THE XXIX ANNUAL CONFERENCE OF MONETARY STUDIES

Caribbean Centre for Monetary Studies

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Central Bank of Barbados

ALTERNATIVES TO THE CONSTRUCTION OF A REGIONAL STOCK MARKET INDEX

by

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HILTON INTERNATIONAL
BARBADOS
October 27 - 31, 1997

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(BRIDGETOWN, BARBADOS, 27th to 31st OCTOBER, 1997)

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1.0 Investing in Emerging Equity Markets.

Emerging equity markets grew out of the trend among global investors to search for a progressively wider range of countries to invest, specifically those not traditionally party to global capital flows. The rationale for this is a greater opportunity for higher performance and possibilities for risk reduction, through diversification. Equity investment, though more in terms of foreign direct investment, was the form of injection used, in line with the philosophy that growth prospects of enterprises in the developing world was closely tied to the growth of the economies themselves. Market inefficiencies with the accompanying mispricing in these economies, also made superior performance possible.

The merits of this type of investment strategy has been accepted in the main. Yet, does the same benefits apply to the CARICOM region, in terms of equity markets? This question begs the need for measurement of performance in regional equity markets, in terms of return on and risk of investment, and comparisons need to be made to other emerging and developed equity markets.

2.0 Emerging Equity Markets of the Region.

There are three established equity markets in the CARICOM region, with stock exchanges and regularly scheduled trading. These are the Trinidad and Tobago Stock Exchange, the Securities Exchange of Barbados and the Jamaica Stock Exchange. The criteria by which they are distinguished as emerging equity markets, are that:

(a) The total market capitalization is small;
(b) A limited number of stocks dominate trading;

(c) Volumes are very small, with a limited number of trading hours;
(d) Concentrated ownership of stocks , together with a high degree of cross-holdings;
(e) Limited number of business activities represented in the market;
(f) Corporate accounting standards do not accord to a common code, and fall short of developed accounting standards;
(g) Poor equity registration and settlements procedures; and
(h) Foreigners restricted from ownership of some equities or of certain voting classes of equities.

Except for (h), the three regional stock exchanges conform to similar characteristics as those listed above.

These equity markets are in their formative stages of development, with the supply of equities being provided by large, well-known local enterprises and by state divestment of economic activity. The number of listed companies has not been increasing to any substantial degree; for the Trinidad and Tobago stock market, it has actually declined since inception in 1982. This indicates that the stage where the market is sourced to finance new enterprises, still looms large in the future. These markets are still maturing. Limited supply of new equity, coupled with the market power of the institutional investors, lead to relatively low turnover in trading and high concentration of ownership. In small, thin markets like these, lack of adequate and timely information pose the greatest obstacle to foreign investment for evaluations of risk and returns, so fundamental to the prudent investor.

As the region's stock exchanges become electronically integrated and with the advances in communication technology, foreign investors should find access to information and the market easier to come by. The benefits of investment in regional equity markets must be measurable and unambiguous. Some benchmark which is truly reflective of the trends in market returns and its associated volatility, needs to be devised. One that is investable, allowing the foreign investor to simply hold the relevant mix of stock underlying it, and forgo

active management, thereby reducing transaction costs significantly. All these factors could be embodied in a regional stock index.

3.0 Considerations in the Construction of a Stock Market Index.

What characteristics should be borne in mind when devising this index, and how should it be constructed?

The characteristics that the Caribbean Stock Market Index (CSMI) should possess, given the inefficiencies of the regions stock markets are:

(i) It must be accurately reflective of the trends in the market that it represents;
(ii) investable, and so, without excessive transaction costs to the investor;
(iii) Stable in terms of market return volatility;
(iv) Calculable at any given time;
(v) Specified clearly in terms of components and computation; and
(vi) Adjustable at regular intervals.

Firstly, from the foreign investor's perspective, given the fact that he does not have much knowledge of the market, and that information is almost solely locally available, an index that is credible and investable facilitates his entry into a market of which he is unfamiliar. This saves the investor time and the cost of doing his own research in evaluating the various company stock available to him. The option is now available to match the index's underlying securities, his only concern being that he achieves matching returns.

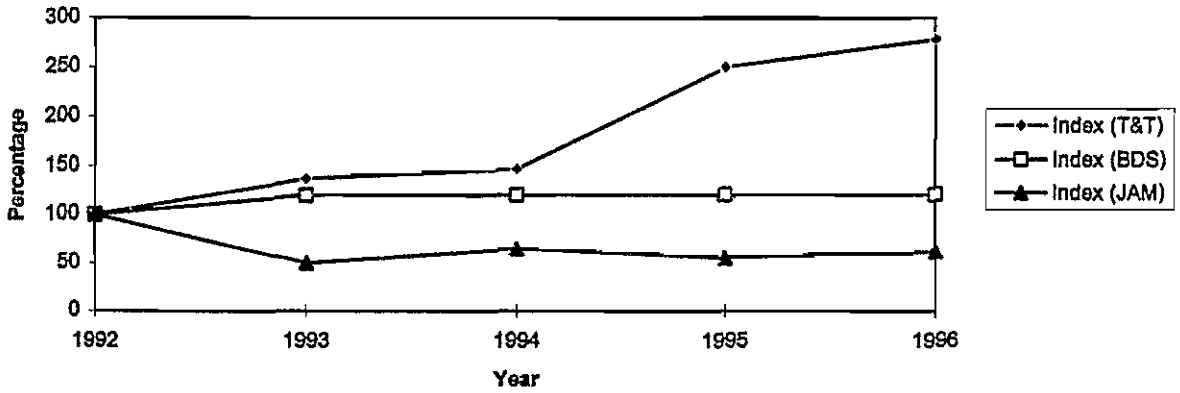
For benchmark purposes, the overall stability of the index is of prime importance, especially for emerging markets which exhibit periods of rapid growth and decline. The volatility of returns is directly related to the risk premium the investor expects from his investment. If it is too high, he will not enter the market. In the case of the region, the Jamaica Stock Market

