The Shanghai & Shenzhen Exchanges:

Performance by Size and MarketGrader ™ Ratings

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MarketGrader Capital

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Francis Gupta joined MarketGrader Capital in 2015 as Senior Advisor to lead intellectual property initiatives, identify applications of MarketGrader's company fundamentals-based Global Research for the benefit of the investment community and assist with development and commercialization of new MarketGrader Indexes. Prior, he was a Director with Dow Jones Indexes and served on the Index Oversight Committee. In this capacity, he built the firm's research group, was integral to new index development and lead landmark projects for institutional clients across equity, multi-asset class and other specialty indexes, such as income and hedge fund indexing. Francis also held strategic advisory positions in institutional investment management for Credit Suisse Asset Management and J.P. Morgan Investment Management. His work has been published in numerous journals including *The Journal of Portfolio Management*, *Journal of Indexes* and *The Journal of Investing*. He earned his B.Sc. in Mathematics from the University of Mumbai and his Ph.D. in Economics from New York University.

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Introduction

China, with an estimated 2014 gross domestic product (GDP) of US$ 17.63 trillion has surpassed the European Union (US$ 17.61 trillion) and the US (US$ 17.46 trillion) as the world's largest economy.[1] The growth in the economy has been concurrent with the development and growth of the capital markets. At the end of May 2015, the value of all publicly traded shares issued by Chinese (domiciled) companies was estimated to be US$11.50 trillion. As the capital markets in China continue to evolve and attract more capital, it is to be expected that the Chinese equities market – the stock market of the world's largest economy – will continue to grow so as to catch up with the market capitalization of the world's largest equity market, namely, the United States.

This rapid structural evolution and shift in global economies and their capital markets also presents China as a strategic investment opportunity for both local and global investors. One of the keys to building out the capital markets is increased transparency and communicating credible measures of the investment opportunity. This is a role that MarketGrader, a global stock market research and index provider, is well suited to play.[2] In 2014 MarketGrader launched a family of China indexes to provide investors, both local and foreign, a measure of the investment opportunity in the Chinese equity markets. Currently, Chinese companies contribute to the performance of seven MarketGrader indexes. In comparison to broad market indexes that seek to measure the performance of the entire market, the MarketGrader indexes are composed of the best companies based on MarketGrader's proprietary rankings constructed using company-specific fundamentals thereby allowing investors to (a) benchmark their active portfolios, and (b) to gain exposure to the best companies using a transparent, rules-based, low-cost, stock selection approach.

The objective of this paper is to present the historical performance of portfolios constructed using MarketGrader rankings for the China equity universe. Because stock performance is driven by many factors, including market capitalizations, the portfolios constructed will control for size. This will allow for a first level estimation of return attribution to the rankings. In addition, because of the regulatory environment surrounding the listing and investments in Chinese companies, the portfolios will control for the exchange where the companies are traded. In particular, companies traded in mainland China on the Shanghai and Shenzhen exchanges will be treated as distinct categories from those traded overseas (in exchanges outside the mainland). This will allow for an estimation of an "exchange" or "mainland" effect in the performance of the equity universe. The paper will conclude with a brief discussion of index products that investors can use as tools to measure the opportunity set and gain exposure to Chinese equity in a strategic (beta) asset allocation framework and as a tactical (alpha) overlay.

The China Equity Universe

Figure 1 below presents the China equity universe broken up by the exchange where the companies are listed and traded.[3] As of May 31, 2015, with 1,572 companies listed, the Shenzhen exchange by far has the largest number of companies trading. With 919 companies listed, the Shanghai exchange is the second largest in terms of listings. All the overseas exchanges combined have 736 companies listed. In terms of growth in listings over the last 12 months, 102 companies (or about 7%) were added on the Shenzhen; 87 companies (or about 10%) were added to the overseas exchanges; and, 68 companies (or about 8%) were added on the Shanghai exchange. Overall, the listings grew from 2,990 to 3,227 – a growth rate of about 8%.

