ARROWSTREET CAPITAL, L.P.

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What's New at Arrowstreet?

We hope this issue finds you enjoying the start of spring and continued investment success. In this issue of the Journal, we highlight two recent research pieces. The first article examines the impact of tilts with respect to active global and international equity investing, while the second article describes the concept of "beta arbitrage" and the potential alpha opportunities it creates.

Q1 2006 Review:

Investment Performance: Our investment strategies produced very strong results during 1Q2006, as all outperformed their benchmarks. In particular, good security selection across European Financial stocks and more broadly the U.S. market contributed favorably.

Business Growth: During the 1st quarter, we added $1.1 billion in new assets. Half came from new clients while the other half came from several existing clients. Total assets passed the $13 billion mark during the quarter.

Other: We are pleased to announce that our 2006 Client Conference will be held on October 17th and 18th in Cambridge, MA. An agenda will be sent out soon.

In addition, we would like to congratulate John Campbell on his 2005 Graham and Dodd Award for his work with Luis Viceira "The Term Structure of Risk-Return Trade-Off". This award, established by the Financial Analysts Journal in 1960, recognizes excellence in financial writing and honors Benjamin Graham and David L. Dodd for their enduring contributions to the field of financial analysis.

Finally, we are pleased to announce that Michael Stanton has joined our marketing team. Michael joined Arrowstreet at the end of April and has a wealth of sales and marketing experience, most recently at Babson Capital Management. Please see page 3 for a more detailed profile.

We are interested in your views and encourage your feedback. Please e-mail your thoughts to us at:

info@arrowstreetcapital.com

Global Tilts: Opportunities and Source of Risk on Global Portfolios

By Peter Rathjens, Ph.D. Arrowstreet Capital, L.P.

All active portfolios are characterized by one or more of a series of active tilts or themes. Conspicuous examples included tilts towards or away from value stocks or small capitalization stocks. International portfolios, because of their breadth, may reflect multiple tilts at any point in time, including not only growth/value tilts and small cap/large cap tilts, but also tilts involving sector/industry decisions and country/regional decisions.

Many of these tilts may be thought of as having a neutral, or zero, long-term average expected return. In this instance, the active manager can outperform his benchmark, and demonstrate skill, only by tactically varying his tilts to exploit cyclical variation in the return of the tilts. In some cases, however, there may be long-term average expected returns associated with a tilt. For example, many people argue that a long-term tilt towards value will result in positive excess returns over time, although with meaningful cyclical variation around that positive expected return. In many other cases, it is not clear whether the long-run average expected return is zero or not, and if not, what is its sign.

This paper will describe several tilts, and will address both the long-term average expected return attached to those tilts as well as how one might forecast the cyclical variation in the returns of those tilts. Finally, we show how these forecasts can evolve over time.

Beta Arbitrage as an Alpha Opportunity

By Tuomo Vuolteenaho, Ph.D. Arrowstreet Capital, L.P.

This paper describes an alpha opportunity created by the mispricing of high-beta stocks and low-beta stocks relative to the overall stock and bond markets. Market-neutral strategies that seek to exploit such pricing errors can be referred to as "beta arbitrage."

A strategic beta-arbitrage strategy, first suggested by Black (1993), builds into the portfolio a systematic tilt towards low-beta stocks and away from high-beta stocks. The intuition behind this arbitrage opportunity is that high beta stocks persistently underperform what their estimated beta's would suggest as calculated by Sharpe-Lintner CAPM theory. What creates the persistent beta-arbitrage opportunity or equivalently, the persistent overpricing of high-beta stocks relative to low-beta stocks that strategic beta-arbitrage seeks to exploit? Potential causes include investors' reluctance to take leverage, the asymmetric treatment of asset inflows and outflows by mutual fund investors, and other irrational investor activity.

In contrast to strategic beta arbitrage, which takes a permanent tilt towards low-beta stocks and away from high-beta stocks, tactical beta-arbitrage adjusts these positions with market conditions. Arrowstreet believes that its ability to forecast the overall market's equity premium and the returns of high-beta stocks and low-beta stocks give it the ability to exploit tactical beta arbitrage and therefore add more value than strategic beta arbitrage alone. In particular, Arrowstreet's process involves taking aggressive positions if and when the forecast equity premium and the forecast cross-sectional beta premium diverge significantly and less aggressive positions when it does not.

