the OUR's approach to estimating separate divisional WACCs for Network Interconnection and Retail services; and;
- Section 6 discusses the inflation assumptions in the OUR's application of a real WACC to LIME's asset base.

Subsequent to this report, NERA will be presenting a detailed cost of capital study for LIME, which will provide our preferred estimates for each of the WACC parameters and demonstrate how they compare to the regulator's proposals.

2. Review of OUR's WACC Estimate for Global Telecom Operators

2.1. Summary of OUR's Approach

The OUR estimates an overall WACC for a global telecommunications operator by analysis of the costs of capital of ten integrated listed telecom operators in developed markets including the Eurozone and the US.

The cost of equity is derived using the standard CAPM framework, relying on the following assumptions for the key parameters:

- A risk-free rate of 3.86% based on US Treasury yields with a constant 10-year maturity averaged over January 2007 to July 2009;
- A MRP of 5.56% based on the average of a set of estimates provided by LIME;
- An equity beta of 0.79 based on the average of forward-looking betas for ten international telecoms companies operating in developed countries;
- A cost of debt based on the weighted average across a set of comparator companies of home-country yields on debt with similar ratings to the comparator company;
- A gearing level of 45.67% based on the weighted average of gearing levels of comparator companies.

2.2. Key Errors in OUR's Approach

2.2.1. Error 1: Internal inconsistencies in risk free rate and market risk premium

Estimates of the risk-free rate and market risk premium need to be internally consistent: they should both be based either on long-term historic data or on recent data, but it is inappropriate to use a long-term historic estimate of the MRP and a current estimate of the risk-free rate, as proposed by the OUR.

The OUR proposed a risk-free rate based on average US Treasury yields over a ***short-term historic*** period (January 2007 to July 2009). In contrast, the OUR proposed a MRP based on the average of a set ***of long-term historical*** estimates.[4]

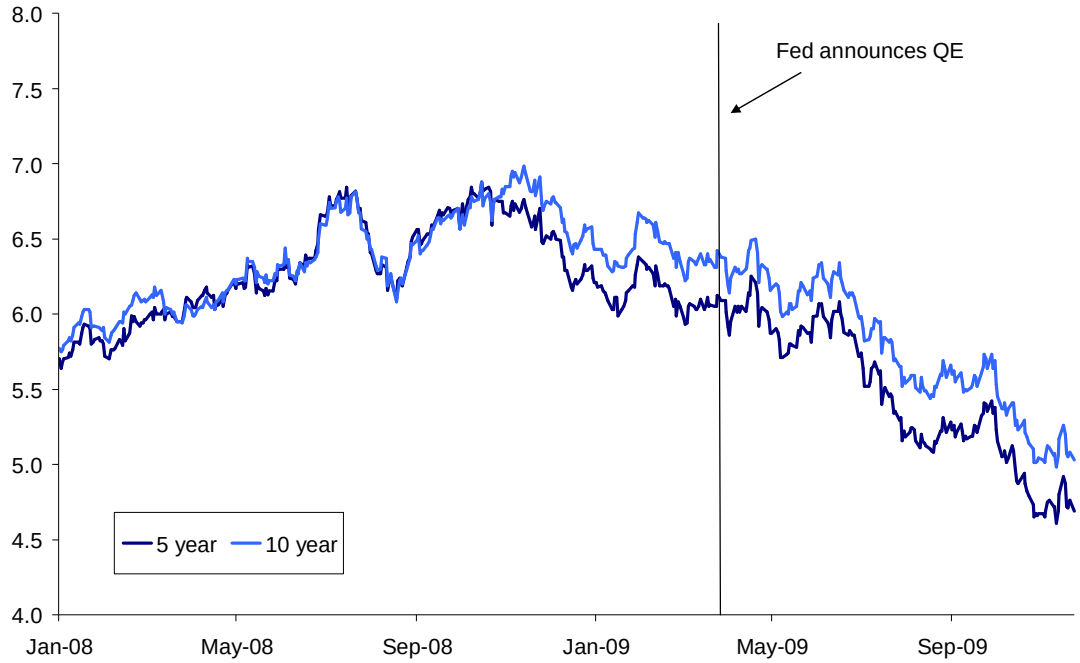
This internal inconsistency in the risk-free rate and MRP is likely to lead to a downwardly biased estimate of the cost of equity in the current market environment.

We note that short term averages of the risk-free rate can be unduly affected by short term interest rate fluctuations. There is some evidence to suggest that recent yields on US

[4] The MRP is based on the average of estimates presented by LIME in its response to OUR's first consultation document. Except for one estimate of 3.4% which was based on a survey of US CFOs in 2007, all estimates presented by LIME were obtained from long-term historical data covering a period from 1990 to 2006.

Treasury bonds may be artificially depressed below the 'true' risk-free rate by the effects of Quantitative Easing recently introduced by the Federal Reserve, as shown in Figure 2.1.