In terms of market capitalizations, the picture is very different. Even though, in the last 12 months, the total market capitalization of companies trading on overseas exchanges

1. Source: The CIA World Factbook as of May 2015, available at www.cia.gov. This figure is in 2014 US dollars.

2. To learn more, please go to www.marketgrader.com.

3. One objective of this paper is to understand the performance of the mainland exchanges. So for the purposes of this analysis, all companies traded on exchanges outside of mainland China will be treated as one category.

grew by only 54% from US$ 2,633 billion, their current market capitalization of US$ 4,054 billion is still the largest. The companies trading on the Shenzhen exchange are in second place with a phenomenal three-fold increase in total market capitalization in the last year from US$1,318 billion to US$ 3,997 billion. The Shanghai exchange grew 185% in terms of market capitalization over the last year going form US$ 1,203 billion to US$ 3,425 billion. In the aggregate, over the last year, the market capitalization of Chinese equities more than doubled going form US $5,154 billion to US$11,475 billion – a growth rate of about 123%.

Figure 1. China Equity Universe by Exchange – As of May 31, 2015

Exchange	Number of Companies Traded	Listed in the Last 12 Months	Total Market Capitalization (in US$ B)	% Change in Last 12 Months
Shanghai	919	68	$ 3,425	185%
Shenzhen	1,572	102	$ 3,997	203%
Overseas	736	87	$ 4,053	54%
All Exchanges	**3,227**	**237**	**$ 11,475**	**123%**

Source: FactSet.

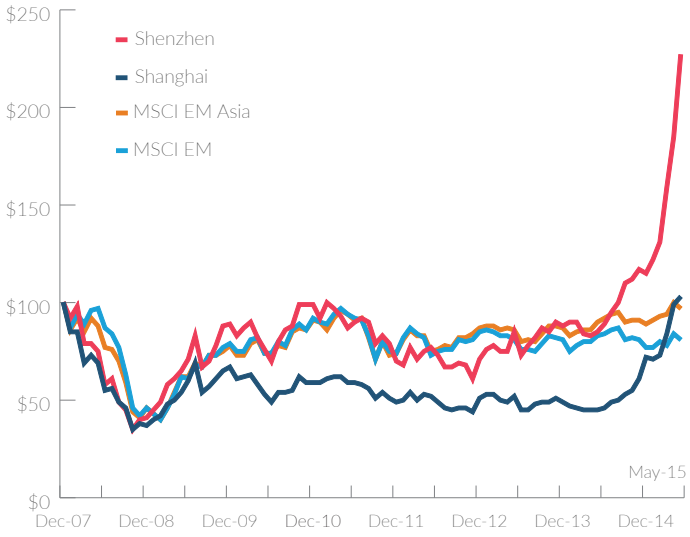
It is worth noting that because the number of companies trading on the exchanges overseas and on the Shanghai exchange is much smaller that the number of companies trading on the Shenzhen exchange, the average market capitalization of the companies on those exchanges is much larger. In terms of numbers, the average size of a company trading on overseas exchanges is US$ 5,507 million and that on the Shanghai exchange is US$ 3,727 million. On the other hand, the average size of a company trading on the Shenzhen is only US$ 2,543 million (about half the size of the companies trading overseas).

Given the fact that companies trading on the mainland exchanges significantly outperformed companies trading on the overseas exchanges and that the companies trading on the mainland exchanges are on the average smaller than companies trading on the overseas exchanges means that (i) a healthy (small capitalization) size risk premium is compensating investors for allocating capital to smaller companies, and (ii) a significant proportion of the growth in the Chinese equity markets can be attributed to smaller capitalization stocks. Both of these observations are consistent with an emerging and rapidly developing equity market.

Performance by Exchange

Figure 2 presents the historical price performance of the Shanghai Stock Exchange Composite Index and the Shenzhen Stock Exchange Composite Index. The MSCI Emerging Markets Index (MSCI EM) and MSCI Emerging Markets Asia Index (MSCI EM Asia) are included in the chart. These serve both as a benchmark for the exchange composites and also act as a proxy for the performance of the all the China companies trading on overseas exchanges.

Figure 2. Shanghai and Shenzhen Exchanges: Cumulative Price Performance in USD of 100 From December 31, 2007 through May 31, 2015



Source: www.MarketGrader.com. Price data from FactSet.