For complete versions of these articles, please visit:
http://www.arrowstreetcapital.com/research_whitepaper.htm

Developed Market Performance: 1st Quarter 2006

The first quarter proved to be a significant success for our Global/ International Equity Strategy. In general, active selection decisions across all dimensions of our investment process (i.e., stock, basket, country, and sector) were additive during the period.

For example, our decision to overweight **Spanish Industrials** proved particularly effective. **Acciona Group**, a company that engages in a wide variety of building projects, increased fourth quarter profits by 42%. In addition to benefiting from the decision to expand its wind-energy units, Acciona has been the beneficiary of increased state spending on roads and railways, providing the company with steady streams of returns, higher profitability, and faster growth than typical construction projects.

We were also successful with our decision to maintain overweight exposures towards **Norway**, **Spain,** and **France**. In Norway, we added value in both the Energy and Financials baskets. Stocks in the Norwegian Energy basket gained for the quarter as the price of oil once again flirted with $70 per barrel. Shares of **Norsk Hydro** led the rally, appreciating over 30%. In the Norwegian Financials basket, **DnB Nor** reported an increase in profit as the country's fastest economic growth in five years fueled higher revenues.

Developed Market Outlook

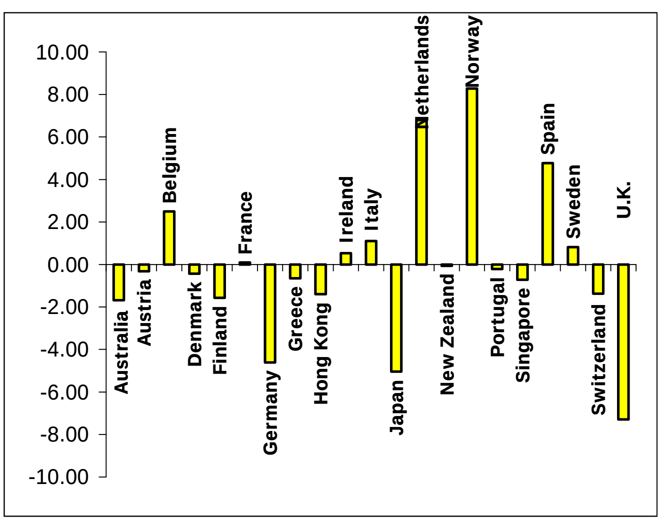
Developed stock markets started the 1st quarter of 2006 where they left off in 2005, generating gains in both local and US dollar terms. The dollar did not move significantly versus other major currency units during the quarter as new Federal Reserve Chairman Ben Bernanke started his term by being transparent regarding interest rate adjustments in the near-term. Bernanke's first rate increase was the 15th in a row, the longest stretch of increases in more than 25 years. The Fed is maintaining their assessment that high energy prices and high labor costs pose an inflation risk and will use measured rate increases to combat them. The European Central Bank is also concerned about inflation as it topped the ECB's ceiling (2% annually) for the 14th straight month. In Japan, the economic situation is still too tenuous for the Bank of Japan to raise rates. However, the Bank has signaled that it will end its deflation-fighting policy and it set the stage for rate increases later in the year.

Across the globe, corporate earnings have been robust for the most part. In the United States, business profits rose the most in 13 years, gaining 14.4 percent for the year ended in December. Earnings optimism has also found its way to Europe where industrial bellwethers such as Alstom and Bouygues announced that they are winning significant contracts which are likely to improve their respective bottom lines. Many Japanese corporate giants are also experiencing higher earnings. Toyota Motor, Nissan Motor, and Honda Motor, Japan's three largest carmakers, experienced record profits on higher sales. Toyota gave its Japanese workers their first raise in five years.

