

Global Momentum Strategies

A portfolio perspective.

John M. Griffin, Xiuqing Ji, and J. Spencer Martin

The simple investing strategy of buying stocks that have won in the past and selling short stocks that have lost appears significantly profitable in the U.S. both statistically and economically. Since the Jegadeesh and Titman [1993] study of U.S. stock returns, substantial out-of-sample evidence of price momentum has mounted. Price momentum is economically high in many European markets, low but positive in many emerging markets, and also present in some Asian markets (see Rouwenhorst [1998, 1999], and Chui, Titman, and Wei [2000]).

Vandell and Parrino [1986] demonstrate that a model with earnings momentum as the major component substantially outperforms the U.S. market. Chan, Jegadeesh, and Lakonishok [1996] show that a similar momentum strategy based not on returns but on past earnings is a separate and distinct source of profitability in the U.S. Scott, Stumpp, and Xu [2003] document earnings momentum in all major markets they examine, but Hong, Lee, and Swaminathan [2003] find positive and significant earnings momentum profits in only

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For earnings momentum over a six-month period, each country in local currency. Countries with statisti

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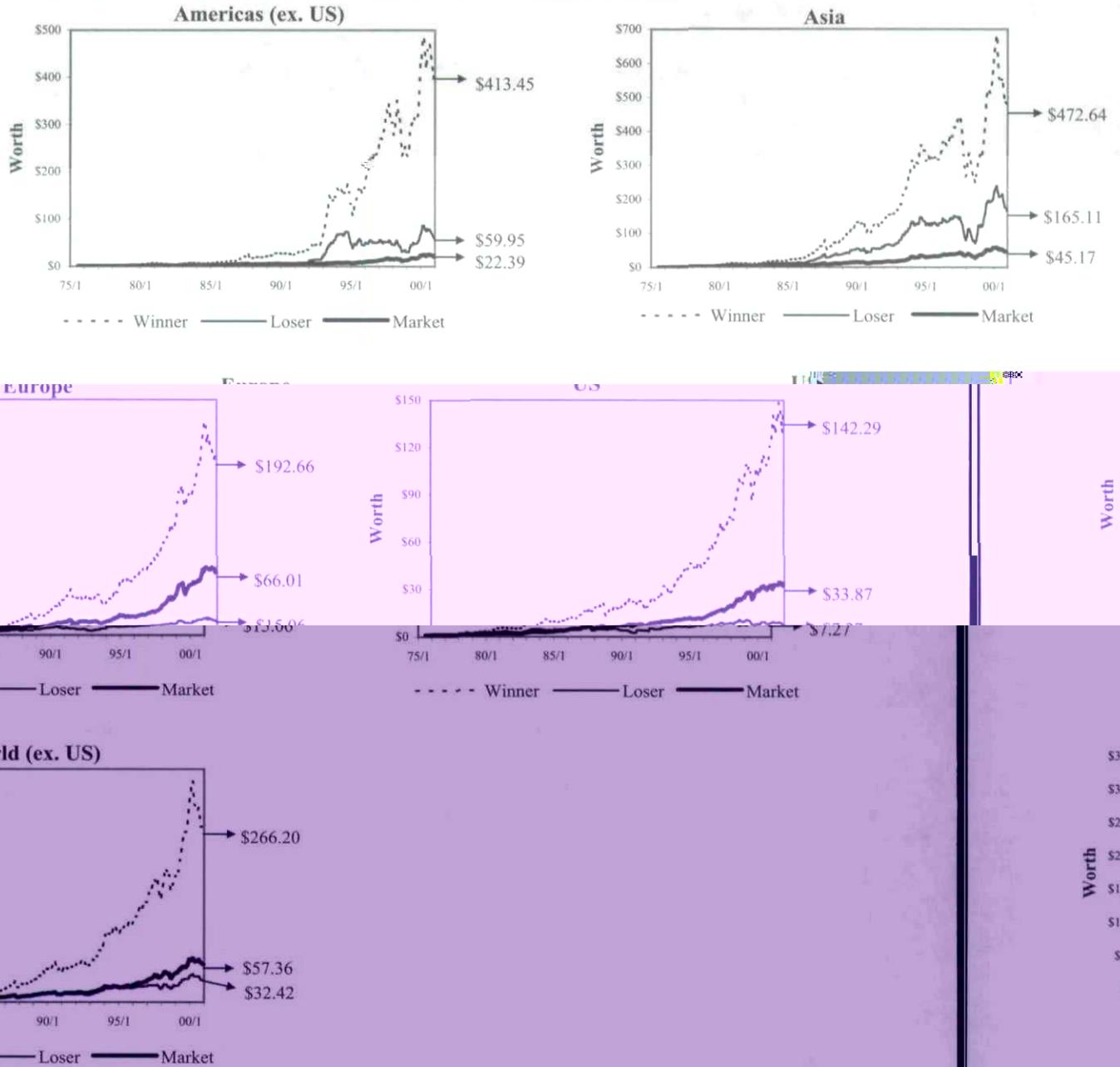
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EXHIBIT 1

