

**EQUITY**  
**RESEARCH:**  
**GLOBAL**



**Quantitative Research**

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**Stock-Market Country Selection**

- **The top quintile of markets rose 1.8% in July, beating the MSCI A/C World by 1%. However, the top-quintile still under-performed the bottom-quintile by 1.5%**
- **The disappointingly strong-performance of the bottom-quintile was due largely to Brazil, up 11% in June, being in this bottom grouping**
- **With short-term price-momentum still being the most significant component of the Brazil factor-model, Brazil now climbs to 4th on the ranking and into the top-quintile. This now comprises: Austria, Korea, Belgium, Brazil and Spain**
- **As analysts become more positive about Swiss companies, the earnings-revisions ratio has improved and Switzerland also moves out of the bottom quintile. Mexico (poor yield support) and the Netherlands (deteriorating analyst forecasts) join Hong Kong, the US and Japan at the bottom of the ranking**

**Global**

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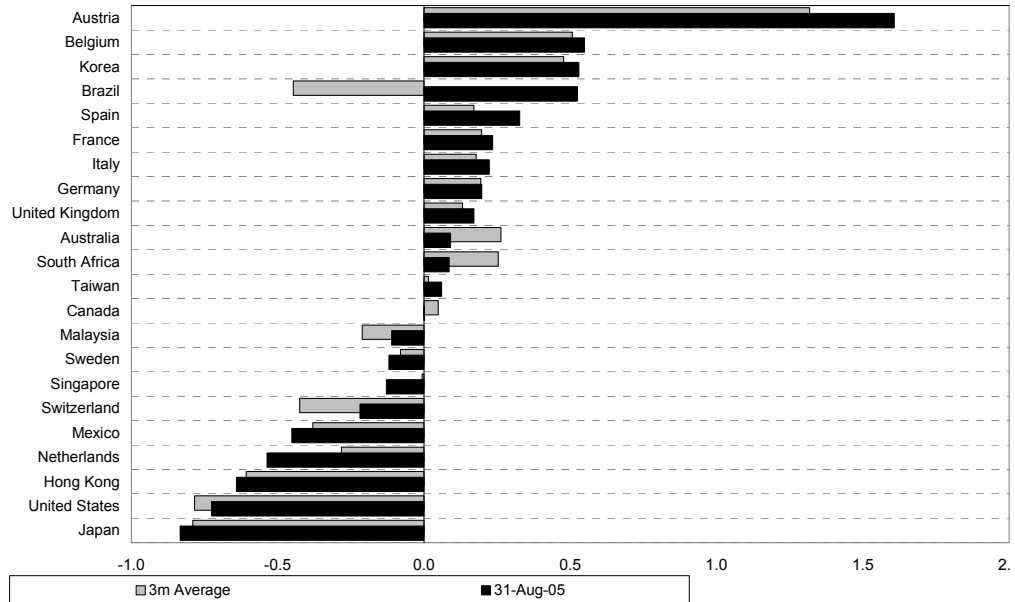
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# Country Ranking

In June 2004, we introduced a market-ranking model that ranked 22 global markets for which exchange-traded funds were available. The model uses style and macroeconomic indicators as inputs. Data for 1990-98 were used to develop the model, which was tested over the out-of-sample, or holdout, period of 1999-2004. Figure 1 shows the current ranking of markets by attractiveness scores calculated by the model.

**Figure 1. Markets Ranked by Attractiveness Score**



Source: Smith Barney, Factset, MSCI, Datastream.

**Figure 2. Back-Test Performance (50bps Each-Way Transaction Costs) to 31 Aug 2005**

After 50bps Costs	In-Sample Jan90-Dec98	Out-of-Sample Jan99-Sept 05
<b>Return</b>		
Top Quintile	26.2	18.9
Bottom Quintile	-5.7	5.3
<b>Top-Bottom</b>	<b>31.2</b>	<b>12.9</b>
<b>Information Ratio</b>		
Top Quintile	1.3	0.9
Bottom Quintile	-0.3	0.3
<b>Top-Bottom</b>	<b>1.6</b>	<b>1.3</b>