exhibits relatively high volatility in stock prices, with the market capitalization falling 54.5% in one year, from US$ 3227mn in 1992 to US$ 1469mn in 1993. It has not recovered since, fluctuating from a rise of 19.3% in 1994 to a decline of 20.7 in 1995. For the same period, the Trinidad and Tobago Stock Exchange showed a decline of 24% in 1992, when Jamaica saw its 212% boom in market capitalization. Since then it has grown steadily by 36.7% in 1994 and 71.6% in 1995. The market capitalization on the Securities Exchange of Barbados has remained fairly stable over the same period, with a mere 4% increase from 1994 to 1995, after the highest annual increase of 57.9% in 1993.The fortunes of Jamaica market as compared to that of Trinidad and Tobago and Barbados, shows the effects of high price volatility, and makes a case for diversification through integration of the markets, in order to reduce overall risk (Exhibit 1). An index based on this strategy should, a priori, be less volatile.

Exhibit 1 does not make this point

Exhibit 1

Local Stock Market Indexes for Trinidad & Tobago, Barbados and Jamaica (1992-1996)



The index should reflect fundamental changes in the component markets, and periodic adjustment in order to incorporate these changes, would be necessary. For this to be possible, the index must be calculated at regular intervals to update the information conveyed. This would ensure accuracy and the appropriateness of such a market indicator. Added to this, the exact composition and computation methodology should be clearly specified for the information and evaluation of its users.

4.0 Alternative Construction Methodologies

With the above characteristics in mind, the alternatives to the construction of the CSMI can now be evaluated. Three factors have to be now considered, namely:

(a) the sample :- size, breadth and source;

(b) the mechanism for weighting sample components; and

(c) the computational procedure.

There are options as to what size of sample is appropriate, given the company listings in each market. The index could be calculated using the closing prices of all listed stock, as is done for the local market indexes. This though, combines shares that are not regularly traded with the very liquid issues. The index in this case would simulate a group of shares that may not be of interest to the prudent investor, especially foreign investors, who consider the liquidity of the market a major factor in deciding would markets to invest.

A reduced sample could consist of the most actively traded stocks, by volume, in each market. This emphasizes liquidity and would most probably be consistent with the choices of the global investor. Alternatively, the reduced sample could be chosen on the basis of market capitalization of the issued common stock. The stocks with larger capitalization could be chosen to represent each market in the index. This though, biases the sample toward single sectors, like the banking sector for Trinidad and Tobago and the trading sector for Barbados. The Jamaican scenario is more balanced amongst the high capitalization issues. The breadth of the sample is compromised, yet not the depth, since these sectors tend to dominate the market in terms of value and trading activity. Therefore, given this sample's dominance in market share and liquidity, it seems well suited for the properties desired of the CSMI. It is important to note that the Dow Jones Industrial Average (DJIA), which is composed of 30 blue-chip stocks, taken from the various industries, represents 1,800 stocks listed on the New York Stock Exchange (NYSE). Studies have pointed to the fact that it has not been as volatile as other market indexes and when its performance is compared for daily percentage price changes, it is highly correlated (in excess of 0.9 with the S&P500, S&P400 and the NYSE

Composite for the period Jan., 1972 - Dec., 1991) with the broader indexes. So, the merits of a small sample can not be ignored.

A sectorally distributed sample taken from each market could be used. The problem with this approach is the fact that the industrial classifications are not the same for each market, therefore negating its present usefulness in computing a region wide index.

5.0 Consideration of Weighting Mechanisms

Country weights must now be established for the CSMI to theoretically harmonise the three markets in some systematic way. Usually a variable which has a known high positive correlation with the inflows of capital to equity markets, is chosen. The commonly used variables are Market Capitalisation, Prices and Equal Weighting of the stocks themselves, and GDP and Exports plus Imports of the countries where the market exists. There are merits and drawbacks to the use of each variable chosen.

Market capitalisation is probably the most widely used weighting variable, and it results in a value-weighted index, for example the IFC Global and Regional Indexes. The assumption made in its use is that the individual country markets are efficiently priced. If this is not the case, overvalued markets would be overweight, and those undervalued would be likewise underweight in the composition of the index. As alluded to previously, emerging markets tend towards greater efficiency as the markets mature, so some degree of mispricing will be evident in markets like ours. Also, another assumption is that all the share issues are available to the foreign investor, but this is not totally true of the Jamaica stock market, where there are restrictions on at least one issue. This fact contrasts with the investability requirement for the CSMI, as previously indicated.

Weighting by GDP is explorable, since theory suggests that the fortunes of investing in equity markets are closely linked to the economic growth of the domestic economy. Periods of rapid

economic growth characterise emerging economies like those of the Caribbean, as they move towards higher levels of development. This prospect of growth, acts as a signal to foreign and local investors alike, to direct their capital to the market.