Figure 2.1
US Treasury Yields (%)



Source: Bloomberg data up to 18 November 2009.

Figure 2.1 shows that US Treasury yields have been declining as a result of a 'flight to quality' in financial markets and effects of unconventional monetary policy. The 'flight to quality' refers to investors increased preference for safe securities in the current market environment characterized by higher uncertainty. On the other hand, as a result of higher market volatility, investors demand a higher risk premium for investing into riskier assets such as common equity.

NERA analysis (to be presented in our WACC report on LIME) suggests that the current MRP is around 2% higher than the long term historic MRP as a result of the excess market volatility and the global financial crisis. Therefore, by using a recent risk free rate and a historic estimate of the MRP, the OUR's cost of equity is significantly downwardly biased.

2.2.2. Error 2: Asset Beta is Implausible

A regulatory WACC decision must pass a test of plausibility. In practice, this means it must be broadly consistent with previous regulatory decisions keeping in mind the economic circumstances under which the decision was taken.

The OUR proposed an equity beta of 0.79 based on the average of betas for ten international telecoms companies operating in developed countries. At the chosen level of gearing of 45.67%, this implies an asset beta of 0.43. This implied asset beta is around 0.15 lower than

the average asset beta allowed by international regulators for fixed line businesses (as shown in Table 2.1), which leads to a cost of equity that is underestimated by around 0.5-1.0%.

Table 2.1
A Comparison of OUR's Asset Beta with Regulatory Decisions

Regulator:	Decision:	Year	Asset Beta
Ofcom (UK)	BT network charges: copper network	2005	0.65
ARCEP (France)	Fixed line telecoms	2008	0.60
Comreg (Ireland)	Eircom's fixed line business	2008	0.57
Ofcom (UK)	BT Openreach	2009	0.55
Average (wholesale interconnection)			**0.59**
OUR Proposal	***Implied Asset Beta***		***0.43***

Source: NERA Analysis of regulatory decisions.

We note the following shortcomings in the OUR's approach to estimating beta which have led to an inappropriate beta estimate:

- The OUR's approach does not explicitly account for the differences in financial leverage on betas; and;
- The OUR does not consider financial stock market data on beta, which is at odds with standard regulatory practice.

There may be further errors in the OUR's methodology but, unfortunately, the OUR does not provide sufficient details of their approach to enable full scrutiny.

Adjusting Betas for Financial Risk

The OUR's approach towards estimating beta does not control for financial risk of the chosen comparators and hence cannot guarantee that the cost of equity is consistent with the level of gearing assumed by the OUR.

Equity betas are affected by financial leverage, which describes the use of debt in the financing structure. An increased use of debt increases the risk of bankruptcy and thus the potentially complete loss of equity capital, which increases the equity beta.

To draw like-for-like comparisons between companies with different financing structures, we need to isolate the underlying business risk from the financial risk associated with different uses of debt and equity capital. The standard way to de-lever equity betas to obtain an asset beta is to use the Miller formula:

$$\beta_{\text{Asset}} = \beta_{\text{Equity}} \cdot (1 - \frac{D}{D+E})$$

The OUR have not discussed if they had taken financial leverage into account. By using the average *equity* beta of comparator firms, rather than the average *asset* beta, the OUR have not separated financial risk from the underlying business risk of comparator companies, which can lead to erroneous conclusions.

Failure to Consider Stock Market Data on Beta

The OUR have not estimated beta for global telecom operators using financial stock market data over a defined historic period.

Instead, the OUR sourced the beta estimates for each company from BARRA which are described as being "forward-looking" incorporating factors which affect companies' future risk. However, BARRA do not provide details of their methodology and their results cannot be empirically verified and therefore cannot be subject to scrutiny. This is unacceptable in a regulatory forum.

We note that using historical stock market data to estimate betas is standard regulatory practice and is a more transparent and objective way to derive beta estimates. To the extent that the systematic risk of regulated businesses tends to be relatively stable over time, historical betas are considered a reliable guide of the future systematic risk of regulated entities.

For instance, the difficulty of obtaining prospective betas was noted by Ofcom in its 2005 decision for BT:[5]

> *"Equity beta estimation is usually carried out in order to estimate what the relationship between a firm's returns and those of the market will be on a forward-looking basis. Expectations of this sort are very difficult to measure though, so equity beta values for a company are typically calculated by regressing data on past returns against the past returns associated with an appropriate market index."*

Therefore, using historical betas is more appropriate from a regulatory perspective.

[5] Ofcom (2005): Ofcom's approach to risk in the assessment of the cost of capital. p.47.