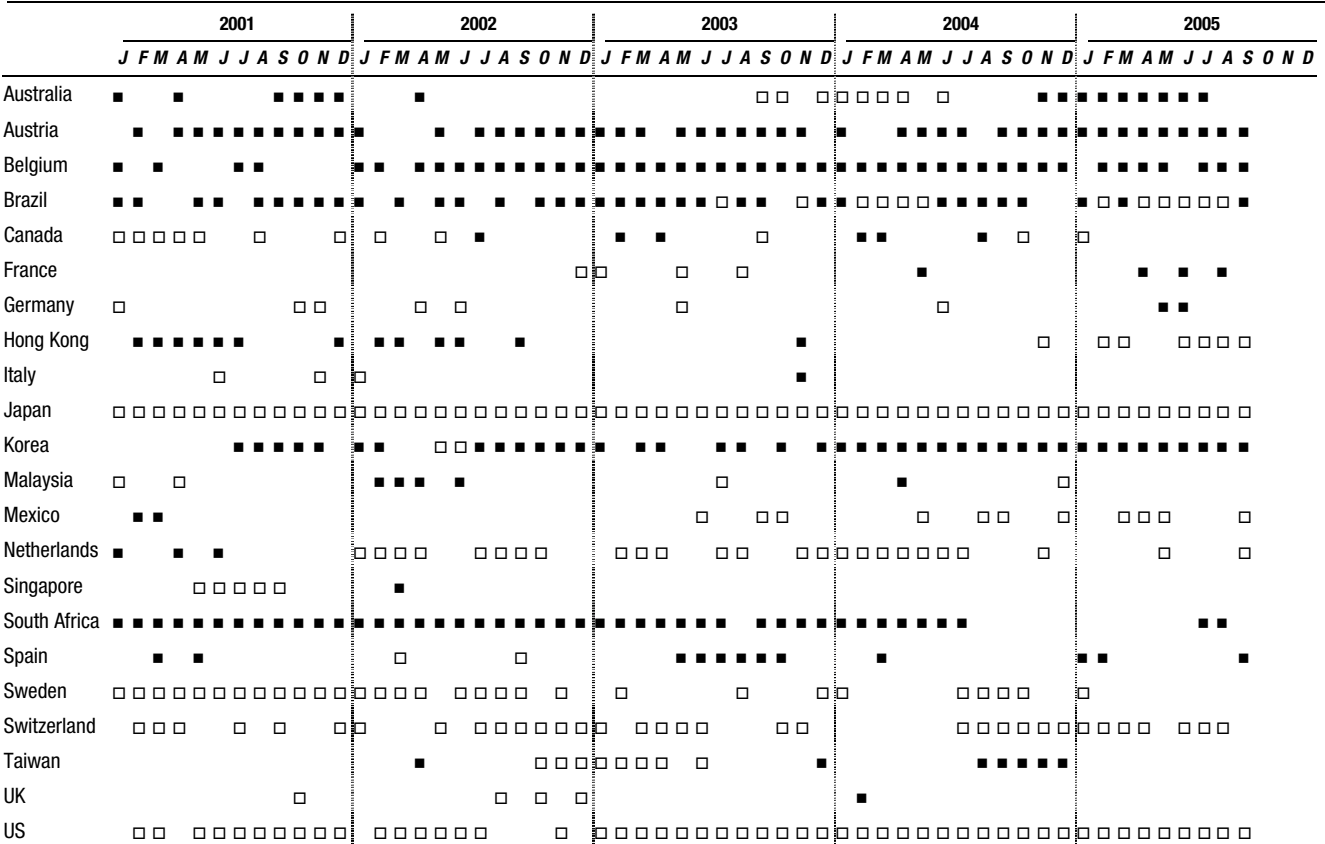
Source: Smith Barney, Factset, MSCI, Datastream.

**Figure 3. Market Ranking — MSCI Index Universe**

Market	Country Score			For	Against
	31 Aug	1m Ago	3m Avg		
Austria	1.61	1.13	1.32	LT Price Momentum & Earnings revision	
Korea	0.53	0.56	0.48	Valuation ratios (Cash Flow) & yield gap	Earnings Stability
Belgium	0.44	0.56	0.47	Dividend yield & yield gap	
Brazil	0.42	-0.86	-0.48	ST Price Momentum & RoE	Real Effective FX
Spain	0.33	0.21	0.17	Yield gap	
France	0.25	0.26	0.20	Yield gap & Earnings revision	
Italy	0.22	0.19	0.18	Dividend yield, IR trend	Earnings revision & PE's
Germany	0.20	0.19	0.19	IR trends	
United Kingdom	0.17	0.15	0.13	Dividend yield	Price to book
Australia	0.09	0.22	0.26	Yield, Stable earnings	Analyst coverage
South Africa	0.09	0.34	0.25	RoE, Yield Gap & Earnings revision	Price to book
Taiwan	0.05	0.04	0.01	Yield Gap	Trend in Interest Rates & Real Effective FX
Canada	0.00	-0.01	0.05	MT Price Momentum	Earnings revisions
Malaysia	-0.11	-0.25	-0.21	Earnings yield gap	Earnings revisions
Sweden	-0.12	-0.02	-0.08		Price to book
Singapore	-0.13	0.12	-0.01	Price to Book	Trend in Interest Rates
Switzerland	-0.19	-0.43	-0.42	Earnings revisions & Real Effective FX	Valuation ratios
Mexico	-0.45	-0.33	-0.38	ST Price Momentum	Price to book, DY
Netherlands	-0.53	-0.37	-0.28		Earnings revisions
Hong Kong	-0.64	-0.64	-0.61	Dividend Yield	Earnings yield, price to cash flow
United States	-0.73	-0.80	-0.78		Valuation ratios
Japan	-0.83	-0.73	-0.79		Valuation ratios

Source: Smith Barney, Factset, MSCI, Datastream.

**Figure 4. Top and Bottom Quintiles — Global Markets (■ = Top Quintile; □ = Bottom Quintile)**



Source: Smith Barney, Factset, MSCI, Datastream.