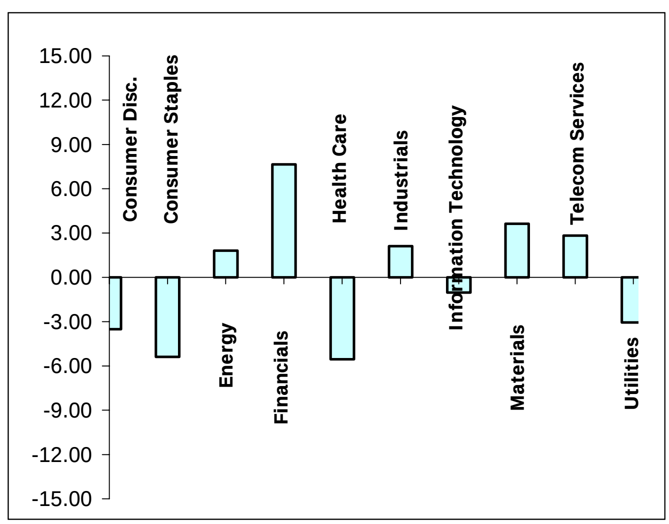
Specific opportunities that we believe will offer attractive return potential include the following:

- **Rio Tinto (UK Materials):** We have recently begun reducing our historically long-term underweight position in the UK market and are attracted to this particular stock for a variety of reasons. The UK market as a whole looks particularly cheap on both a forward looking and historical earnings basis, the UK Materials basket is displaying positive short-term and mid-term momentum, and this particular stock scores favorably on a equity/debt issuance basis. Moreover, we believe this stock will benefit from the broader positive sentiment being displayed towards the global Materials sector.
- **Capitalia (Italian Financials):** Although the broad global Financial sector only scores average on a valuation and mid-term momentum basis, there are many bottom-up opportunities that look particularly attractive within the sector. In particular, the Italian Financials basket looks attractive on a mid-term momentum basis and is cheap relative to its long-term basket yield. Moreover, Capitalia is experiencing above average momentum within the Italian Financials basket and benefits from many high frequency/technical signals that suggest the time is right to begin purchasing this stock.

April 2006 Active Country Weights (%)



April 2006 Active Sector Weights (%)



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April 2006 Investment Outlook

Emerging Markets Equity Strategy

Emerging Market Performance: 4th Quarter 2005

The first quarter proved to be a significant success for our Emerging Markets Equity Strategy. In general, our active selection decisions across all dimensions (i.e., stock, basket, country, and sector) added value during the period.

For example, our overweight position in **Impala Platinum Holdings** (South African Materials) added value as its shares rose on its plans to spend $121 million to boost its processing capacity as the price of platinum continues to move higher. Moreover, our overweight position in **Nacional Telefonos de Venezuela** (Venezuela Telecommunication Services) added value as its shares soared on the approval of an increased dividend payment and an analyst upgrade.

Emerging Markets Outlook

Emerging equities continued their dramatic upward trend, starting the first quarter of 2006 with a +12.12% return in USD terms. By comparison, the MSCI World Index of developed countries rose +6.72% in Q1 2006. The strong gains realized by emerging equities occurred despite higher energy prices and rising interest rates among most major central banks. This stellar performance has led some investors to be concerned that the asset class may be poised for a turn of fortunes after several straight years of out-performing developed equities. [1]

During the first quarter, inflows of cash into emerging stocks had already exceeded the record inflows witnessed for the entire previous year. According to Emerging Portfolio Fund Research, emerging-market stock funds experienced inflows of approximately USD $21 billion in Q1 2006, versus $20.3 billion of net inflows in 2005. [2]

