# Understanding Investor Behaviour:

## A look at Cross-Border Flows

**Observing and understanding investor flows and position sizes can offer international portfolio managers an enhanced appreciation of potential risks and opportunities.**

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### The explosion of cross-border portfolio flows

With the evolution of communication networks, the ubiquitous presence of electronic dealing platforms, and greater and more immediate access to investment flow data, financial markets are increasingly transparent and sophisticated investors are better equipped to assess the trends and influences that impact global investment markets. Indeed, an analysis of timely global portfolio flows can provide the investment community with enhanced estimations of portfolio parameters such as market risk and correlations between assets, sectors, and countries.

The last 15 years have witnessed an opening up of economies and increase in global trade. In Canada, free trade with the United States has paved the way for the North American Free Trade Agreement. As a result, Canada's total international trade (exports plus imports) as a proportion of GDP has risen from 50 per cent in 1985 to 80 per cent today. In Europe, the Cold War ended, Germany reunified, and on January 1st of this year, the Euro was successfully introduced. Moreover, in the Far East, China has been admitted into the World Trade Organization (WTO). The opening of the global economic stage has seen global trade outpace world GDP growth.

As impressive as the growth in trade has been, the growth in (and appetite for) cross-border transactions in bonds and equities has been even more remarkable. In Canada, this is evidenced by the ongoing debate over the relevance of foreign exposure limitations on pension assets.

Globalization of investment portfolios is now predominant. Gross cross-border portfolio transactions have exploded and are now more than six times as large as trade flows (Chart 1). In trying to interpret these flows, it is notable that the factors influencing investors in the short run are not merely economic. For example, investors exhibit frequently shifting preferences for risk and diversification. Observing and understanding investor flows and position sizes can offer international portfolio managers an enhanced appreciation of potential risks and opportunities.

### A need for reliable and timely data

Unfortunately, the large interest in portfolio flows is inversely proportional to the availability of reliable, frequent, and consistent data. Most stories on market

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positions and flows making the daily rounds among brokers and investors tend to be anecdotal and spurious. The analysis provided in this article is, therefore, based on data derived from 12 per cent of the world's freely tradable securities flowing among more than 40 countries, and it correlates with official data published by central banks, where it exists.

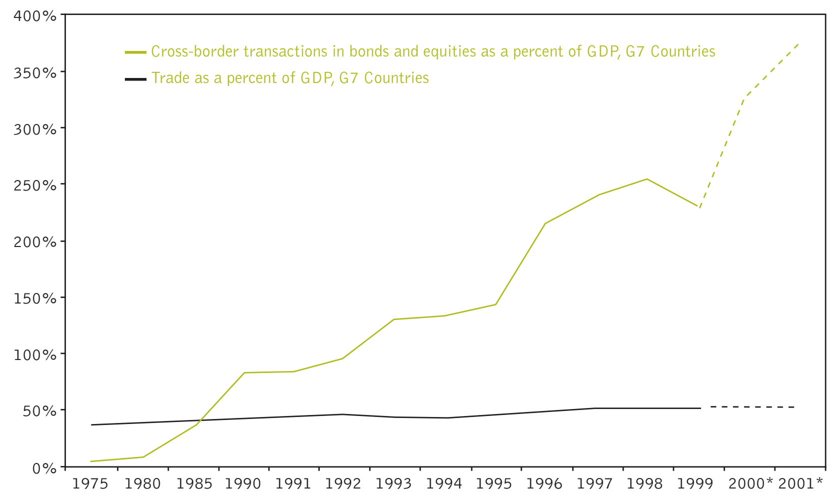
Now that we can appreciate the growing importance and the availability of global portfolio flows, let's walk through a bit of history to observe how the investment world has evolved over the years. Indeed, the events of the past few years illustrate how the careful analysis of such flows and the use of certain tools can allow investors to gain insight for their investment decisions.

## Investor positions spread financial contagion

In the early 1990s, portfolio managers had fully embraced modern portfolio theory, diversifying their portfolios to include international exposure. In the U.S. in particular, investment in foreign markets had reached US$100 billion by the mid-1990s. As Chart 2 indicates, there have also been strong portfolio flows directed to non-U.S. developed markets. This phenomenon could also be observed in emerging markets, which benefited from portfolio flows from the U.S. In the mid-1990s, virtually indiscriminate buying of emerging markets can be observed, with 95 per cent of emerging economies exhibiting cross-border portfolio inflows during that period (Chart 3).