# Long-Short Performance Analysis

**Figure 5. Back-Test Performance (50bps Each-Way Transaction Costs) to 31 Aug 05**

	In-sample Dec89-Dec98	Out-of-Sample Jan99-Sept 05
<b>Annualized Return</b>	31.2	12.9
Standard Deviation	19.5	10.1
<b>Information Ratio</b>	<b>1.6</b>	<b>1.3</b>
Average Return in Up Market	2.7	1.4
Average Return in Down Market	2.0	0.7
Percent of months +ve Return	68	63
Best Monthly Return	21.5	7.9
Worst Monthly Return	-24.0	-6.2
Max Drawdown	-36.0	-6.7
<b>Date</b>	<b>Oct-90</b>	<b>Jun-02</b>
Level of High Water	12.7	219.7
<b>Date of High Water</b>	<b>Feb-90</b>	<b>Apr-02</b>
<b>Date High Water Breached</b>	Jan-92	Sep-02
Months to recovery	<b>23</b>	<b>5</b>
Return/Max Drawdown	0.87	1.94

Source: Smith Barney, Factset, MSCI, Datastream.

**Figure 6. Monthly Performance History\* (Top-Bottom Spread, 50bps Each-Way Transaction Costs)**

	Jan	Feb	Mar	Apr	June	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Return
<b>1999</b>	-0.9	5.1	6.7	3.4	0.7	4.1	-5.7	2.8	-1.1	0.1	3.8	3.0	<b>23.7</b>
<b>2000</b>	4.2	1.5	-1.0	-1.5	-0.5	2.1	-2.0	3.4	0.0	-6.2	2.0	7.9	<b>9.4</b>
<b>2001</b>	-1.4	6.9	1.3	1.4	-1.9	-0.2	0.3	3.8	-2.8	1.6	3.1	2.9	<b>15.7</b>
<b>2002</b>	5.4	0.3	-1.2	5.0	-3.0	-3.7	0.2	5.2	3.2	3.3	-0.7	6.3	<b>21.5</b>
<b>2003</b>	-2.9	1.7	1.2	7.0	-1.6	-2.3	-0.7	-1.6	-0.4	2.7	1.8	-1.9	<b>2.7</b>
<b>2004</b>	2.3	1.3	-2.4	0.1	1.3	-0.5	4.3	4.4	1.9	0.1	2.1	0.8	<b>16.6</b>
<b>2005</b>	2.7	0.1	-1.4	-1.9	-2.2	0.9	2.0	-1.5					<b>-1.4</b>

\*Past performance is no guarantee of future returns.

Source: Smith Barney, Factset, MSCI, Datastream.

**Figure 7. Analysis of All Major Draw-down Periods — Drawdown Events over 300bps (Top-Bottom Spread)**

Ranks	Start Date	Trough Date	End Date	Length of Drawdown (Months)	Size (%)	High-water level	Length of Recovery (Months)	Total Period (Months)
1	200204	200206	200209	2	-6.7	171.9	3	5
2	200304	200309	200407	5	-6.4	203.5	10	15
3	200008	200010	200012	2	-6.3	131.2	2	4
4	199906	199907	199912	1	-5.7	120.4	5	6
5	200502	200505	NA	3	-5.4	234.4	NA	6
6	200002	200005	200008	3	-3.0	130.7	3	6

Source: Smith Barney, Factset, MSCI, Datastream.

**Figure 8. Equally Weighted Performance of Top & Bottom Quintiles**



Source: Smith Barney, Factset, MSCI, Datastream.

**Figure 9. Quintile Wealth Curves (Top–Universe; Bottom–Universe and Top–Bottom)**



Source: Smith Barney, Factset, MSCI, Datastream.

## Long Only Performance

The following tables show the detailed performance of an equally weighted basket of top-ranked markets in isolation.

**Figure 10. Back-test Performance (50bps Each-Way Transaction Costs) to 31 Aug 05**

	In-sample Dec 89-Dec 98	Out-of-Sample Jan 99-Sept 05
<b>Annualized Return</b>	26.2	18.9
Standard Deviation	20.5	20.0
<b>Information Ratio</b>	1.3	0.9
Average Return in Up Market	4.4	4.7
Average Return in Down Market	0.1	-2.0
Percent of months +ve Return	71	64
Best Monthly Return	17.2	14.1
Worst Monthly Return	-21.3	-14.2
Max Drawdown	-26.4	-33.9
<b>Date</b>	<b>Oct-90</b>	<b>Sep-01</b>
Level of High Water	12.7	166.2
<b>Date of High Water</b>	<b>Feb-90</b>	<b>Mar-00</b>
<b>Date High Water Breached</b>	<b>May-91</b>	<b>Sep-03</b>
Months to recovery	<b>15</b>	<b>42</b>
Return / Max Drawdown	0.99	0.56

Source: Smith Barney, Factset, MSCI, Datastream.