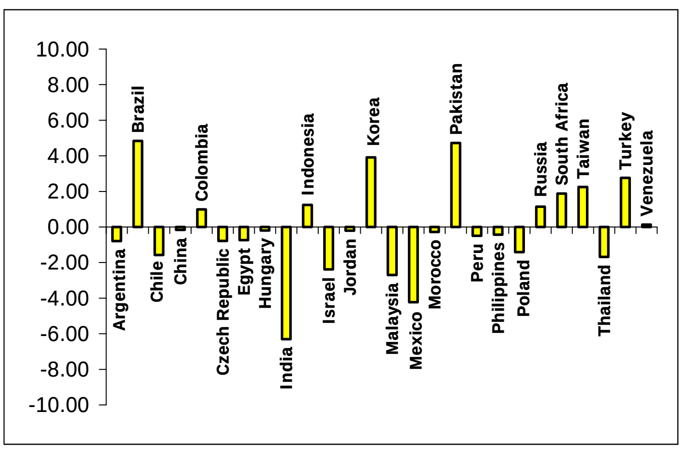
Emerging equity valuations remain at a discount to developed equities, although the gap has contracted recently. Based on forecasted 12-month earnings, the price-to-earnings ratio of the MSCI Emerging Markets Index stood at 11.21 as of mid-March, 2006. By comparison, the same measure for the MSCI World Developed Index was 14.99. This represents a 25% discount, versus the 37% average discount from mid 2003 through the end of 2005.

Specific opportunities that we believe will offer attractive return potential include the following:

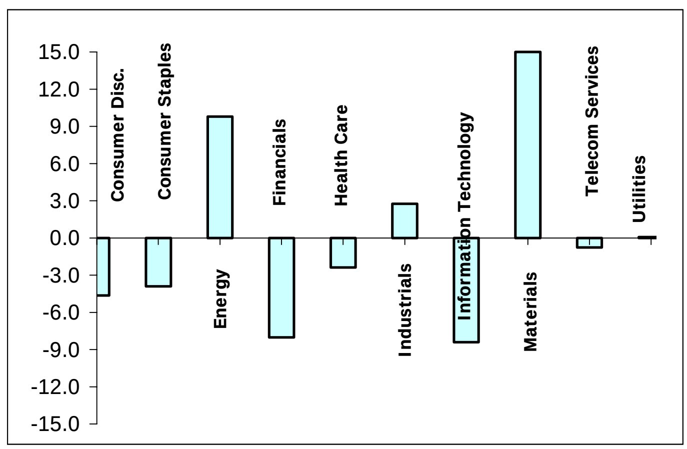
- **Petrochina (China Energy):** Although we are only neutral to slightly positive on the Chinese market as a whole, Petrochina possess a variety of favorable bottom-up and top-down characteristics. The Chinese Energy basket looks cheap relative to other emerging market energy baskets and it is experiencing very attractive mid-term momentum. This particular stock has better momentum relative to other stocks within the basket and analysts are upgrading their estimates of the company. Moreover, we believe this stock will benefit from the broader positive sentiment occurring in the global Energy sector.
- **China Steel (Taiwan Materials):** We have recently begun increasing our exposure to the Taiwan market as a whole and now carry a moderate overweight position. After trailing the index for a number of years, the Taiwanese market is beginning to look attractive on a valuation basis while the analyst community's outlook has improved. Moreover, the Taiwan Materials basket looks cheap relative to other emerging market Materials baskets and China Steel is cheap relative to other stocks within the basket.

[1,2] Source: "Stocks Abroad Climb in Spite of Rising Rates," Scott Patterson, Wall Street Journal, Page C9, April 3, 2006.

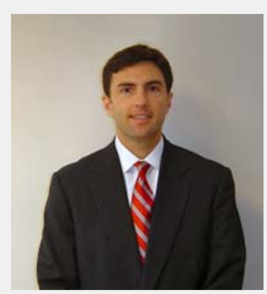
April 2006 Active Country Weights (%)



April 2006 Active Sector Weights (%)



Employee Profiles — **Michael Stanton, CFA** Manager, Business Development



Michael Stanton is responsible for Arrowstreet's sales and marketing effort.

Prior to joining Arrowstreet, Michael was a Managing Director on the Consultant Relations Team at Babson Capital Management. In this role, his responsibilities included managing and servicing investment consultant relationships, new business development, and strategic marketing. Prior to Babson Capital Management, he worked as a Consultant Relations Associate at Putnam Investments. Michael received a BA in Government from Colby College.

In his spare time, Michael enjoys playing golf and tennis, running, skiing, and spending time with his family. He lives in Wellesley.

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