Exports plus imports could be used to weight the three countries as is done by JP Morgan in constructing its Emerging Local Markets Index (ELMI). In the development of the ELMI, it was found that international trade, measured by exports plus imports, was highly correlated with capital inflows to emerging economies. Using such a weighting for countries represent by the index, produced reasonable and relatively stable weights over time. The availability and reliability of information on capital inflows to our region does not permit testing of this proposition directly, though the correlation between exports plus imports and GDP, as a proxy for capital inflows, could be evaluated since we established a direct relationship between GDP and the inflow of equity investment.

Table 1

Country		1990	1991	1992	1993	1994	1995	Correlation Coefficient
T&T	Exports	8330.7	8436.4	7188.3	8800.9	11055.2	14608.6	
	Imports	4712.3	7084.8	4169.5	7495.3	6700.9	10191.1	
	E + I	13043	15521.2	11357.8	16296.2	17756.1	24799.7	
	GDP	21539	22559	23118	24491	28571	30726	0.8873024
JAM	Exports	8305	12079	24099	26361	39461	48510	
	Imports	13923	20830	38267	52847	71654	97563	
	E + I	22228	32909	62366	79208	111115	146073	
	GDP	30518	45217	76992	105027	140400	-	0.9982744
BDS	Exports	430.2	414.7	380.3	374	363.1	477.8	
	Imports	1407.9	1397.7	1048.5	1154.1	1228.6	1541.2	
	E + I	1838.1	1812.4	1428.8	1528.1	1591.7	2019	
	GDP	3440	3393	3171	3301	3474	3765	0.862866

As Table 1 shows, high positive correlation does indeed exist for the three economies considered, making this a plausible approach.

Price weighting of the common stock prices in the country samples could be effected, as long as these prices are quote in a common currency. The sum of the prices of all the stocks in each market would then act as that country's weight in computing the index. The obvious drawback, as is the case with value-weighting, is that overpriced markets would tend to distort the information that the index is intended to convey, by virtue of it being overweighted, and vice versa.

An unweighted or equally weighted index could be constructed. This method of weighting uses initial prices at a given point in time as the base, and the proportionate change in stock prices, averaged over the entire sample, as the basis for the valuation of the index, thereafter. In this way, the relative size and prices of the individual issues comprising the index, are neutralised, with the change in total sample price spread equally over individual components. This reflects a passive investment strategy. For practical purposes, it means that equal dollar amounts are invested on each stock comprising the index; the sought of strategy a nonresident investor may adopt, given his remoteness to, and lack of timely information from the market, which makes active management of his portfolio impossible.

The alternatives for sample selection and weighting schemes are combined in Table 2 below. The table shows fifteen possible combinations that can be explored in the construction of the CSMI.

Table 2

Matrix of Explorable Options in the Construction of CSMI

SAMPLE / WEIGHTING	All Listed Company Stock	Ten Most Liquid Issues from Each Market	Ten Largest Capitalisation Issues in Each Market	Sectorally Distributed (Largest and Smallest from Each Sector)
Market Capitalisation	Relatvely low price volatility, thus explorable.	Higher price volatility, but explorable.	Skewed by sector; coincides with most liquid issues,;explorable.	Classification of sectors not comparable, thus not useful.
	Weights distorted due to mispricing.	Weights distorted due to mispricing.	Weights distorted due to mispricing.	Weights distorted due to mispricing
Gross Domestic Product	Relatvely low price volatility, thus explorable.	Higher price volatility, but explorable.	Skewed by sector; coincides with most liquid issues,;explorable	.Not useful
	Market signal; positively correlated inflows explorable	Market signal; positively correlated inflows explorable	Market signal; positively correlated inflows explorable	Market signal; positively correlated inflows explorable
Exports plus Imports	Relatvely low price volatility, thus explorable.	Higher price volatility, but explorable.	Skewed by sector; coincides with most liquid issues,;explorable	Not useful
	High positive correlation with GDP, thus explorable	High positive correlation with GDP, thus explorable	High positive correlation with GDP, thus explorable	High positive correlation with GDP, thus explorable
Price	Relatvely low price volatility, thus explorable.	Higher price volatility, but explorable.	Skewed by sector; coincides with most liquid issues,;explorable	Not useful
	Price sensitive, thus volatile.	Price sensitive, thus volatile.	Price sensitive, thus volatile.	Price sensitive, thus volatile.
Unweighted	Relatvely low price volatility, thus explorable.	Higher price volatility, but explorable.	Skewed by sector; coincides with most liquid issues,;explorable	Not useful
	Passive strategy.	Passive strategy.	Passive strategy.	Passive strategy.

6.0 Computational Procedures

Bearing in mind the characteristics desired of the CSMI and the array of alternatives for its construction, the methods of computation are now specified.

The general equation for the CSMI is specified as: where,

$$CSMI_{(S,W)} = \frac{w^{J}_{t-1}\sum_{i=1}^{n} p^{J}_{i,t} + w^{J}_{t-1}\sum_{i=1}^{n} p^{TT}_{i,t} + w^{B}_{t-1}\sum_{i=1}^{n} p^{B}_{i,t}}{w^{J}_{t-1} + w^{TT}_{t-1} + w^{B}_{t-1}}$$

S = specific sampling technique,

W= specific weighting variable,

w = individual country weight,

p = price of sample stock i in US$; $i = 1,2,3,\ldots,n$

where n is the size of the sample from each local market from which it is chosen,

J = Jamaica,

TT =Trinidad & Tobago

B = Barbados

t = time, with base day being $t = 0$.

