LAZARD
ASSET MANAGEMENT

Dear friends and colleagues

Asset Allocation 101 would suggest that an optimal portfolio is one where risk/return dynamics are optimised given a level of risk tolerance and budget. More often than not strategist and asset allocators utilise broad market systematic metrics, which usually are pretty straightforward. But with Emerging Markets, which today is seen by many as a strategic asset class, this more mechanical asset allocation process is being challenged as MSCI actuaries in Geneva, the home of the MSCI Index series, are eventually expected to re classify the broad definition of Emerging Market equities (MSCI EM) by upgrading Korea and Taiwan into the Developed Markets (MSCI DM) series. Whilst perhaps understandable given the size and a more developed middle class in these markets, their exclusion is going to noticeably alter the MSCI EM index series.

Take for example market capitalisation alone. Currently, the MSCI Korea and Taiwan constituency within the 25 countries ranks as the second and third largest markets within MSCI EM, respectively. As and when this "upgrade" happens, Korea and Taiwan constituency will still be sizeable ranking ninth and tenth largest markets within MSCI DM, respectively. Whilst the timing of such an upgrade may be a vocal debate, such debate becomes less vocal when discussing "if".

Rather than debating when, the purpose of this piece is to discuss what the ramifications will be once such an upgrade occurs. By ramifications, I am referring to expected changes on broad market and systemic risk/return metrics.

With all statistical analysis, certain assumptions will need to be made. These assumptions may appear contentious, but when assessed in totality of possibilities, I am comfortable that we address some portion of these concerns, at least suffice to keep the focus on trying to assess what changes could mean in altering the risk/return dynamics within MSCI EM.

The first of these assumptions is to assess constituency and risk/return metrics by NOT including nor supplementing the new MSCI EM. Current money, which has yet to be verified by any credible source would suggest the probable inclusions following the removal of Korea/Taiwan would be to include one/two frontier markets (most likely one from MENA), and some liquidity and float adjusted China "A" shares. Whilst arguably sound by reason, we have deliberately excluded these as all this is both still hypothetical and China "A" and a frontier market would likely only add to our expected increase in risk metrics without any meaningful upgrade in return expectations. More further ahead.

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The second of our assumptions is we haven't studied the ramifications on the inclusion into MSCI DM. The main reason as to why we hadn't relates to Korea/Taiwan's size would still only rank ninth and tenth within MSCI DM, respectively. Furthermore, as discussed further ahead, the GICs sectors dominance within Korea/Taiwan are already well represented within many DMs already.

The third assumption relates to studying probable responses strategist and asset allocators will undertake as a result of such a change. As soon discussed, we try to assess responses by looking at opposite ends of the book shelf. One obvious end is to do nothing, and accept the upgrades (and potential inclusion of China "A"/frontier market is fait accompli and things would wash out in the medium to long run. The other end of this book end is to override MSCIs definition and to rely on one which is better aligned to that of the asset allocators fund and mission statement.