3. Review of OUR's WACC for Jamaican Telecoms

3.1. Summary of OUR's Approach

The OUR uses the following approach to estimate the cost of equity for a Jamaican Telecom:

- To calculate a Jamaican Telecom cost of equity in USD, the OUR adds a sovereign risk premium to the estimated cost of equity for a Global Telecom;
- To calculate a Jamaican Telecom cost of equity in JMD, the OUR further adds a currency risk premium to the USD-denominated WACC;
- The OUR proposes a total sovereign and currency risk premium of 13.380%, consisting of a sovereign risk premium of 4.355% and a currency risk premium of 9.025%. The OUR's methodology and estimates are summarised in Table 3.1.

Table 3.1
OUR's Sovereign and Currency Risk Estimates

		OUR Estimate	Methodology
(a)	Sovereign + Currency Risk Premia	13.380%	Average difference in yields on Jamaican 182-day Treasury bills and US 6-month Treasury bills from Jan 2007 to July 2009
(b)	Sovereign Risk Premium	4.355%	Average difference in yields on Jamaican government bonds and US Treasury bonds of 10-yr maturities from Jan 2007 to July 2009
(c)	Currency Risk Premium	9.025%	(a) – (b)

Source: OUR Second Consultation Document, August 2009.

To arrive at the final WACC estimates, the OUR makes a number of further assumptions:

- The equity beta for a Jamaican Telecom is the same as for a Global Telecom;
- The gearing level of 45.67% observed for global telecoms is also appropriate for Jamaican telecoms; and;
- The cost of debt for Jamaican telecoms is equal to 8.66% and 17.88% in USD and JMD respectively. The methodology used to derive these estimates is shown in Table 3.2.

Table 3.2
OUR's Cost of Debt Estimates

		OUR Estimate	Methodology
(a)	JMD-denominated cost of debt for Jamaican telecom	17.88%	Average yield on Jamaican 6-month Treasury bills from Jan 2007 to July 2009 + historical debt premium of 200bps for Jamaican telecoms
(b)	USD-denominated cost of debt for Jamaican telecom	8.86%	(a) – currency risk premium of 9.025%

Source: OUR Second Consultation Document, August 2009.

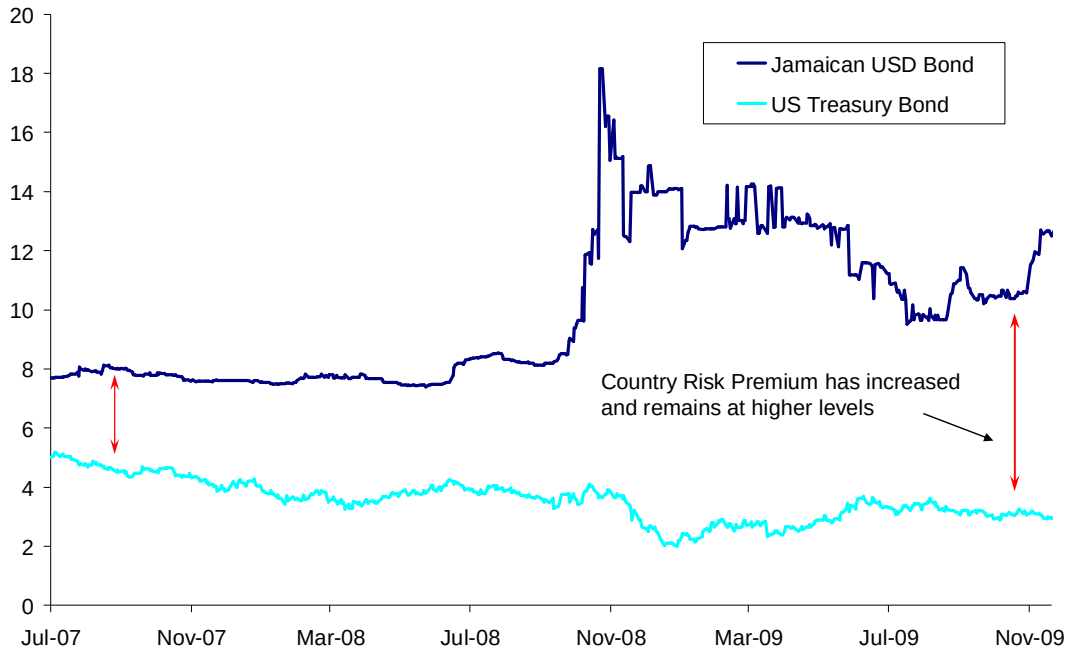
3.1.1. Error 1: The OUR's sovereign risk premium does not fully account for the current increased risk perceptions of Jamaica

The recent downgrades in Jamaica's sovereign credit rating mean that using data from January 2007 to July 2009 does not provide a reliable measure of sovereign risk. Just on November 2nd, 2009, Jamaica was downgraded to CCC by S&P – the third ratings downgrade by S&P this year.[6]

Figure 3.1 shows the change in the spread between a USD-denominated Jamaican bond and a comparable US Treasury bond since 2007.