It should be noted that the weight for any given time period must be pre-specified, i.e. at t-1. The rationale for this is that the investor needs to know these weights in order to construct his portfolio along a similar pattern, or a variation of such. The index is used'ex post,' as a yardstick to evaluate the performance of his chosen investment strategy.

(1) Value (Market Capitalisation) Weighted CSMI

Using the general equation and notation for the index above, weighting by market capitalisation is illustrated by substituting $\Sigma P_i Q_i$ for w, for the chosen sample of listed

company stocks I; where P is the total US dollar price of the shares in each country, and Q is the total number issued, at time t-1. If this is done for each sample alternative, i.e. all the listed issues in the three markets, the top ten issues in terms of traded volume and the top ten issues by way of market capitalisation, three indexes would result, denoted by $CSMI_{(All, Cap)}$, $CSMI_{(Liq, Cap)}$ and $CSMI_{(Big, Cap)}$, where the first item in the subscript is the sample – all issues (All), ten most most active by volume (Liq) and ten largest (Big), and the second item is the weighting variable – total market capitalisation.

(2) GDP Weighted Index

A substitution of GDP for w in the equation yields three indexes - $CSMI_{(All, GDP)}$, $CSMI_{(Liq, GDP)}$ and $CSMI_{(Big, GDP)}$, for the three samples chosen. GDP is measured at current value in US dollars.

(3) Trade (Exports plus Imports) Weighted Index

The sum of exports plus imports (E+I) for each of the three countries, is substituted for w in this case. The resulting indexes being $CSMI_{(All, E+I)}$, $CSMI_{(Liq, E+I)}$ and $CSMI_{(Big, E+I)}$. Exports and imports are measured in US dollars.

(4) Price Weighted Index

The weights w, in this case, are replaced by ΣP_i for all i, from i=1 to n, where n is the total number of listed company shares in the three countries. The indexes so formed are denoted as above - $CSMI_{(All, Price)}$, $CSMI_{(Liq, Price)}$ and $CSMI_{(Big, Price)}$.

(5) Unweighted (Equally Weighted) Index

In this case, the computation of the index is done in two stages.

(a) Firstly, the change in the total price of the sample from each market comprising the index for the period t, is calculated by $\sum_{All\ i} p_{i,t} / p_{i,t-1}$.

(b) The index is then calculated as the geometric mean of the individual market price changes, i.e. $\left(\sum_{All\ i} p^{J}_{i,t} / p^{J}_{i,t-1} \times \sum_{All\ i} p^{TT}_{i,t} / p^{TT}_{i,t-1} \times \sum_{All\ i} p^{B}_{i,t} / p^{TT}_{i,t-1} \right)^{1/3}$.

The three indexes, given the sample alternatives under consideration, are $CSMI_{(All,\ Equal)}$, $CSMI_{(Liq,\ Equal)}$ and $CSMI_{(Big,\ Equal)}$.