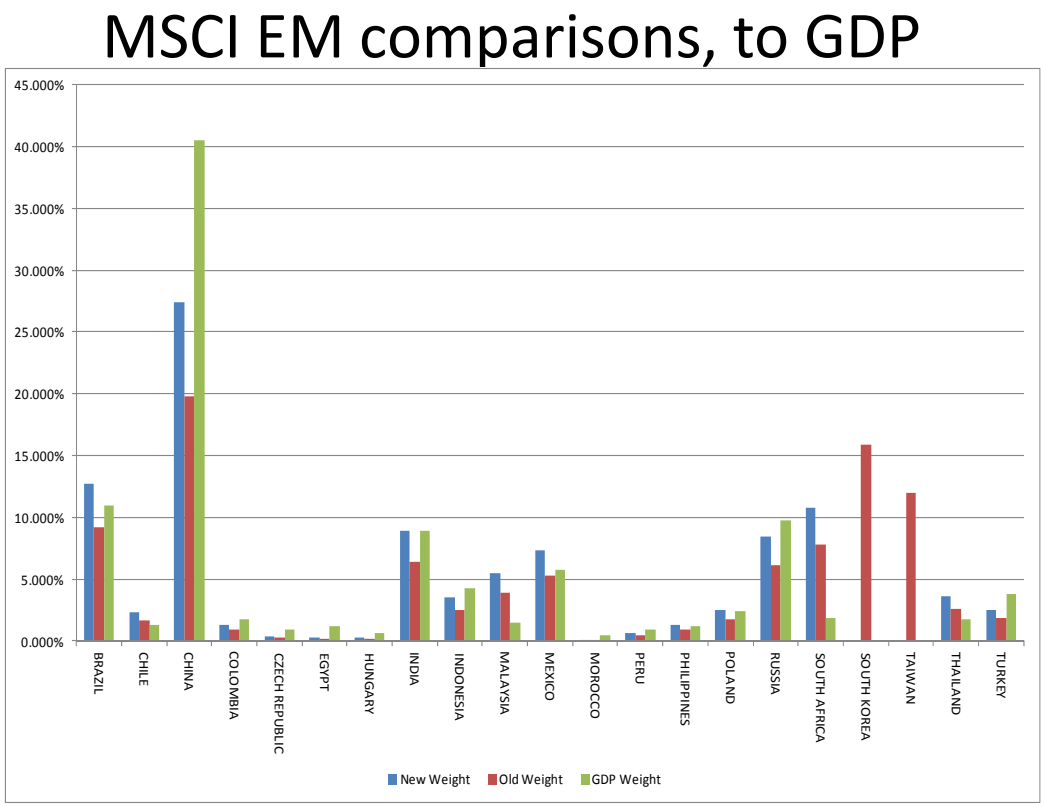
It is obviously too early to determine how asset allocators will respond as a result to such pending changes to MSCI EM. But one thing which MUST be remembered is that this is NOT an issue which manufacturers will need to address as ultimately clients determine what is the benchmark they expect their managers to beat (which in turn is why this is becoming an issue, given most asset allocators assume some broad systematic returns within their asset optimisation exercise). Regardless, why this is an issue is a historical one as in the past, EM was considered an asset class whose inclusion was opportunistic in nature. Pre the "Lexus and Olive Tree"/"World is Flat" enlightenment, the default allocation towards EM was nil. Any allocation was usually an opportunistic response to some tactical misevaluation within the asset. But since these two books, investors have come to see sustained long term opportunities as the EM markets themselves sustain their own economic prosperity through a growing middle class. As the emerging middle class grew, the theory was that GDP and profits within EM would be less beholding to global economic gyrations, and therefore offer a diversification benefit.

As a thematically driven theory, it is both inexact and less quantifiable. Nonetheless, it comforted MANY asset allocators to start to strategically allocate between 5 to 10% of their portfolios into EM assets, riding through market cycles. Were it purely on market statistics, perhaps a "neutral" allocation would be closer to the EM weighting within the very broad MSCI All World Index (MSCI ACWI). Yet many exceed even this neutral given their wholeheartedly embracing this emerging middle class theme. But now, courtesy of some more visible numeric approach, MSCI will likely eventually upgrade Korea/Taiwan and probably alter the risk/return metrics utilised by many asset allocators.

Back at the beginning. Given such pending changes within MSCI constituency, will asset allocators need to make allowances for such changes? Will the risk/return metrics change so significantly, thereby requiring them to alter their approach towards this thematically allocated/influenced asset? Whilst I would believe that managers will themselves have their own views, views which they themselves will wish to see through fruition, it is unlikely many would be willing to hold outside benchmark securities as the contribution to how clients view risk (e.g., tracking error), would be too high an agency risk, especially given so many other active EM managers hold higher portfolio turnover when compared to their DM brethren.

So let's first study these changes, at least as they relate to the exclusion of Korea/Taiwan from MSCI EM index series.