[6] S&P downgraded Jamaican Long-term foreign debt rating to CCC on November 2nd and Moody's similarly downgraded Jamaica's rating to Caa1 on November 18th. Earlier in the year, Jamaica was downgraded by S&P to B- on March 18th and to CCC+ on August 5th. Similarly, Moody's ratings changed to B2 on March 4th, 2009 (source: Bloomberg)

Figure 3.1
Yields of Jamaican USD Government Bond and Comparable US Treasury Bond[1] (%)



Source: NERA Analysis of Bloomberg data up to 18 November 2009. (1) Both bonds mature in approx. 8 years. Jamaican USD bond matures on 20/06/2017. US Treasury bond matures on 15/05/2017. Both bonds are fixed-coupon, non-callable, non-putable, not index-linked, bullet securities.

Figure 3.1 illustrates the increased divergence between yields on Jamaican and US government bonds, reflecting the impact of the current economic environment and increased risk perceptions of Jamaica.

This means that the estimate of sovereign risk should be based on very recent data (e.g. most recent 3 months) unless there is strong reason to believe that Jamaica's credit rating will improve in the near future. In the current economic climate this seems unlikely, particularly as Jamaica's credit rating has progressively deteriorated over the course of 2009. Therefore, in the current market environment, using a 2-yr average (as the OUR have done) will understate the risk premium required to attract investors to invest in the Jamaican market by around 3%.

3.1.2. Error 2: The beta of large globally diversified telecoms may understate systematic risk for a Jamaican telecom

The OUR's approach towards selecting comparators is likely to underestimate the systematic risk of regulated telephone services in Jamaica. The OUR only selects comparators which operate in mature markets, where the telephone services are considered a 'necessity'.

A more detailed assessment to identify potential comparator companies is needed to ensure that the chosen comparators have similar risk characteristics to LIME. The chosen

comparators should have similar beta, i.e. systematic, risk which is turn affected by a number of factors, such as exposure to demand risks, competitive pressures in the industry and the operational environment.

Telecommunication services are generally considered to be 'necessities', exhibiting low income and market price elasticities of demand. However, the 'necessity' characteristic of telecom services in an emerging market such as Jamaica may be less pronounced compared to a mature developed market, meaning higher income elasticities of demand and therefore increasing the sensitivity of demand to business cycle fluctuations. This will mean that a telecom operator in Jamaica will likely have a higher beta than a telecom operator in a mature developed market. Therefore, relying on large diversified comparators from developed countries only may understate the demand risks associated with the provision of telecom services in Jamaica.

Including a number of comparators of similar size operating in smaller emerging markets where demand for telecom services is also likely to be more exposed the business cycle would be a useful cross-check on beta estimates for global diversified telecoms.

3.1.3. Error 3: The OUR's cost of debt is biased downwards

The OUR estimates of the cost of debt are 8.86% USD and 17.88% JMD for Jamaican telecom operators. We note a number of problems with the OUR's approach to the cost of debt.

First, the cost of debt should be obtained by adding a debt premium to the risk-free rate.[7] However, the OUR have estimated a cost of debt by adding a debt premium to the average yield on Jamaican 6-month Treasury bills from Jan 2007 to July 2009. Since Jamaican 6-month Treasury bills are around 2% lower than the OUR's estimate of the risk free rate, the OUR's overall cost of debt is downwardly biased by around 2%.

For the JMD-denominated cost of debt, the OUR should have added the debt premium to their chosen estimate of the JMD risk-free rate (equal to the US risk-free rate plus the sovereign risk premium plus the currency risk premium). Similarly, for the USD-denominated cost of debt, the debt premium should have been added to the chosen USD risk-free rate (equal to the US risk-free rate plus the sovereign risk premium). Table 3.3 shows the 'revised' cost of debt using OUR estimates of the risk-free rate.

[7] The maturity of the Jamaican government bonds to which the debt premium should be applied needs to reflect the asset of live of regulated assets, which is assumed to be 10 years for telecom assets. The 10-year maturity should be used both for the JMD risk-free rate and for the cost of debt estimation. Yields on 10 year bonds include a term premium to reflect their longer maturity. Adding the debt premium to 6-m yields instead understates the cost of debt by a significant margin.

Table 3.3
OUR 'Revised' Cost of Debt Estimates

	USD Cost of Debt for Jamaican Telecom	JMD Cost of Debt for Jamaican Telecom
Risk-free Rate	8.22%[1]	17.25%[2]
Debt Premium	2.00%	2.00%
Cost of Debt	10.22%	19.25%