**Figure 11. Monthly Performance History\* (Top-Quintile Only, 50bps Each-Way Transaction Costs)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Return
<b>1999</b>	0.2	3.1	11.6	12.2	-4.6	13.4	-5.6	2.5	-2.7	4.9	7.6	14.1	<b>69.7</b>
<b>2000</b>	-2.1	3.5	1.9	-6.5	-0.6	7.2	-4.6	2.8	-7.9	-7.8	-4.6	8.5	<b>-11.4</b>
<b>2001</b>	3.4	-3.1	-8.8	6.0	-3.0	-3.2	-1.5	0.2	-14.2	5.0	10.2	3.3	<b>-7.8</b>
<b>2002</b>	-0.2	1.4	3.9	2.6	-0.1	-7.7	-11.1	5.2	-8.9	9.4	5.5	3.5	<b>1.1</b>
<b>2003</b>	-2.9	-2.1	-0.2	12.9	4.9	2.1	4.1	2.3	2.7	7.6	4.7	6.1	<b>50.1</b>
<b>2004</b>	3.6	3.7	-0.7	-5.5	1.4	2.3	0.4	5.2	4.9	3.0	8.9	5.3	<b>37.1</b>
<b>2005</b>	-0.2	6.6	-5.0	-3.8	1.9	2.7	5.9	1.8					<b>9.9</b>

\*Past performance is no guarantee of future returns.

Source: Smith Barney, Factset, MSCI, Datastream.

**Figure 12. Analysis of All Major Draw-down Periods — Drawdown Events over 300bp (Top Quintile only)**

Ranks	Start Date	Trough Date	End Date	Length of Drawdown (Months)	Size (%)	High-water level	Length of Recovery (Months)	Total Period (Months)
1	200003	200109	200309	18	-33.9	175.3	24	42
2	200502	200504	200507	2	-8.6	306.7	3	5
3	200402	200404	200408	2	-6.1	225.9	4	6
4	199906	199909	199911	3	-5.8	139.8	2	5
5	199904	199905	199906	1	-4.6	129.3	1	2

Source: Smith Barney, Factset, MSCI, Datastream.



## Long – MSCI AC World Performance

The following tables show the detailed performance of the equally weighted basket of top-ranked markets relative to the MSCI A/C World Index

**Figure 13. Back-test Performance (50bps Each-Way Transaction Costs) to 31 Aug 05**

	In-sample Dec 89-Dec 98	Out-of-Sample Jan 99-Sept 05
<b>Annualized Return</b>	14.9	15.9
Standard Deviation	13.7	10.7
<b>Information Ratio</b>	<b>1.6</b>	<b>1.3</b>
Average Return in Up Market	1.3	2.1
Average Return in Down Market	1.2	0.3
Percent of months +ve Return	62	63
Best Monthly Return	12.0	8.4
Worst Monthly Return	-10.2	-5.8
Max Drawdown	-20.1	-10.9
<b>Date</b>	<b>Dec-90</b>	<b>Oct-00</b>
Level of High Water	13.2	56.2
<b>Date of High Water</b>	<b>Feb-90</b>	<b>Feb-00</b>
<b>Date High Water Breached</b>	Jun-91	Feb-01
Months to recovery	<b>16</b>	<b>12</b>
Return / Max Drawdown	0.74	1.45

Source: Smith Barney, Factset, MSCI, Datastream.

**Figure 14. Monthly Performance History\* (Top-Quintile less MSCI A/C World, 50bps Each-Way Transaction Costs)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Return
<b>1999</b>	-1.8	5.6	7.1	7.9	-1.1	8.4	-5.2	2.6	-1.6	-0.1	4.5	5.8	<b>35.7</b>
<b>2000</b>	3.3	3.1	-4.6	-2.1	2.0	3.8	-1.7	-0.3	-2.4	-5.8	1.5	6.8	<b>2.9</b>
<b>2001</b>	0.9	5.3	-2.0	-1.3	-1.9	-0.2	0.1	4.8	-5.1	2.9	4.0	2.4	<b>9.9</b>
<b>2002</b>	2.5	2.1	-0.6	5.7	-0.2	-1.6	-2.7	5.0	2.0	2.0	0.0	8.2	<b>24.3</b>
<b>2003</b>	0.0	-0.3	0.2	4.0	-0.9	0.2	1.8	-0.1	2.1	1.5	3.2	-0.2	<b>12.0</b>
<b>2004</b>	1.9	1.9	-0.1	-3.2	0.5	0.3	3.5	4.6	2.8	0.5	3.4	1.4	<b>18.9</b>
<b>2005</b>	1.9	3.1	-2.8	-1.7	0.0	1.7	2.2	1.0					<b>5.4</b>

\*Past performance is no guarantee of future returns.

Source: Smith Barney, Factset, MSCI, Datastream.

**Figure 15. Analysis of All Major Draw-down Periods — Drawdown Events over 300bps (Top Quintile less MSCI A/C World)**

Ranks	Start Date	Trough Date	End Date	Length of Drawdown (Months)	Size (%)	High-water level	Length of Recovery (Months)	Total Period (Months)
1	200002	200010	200102	8	-10.9	144.6	4	12
2	200102	200109	200111	7	-5.6	148.4	2	9
3	199906	199907	199912	1	-5.2	128.4	5	6
4	200204	200207	200208	3	-4.5	168.9	1	4
5	200502	200505	NA	3	-4.5	266.9	NA	6
6	200402	200404	200407	2	-3.3	221.8	3	5

Source: Smith Barney, Factset, MSCI, Datastream.

## Factors and Weights

In the ranking model, factors and weights vary across markets. Factor definitions are covered in detail later in this document. Using cluster analysis as a guide, 17 factors are classified into 11 groups. Five factors are chosen for each market, with no more than one factor from each of these groups.