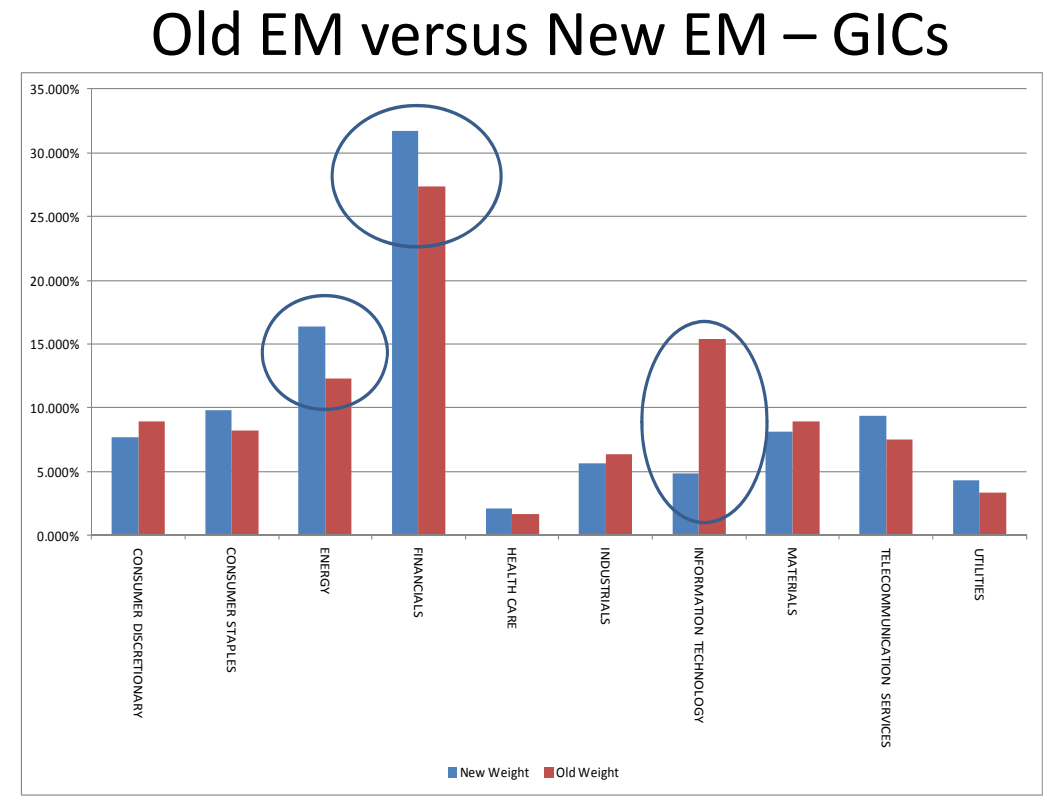
As previously mentioned, without any supplementing, the upgrade of Korea and Taiwan will take out near a third of the whole MSCI EM market cap. Given Korea/Taiwan are the second and third largest markets within MSCI EM, this isn't too surprising. But one result from such a change is that the remaining reallocation makes what was meant to be a "broad market benchmark" look more like BRIC+ (Brazil, Russia, India, China, plus South Africa). From constituency of 25 countries, the VAST majority of the AUM will come from these five countries, thereby increasing their country specific risk/return factors within the broader MSCI EM series. This said, with the exception of South Africa, which is over represented for its mining and resources relative to its own broader economy, the country cap weights close in closer to where the EM constituency based off a broader and more stable GDP weights.



Citi Calculations base d on Thompson Reuters, IBES, Worldscope data

What is less obvious is how the exclusion of Korea/Taiwan will alter the broad GIC sectoral breakdown within MSCI EM. Not too surprisingly, given Korea/Taiwan's exposure towards IT, this sectoral weighting drops noticeably. Before the changes, IT was the second largest GICs sector within MSCI, at

just over 15% of MSCI EM. Following their exclusion, the sector representation drops from second largest to the second smallest, or a drop of just over 10%. Of the ten GICs sectors, three other show drops in cap weight, but by a much smaller proportion, almost insignificant. Financials and Energy, on the other hand, show to capture much of this drop, with smaller increased weights to Telco and Consumer Staples.



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As previously mentioned, for the purpose of this study, we had not supplemented such a large drop in capitalisation by including China "A" or Frontier. But from a GICs composition point of view, at least I doubt had we done so the significant drop in IT and supplemental increase in Financials and Energy would still have been observed, albeit perhaps off different magnitude.