It is difficult to miss the remarkable recent performance of the Shenzhen Composite in Figure 2. All of the indexes suffered significant losses in 2008 (declining more than 50%) and have spent most of the period under consideration in

recovery (or are still recovering). In comparison, the Shenzhen Composite, in the last few months, has made up all of its losses and then posted considerable gains. In cumulative terms, prices are up 127%. The Shanghai Composite is flat with a negligible cumulative price gain of 3.3%. Both the MSCI EM and the MSCI EM Asia are still recovering with prices down -19.4% and -2.9% from their beginning of 2008 levels, respectively.

What this means is that, in essence, the performance of the exchanges has been decoupling from that of the broad emerging market indexes. This decoupling seems to suggest that, besides the small capitalization risk premium, there may be an "exchange" effect present in the performance of the mainland composites.

To gain additional insight into this hypothesis, Figure 3 below presents the annualized price returns, standard deviations and correlations of the four broad indexes over the entire time period and compares them to the same statistics over the last 36 months.

Figure 3. Shanghai & Shenzhen Exchanges: Price Perfomance & Correlations Exhibit Decoupling

	Shanghai	Shenzhen	MSCI EM	MSCI EM Asia
Panel A: From January 1, 2008 to May 31, 2015				
Price Return (in USD):				
Cumulative (%)	3.3	127.5	-19.4	-2.9
Annualized (%)	0.4	11.7	-2.9	-0.4
Annualized Std. Dev. (%)	28.8	32.8	24.8	24.3
Return / Std. Dev.	0.02	0.38	-0.12	-0.02
Correlations:				
Shanghai	1.00	0.87	0.52	0.55
Shenzhen		1.00	0.44	0.46
MSCI EM			1.00	0.98
MSCI EM Asia				1.00
Panel B: From June 1, 2012 to May 31, 2015				
Price Return (in USD):				
Cumulative (%)	99.8	196.6	10.8	29.6
Annualized (%)	25.9	43.7	3.5	9.0
Annualized Std. Dev. (%)	24.2	28.3	12.5	10.7
Return / Std. Dev.	1.32	1.93	0.33	1.01
Correlations:				
Shanghai	1.00	0.71	0.14	0.25
Shenzhen		1.00	0.04	0.11
MSCI EM			1.00	0.96
MSCI EM Asia				1.00
Panel C: From January 1, 2008 to May 31, 2012				
Price Return (in USD):				
Cumulative (%)	-48.3	-23.3	-27.2	-25.1
Annualized (%)	-14.6	-7.3	-4.0	-4.1
Annualized Std. Dev. (%)	31.1	34.9	30.6	30.2
Return / Std. Dev.	-0.45	-0.17	-0.23	-0.21
Correlations:				
Shanghai	1.00	0.93	0.62	0.63
Shenzhen		1.00	0.55	0.55
MSCI EM			1.00	0.98
MSCI EM Asia				1.00

Source: www.MarketGrader.com. Price data from FactSet.

The figure presents the annualized returns, standard deviations, return/risk ratios and correlations for three panels defined by specific time periods. Panel A covers the entire 7 years and 5 month period under analysis from January

1, 2008, to May 31, 2015. Panels B and C take the period covered in Panel A and break it up into two mutually exclusive time periods – one more recent and one in the past. Panel B covers the most recent three-year period (36 months) from June 1, 2012, to May 31, 2015[4]. While Panel C covers the prior 4 years and 5 months (53 months) from January 1, 2008, to May 31, 2012.

The statistics in the three panels speak for themselves. In the early part of the period (Panel C), the four indexes perform similarly posting heavy losses. They also exhibited similar volatility and return/risk ratios. In addition, during this time period, the composites for the Shanghai and Shenzhen exchanges are highly correlated (0.93) and both of them are significantly correlated with the two emerging market indexes. The Shanghai composite has a correlation of 0.62 with MSCI EM and 0.63 with MSCI EM Asia. The Shenzhen Composite has a correlation of the 0.55 with the two MSCI EM indexes. The MSCI EM indexes exhibit nearly a perfect correlation of 0.98.