The weights assigned to these factors are determined by the size and strength of the relationship between a market's rank on a given factor and the subsequent performance rank of the country across the region. *(In technical jargon, the factor weights depend on the t-stat of the correlation between the cross-sectional normalized factor values and the cross-sectional normalized one-month forward returns.)*

Unless data availability dictates use of a shorter time period, the correlations are measured over the period since the beginning of 1990.

### Factor values

Figure 16 shows the current values of the indicators used in the model.

**Figure 16. Factor Values**

	Australia	Austria	Belgium	Brazil	Canada	France	Germany	Hong Kong	Italy	Japan	Korea	Malaysia	Mexico	Netherlands	Singapore	South Africa	Spain	Sweden	Switzerland	Taiwan	United Kingdom	United States
Change in # of Analyst Estimates (%)	-15	9	15	-2	2	10	-11	-4	7	0	-3	1	1	-6	1	24	-4	-5	-2	-1	23	1
Dividend Yield	3.9	3.2	3.4	3.6	1.6	2.3	2.3	3.0	3.5	1.1	2.1	2.7	1.9	3.4	2.7	2.8	3.0	2.6	1.8	4.2	3.3	1.8
EY less IR for P/E FY0	0.2	1.9	5.2	-11.9	1.6	3.8	3.1	1.5	3.8	3.7	8.0	3.7	-3.9	5.5	3.9	-0.7	4.2	2.7	3.9	5.2	2.7	0.9
EY - IR for FY1 (IBES)	1.5	3.3	5.4	-3.7	3.0	4.4	4.3	1.7	3.3	4.3	3.9	3.8	-3.7	4.3	5.2	0.8	4.6	3.3	3.9	4.9	3.7	1.6
Return on Equity	14.2	14.5	17.2	19.3	13.7	13.6	9.0	8.9	12.2	8.6	16.5	12.7	19.3	19.8	11.4	18.5	15.2	15.0	15.8	11.9	17.5	15.7
Interest Rates Trend (%)	-2	-9	-10	69	-10	-11	-11	81	-8	7	29	9	37	-10	24	-5	-11	-19	-4	17	-7	-8
260d Price Momentum (%)	20	40	19	17	21	20	18	14	19	8	23	3	28	19	15	24	21	23	20	7	14	8
65d Price Momentum (%)	7	14	7	13	11	8	10	11	5	11	16	7	14	4	7	15	7	10	8	0	6	3
20d Price Momentum (%)	1	2	-2	5	-1	-2	-1	-4	-2	7	-2	-4	-1	-3	-4	-1	-2	-3	-3	-8	-2	-2
Price to Sales	2.5	1.5	1.2	1.5	2.2	1.1	0.7	6.2	1.5	0.8	0.9	2.5	1.9	0.9	3.6	1.7	2.3	1.6	1.6	1.7	1.6	2.3
Earnings Stability	18.4	42.5	17.1	59.2	36.8	18.7	41.9	15.8	28.0	48.8	51.0	51.8	93.0	25.2	27.7	24.7	12.3	57.3	23.3	46.2	19.0	31.8
PE FY0 (IBES)	18.9	19.7	11.9	12.8	18.5	14.6	16.1	17.7	14.1	20.0	8.0	14.9	17.0	11.5	16.9	14.2	13.8	17.3	17.3	14.3	14.6	19.5
PE FY1 (IBES)	15.2	15.7	11.6	6.3	14.6	13.3	13.4	17.2	15.0	17.7	12.0	14.7	16.3	13.4	13.8	11.8	13.1	15.9	17.2	14.9	12.7	17.1
Price to Book	2.5	1.1	2.2	2.0	2.6	2.4	1.8	1.7	2.3	1.8	1.6	1.9	2.7	2.4	1.7	2.7	2.7	2.7	3.0	1.7	2.5	2.9
Price to Cash Flow	14.0	7.8	6.6	5.0	9.6	9.0	6.8	24.7	7.0	8.4	4.0	9.1	10.2	7.6	12.7	11.2	8.2	11.2	15.7	7.5	9.4	12.5
Earning Revision Ratio (%)	11	36	5	11	4	29	17	3	5	10	16	-4	16	-54	8	9	25	27	26	3	15	21
Chg in Real Effective FX Rate (%)	3	2	3	23	7	2	2	-3	2	-5	11	0	6	2	-2	-2	3	-5	-4	5	-3	-3

Source: Smith Barney, IBES, Factset, MSCI, Datastream.

## Normalized factor values

Figure 17 shows the factors in Figure 11 normalized across the markets. Thus, Brazil's ROE of 19% is 1.4 standard deviations above the regional average and translates into a factor score of 1.4.