Pontificating here, I can foresee three possible responses asset allocators could/would take in response to the eventual changes to MSCI EM, or variations therein:

> Accept the "new" definition of EM, assuming it will all wash-out in the long run;
> Re engage Korea/Taiwan, or Asia ex Japan as part of the EM allocation; or,

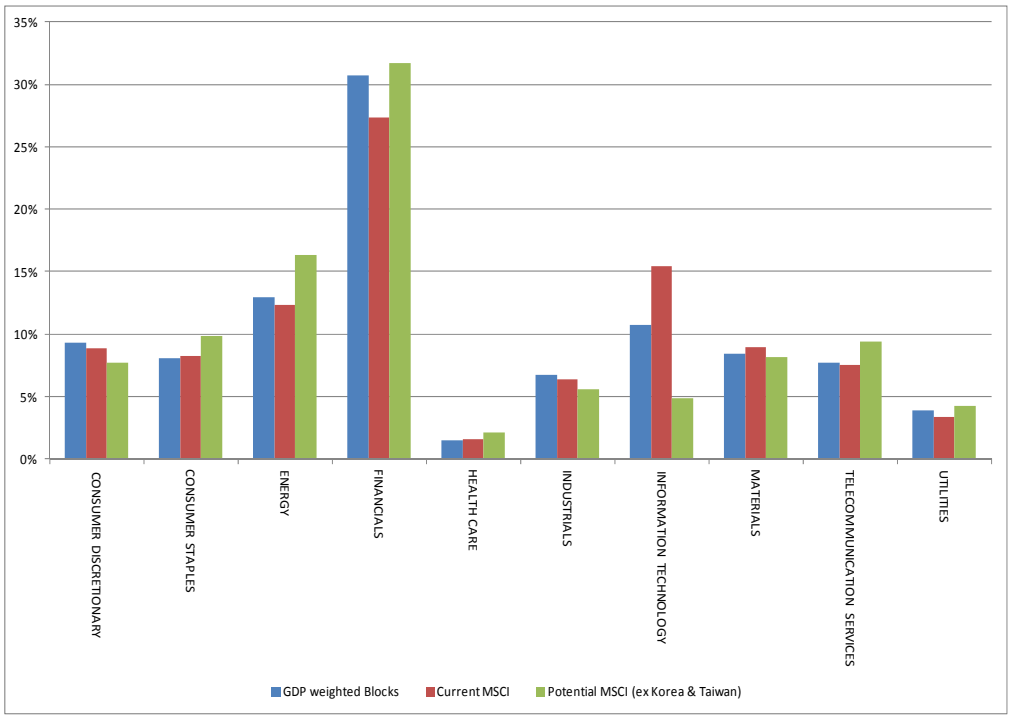
Reconstruct "EM" by compartmentalising EM from its three regional blocs – LatAm, EMEA, and Asia ex Japan.

As previously mentioned, of these three possible responses, the third, or reconstructing the EM benchmark to one which is better aligned to the allocators thematically inspired EM allocation will require some leap of faith. By this I am referring to the fact that this reconstruction will be driven off compartmentalising the EM bucket into three regions: Latin America (LatAm), Eastern Europe/Middle East/Africa (EMEA), and Asia ex Japan (AxJ). With the AxJ, for example, this would not only still include Korea/Taiwan, but equally add two other existing DM countries of Hong Kong and Singapore. Whilst perhaps this may be contentious, I am less concerned given these markets already show a strong influence and correlation to China, and noticeably less volatile and more liquid than the possible inclusion of China "A" shares. Furthermore, re including these through AxJ would be closer to the "emerging middle class" theme than by its lack of capture through their exclusion.

As previously flagged, by excluding Korea/Taiwan from the new MSCI EM benchmark, the new reconfigured country allocations would move more in-line with GDP weights (South Africa being the exception). So when compartmentalising the EM from these three regions, we've done using more stable GDP weights than market cap alone. The weight given to each bloc, therefore, was a function not of market cap but of GDP for each region. Whilst we could use market cap as well, we didn't find a noticeable difference so kept it "pure" to the earlier observation that new country weights would be closer aligned to GDP (again, South Africa is the main exception).

The GICs sectoral breakdown continues to show some divergence from the original/old EM bench. However, when compared against the GDP weighted regional/bloc composition, the divergences are much less visible and exaggerated. The GDP weighted bloc has a modestly lower IT allocation and modestly higher weighting towards financials. The remaining eight GICs show little, if any change, vs. the current MSCI EM benchmark.