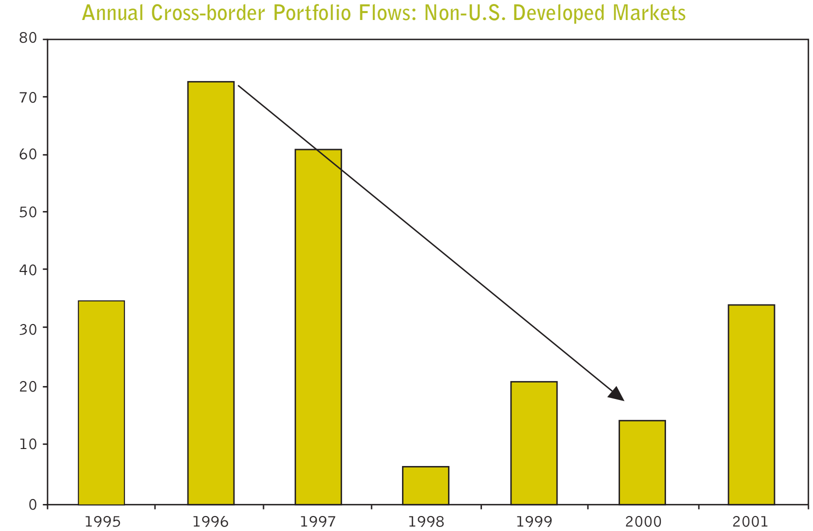
Looking at this chain of events through an intuitive framework or model, it can be seen that strong portfolio flows into a particular market begin to impact returns. Returns then feed back, influencing portfolio flows. The end result is a type of "herding" behaviour. For a while

Chart 1
Cross-border Portfolio Flows Dwarf Trade Flows




* State Street estimates

Chart 2
Annual Cross-border Portfolio Flows: Non-U.S. Developed Markets




Source: State Street

One by one, as contagion spread, markets fell like dominoes.

the cycle is virtuous, but a random shock can quickly turn the virtuous cycle into a vicious one.

The financial crisis of 1997-1998 led, ultimately, to the shaking of North American markets and consumer confidence in October, 1998. During this time, the avenue of contagion from Thailand to Russia to the U.S. and on to Brazil were not those of shared trade or economic circumstance, but the avenue of shared investor positions. A sharp reduction in investor risk appetite led to a herd-like unwinding of positions. As investors exited Thailand, they also exited South Korea, Russia, Brazil, and even developed markets. One by one, as contagion spread, markets fell like dominoes. Ultimately, there was no place left for investors to hide, with return correlations between markets rising toward one. This rendered traditional measures of portfolio risk[1] virtually useless. A timely understanding of investor flows and positions could have offered portfolio managers a better assessment of shifting risk and correlation measures between markets.

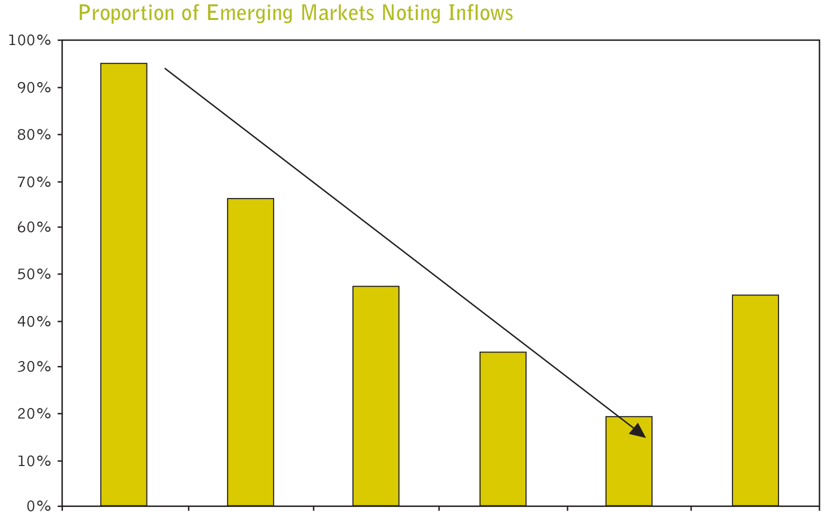
## The pendulum swings the other way

During the 1997/98 crisis years, international diversification failed to reduce portfolio risk at a time when investors most needed the benefits of diversification. It is no surprise that investor behaviour has changed dramatically since those crisis years. Investors have virtually stopped venturing into non-U.S. developed markets (Chart 2). Similarly, the breadth of flows into emerging markets has slowed sharply. In the year 2000, only 19 per cent of emerging markets noted cross-border portfolio inflows (Chart 3).