**Figure 17. Factor Values (Normalized)**

	Australia	Austria	Belgium	Brazil	Canada	France	Germany	Hong Kong	Italy	Japan	Korea	Malaysia	Mexico	Netherlands	Singapore	South Africa	Spain	Sweden	Switzerland	Taiwan	United Kingdom	United States
Change in # of Analyst Estimates (%)	-1.7	0.7	1.4	-0.4	0.1	0.9	-1.3	-0.6	0.6	-0.2	-0.5	-0.1	-0.1	-0.8	-0.1	2.3	-0.7	-0.7	-0.4	-0.3	2.2	-0.1
Dividend Yield	1.4	0.6	0.8	1.1	-1.4	-0.5	-0.6	0.3	0.9	-2.0	-0.8	-0.1	-1.0	0.8	-0.1	0.1	0.3	-0.2	-1.2	1.9	0.7	-1.2
EY less IR for P/E FY0	-0.5	-0.1	0.7	-2.5	-0.1	0.4	0.2	-0.2	0.4	0.4	1.5	0.4	-1.5	0.8	0.4	-0.7	0.5	0.1	0.4	0.7	0.1	-0.3
EY - IR for FY1 (IBES)	-0.6	0.1	1.0	-2.5	0.1	0.6	0.6	-0.5	0.2	0.6	0.4	0.4	-2.5	0.6	0.9	-0.9	0.7	0.1	0.4	0.8	0.3	-0.5
Return on Equity	-0.1	0.0	0.8	1.4	-0.3	-0.3	-1.6	-1.7	-0.7	-1.8	0.6	-0.6	1.4	1.6	-0.9	1.2	0.2	0.1	0.4	-0.8	0.9	0.3
Interest Rates Trend (%)	0.3	0.6	0.6	-2.3	0.6	0.7	0.7	-2.5	0.6	0.0	-0.8	-0.1	-1.1	0.6	-0.6	0.4	0.7	1.0	0.4	-0.4	0.5	0.5
260d Price Momentum (%)	0.2	2.5	0.1	-0.2	0.3	0.2	0.0	-0.5	0.1	-1.2	0.6	-1.9	1.2	0.1	-0.4	0.7	0.3	0.6	0.2	-1.5	-0.6	-1.3
65d Price Momentum (%)	-0.4	1.2	-0.4	1.1	0.4	-0.1	0.3	0.6	-0.9	0.4	1.8	-0.5	1.2	-1.2	-0.5	1.6	-0.5	0.2	-0.2	-2.0	-0.6	-1.5
20d Price Momentum (%)	0.9	1.1	-0.3	2.0	0.2	-0.3	0.0	-0.7	0.0	2.5	-0.3	-0.9	0.2	-0.4	-0.9	0.3	-0.2	-0.6	-0.4	-2.0	-0.2	-0.2
Price to Sales	-0.5	0.3	0.6	0.3	-0.3	0.7	1.0	-2.5	0.4	0.9	0.8	-0.5	0.0	0.8	-1.5	0.1	-0.3	0.3	0.3	0.2	0.2	-0.3
Earnings Stability	0.9	-0.3	1.0	-1.2	0.0	0.9	-0.3	1.0	0.4	-0.7	-0.8	-0.8	-2.5	0.6	0.4	0.6	1.2	-1.1	0.7	-0.5	0.9	0.2
EY FY0 (IBES)	-0.9	-1.0	1.0	0.7	-0.8	0.1	-0.3	-0.6	0.2	-1.0	2.5	0.0	-0.5	1.2	-0.5	0.2	0.3	-0.6	-0.6	0.2	0.1	-0.9
EY FY1 (IBES)	-0.4	-0.5	0.6	2.5	-0.3	0.1	0.0	-0.7	-0.3	-0.8	0.5	-0.3	-0.6	0.0	-0.1	0.5	0.1	-0.5	-0.7	-0.3	0.2	-0.7
Price to Book	-0.6	2.5	-0.2	0.1	-0.7	-0.5	0.7	0.8	-0.4	0.7	1.1	0.4	-0.8	-0.4	0.7	-0.8	-0.7	-0.8	-1.1	0.7	-0.5	-1.0
Price to Cash Flow	-1.0	0.3	0.8	1.9	-0.3	-0.1	0.7	-1.7	0.6	0.0	2.5	-0.2	-0.4	0.3	-0.8	-0.6	0.1	-0.6	-1.2	0.4	-0.2	-0.8
Earning Revision Ratio (%)	0.0	1.4	-0.3	0.0	-0.4	1.0	0.4	-0.5	-0.3	-0.1	0.3	-0.8	0.3	-2.5	-0.2	-0.1	0.8	0.9	0.9	-0.4	0.3	0.6
Chg in Real Effective FX Rate (%)	-0.2	-0.1	-0.1	-2.5	-0.8	0.0	0.0	0.7	0.0	1.1	-1.5	0.4	-0.6	0.0	0.6	0.7	-0.2	1.1	0.9	-0.5	0.8	0.9

Source: Smith Barney, IBES, Factset, MSCI, Datastream.

## Attractiveness Scores

Each factor's contribution to a market's outlook is measured by multiplying the factor value in Figure 17 with the factor weight in Figure 18. Adding up the contributions across factors provides the attractiveness score for each market. Figure 19 provides a detailed breakdown.