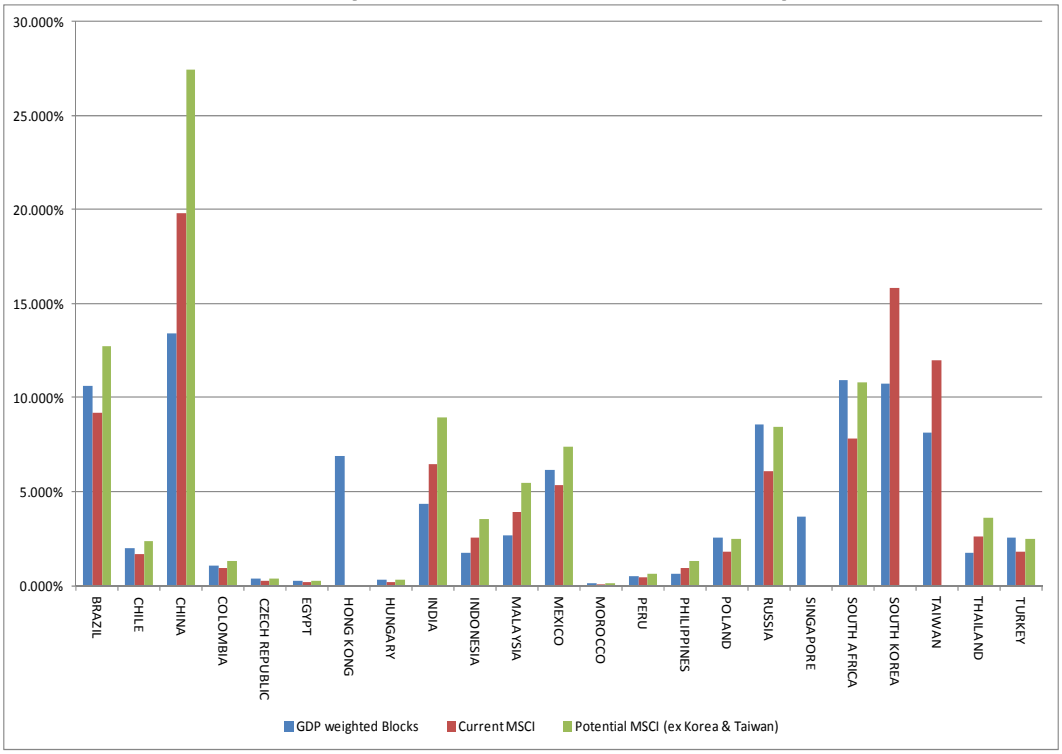
GICs comparison: old/new EM, and blocs



Citi Calculations base d on Thompson Reuters, IBES, Worldscope data

Country allocations between original/current EM and GDP weighted bloc still shows a noticeable divergence for China. This said, however, it must be remembered that by using Asia ex Japan, we are utilising a more liquid proxy such as China and Singapore. And were these countries added back to the "China" weight, the divergence becomes much less significant. All other country allocations show little change from current MSCI EM.