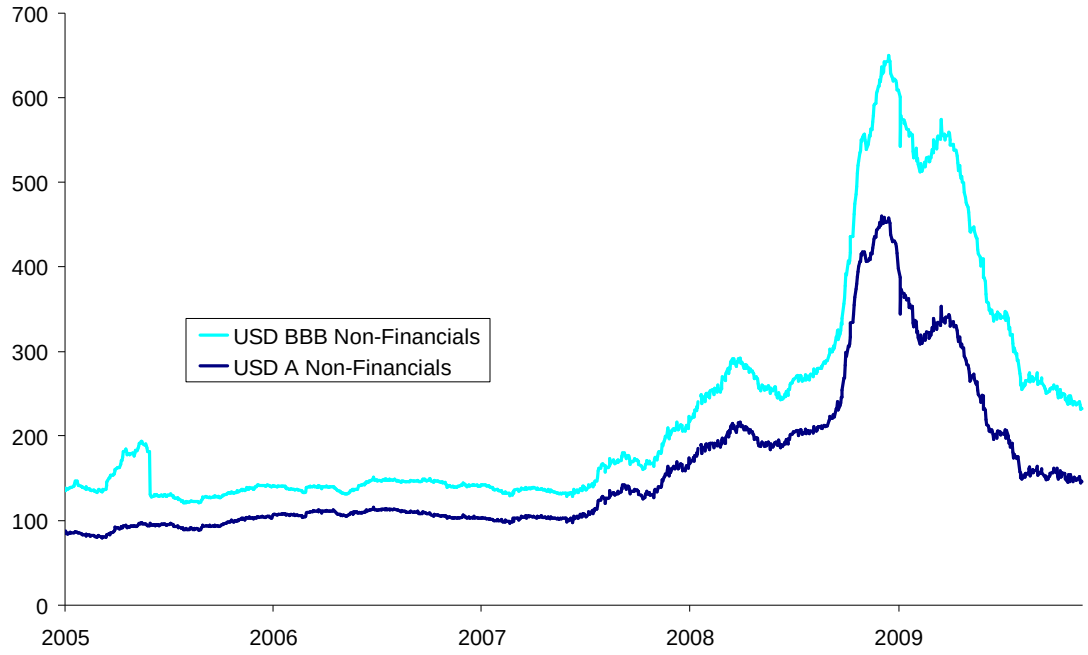
(1) 8.22% = US risk-free rate + sovereign risk premium = 3.86% + 4.46%. (2) 17.22% = US risk-free rate + sovereign risk premium + currency risk premium = 3.85% + 4.46% + 9.025%

Comparing the results in Table 3.3 with the OUR's costs of debt estimates of 8.86% USD and 17.88% JMD for Jamaican telecom operators shows that the OUR under-estimated the cost of debt by almost 2 percentage points, taking their risk-free estimates as given.

A second error in the OUR's methodology is that they have not transparently matched the credit risk of LIME to derive their debt premium assumptions. Especially in times of market turbulence, costs of raising new finance may be markedly higher than historically, and will differ across different issuers.

As an example of the difference in debt costs over time and across credit ratings, Figure 3.2 shows historical spreads on A and BBB USD-denominated bonds.

Figure 3.2
Spreads of USD-Bonds for Different Rating Classes (bps)



Source: IBoxx data up to 18 November 2009. Note: IBoxx does not provide data for ratings classes below BBB.

Figure 3.2 shows that:

§ Debt spreads are higher for issuers with weaker credit ratings; and;

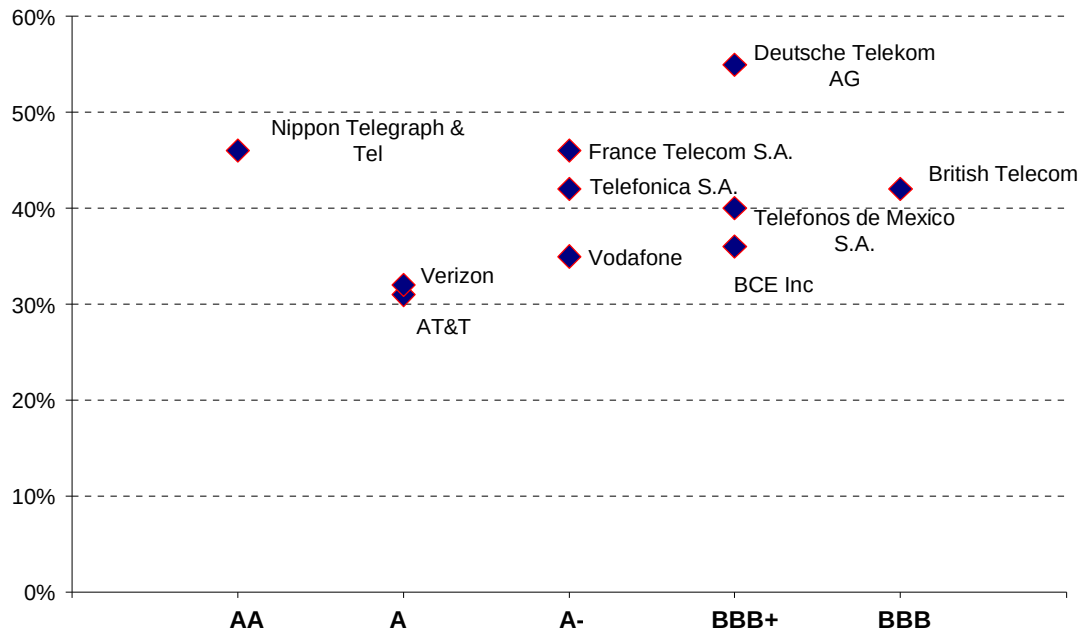
§ Spread on both A and BBB bonds have widened substantially throughout late 2007 and 2008 without yet returning to the levels observed before the onset of the financial crisis.