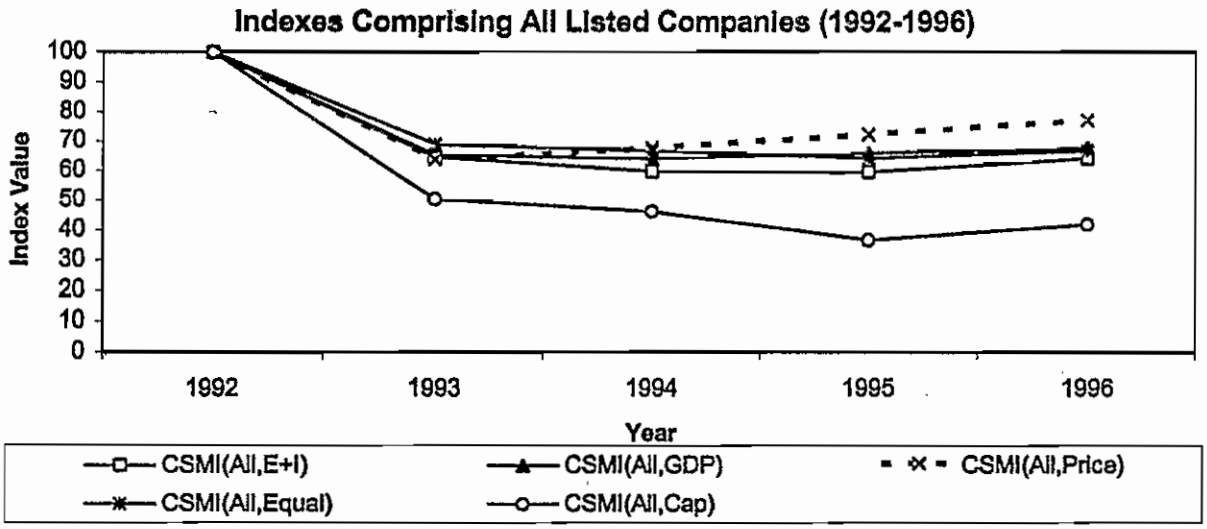
7.0 Presented Results of Computations

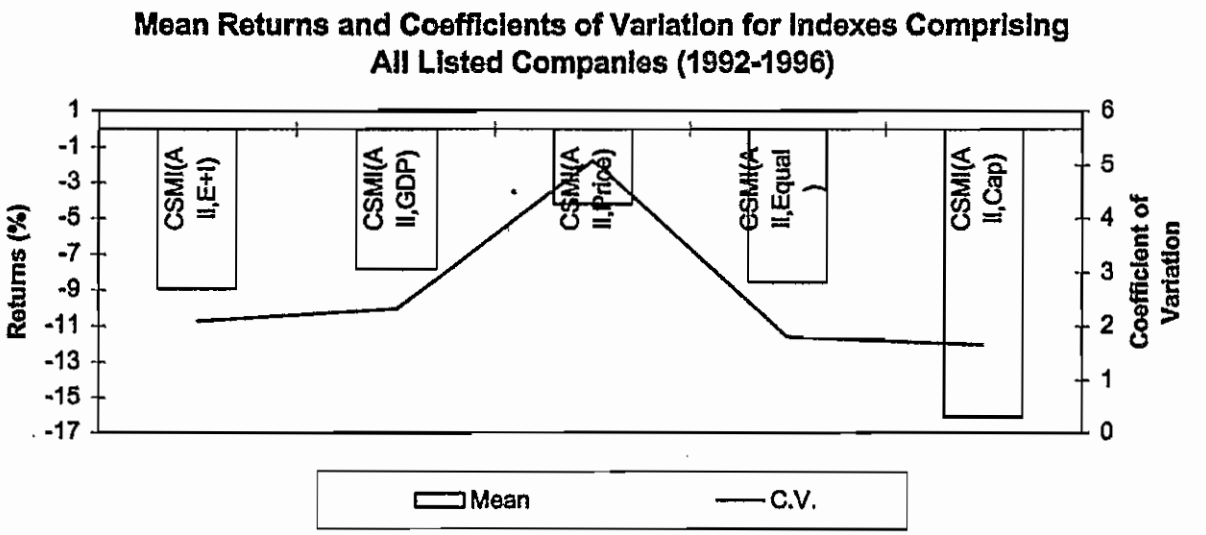
(i) Indexes constructed using all stock prices.

A graphical comparison of the CSMI indexes, where all listed stock prices from the three markets are used, along with the annual mean returns and coefficients of variation of each, is shown below as Exhibit 1, for the period 1992 to 1996. The coefficient of variation was selected as a measure for combining the risk return characteristics of the various indexes. If two indexes show the same mean return, the one with lower coefficient of variation is less risky.

As the graphs show, the index $CSMI_{(All,Price)}$, which employs a price weighting, outperforms the other methods of construction, with comparable trend characteristics. Though over the period the mean return was negative for all indexes, the price weighted index shows the highest return, and also the highest coefficient of variation; -4.2% and 5.08, respectively **(Appendix I)**. As expected, due to their high correlation, the $CSMI_{(All,E+I)}$ and the $CSMI_{(All,GDP)}$, performed similarly with respect to returns and risk; GDP doing slightly better. Also, the $CSMI_{(All,Cap)}$, for reasons specified above, showed by far the lowest return, but also the lowest coefficient of variation. The unweighted index $CSMI_{(All,Equal)}$, showed a flat trend from 1993, i.e. stable.

Exhibit 1



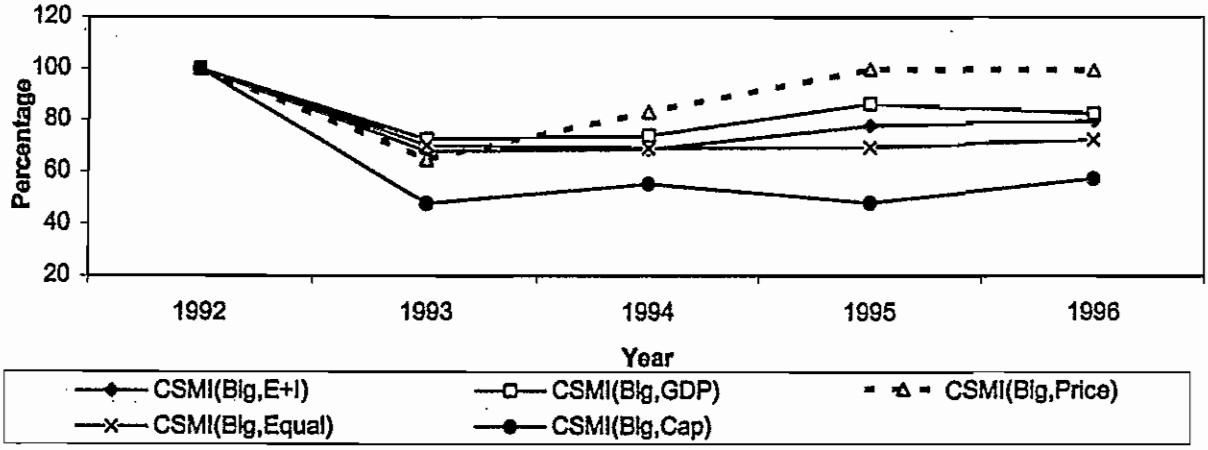


(ii) **Indexes constructed using prices of top ten stocks in each market in terms of market capitalisation.**