EM country allocation comparison



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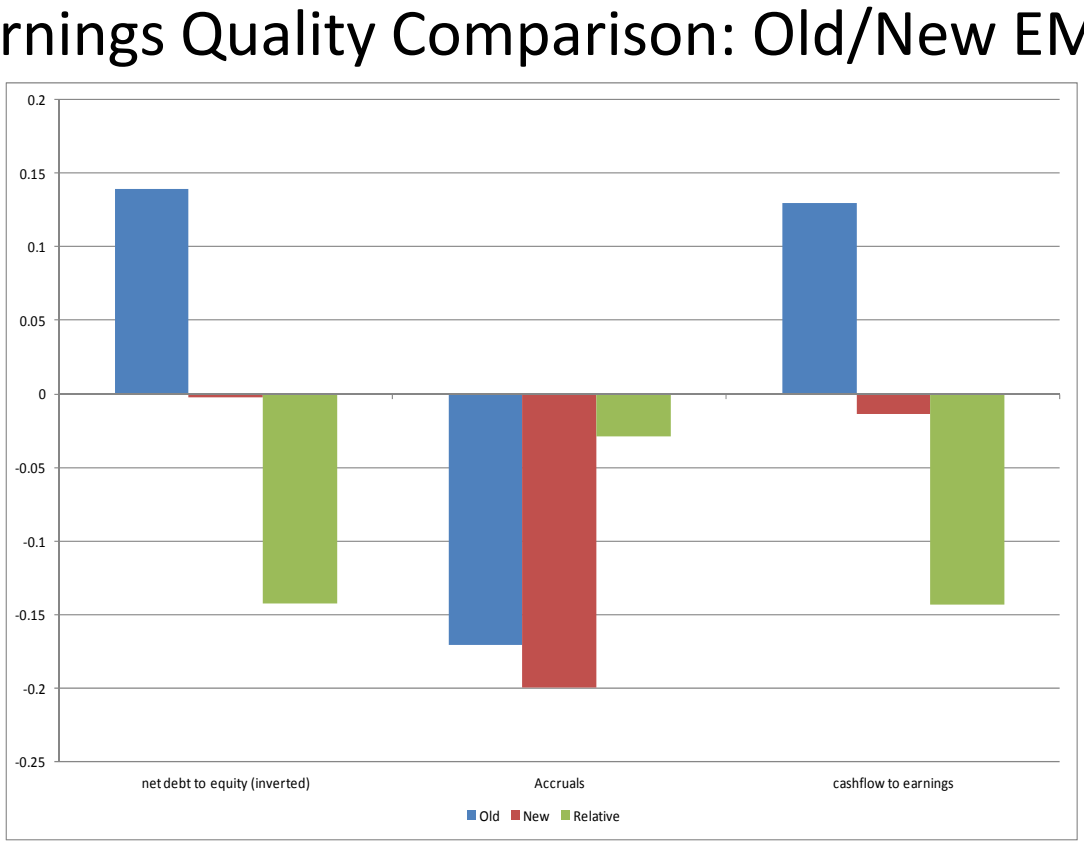
Studying the risk/return metrics revealed an even greater impact than we had anticipated between the current/old MSCI EM definition and the forthcoming/new EM. As a reminder, for the purpose of this study, we have NOT supplemented with China "A" and a frontier market as this is all still both hypothetical let alone only add the risk/return divergence, not take away from it.

Whilst there were many ways to study this, we decided to study this "risk" measurement off fundamental and quantitative risk metrics. As for the fundamentals, we studied the compositional divergence through three fundamental measures:

Gearing: net debt (total minus cash) to equity (book value)
Accruals: change in net operating assets divided by the average net operating assets over two fiscal years; and,
CONIA: last reported cash flow to earnings.

With the exception of accruals, there is a visible reduction in the quality of earnings when comparing the original and new MSCI EM series. We believe this decay is more a function of the reallocation and weighting away from IT and more towards more cyclical EM GIC sectors. As the chart below shows, however, in absolute terms (red bar), this is less visible.

So my comments relay more to the visible change between the old and new EM series (green bar), whereby the old EM series showed more favourable earnings quality figures (blue bar).