**Figure 18. Factor Weights (Percent)**

	Australia	Austria	Belgium	Brazil	Canada	France	Germany	Hong Kong	Italy	Japan	Korea	Malaysia	Mexico	Netherlands	Singapore	South Africa	Spain	Sweden	Switzerland	Taiwan	United Kingdom	United States	
Change in # of Analyst Estimates (%)	21	11			22			9															
Dividend Yield	12		20			8		20	20	23		4	29		23	31			22		21	15	
EY less IR for P/E FY0						33	35		21	10							24			16		23	
EY - IR for FY1 (IBES)			25	2				25			17	33						22			16		
Return on Equity				18	17										13	19							
Interest Rates Trend (%)							14		18			27			22						20		
260d Price Momentum (%)	29	29				14					20			31			18		18				
65d Price Momentum (%)					24													16					
20d Price Momentum (%)			<b>23</b>	<b>47</b>									<b>22</b>										
Price to Sales		19											20				18	25		21	20	20	
Earnings Stability	25				21					11	26			9									
EY FY0 (IBES)				2			19			33						11				26		18	
EY FY1 (IBES)			19					24	22		20				21			17			21		
Price to Book		15											28	13	22	21		20			23	24	
Price to Cash Flow							12	21		23	18	14					17		24				
Earning Revision Ratio (%)	13	27			16	12			20			22	2	23		19	24		20				
Chg in Real Effective FX Rate (%)			12	30		34	19							24					16	17			

Source: Smith Barney, IBES, Factset, MSCI, Datastream.

**Figure 19. Contribution to Final Scores**

	Australia	Austria	Belgium	Brazil	Canada	France	Germany	Hong Kong	Italy	Japan	Korea	Malaysia	Mexico	Netherlands	Singapore	South Africa	Spain	Sweden	Switzerland	Taiwan	United Kingdom	United States	
Change in # of Analyst Estimates (%)	-0.36	0.07			0.01			-0.05															
Dividend Yield	0.16		0.16			-0.04		0.07	0.18	-0.47		0.00	-0.29		-0.01	0.03			-0.26		0.14	-0.18	
EY less IR for P/E FY0						0.12	0.08		0.08	0.04							0.12			0.12		-0.08	
EY - IR for FY1 (IBES)			0.26	-0.06				-0.12			0.07	0.12						0.03			0.05		
Return on Equity				0.26	-0.04										-0.12	0.22							
Interest Rates Trend (%)							0.09		0.10			-0.02			-0.14						-0.08		
260d Price Momentum (%)	0.07	0.73				0.03					0.13			0.03			0.05		0.04				
65d Price Momentum (%)					0.11													0.03					
20d Price Momentum (%)			-0.07	0.95									0.04										
Price to Sales		0.06											0.00				-0.06	0.06		0.04	0.04	-0.07	
Earnings Stability	0.22				-0.01					-0.07	-0.20			0.05									
EY FY0 (IBES)				0.02			-0.06			-0.34						0.02				0.05		-0.17	
EY FY1 (IBES)			0.11					-0.18	-0.07		0.09				-0.01			-0.09			0.05		
Price to Book		0.37											-0.21	-0.05	0.16	-0.17		-0.16			-0.12	-0.24	
Price to Cash Flow							0.08	-0.36	0.01	0.44	-0.02						0.02		-0.29				
Earning Revision Ratio (%)	0.00	0.38			-0.07	0.12			-0.07			-0.18	0.01	-0.57		-0.02	0.19		0.18				
Chg in Real Effective FX Rate (%)			-0.01	-0.75		0.01	0.00							0.01					0.14	-0.08			
Score	0.09	1.61	0.44	0.42	0.00	0.25	0.20	-0.64	0.22	-0.83	0.53	-0.11	-0.45	-0.53	-0.13	0.09	0.33	-0.12	-0.19	0.05	0.17	-0.73	
<b>Rank</b>	<b>10</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>13</b>	<b>6</b>	<b>8</b>	<b>20</b>	<b>7</b>	<b>22</b>	<b>2</b>	<b>14</b>	<b>18</b>	<b>19</b>	<b>16</b>	<b>11</b>	<b>5</b>	<b>15</b>	<b>17</b>	<b>12</b>	<b>9</b>	<b>21</b>	

Source: Smith Barney, IBES, Factset, MSCI, Datastream.

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# Factor Definitions

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## Factors

### **Earnings Yield based on FY0 IBES Earnings**

One over the aggregate Weighted Medium IBES FY0 P/E for the Market calculated using Factset.

### **Earnings Yield based on FY1 IBES Earnings**

One over the aggregate Weighted Medium IBES FY1 P/E for the Market calculated using Factset.

### **Cash Earnings Yield**

One over the Weighted Medium Price to Cash Earnings for the market calculated using the Worldscope trailing 12m Cash Earnings (earnings excluding extraordinary items, plus depreciation).

### **FY0 IBES Earnings Yield less Interest Rates**

Earnings Yield based on FY0 IBES Earnings less current domestic interest rate.

### **FY1 IBES Earnings Yield less Interest Rates**

Earnings Yield based on FY1 estimates less current domestic interest rate.

### **Dividend Yield**

MSCI calculated dividend yield based on trailing 12m Gross Dividends per share.

### **Price to Sales Ratio**

Weighted medium market P/S calculated using Worldscope trailing 12m sales per share.

### **RoE**

An implied market RoE based on aggregate FY0 EPS and the most recent MSCI calculated market aggregate book values per share.

### **Interest Rate Trend**

Ratio of the current (actual) domestic interest rate to the 12m (linear) trend interest rate forecast.

### **Long-term (260d) Price Momentum**

Slope of the 260d linear trend in country (MSCI) index prices.