A rigorous WACC analysis must involve taking account of the underlying issuer's likely credit ratings and ensuring that the debt premium is based on the same credit rating used to determine gearing. The OUR have not considered the fundamental link between gearing and debt costs, which we address in the next section.

3.1.4. Error 4: The gearing levels of global telecoms are too high for a Jamaican telecom operator

The OUR is likely to have overestimated the level of gearing for a telecom company operating in Jamaica. The OUR proposed a gearing level of 45.67% based on the average gearing for a set of comparator companies which generate the majority of their profits in mature markets and have investment grade credit ratings (shown in Figure 3.3).

Figure 3.3
Gearing & Credit Ratings of OUR Comparators



Source: Bloomberg. Ratings as of 18 November 2009.

The chosen comparator companies have gearing levels in the range of 30-55% with credit ratings between A and BBB, consistent with the rating range that is likely to minimise the WACC for a global diversified telecom. [8]

However, it is very doubtful that such a capital structure would be appropriate for LIME. LIME does not have any bonds outstanding and does not have a credit rating, yet the parent company Cable & Wireless plc is only rated BB-.

Higher perception of credit risk suggests that adopting a gearing level of 45.67% would be consistent with much higher debt spreads than those obtained by telecoms in developed countries.

Table 3.4 below shows a number of potential comparators for LIME which include less well-known companies in emerging markets and have a market cap of less than $15b (substantially smaller than the comparators used by the OUR), showing that companies in emerging markets tend to have lower debt levels in their capital structure. All companies in this table have lower credit ratings below BBB+ meaning higher debt costs than for the OUR's comparators in the figure above.

Table 3.4
Debt Levels & Credit Ratings of Telecom Operators in Emerging Markets

Company	Country	Gearing	Current Credit Rating[1]
Fixed-line incumbents			
Brasil Telecom	Brazil	16%	NR
Telecomunicacoes de Sao Paulo SA	Brazil	13%	NR/Baa2
Telefonos de Mexico	Mexico	32%	BBB+/A3
Telkom SA	South Africa	26%	BBB/Baa1(*-)
Mobile carriers			
Partner Communications Co.	Israel	15%	NR/Baa3
TIM Participacoes SA	Brazil	31%	NR
Turkcell Iletisim Hizmet	Turkey	6%	BB/Ba2

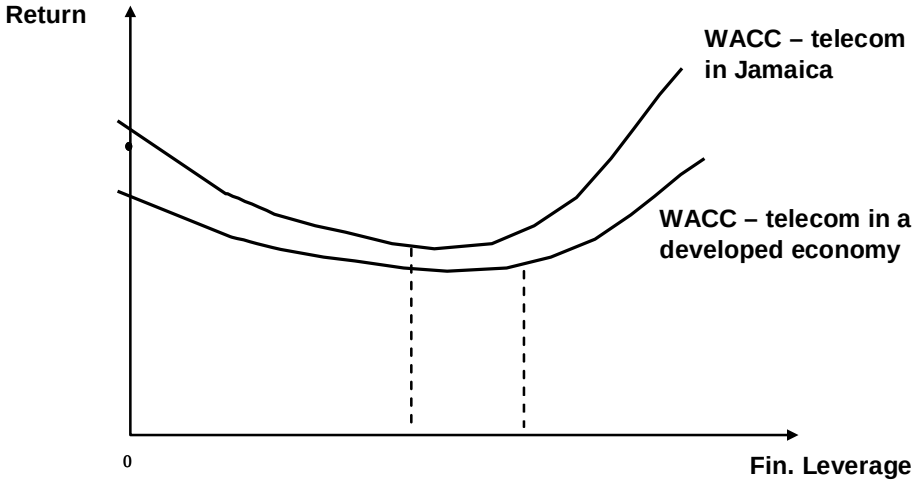
*Source: Bloomberg. (1) Ratings as of 18 November 2009. * indicates a rating on negative watch.*

The OUR should also consider the WACC outcomes for a range of different gearing scenarios. The optimal level of gearing is the level of gearing that minimises the WACC by trading off the benefits of the debt tax shield and the increased level of bankruptcy costs associated with increased gearing. This optimal level of gearing is likely to be lower for a telecoms operator in Jamaica compared to a telecoms operator in a developed market.

Telecoms in developed markets are likely to have more stable cash flows and lower risk profiles than telecoms in emerging markets and thus can absorb more debt into their balance sheets. An example of the general relationship between capital structure and the WACC is shown graphically in Figure 3.4 below.