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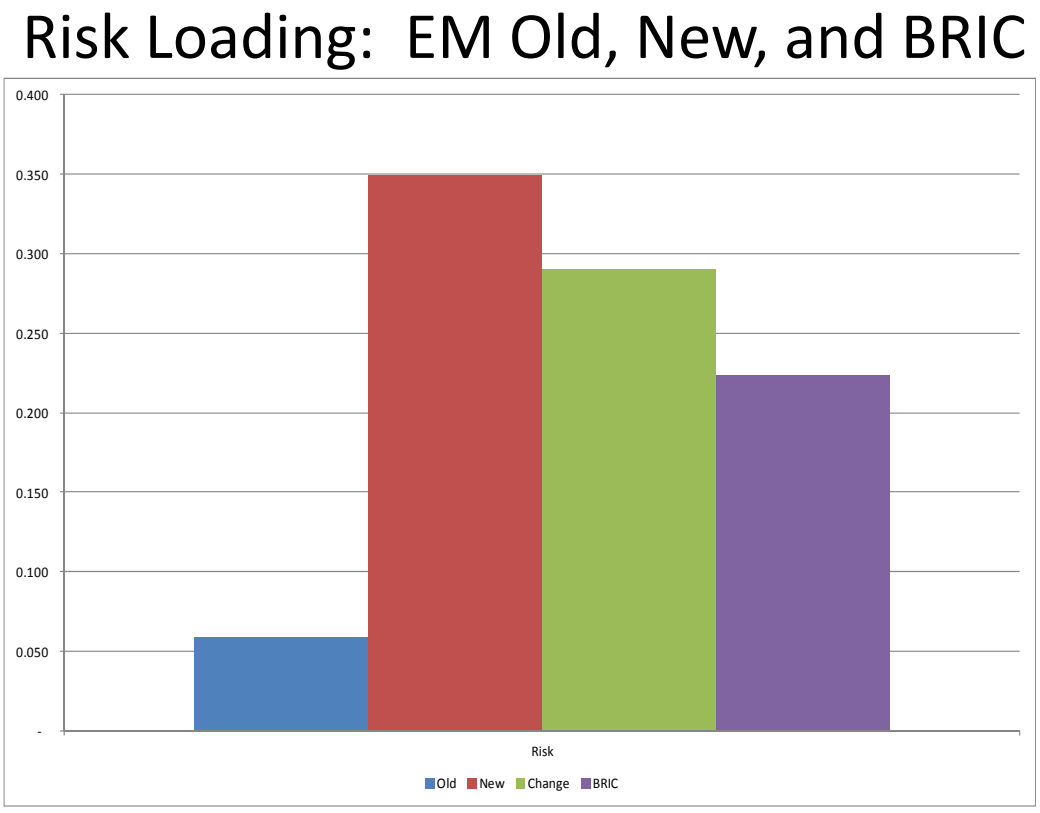
As for the quantitative risk modelling, we looked at this as a "risk loading" exercise, inasmuch studying how the portfolio would be expected to perform under different risk on/off scenarios. And here, we not only compared the current/old to the new/pending MSCI EM, but relative to response #3, or GDP weighted regional bloc allocation (LatAm/EMEA/AxJ). The intention is to assess how the systematic returns would perform under risk on and risk off (can't help but to think of "Karate Kid" whenever I say this) environments, and relative to the very broad and diverse MSCI ACWI benchmark. An asset with a high risk loading will likely have both high beta AND high volatility.

What allocators HATE most is positive "risk loading" reading as the more positive the reading, the more important it is to market time the EM allocation to coincide with risk on/off environments. As the great Jack Bogle once wrote, "I've never met anyone who could time the market, nor have I met anyone who's ever met anyone who could market time."

But I digress. For the purpose of this study, we define and quantify "risk loading" through a 50/50 weight to:

> Beta of the stock total return relative to MSCI ACWI, both in USD; and,
> Standard deviation on 6 months of daily stock returns.

What surprised me most about these risk loading results was how low the loading figure was for the old/current MSCI EM. More often than not, asset allocators have an increased risk budgeting for their EM allocation, so was assuming this loading would be more. As the chart below shows, however, there is very little loading with current MSCI EM (blue) allocation. By taking out Korea/Taiwan, however, out of the EM configuration, the new risk loading figure (red bar) jumps up considerably, showing a near 5X increase (green bar).