However, notice what occurred during the last 36 months (Panel B) - the price for both the mainland China exchanges have climbed exponentially while those for the broader MSCI EM indexes exhibited only marginal increases. The Shenzhen Composite experienced a cumulative price gain of 196.9% that translates into an annualized price return of 43.7% over the three-year period ending May 2015. The Shanghai Composite experienced a cumulative price gain of 99.8% that translates into an annualized price return of 25.9%. In comparison, the MSCI EM index, with a cumulative price gain of 10.8%, is only up 3.5% on an annualized basis. MSCI EM Asia fared a little better with a cumulative price gain of 29.6%, or an annualized gain of 10.7%.

Also, notice that in Panel B, the correlations of both the mainland China exchanges has declined dramatically with the MSCI EM indexes. The Shanghai Composite's correlation to MSCI EM is down to 0.14, and with a correlation of 0.25, it is only slightly higher with MSCI EM Asia. The correlations of the Shenzhen Composite with MSCI EM and MSCI EM Asia of 0.04 and 0.11, respectively, seem to indicate that the Shenzhen might be uncorrelated (or, only slightly positively correlated), with the two MSCI EM benchmarks.

Lastly, notice that the correlation between the Shanghai and Shenzhen exchanges has fallen from 0.93 (in Panel C) to 0.71 (in Panel B). Structurally, the relationship between the two return series in the earlier part of the period under analysis is very different from that in the latter part of the period.

The comparison of the returns, standard deviations and correlations across Panels B and C suggests that in the last couple of years two distinct events might be occurring. First, as previously suggested, the performance of the companies trading on the mainland China exchanges might be decoupling from that of the companies trading on overseas exchanges. Second, the performance of the Shenzhen exchange might be decoupling from the Shanghai exchange. If true, both of these events have major implications for investors seeking to gain exposure to Chinese equity markets. For instance, if it is the case that different risk factors are driving the performance of the companies traded in mainland China than those that make up emerging markets, then (to say the least) it would not be optimal to incorporate Chinese equity as part of the emerging markets asset class within an asset allocation framework. Additionally, if the performance of the Shenzhen is decoupling from the Shanghai based on other factors (besides the difference in the size of the companies that are trading on the two exchanges and the sectors those companies belong to), then it might be beneficial for investors to be given access to exchange-specific measurement tools and financial products benchmarked to these measurement tools[5].

The basis of creation of optimal measurement tools is discussed in more detail in the next two sections of this paper. The first will present the historical performance of the three subsets of the Chinese equity universe broken down by size

4. The most recent time frame was defined as 36 months so as to keep the analysis statistically significant. A smaller time frame may have incorporated too much noise.

5. Within a given country, size and sector are the two factors that differentiate companies.

and by MarketGrader ratings categories. The final section will briefly cover the design of indexes to satisfy specific investor objectives.

Performance by Size and MarketGrader Rating Category

The creation of optimal measurement and benchmarking tools requires the understanding of the drivers of performance. To that end, Figure 4 presents the historical performance of the three subsets of companies (Shanghai, Shenzhen and Overseas) by size and a growth at a reasonable price (GARP) quality category based on MarketGrader ratings[6]. The MarketGrader ratings take into account company quality, financial health, growth prospects and value as well as other company fundamentals. Overall the performance of the resulting portfolios is consistent with expectations based on the cumulative performance of the exchange composites presented in Figure 2.

As discussed earlier, for the universe of companies trading on the Shanghai exchange, small stocks outperformed large stocks. Beginning on January 1, 2008, through May 31, 2015, the portfolio comprised of all small stocks, outperformed the portfolio comprised of all large stocks by 18.9% on an annualized basis (this is the difference between the annualized return of the small-cap portfolio of 27.3% and the annualized return of the large-cap portfolio of 8.4%,). Essentially, this figure can be called the annualized "small-cap premium" that was demanded by investors for stocks trading on the Shanghai exchange.

When controlling for size, higher quality stocks based on MarketGrader rating categories significantly outperformed lower quality stocks. Within large-cap stocks, the "quality spread" was 9.2% on a annualized basis (this is the difference between the annualized return of the large-cap high quality portfolio of 13.6% and the annualized return of the large-cap low quality portfolio of 4.4%). For mid-cap stocks, the annualized quality spread of 9.9% (22.1% less 12.2%) was about the same as for large-cap stocks. However, the annualized spread declines to 4.1% (30.4% less 26.2%) for small cap stocks[7]. Finally, controlling for size, the annualized returns to stock selection was 520 basis points for large-cap stocks (13.6% less 8.4%); 620 basis points for mid-cap stocks (22.1% less 15.9%); and, 310 basis points for small-cap stocks. Notice, that if the portfolios are not controlled for size, the three quality portfolios are unable to differentiate significantly in terms of performance.