### **Medium-term (65d) Price Momentum**

Slope of the 65d linear trend in country (MSCI) index prices.

### **Short-term (20d) Price Momentum**

Slope of the 20d linear trend in country (MSCI) index prices.

**Earnings Stability**

The market-cap weighted aggregate of stock-level IBES 5-year Earnings Stability measure. This is the mean absolute percentage difference between actual reported EPS and a 5-year historical EPS growth trend line, expressed as a percentage of trend line EPS.

**Earnings Revision Ratio**

A market-cap weighted aggregate of the ERRs – where the ERR is the number of upgrades less downgrades for FY1 and FY2 as a percentage of total number of forecasts.

**Change in Number of Analyst Estimates**

The ratio of the 3m average to the 12m average of the market-cap weighted aggregate number of IBES Analyst Estimates per company.

**Change in Real Effective Exchange Rate**

12m percentage change in the Real Effective Exchange Rates, which are in turn based on the Citibank Competitive Trade-weighted Exchange Rate Indices (CTERI)<sup>1</sup>. For countries not included in the CTERI indices, we are using changes in Real Effective Exchange rates as calculated by the IMF. As this data is generally late, a 6-month lag is introduced for back-testing purposes.

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**Raw data sources**

P&L-related valuation data is the Factset-aggregated Weighted Medium value using the MSCI index weights and IBES (profit) and Worldscope (revenue) data. Balance Sheet-related data (i.e., P/BV/ROE) is taken from the MSCI index level valuations.

Real effective Exchange Rates are taken primarily from the Citigroup Economists (EMA). Where this isn't available, we use the IMF data series sourced via DataStream.

Local market Interest Rates are sourced from DataStream.

Price momentum measures are calculated using Factset based on the MSCI country index data index data.

Aggregate IBES earnings revision ratios and aggregate Earnings stability are calculated using the IBES historical data on Factset.

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<sup>1</sup> For a full description of this measures of exchange rate values, please see the report, "Introducing CTERI: A New Guide to Currency Valuation" by Greg Berman and Adam LaVier – January 2001

**Notes**



**Notes**

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Citigroup Investment Research Quantitative World Radar Screen Model Coverage (5323)	29%	40%	30%
<i>% of companies in each rating category that are investment banking clients</i>	36%	29%	25%
Citigroup Investment Research Quantitative Decision Tree Model Coverage (356)	48%	0%	52%
<i>% of companies in each rating category that are investment banking clients</i>	39%	0%	39%
Citigroup Investment Research Quantitative European Value & Momentum Screen (559)	30%	40%	30%
<i>% of companies in each rating category that are investment banking clients</i>	48%	39%	29%
Citigroup Investment Research Asia Quantitative Radar Screen Model Coverage (1067)	20%	60%	20%
<i>% of companies in each rating category that are investment banking clients</i>	15%	20%	16%
Citigroup Investment Research Quant Emerging Markets Radar Screen Model Coverage (857)	20%	60%	20%
<i>% of companies in each rating category that are investment banking clients</i>	22%	23%	19%
Citigroup Investment Research Australia Quantitative Top 100 Model Coverage (94)	30%	40%	30%
<i>% of companies in each rating category that are investment banking clients</i>	46%	42%	21%
Citigroup Investment Research Australia Quantitative Bottom 200 Model Coverage (148)	30%	39%	30%
<i>% of companies in each rating category that are investment banking clients</i>	2%	7%	4%
Citigroup Investment Research Australia Quantitative Scoring Stocks Model Coverage (10)	50%	0%	50%
<i>% of companies in each rating category that are investment banking clients</i>	20%	0%	20%

### Guide to Quantitative Research Investment Ratings:

Citigroup Investment Research Quantitative Research World Radar Screen recommendations are based on a globally consistent framework to measure relative value and momentum for a large number of stocks across global developed and emerging markets. Relative value and momentum rankings are equally weighted to produce a global attractiveness score for each stock. The scores are then ranked and put into deciles. A stock with a decile rating of 1 denotes an attractiveness score in the top 10% of the universe (most attractive). A stock with a decile rating of 10 denotes an attractiveness score in the bottom 10% of the universe (least attractive). Citigroup Investment Research Quantitative Decision Tree model recommendations are based on a predetermined set of factors to rate the relative attractiveness of stocks. These factors are detailed in the text of the report. Each month, the Decision Tree model forecasts whether stocks are attractive or unattractive relative to other stocks in the same sector (based on the Russell 1000 sector classifications).

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Citigroup Investment Research Quantitative Australian Stock Selection Screen rankings are based on a consistent framework to measure relative value and earnings momentum for a large number of stocks across the Australian market. Relative value and earnings momentum rankings are weighted to produce a rank within a relevant universe for each stock. The rankings are then put into deciles. A stock with a decile rating of 1 denotes an attractiveness score in the top 10% of the universe (most attractive). A stock with a decile rating of 10 denotes an attractiveness score in the bottom 10% of the universe (least attractive).

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Recommendations are based on the relative attractiveness of a stock, they can not be directly equated to buy, hold and sell categories. Accordingly, your decision to buy or sell a security should be based on your personal investment objectives and only after evaluating the stock's expected relative performance.

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