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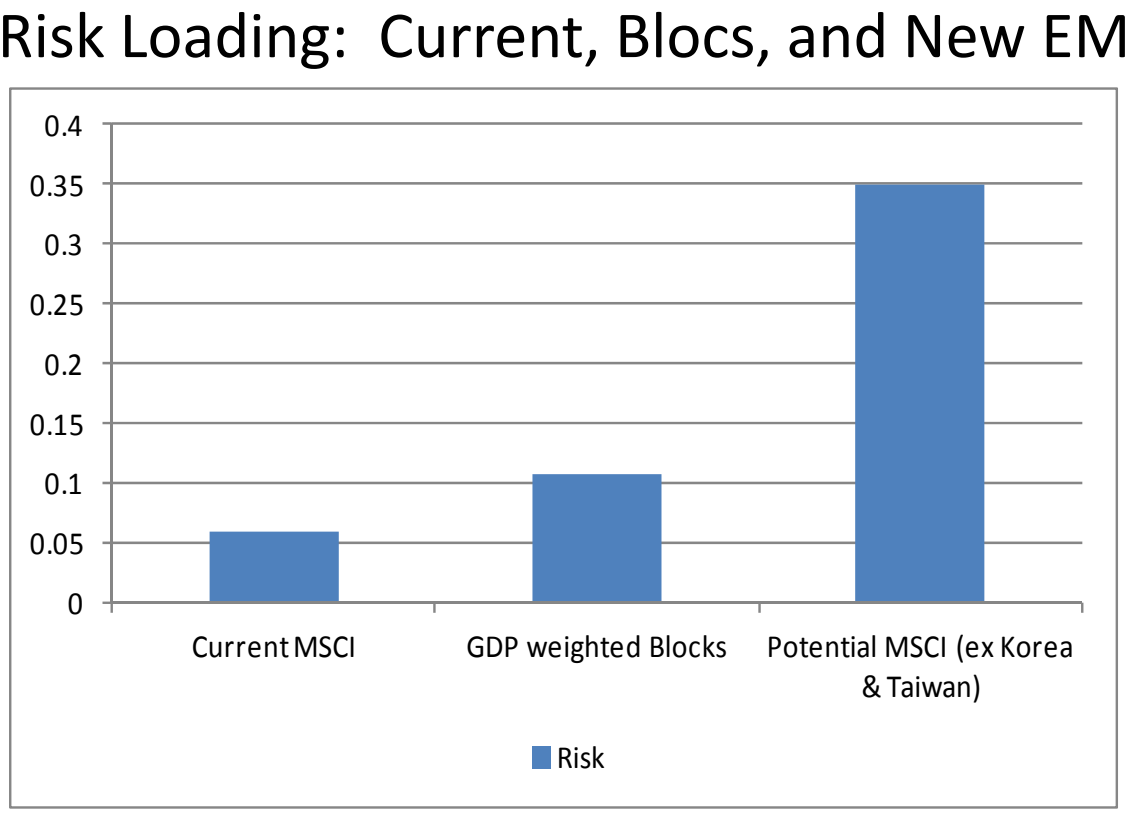
On reflection such an increase perhaps wasn't too surprising given changes to the GICs sectoral allocation, let alone given the new MSCI EM index would look more BRIC+ like. So to test this, we reran the figures but only this time on BRIC relative to MSCI ACWI.

Sure enough, BRIC alone shows higher risk loading figure, and not doubt accounting for a lion's share of the increased risk load with the new MSCI EM index series.

So what about the GDP weighted bloc, how does this compare relative to both old and new EM definitions? Not too surprisingly, probably due to the reintroduction of Korea/Taiwan, and the less volatile/more liquid China plays of HK and Singapore, the risk loading drops to almost the old EM levels. This was intriguing somewhat given that as previously shown, the GDP bloc country weightings didn't differ too much from the forthcoming EM definitions.



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Whilst we accept that all this is purely hypothetical, suspect that as with the apparent decay of earning quality, the increased risk loading is more a function of the exclusion/reduction within EM IT, and such reduction funding a noticeable increase in more cyclical GIC sector. Meaning, it isn't so much that Korea/Taiwan are excluded, but the increased risk was more a function of the noticeable reweighting through sectors.

When we reassess the risk metrics off GDP weight blocs, the risk readings drop to a more stable environment.

And whilst we hadn't added China "A" or a frontier market into this analysis, I suspect you'd agree that were we to have added less liquid and volatile markets like China "A" and frontier would only exacerbated the risk measure even higher.

However one draws this picture, what is visible is how the pending changes to MSCI EM constituency is likely to have noticeable impact on the "broad EM market/bench" risk return metrics. And if so, asset allocators are either going to have to accept such changes, with their active managers eventually towing the line, or redefine the EM benchmark to one which is more closely aligned to their expectations and investment policy. Failing to acknowledge such changes could misalign their portfolio allocation with their risk/return immunisation demands. Equally, failing to do so would misalign CIOs from their EM managers, who may themselves eventually reconfigure their benchmark aware portfolio away from the funds policy.

Take for example Australian domiciled pension funds, where the domestic market is already heavily exposed towards the more cyclical resource and mining sectors. The new BRIC-like broad EM bench would only add to the risk loading, thereby adding unnecessary risk loading to the funds' total policy. Either way, we come back to the rule overriding ALL investment analysis and research, GIGO. Garbage In, Garbage Out.

So I now reach out to ask for your views. Have you considered such changes? If so, and given so few have published material on this, our ability to convey some views and analysis would no doubt be welcomed by our clients. As Stephen van Eyk (from my days at van Eyk Research) once said, the goal of any provider is to make their clients look good. The better they look in their investment calls, the more they rely on us as a provider of such information. Word.