Figure 4. Annualized Total Returns by Size and MarketGrader Rating Category in USD From December 31, 2007 through May 31, 2015

	By MarketGrader™ Rating Category			
Exchange	**High**	**Average**	**Low**	**All Categories**
Shanghai				
Large	13.6%	7.9%	4.4%	8.4%
Mid	22.1	19.8	12.2	15.9
Small	30.4	29.9	26.3	27.3
All Sizes	**17.4**	**17.0**	**16.9**	**17.2**
Shenzhen				
Large	17.8%	11.6%	5.1%	11.4%
Mid	33.9	23.6	16.1	20.3
Small	53.1	46.9	35.7	38.8
All Sizes	**24.3**	**25.0**	**22.1**	**23.3**
Overseas				
Large	6.5%	5.4%	-2.5%	4.2%
Mid	7.9	4.1	0.0	4.6
Small	5.2	16.9	7.9	9.6
All Sizes	**7.1**	**8.5**	**3.4**	**6.5**

Source: www.MarketGrader.com. Contact MarketGrader Research for more on the MarketGrader™ ratings.

6. Only companies with MarketGrader ratings are included in this analysis. As of the March 2015 rebalance, this covered 885 companies on the Shanghai exchange, 1,482 companies on the Shenzhen exchange, and 694 companies on the exchanges overseas, for a total of 3,061 companies, or about 95% of the universe presented in Figure 1.

7. One explanation for this could be that the small high quality portfolio is comprised of too few stocks (see Figures A1, A2 and A3 for average company counts in these portfolios). Even though the small capitalization category is made up of one-third of the universe, because of the methodology used to calculate MarketGrader ratings, a smaller number of smaller capitalization stocks get high ratings. This article uses a fixed cut-off for defining the quality categories using the ratings and therefore the fewer stocks. One of the ways to resolve this would be to define the cut-off for the quality categories by size so that about a equal number of stocks fit into each quality portfolio.

Notes:

1. For average component counts of these portfolios, see Figures A1, A2 and A3 in the Appendix. For cumulative performance of these portfolios, see Figure A4 in the Appendix.
2. Portfolios are equally weighted at rebalance.
3. These portfolios were first reconstituted and rebalanced on December 31, 2007. After which there are reconstituted and rebalanced on the 3rd Friday of March and September every year.
4. The company market capitalizations and MarketGrader™ ratings on the reconstitution dates is used to reconstitute the nine portfolios defined by size and MarketGrader™ Rating category.
5. For size, the largest one-third of the companies are defined as "Large," the next third are defined as "Mid" and the smallest one-third of companies are defined as "Small." Consequently, as an outcome of this construct, each of the size categories is made up of an equal number of stocks.
6. The MarketGrader™ ratings are used to define the MarketGrader Rating category. Each company first receives a rating between 0 and 100. Companies with ratings greater than 55 are defined as "High" and those with ratings between 40 and 55 are defined as "Average." Companies with ratings below 40 are defined as "Low."

The results for the stock universe trading on the Shenzhen exchange are similar, but only more magnified. The annualized small-cap premium is now a significant 27.4% (38.8% less 11.4%). The annualized quality spread within large-cap stocks is 12.7% (17.8% less 5.1%). For mid-cap, the spread increases to 17.8% (33.9% less 16.1%). And for small-cap it increased even further to 17.4% (53.1% less 35.7%). For the Shenzhen exchange universe, there is also a role for stock selection based on quality as defined by MarketGrader ratings. Historically, for large-cap stocks, 640 basis points of the annualized returns (17.8% less 11.4%) can be attributed to selecting companies based on quality. For mid-cap stocks 1,360 basis points of the annualized returns (33.9% less 20.3%) can be attributed to the quality factor. For small-cap stocks, 1,430 of the annualized return (53.1% less 38.8%) can be attributed to stock selection. Finally, similar to the Shanghai exchange universe, if the portfolios are not controlled for size, the three quality portfolios are unable to differentiate significantly in terms of performance.