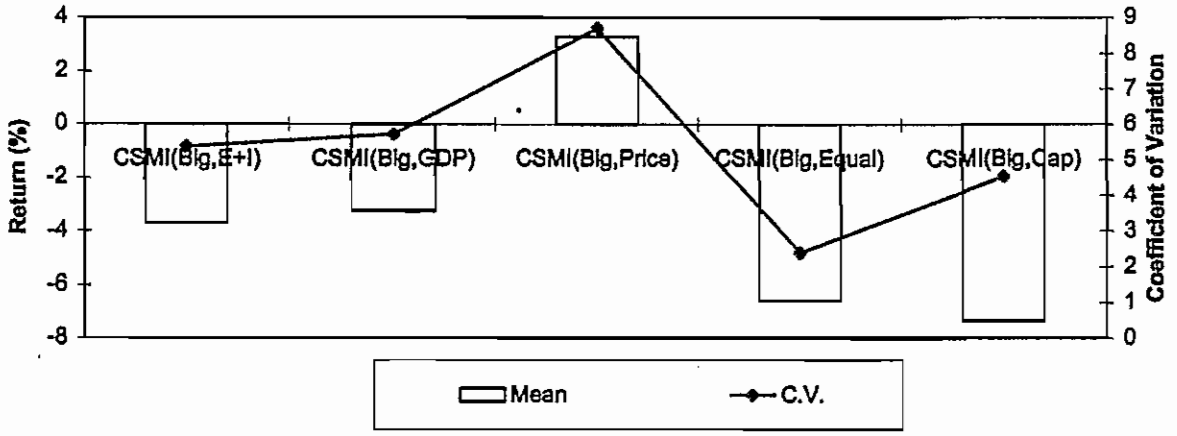
Exhibit 2 displays the five alternative indexes constructed from the specified sample stock prices using the five weighting schemes, as above.

Exhibit 2

Indexes Comprising Top Ten Listed Companies by Market Capitalisation (1992-1996)



Mean Returns and Coefficients of Variation for Indexes Comprising Top Ten Listed Companies by Market Capitalistion (1992-1996)

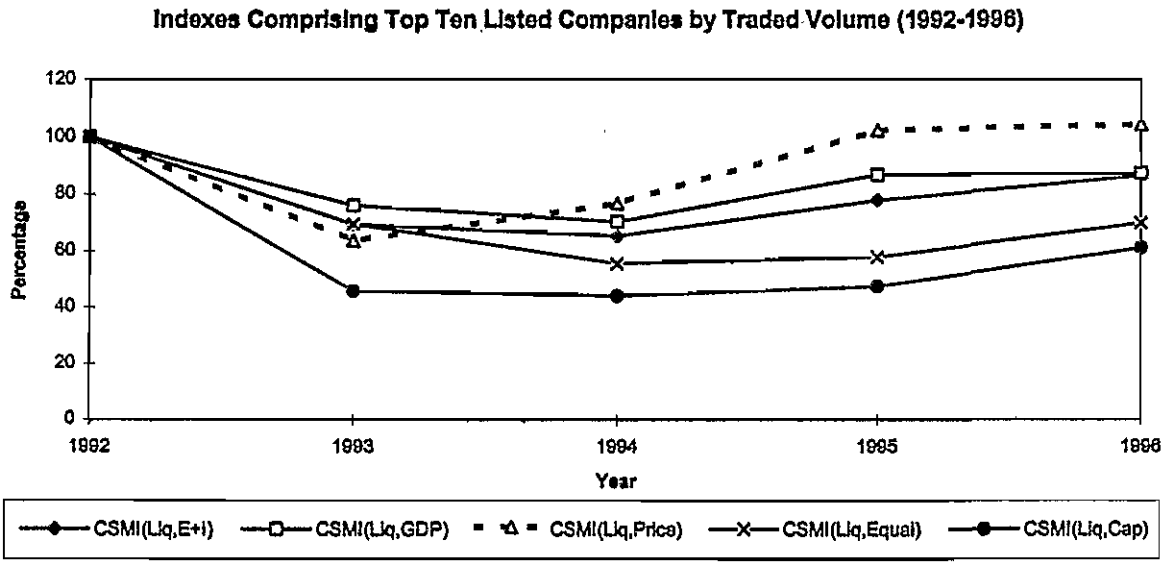


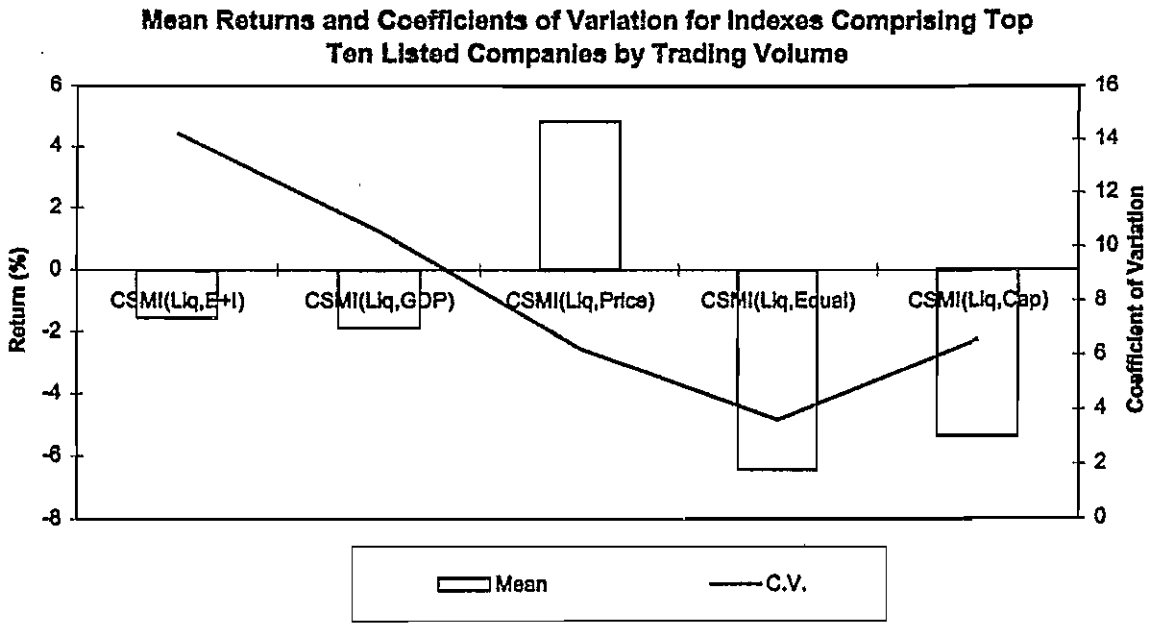
Again, the price weighted index outperformed the other indexes in terms of returns over the period, showing a mean positive return of 3.3%. The coefficient of variation is also the highest at 8.7, and rose compared to the previous example where all stock prices were used in the index **(Appendix I)**. The same analysis applies for the other four indexes, with all showing higher mean returns than previously, though still negative, with $CSMI_{(Big,Cap)}$ in the cellar position, as in the previous exhibit. The $CSMI_{(Big,Price)}$ now shows the best risk vs return characteristics, with the $CSMI_{(Big,GDP)}$ and the $CSMI_{(Big,E+I)}$ occupying the middle ground.