One Dollar Investment in Price Winner, Loser, and Market 1975-2000



momentum profits are 4.89%, 6.13%, and 7.90% per year in low, medium, and high earnings momentum groups.

return groups, earnings momentum strategies are profitable in all but one American market, and one European market. Earnings momentum strategies are positive and significant in low, high past return momentum groups in both

Asia and Europe. Interestingly, though, earnings momentum is least profitable in the medium-price groups in both Asia and Europe. Across all markets, earnings momentum profits are 4.59%, 3.10%, and 7.50% per year in low, medium, and high return groups.

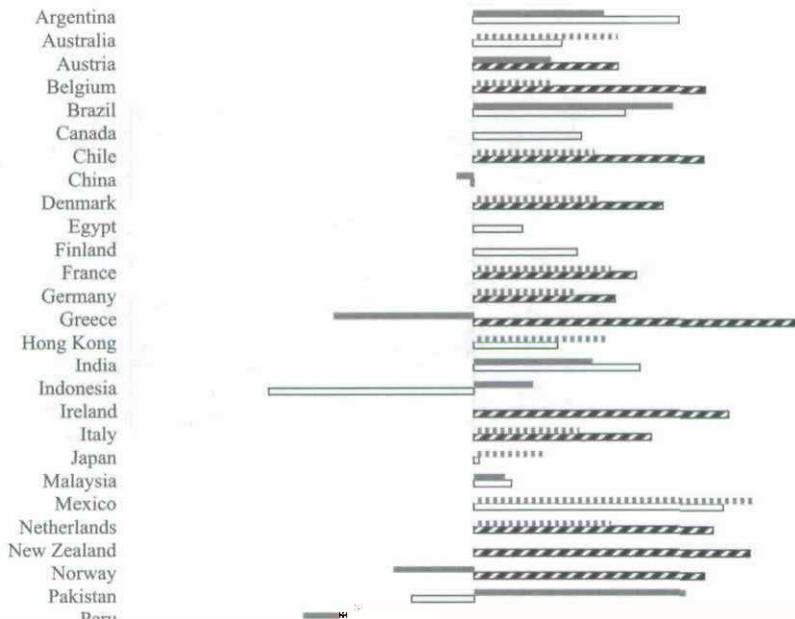
These findings show that after conditioning on the same sets of stocks and the same time period, earnings momentum strategies are much more profitable than

kets, price momentum strategies are on average 7.90% per year more profitable than market momentum strategies.

In past studies, earnings momentum strategies are on average 4.59% more profitable than market momentum strategies in low, medium, and high return groups.

EXHIBIT 2

Momentum Profits by Country and Region



driven by price momentum. Traditionally, price and earnings momentum are separate and profitable phenomena.

Quantitative investment houses are likely to use

of both categories. The last column in Exhibit 3 shows that these strategies are substantially more profitable than the univariate results presented in Exhibit 2.

EXHIBIT 3

Interaction of Price and Earnings Momentum

Region/Country	Price Momentum Sort Power of $(P_{hi} - P_{lo})$ within Earnings Momentum Groups				Earnings Momentum Sort Power of $(E_{hi} - E_{lo})$ within Price Momentum Groups				Combined Strategy $P_{hi}, E_{hi} - P_{lo}, E_{lo}$
	$P_{hi} - P_{lo}$				$E_{hi} - E_{lo}$				
	E_{lo}	E_{md}	E_{hi}	Avg	P_{lo}	P_{md}	P_{hi}	Avg	
Germany	20.07	5.43	14.25	13.58	5.00	14.00	6.00	11.67	13.58

EXHIBIT 4

Correlation Between Price and Earnings Momentum



*Hatched bars: Statistically significant at the 5% level.

the highest positive correlation, while China, Denmark, France, Greece, and Portugal have negative correlations. In the U.S. and the world excluding the U.S., correlations are 0.338 and 0.398, respectively.

Hence, the results in Exhibits 3 and 4 demonstrate that, while the price and earnings momentum profits are related, there is clearly useful information in each.