For the overseas exchanges universe even though the results are ordered by size, they are not ordered by quality for all size categories. The portfolios are ordered by quality within the large-cap and mid-cap categories. But within small-cap, the average quality stocks outperform the high quality stocks. There may be a number of explanations for this observation: Firstly, the small sample size of the small-cap high quality portfolio might be introducing too much noise (see footnote 5 for more on this). Second, this analysis only controls for the size factor. It might be the case that the small-cap high quality portfolio is concentrated in one sector (financials, for instance) and that sector was not in favor during this period. Thirdly, from Figure 1 we know that, on the average, the Chinese companies trading overseas are much larger than those trading on the mainland exchanges. If it is the case that the majority of the companies are so large and behave like large-cap stocks then breaking them into categories based on size might not be so insightful in explaining performance.

Comparing the results across the two mainland exchanges leads to the following conclusions:
(a) Historically, since 2008, the annualized small-cap premium is significant in both the exchanges, though much larger in the Shenzhen exchange by 8.5% (27.4% versus 18.9%).

(b) Historically, since 2008, the company quality spread is also significant in both the mainland China exchanges, though much larger in the Shenzhen exchange. This means that there is a role for stock selection that focuses on quality stocks defined using company fundamentals, in both the exchanges. To isolate and leverage the quality spread, the stock selection needs to control for size.

(c) Historically, since 2008, the Shenzhen exchange outperformed the Shanghai exchange within each size category. The annualized outperformance of 11.5% (38.8% versus 27.3%) was most pronounced for small-cap stocks.

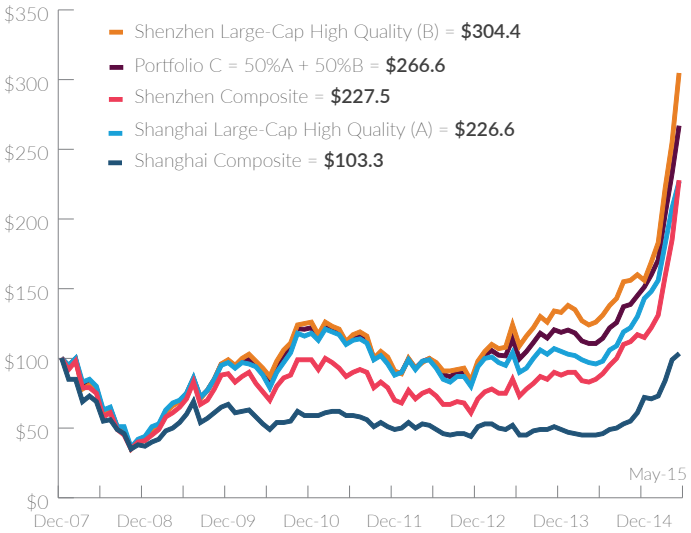
Implications for Index Design

Figure 5 presents the cumulative price performance of 100 in USD for the Shanghai Large-Cap High Quality Portfolio and the Shenzhen Large-Cap High Quality portfolio presented in Figure 4 and compares it to the Shanghai and Shenzhen Composites. The figure also presents the performance of a balanced portfolio (Portfolio C) made up of 50%

of the Shanghai Large-Cap High Quality Portfolio and 50% of the Large-Cap Shenzhen Portfolio. Portfolio C is rebalanced to the 50/50 allocations annually.

As we know, during this period, small stocks outperformed large stocks and they were the major contributor to the performance of the Shenzhen Composite. However, the Shanghai Large-Cap High Quality portfolio, a portfolio made up of high quality large-cap stocks trading on the Shanghai exchange (the exchange that significantly underperformed the performance of the Shenzhen), was able to generate cumulative gains that were nearly identical to that of the broad Shenzhen Composite (126.6% versus 127.5%) – a remarkable achievement.

Figure 5. Cumulative Price Performance of 100 in USD From December 31, 2007 through May 31, 2015



Source: www.MarketGrader.com.

See Figure 4 for the methodology of Portfolio's A and B. Portfolio C is a balanced portfolio between A and B, rebalanced annually. Though Figure 4 presents total returns, this Figure uses price returns to make them comparable to the Shanghai and Shenzhen Composites.