(iii) **Indexes constructed using prices of top ten stocks in each market in terms of trading activity.**

Exhibit 3, shows the results of this construction, using the prices of the top ten stocks by trading volume, in combination with the five weighting shemes under consideration, to compose the index.

Exhibit 3





In this case, the $CSMI_{(Liq,Price)}$ shows an even higher average positive return than previously, but its risk vs return characteristics have improved; the coefficient of variation being 6.2 and the mean return rising to 4.9%, for the period **(Appendix I)**. The $CSMI_{(Liq,Equal)}$ and the $CSMI_{(Liq,Cap)}$ rank the lowest in terms of returns, and the lowest also in risk relative to these returns. The $CSMI_{(Liq,GDP)}$ and the $CSMI_{(Liq,E+I)}$ show very similar characteristics and are balanced relative to the above extreme performers.

8.0 Selection and Comparisons to Other Established Benchmarks.

From the analysis above, the CSMI weighted by price consistently outperformed the other indexes, though showing higher risk relative to return. The $CSMI_{(Liq,Price)}$ provides the highest return, and being constructed using the most liquid issues in the three markets, is consistent with the global investor's choice of equity portfolio, given that the risk and cost associated with such an investment, is not excessive. When compared to the IFC Latin America and IFC Composite, chosen for their emerging market bias in the first case and for global comparison in the second, for the same period, the mean return is less than half, 13.8 and 11.6% respectively, and the risk relative to return is twice as great at 2.6 and 2.7 **(Appendix I)**. It should be noted though that the volatility as gauged by the standard deviation of the relevant returns is similar for the three indexes, and the difference in the coefficients of variation is due to the higher level of returns. The NYSE Composite had similar average returns to the IFC indexes over the period of 13.8%, but even lower volatily, with the standard deviation approximately half that of the IFC and $CSMI_{(Liq,Price)}$ indexes.

For the risk averse investor, the unweighted (or equally weighted) indexes were relatively stable in terms of their low risk vs return characteristics, with the $CSMI_{(Big,Equal)}$ being the most balanced. The coefficient of variation of 2.4 in this case, is comparable to the IFC indexes, with much lower volatility; the standard deviation of returns being less than half that of the IFC indexes and similar to the NYSE value for the period.

Table 5, shows the correlation matrix for the two more useful indexes that we have devised, namely the $CSMI_{(Liq,Price)}$ and the $CSMI_{(Big,Equal)}$, the NYSE Composite and the IFC Latin America and Composite.

Table 3

TOTAL RETURN INDEX CORRELATIONS

	CSMI(Big,Equal)	CSMI(Liq,Price)	IFC Latin America	IFC Composite	NYSE Composite
CSMI(Big,Equal)	1				
CSMI(Liq,Price)	0.365775648	1			
IFC Latin America	-0.649817103	0.199519649	1		
IFC Composite	-0.610944253	0.280959292	0.993395258	1	
NYSE Composite	-0.390904028	0.591857184	0.374650068	0.443979233	1

Given the short data series, it is difficult to draw any firm conclusions from the correlation analysis. Two things do seem apparent though. Firstly, the negative correlation between the $CSMI_{(Big,Equal)}$ and the NYSE Composite, if indeed existing over a longer period, is a good sign for regional markets. Global investors seek diversification and respond positively to markets offering such, as the relatively high negative value for Latin America bears out.

Secondly, the relatively low correlation between the IFC Indexes and the $CSMI_{(Liq,Price)}$ alludes to possible scope for diversification benefits between the regional equity market and that of Latin America and the wider global emerging market. This harbors good prospects particularly in the first instance, given the closeness of the markets and the integration possibilities for the two regions.