[8] Moody's (November 2009): "European Telecoms Service Providers Resilient, but Revenue Pressures Persist", Industry Outlook.

Figure 3.4
Optimal Gearing



Source: NERA Illustration

This figure shows that the optimal (WACC-minimising) financial leverage level of debt in the company structure is lower for a Jamaican telecom compared to a large diversified operator in a developed economy due to the higher credit risks of a smaller operator in a developing market.

The proposed level of 45.67% is high even compared to regulators' decisions in mature markets. For instance, Ofcom recommended a gearing level of 35% for all the segments of BT's operations. Similarly, the French regulator ARCEP adopted gearing of 40% for fixed-line telecoms and 23% for mobile telecoms in its latest determination for 2008-09.

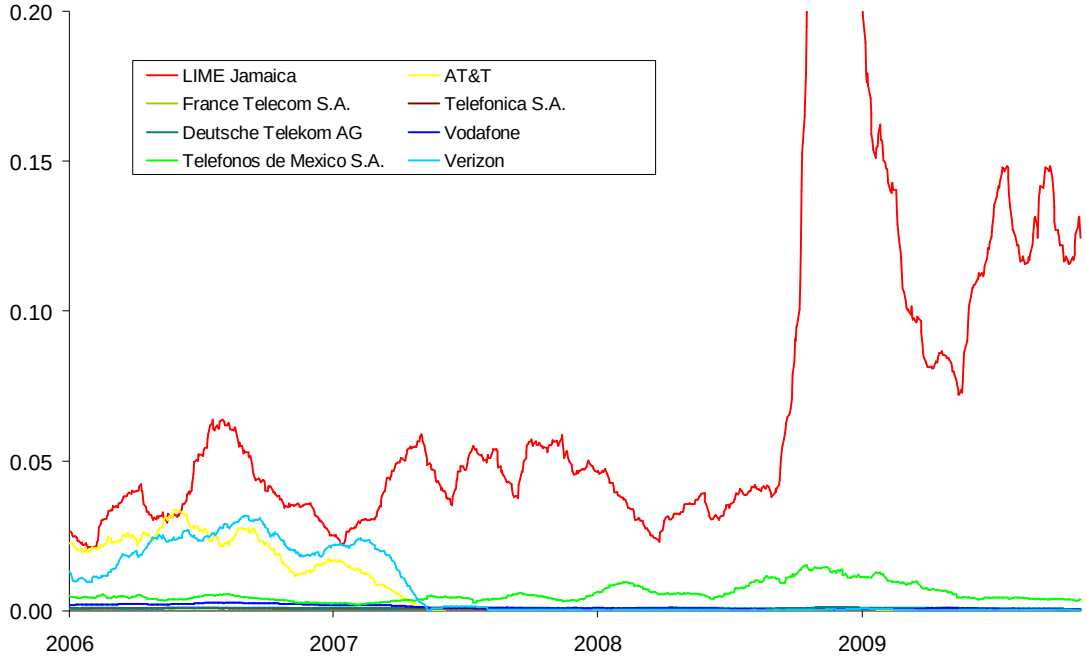
4. Small Company Premium

The use of large telecoms companies in developed countries as comparators may be appropriate since the data on these companies is likely to produce more robust beta estimates than using an emerging markets sample.

In this case, however, the cost of equity may need to include compensation for LIME's investors for the additional costs and risks of investing in a small company operating in a small country, possibly through a small company premium.

Investors may require a premium for the extra trading costs associated with transacting in such an illiquid stock as LIME which they are not compensated for in the CAPM-based cost of equity. Figure 4.1 shows the average bid-ask spread of LIME (previously C&W Jamaica) listed on JSE and the OUR's comparator companies (where data is available).

Figure 4.1
Bid-Ask Spreads (3-month Rolling Average, %)



Source: NERA Analysis of Bloomberg data up to November 2009.

As can be seen from Figure 4.1, the stock of LIME is substantially more illiquid than any of the chosen comparators.

Higher illiquidity imposes additional transactions costs onto investors, which makes LIME's stock less attractive. Therefore, investors will require an additional premium to bear these costs.

The need for a small company premium may also arise because of the relative size of LIME compared to larger telecoms in developed markets. Returns to shareholders in smaller firms

may be more volatile if profits represent a smaller share of revenues, increasing the impact of any cost or revenue shock affecting these companies, i.e., higher profit volatility implies higher systematic risk. Moreover, smaller firms face higher transaction costs in accessing debt and equity markets. Firms incur fixed costs in raising external finance which are proportionately larger for smaller firms.

Table 4.1 shows the relative size of LIME compared to companies chosen by the OUR.