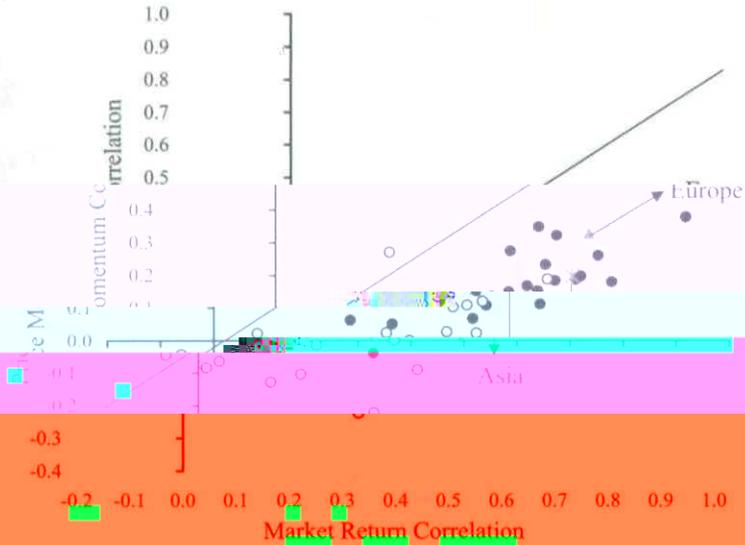
INTERNATIONAL DIVERSIFICATION AND TIMING OF MOMENTUM STRATEGIES

To analyze the relation between country strategies across markets, we first calculate low correlations and then these correlations in up and down markets.

EXHIBIT 5

Momentum Correlation versus Market Return Correlation

Panel A: Price Momentum Correlation versus Market Return Correlation



ment than pure passive diversification strategies, momentum may be costly to implement as a strategy component.

We calculate the correlation between U.S. momentum strategies and momentum strategies abroad and also the correlation between market indexes. In Exhibit 5, the correlation of each country's market index with the U.S. index appears on the x axis, and the correlation of each country's price momentum strategy with the U.S. price momentum appears on the y axis. Developed markets are the solid circles, and emerging markets the hollow circles.

The benchmark line of 45 degrees in Panel

A shows that in only two emerging markets is the correlation between U.S. and international price momentum positively aligned with the 45-degree relation. Emerging market strategies generally exhibit lower momentum correlations than those in developed markets. These lower correlations could be attributable to the

Developed countries
 Emerging markets
 Asia
 Europe
 Momentum Correlation
 Market Return Correlation

...ing momentum strategies using large cap stocks are somewhat higher correlations. Our study is consistent with the findings of Stevens [1999] who found that an international index of large cap U.S. momentum strategies (Griffin and Martin [2003])

EXHIBIT 6

Figure 1: [Illegible text]



Figure 2: [Illegible text]

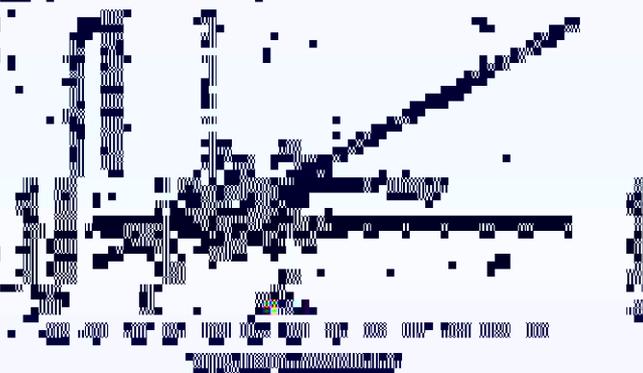


Figure 3: [Illegible text]

Figure 4: [Illegible text]

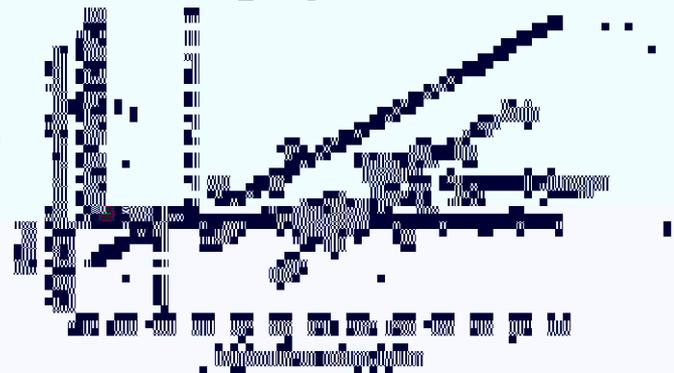


Figure 5: [Illegible text]