9.0 Conclusion

The obvious need for inflows of capital into regional equity markets and the prospects of increasing capital flows directed to the so-called emerging economies and markets, make the need for benchmarks and performance indicators for a regional market more than a consideration, but a rational stage in the development of these markets. This paper was a

preliminary exercise in the construction of such an indicator, in the form of a Caribbean Stock Mark Index. Though limited to just three countries of the Caribbean, i.e. those with established stock markets and regularly scheduled trading, and short on numerical data spanning a longer period, the above analysis shows the capability to establish such indicators and the possible information that they could widely disseminate. This would greatly enhance the information generated from the region, which up to this point is lagging behind the rest of the developing world, and would facilitate foreign investor assessment, without the need for costly research, once such information is reliable, accurate, current, easily accessed and comparable. This is what an index of this sort would have to display.

As an incentive, some diversification benefits were shown possible between the regional market and those of the other emerging markets, particularly Latin America, and the US market. For these benefits to be realised, performance of the regional market must lend itself to monitoring, and measures must be credible, over an extended period. The challenge to us in the region is to make such a credible index of performance a reality, beginning with the stock markets and expanding to other securities markets and territories in the wider Caribbean.

Appendix I: Indexes and Comparative Statistics for 1992 to 1996

Local Country Indexes									
INDEXES	1992	1993	1994	1995	1996	INDEXES	Mean	C.V.	Std. Dev.
Index (T&T)	100	137.0365139	147.2279322	249.6258544	278.1277263	Index (T&T)	31.3605	0.91325	28.64
Index (BDS)	100	119.9227511	120.2625122	120.6022734	120.562978	Index (BDS)	5.114	1.9307	9.87362
Index (JAM)	100	50.05771797	64.77440274	55.41465275	61.55144046	Index (JAM)	-5.9796	5.7504	34.3849
Indexes using total prices.(All listed common stock)									
INDEXES	1992	1993	1994	1995	1996	INDEXES	Mean	C.V.	Std. Dev.
$CSMI_{(All,E+I)}$	100	64.57104268	59.86084129	59.5101596	64.01709783	$CSMI_{(All,E+I)}$	-8.934	2.09	18.6803
$CSMI_{(All,GDP)}$	100	65.22184053	64.18735358	65.82410046	67.56818768	$CSMI_{(All,GDP)}$	-7.7912	2.32	18.0993
$CSMI_{(All,Price)}$	100	63.75673911	67.72420101	72.15386266	76.96432499	$CSMI_{(All,Price)}$	-4.20	5.08	21.3609
$CSMI_{(All,Equal)}$	100	68.8787755	66.71359618	64.1686299	66.66795323	$CSMI_{(All,Equal)}$	-8.5461	1.81	15.4487
$CSMI_{(All,Cap)}$	100	50.27640577	46.15900746	36.59466482	41.81041798	$CSMI_{(All,Cap)}$	-16.095	1.66	26.6818
Indexes using (Top ten stocks by market capitalisation).									
INDEXES	1992	1993	1994	1995	1996	INDEXES	Mean	C.V.	Std. Dev.
$CSMI_{(Big,E+I)}$	100	67.57699668	68.57244112	77.71089793	79.90500682	$CSMI_{(Big,E+I)}$	-3.7	5.36985	19.8682
$CSMI_{(Big,GDP)}$	100	72.27696291	73.86964587	86.30194996	82.6061629	$CSMI_{(Big,GDP)}$	-3.2429	5.72187	18.5557
$CSMI_{(Big,Price)}$	100	64.56708482	83.16425854	99.87158362	99.54797357	$CSMI_{(Big,Price)}$	3.28387	8.69463	28.552
$CSMI_{(Big,Equal)}$	100	70.00347273	69.00826141	69.3411688	72.50823291	$CSMI_{(Big,Equal)}$	-6.5921	2.39707	15.8017
$CSMI_{(Big,Cap)}$	100	47.80769253	55.43159576	48.09850268	57.73048226	$CSMI_{(Big,Cap)}$	-7.3622	4.5305	33.3545
Indexes using(Top ten companies by trading activity).									
INDEXES	1992	1993	1994	1995	1996	INDEXES	Mean	C.V.	Std. Dev.
$CSMI_{(Liq,E+I)}$	100	69.48012549	65.31180459	78.00852569	86.49557888	$CSMI_{(Liq,E+I)}$	-1.5498	14.2054	22.0162
$CSMI_{(Liq,GDP)}$	100	76.12388644	70.45874824	86.85253859	87.38136849	$CSMI_{(Liq,GDP)}$	-1.8605	10.5387	19.6073
$CSMI_{(Liq,Price)}$	100	63.78498396	76.90698665	102.528897	104.3074619	$CSMI_{(Liq,Price)}$	4.85184	6.24419	30.2958
$CSMI_{(Liq,Equal)}$	100	69.55	55.56	57.94	69.91	$CSMI_{(Liq,Equal)}$	-6.4048	3.62014	23.1863
$CSMI_{(Liq,Cap)}$	100	45.73196198	44.03560019	47.48134479	61.09755383	$CSMI_{(Liq,Cap)}$	-5.3689	6.56508	35.2471
Other Internationally Established Indices									
INDEXES	1992	1993	1994	1995	1996	INDEXES	Mean	C.V.	Std. Dev.
IFC Latin America	100	105.7078724	165.4962322	165.2877986	138.9770723	IFC Latin America	13.7525	2.64052	36.3137
IFC Composite	100	100.3330306	168.0896155	167.1813503	146.5940054	IFC Composite	11.5559	2.71399	31.3627
NYSE Composite	100	107.8556263	104.4669248	137.1758045	163.3154323	NYSE Composite	13.7699	1.07438	14.794

Source: International Finance Corporation, Emerging Stock Markets Factbook's, 1996

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