Table 4.1
Relative Size of Comparators

Company	Market Cap (USD m)
AT&T	151,598
BCE Inc	17,401
British Telecoms	N/A
Nippon Telegraph & Tel	67,976
France Telecom S.A.	63,880
Telefonica S.A.	103,568
Deutsche Telekom AG	56,214
Vodafone	102,666
Telefonos de Mexico S.A.	15,659
Verizon	86,373
LIME Jamaica	91

Source: Bloomberg

The differences in size are stark. All of LIME's comparators are significantly larger. Estimates of the cost of equity of these comparators is likely to understate the true riskiness of LIME's shares and the inclusion of an additional small premium is justified.

Regulators in other jurisdictions have acknowledged the need for a small company premium for smaller-sized regulated firms. For example, in setting prices for mobile service providers, Oftel in the UK estimated a small firm risk premium of 0.9-1.7%.

5. Divisional WACC

The OUR proposed a separate divisional WACC for interconnection services and for retail services. The divisional WACC was based on a "heuristic approach" developed by the Boston Consulting Group (BCG) which assesses the relative riskiness of the individual divisions of the firm by ranking the divisions on a number of qualitative dimensions.

While other regulators such as Ofcom also apply different WACCs to different parts of the regulated business, international regulators rely on standard CAPM beta to account for the differences in risk. The approach adopted by the OUR lacks transparency and produces results which are implausible in magnitude.

The OUR estimated a real WACC for network interconnections of 4.05% for a global telecom. This is lower than most regulatory precedent in water and energy sectors in developed markets. For example, latest proposals by Ofwat in July 2009 applied a real vanilla WACC of 5.1% to regulated water companies in the UK, more than a percentage point higher than the OUR's estimate. This stark difference is implausible, considering that betas of regulated telecom services are a priori higher than for regulated energy and water networks, which are characterised by very slow technological progress and less competitive pressure.

We note that there may indeed be a distinction between the income elasticity for *retail* services and the income elasticity for regulated *interconnection* services. Generally, the interconnection business is likely to be less exposed to revenue fluctuation risk across the economic cycle than the retail business because the interconnection business is less exposed to *volume* risk. As retail businesses, interconnection businesses face the risk from variations in the number of lines and connections, i.e. during an economic upswing, there might be a growing number of businesses demanding connections and/or existing businesses may want to invest in an additional line to reduce instances of customers being unable to make contact; in an economic downturn these lines might be disconnected.[9] However the access business is not exposed to volume risk with respect to *usage intensity* of rented lines, and thus will not lose or win revenue due to decreased or increased usage intensity of the rented lines.

A priori, this suggests that the beta of a regulated interconnection service should be lower than the beta of a regulated retail service. Therefore, if a different WACC is to be applied to the interconnection and retail services, an appropriate way to do this is to estimate different betas for the two lines of business.

[9] Ofcom, in its consultation document for assessing the cost of capital for BT's copper access networks, refer to large number of studies that show that, on average, "the income elasticity of demand for [copper] access is significantly lower than the corresponding elasticities for various call types", see Ofcom (25 January 2005) "Ofcom's approach to risk in the assessment of the cost of capital", para 5.38.

6. Compensation for Inflation

The OUR proposes the application of a real WACC since LIME's regulatory accounting procedures are based on current cost accounting (CCA). The OUR estimates the revaluation rate by taking the product of the annual change in the AUS Telephone Plant Index (TPI) to account for productivity gains and the annual change in the JMD/USD exchange rate to allow for inflation.

The OUR's approach does not compensate an investor for Jamaican inflation. The OUR's 'currency adjuster', which is used to index the regulatory asset base, is equal to 6.94%. By contrast, the inflation figure implicitly used to derive the real WACC is equal to 8.77%.[10] This means that under the OUR's proposed approach, an investor can only expect to earn a nominal return which lies on average 1.8% below the intended allowed nominal WACC.

The reason for this divergence lies in the OUR's approach of setting the 'currency adjuster' equal to Jamaican inflation expectations. Under Purchasing Power Parity ("PPP") changes in the JMD/USD exchange rate are driven by changes in inflation expectation ***between*** the two currencies and not by changes of the Jamaican inflation rate alone. Therefore, the OUR's currency adjuster underestimates Jamaican inflation by the extent of US inflation expectations. This means, the OUR's 'currency adjuster' would need to be inflated by US inflation in order to derive an unbiased estimate for Jamaican inflation.

Note the OUR also uses inconsistent time periods and an inconsistent methodology to calculate the 'currency adjuster' and inflation used in the real WACC calculations. The OUR's 'currency adjuster' is calculated over 2002-2008 and is based on actual (outturn) changes in the exchange rate. By contrast, inflation used in calculating the real WACC is based on government bonds yields over a historic period from 2007 - 2009.

[10] The OUR state the nominal vanilla WACC (JMD) at 19.92% and the real vanilla WACC at 10.25%. Using the Fisher equation, the implied inflation rate is 8.77% (8.77% = (1+19.92%)/(1+10.25%)-1).

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