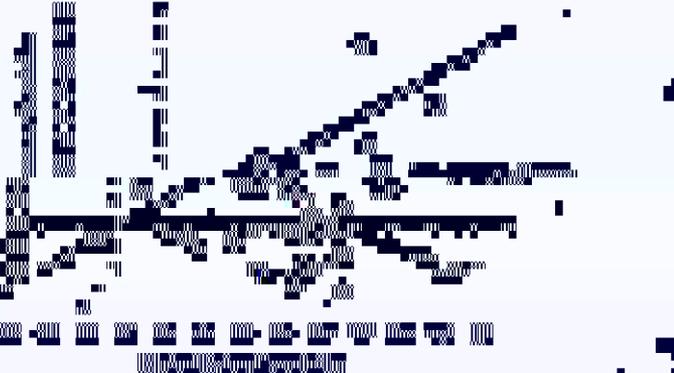


Figure 6: [Illegible text]

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and other countries) are quite low, and price momentum correlations are similarly low. The average correlation between Asian price momentum profits and those in the U.S. is 0.167, compared to a correlation between the markets and the U.S. of 0.311. The average correlation between European and U.S. price momentum profits is 0.373, compared to 0.292 between the markets and the U.S.

Panel B shows results for the U.S. market. In down markets, market correlations are quite high, but price momentum correlations are similar to those in Panel A. The correlation between the Asian (European) momentum strategies

in 24 of 32 countries in up markets and in 21 of 32 in down markets. Because the earnings momentum strategies are constrained to the middle price group, the profits are low. Profits are nevertheless overall positive in both down and up markets, and greater in down markets than in up markets.

If momentum were related to economic distress risk, one might expect to see negative momentum profits in down markets, especially in periods of low or negative GDP growth. We examine momentum profits in 22 markets for which the Organization for Economic

EXHIBIT 7

Momentum Investing and Market States

Price Momentum



EXHIBIT 9

EXHIBIT 9.1: THE FIVE-STEP PROCESS

1. Identify the problem or opportunity

2. Analyze the situation

3. Develop a plan

4. Implement the plan

5. Evaluate the results

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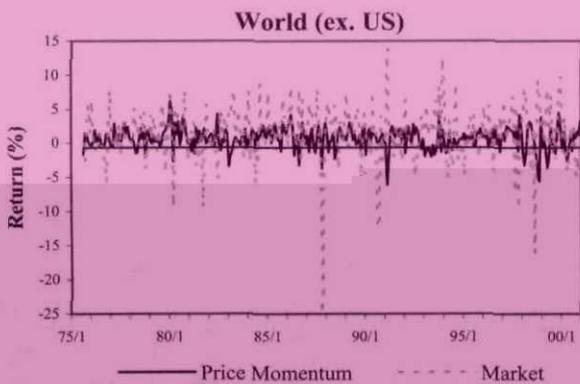
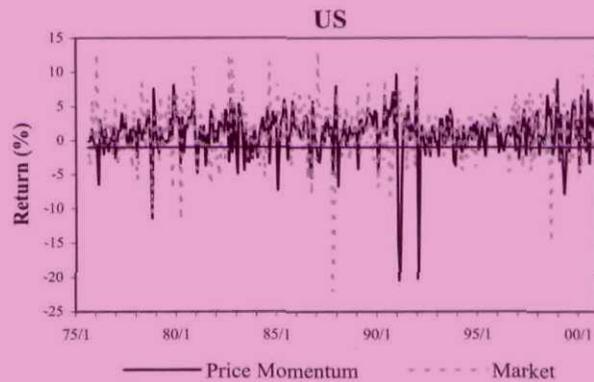
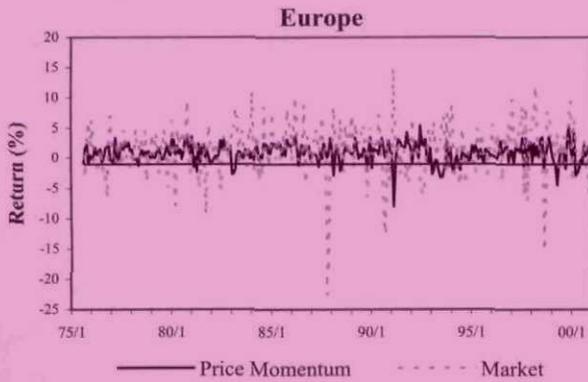
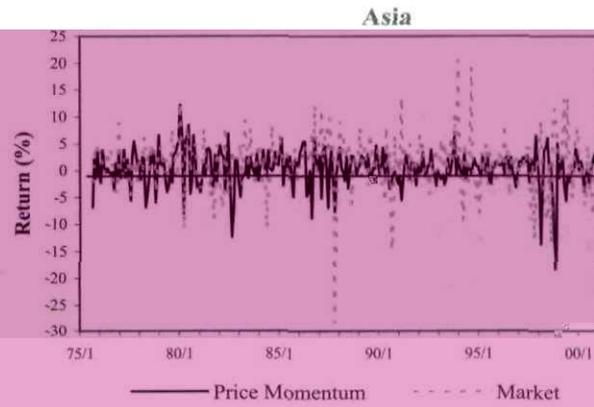
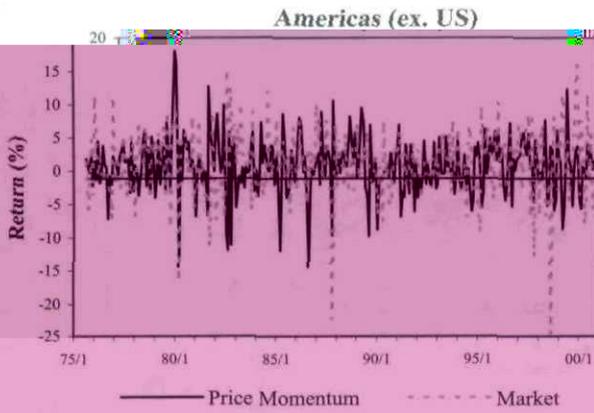
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EXHIBIT 9