Even though only the performance of the two large-cap high quality portfolios is presented here, it may be possible to combine the three size high quality portfolios (large-, mid- and small-cap) for a specific exchange to construct a portfolio-of-portfolios that provides beta exposure to that exchange for an investor. These three size portfolios could also be tactically over/under weighted in the portfolio-of-portfolios in an attempt to incorporate investor beliefs and generate alpha relative to the broad market (in this case the exchange in question).

The tactical over/under weighting described above can also be implemented across exchanges. For instance, the two exchange-specific high quality large-cap portfolios can be combined as a portfolio-of-portfolios to tactically over/under weight their exposure, within high quality large-cap companies, to the two mainland exchanges. Portfolio C defined earlier and presented in Figure 5 is such a construct.

Portfolio C is a balanced portfolio between the Shanghai Large-Cap High Quality Portfolio and the Shenzhen Large-Cap High Quality portfolio meaning that it gives equal weight to the performance of the two exchanges. A version of Portfolio C using different weights would allow investors to weight their beliefs differently (for the generation of tactical alpha). As one would expect, Portfolio C performs in the middle of the two high quality portfolios while still outperforming the two mainland exchange composites by a significant amount.

The six high quality portfolios across the three size categories for the two exchanges can be used within, and across, the exchanges in a whole host of "smart" index applications to satisfy specific investor objectives. Such a rules-based portfolio design approach is an attractive, low-cost alternative to active management and represents a significant opportunity for investors looking to gain exposure to Chinese equities.

Acknowledgements

Elias Guerrero provided invaluable analytical support.

Appendix

Figure A1. China Shanghai Exchange Equity Universe: Average Counts and Percentages by Size and MarketGrader™ Rating

	MarketGrader™ Rating Category			
Size Category	High	Average	Low	Row Totals
Large	89	89	95	273
%	10.9%	10.8%	11.6%	33.3%
Mid	40	80	154	274
%	4.9%	9.7%	18.7%	33.3%
Small	17	50	207	274
%	2.1%	6.1%	25.2%	33.4%
Column Totals	146	219	456	811
%	17.8%	26.7%	55.5%	100.0%

Source: www.MarketGrader.com. Contact MarketGrader Research for more on the MarketGrader™ ratings and the historical counts of the portfolios.

Notes:

1. For performance of these portfolios, see Figure 4.
2. Portfolios are equally weighted at rebalance.
3. These portfolios were first reconstituted and rebalanced on December 31, 2007. After which there are reconstituted and rebalanced on the 3rd Friday of March and September every year.
4. The company market capitalizations and MarketGrader™ ratings on the reconstitution dates is used to reconstitute the nine portfolios defined by size and MarketGrader™ Rating category.
5. For size, the largest one-third of the companies is defined as "Large," the next third is defined as "Mid" and the smallest one-third of companies is defined as "Small." Consequently, as an outcome of the construct, each of the size categories is made up of an equal number of stocks.
6. The MarketGrader™ ratings are used to define the MarketGrader Rating category. Each company first receives a rating between 0 and 100. Companies with ratings greater than 55 are defined as "High" and those with ratings between 40 and 55 are defined as "Average." Companies with ratings below 40 are defined as "Low."

Figure A2. China Shenzhen Exchange Equity Universe: Average Counts and Percentages by Size and MarketGrader™ Rating

	MarketGrader™ Rating Category			
Size Category	High	Average	Low	Row Totals
Large	127	120	130	377
%	11.2%	10.6%	11.5%	33.3%
Mid	50	120	207	377
%	4.4%	10.6%	18.3%	33.3%
Small	17	92	268	377
%	1.6%	8.1%	23.7%	33.4%
Column Totals	194	332	605	1,131
%	17.2%	29.3%	53.5%	100.0%

Source: www.MarketGrader.com. Contact MarketGrader Research for more on the MarketGrader™ ratings and the historical counts of the portfolios.