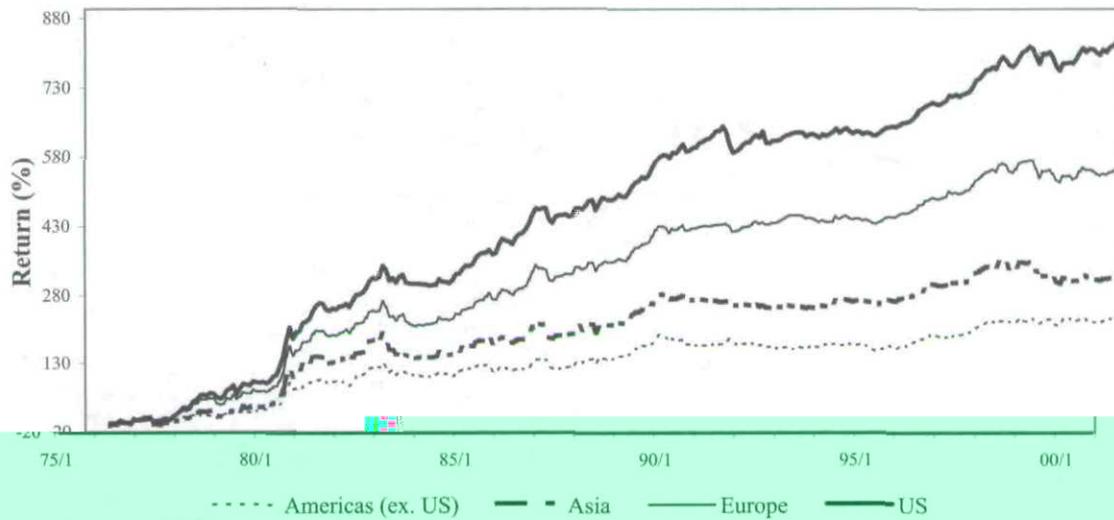
Price Momentum Profits and Market Returns



Sample period runs from the first available date for each country through December 2000, except through 1999 for the US.

EXHIBIT 11

Cumulative Price Momentum Returns



negative in January for 16 of 40 markets. Earnings momentum strategies are also negative in many markets in January.

Before they implement momentum strategies, managers may want to consider possible tax loss and portfolio rebalancing effects.⁴

Long-Run Returns

To examine momentum from a longer-term perspective, we plot the cumulative returns to price momentum strategies around the world in Exhibit 11. Three interesting patterns emerge. First, momentum strategies

CONCLUSION

We have investigated practical issues regarding both price and earnings momentum in an international setting. First, we find momentum profits are not driven just by short positions; taking long positions in stocks with high past returns would have generated long-run buy-and-hold returns to outpace market indexes. Second, both price and earnings momentum strategies yield economically high profits in a variety of markets. Third, while price and earnings momentum profits are correlated, there is incremental information in both; strategies using both past returns and (a)

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