Notes:

1. For performance of these portfolios, see Figure 4.
2. Portfolios are equally weighted at rebalance.
3. These portfolios were first reconstituted and rebalanced on December 31, 2007. After which there are reconstituted and rebalanced on the 3rd Friday of March and September every year.
4. The company market capitalizations and MarketGrader™ ratings on the reconstitution dates is used to reconstitute the nine portfolios defined by size and MarketGrader™ Rating category.
5. For size, the largest one-third of the companies is defined as "Large," the next third is defined as "Mid" and the smallest one-third of companies is defined as "Small." Consequently, as an outcome of the construct, each of the size categories is made up of an equal number of stocks.
6. The MarketGrader™ ratings are used to define the MarketGrader Rating category. Each company first receives a rating between 0 and 100. Companies with ratings greater than 55 are defined as "High" and those with ratings between 40 and 55 are defined as "Average." Companies with ratings below 40 are defined as "Low."

Figure A3. China Overseas Equity Universe: Average Counts and Percentages by Size and MarketGrader™ Rating

	MarketGrader™ Rating Category			
Size Category	High	Average	Low	Row Totals
Large	83	46	39	168
%	16.5%	9.2%	7.6%	33.3%
Mid	62	51	55	168
%	12.2%	10.1%	11.0%	33.3%
Small	44	40	85	169
%	8.6%	8.0%	16.8%	33.4%
Column Totals	189	137	179	505
%	37.3%	27.3%	35.4%	100.0%

Source: www.MarketGrader.com. Contact MarketGrader Research for more on the MarketGrader™ ratings and the historical counts of the portfolios.

Notes:

1. For performance of these portfolios, see Figure 4.
2. Portfolios are equally weighted at rebalance.
3. These portfolios were first reconstituted and rebalanced on December 31, 2007. After which there are reconstituted and rebalanced on the 3rd Friday of March and September every year.
4. The company market capitalizations and MarketGrader™ ratings on the reconstitution dates is used to reconstitute the nine portfolios defined by size and MarketGrader™ Rating category.
5. For size, the largest one-third of the companies is defined as "Large," the next third is defined as "Mid" and the smallest one-third of companies is defined as "Small." Consequently, as an outcome of the construct, each of the size categories is made up of an equal number of stocks.
6. The MarketGrader™ ratings are used to define the MarketGrader Rating category. Each company first receives a rating between 0 and 100. Companies with ratings greater than 55 are defined as "High" and those with ratings between 40 and 55 are defined as "Average." Companies with ratings below 40 are defined as "Low."

Figure A4. Cumulative Total Returns by Size and MarketGrader Rating Category in USD From December 31, 2007 through May 31, 2015 (Rounded to the nearest percent)

	By MarketGrader™ Rating Category			
Exchange	High	Average	Low	All Categories
Shanghai				
Large	158%	75%	38%	82%
Mid	340	281	136	198
Small	618	595	464	500
All Sizes	228	221	218	225
Shenzhen				
Large	237%	125%	45%	122%
Mid	769	382	203	295
Small	2,251	1,634	862	1,035
All Sizes	403	423	340	374
Overseas				
Large	59%	47%	-17%	35%
Mid	75	35	0	39
Small	46	219	75	98
All Sizes	67	84	28	59

Source: www.MarketGrader.com. Contact MarketGrader Research for more on the MarketGrader™ ratings.

Notes:

1. For average component counts of these portfolios, see Figures A1, A2 and A3 in the Appendix. For annualized performance of these portfolios, see Figure 4 in the article.
2. Portfolios are equally weighted at rebalance.
3. These portfolios were first reconstituted and rebalanced on December 31, 2007. After which there are reconstituted and rebalanced on the 3rd Friday of March and September every year.
4. The company market capitalizations and MarketGrader™ ratings on the reconstitution dates is used to reconstitute the nine portfolios defined by size and MarketGrader™ Rating category.
5. For size, the largest one-third of the companies are defined as "Large," the next third are defined as "Mid" and the smallest one-third of companies are defined as "Small." Consequently, as an outcome of this construct, each of the size categories is made up of an equal number of stocks.
6. The MarketGrader™ ratings are used to define the MarketGrader Rating category. Each company first receives a rating between 0 and 100. Companies with ratings greater than 55 are defined as "High" and those with ratings between 40 and 55 are defined as "Average." Companies with ratings below 40 are defined as "Low."

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