Not only have changes in the absolute level of new positions been minimal, but the positions that investors do maintain show no significant deviation from the benchmark. Further, minimal investor positions have limited the rate of contagion from trouble spots. For example, while the Argentinean financial meltdown has resulted in the biggest sovereign default in history, there have been few ripples in the rest of the world. Its effect has certainly been nothing of the magnitude of the 1997/98 crisis, when net positions relative to the benchmark were significant compared to current holdings, leading to a far greater wave of volatility.

With minimal flows into non-U.S. developed markets and emerging markets during the last four years, the main benefactor of investment was the U.S. Factors such as the financing of a record U.S. current account deficit of over 4 per cent of GDP and an appreciating U.S. dollar certainly suggest that they have been a magnet for attracting global capital flows. In hindsight, one can see that the crisis of 1997/98 was the catalyst that drove global capital towards the U.S. As the rest of the world suddenly appeared more risky, the U.S., in contrast, stood out as a safe haven. With a resilient

Chart 3
Proportion of Emerging Markets Noting Inflows




Source: State Street

economy, the hype of a new paradigm promising a never-ending bull market, and technology stocks posting stratospheric returns, there was little reason for investors to venture elsewhere. Indeed, in the three years prior to the Russian-led crisis, U.S.-based investors invested US$300 billion in foreign markets. In the three years since the crisis, total outward investment has been effectively zero. Essentially, investors viewed the 1998 crisis as an external shock to the U.S., which pushed capital flows to that country.

## Another shock

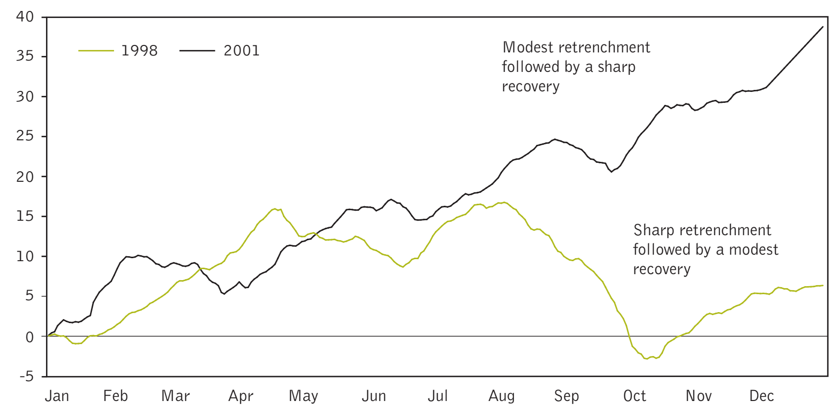
Almost three years since the Russian-led crisis of 1998, investors have faced another shock. The U.S. economy—already struggling from the bursting of the capital investment and equity bubble—suffered a severe blow on September 11th, 2001. It is useful to compare investor behaviour and cross-border portfolio flows in the current environment with that of the 1998 Russian crisis. Chart 4 shows the year-to-date cumulative portfolio flow indicators for non-U.S. developed markets in 1998 and 2001. Two salient points can be gleaned from the chart.

First, 1998 witnessed a sharp retrenchment in cross-border portfolio flows, followed by a modest recovery. Total flows had still not reverted back to pre-crisis levels by the end of 1998. Second, 2001 witnessed a much more modest retrenchment in cross-border flows, followed by a quick recovery that subsequently moved above pre-crisis levels by year-end.

This contrast in investor behaviour highlights a key difference in the current environment relative to that of 1998. Unlike 1998, the current shock is not a short-term liquidity crisis taking place outside of the U.S. Rather, there is a fundamental re-rating of economic prospects within that country. Instead of foreign troubles spilling over to American shores, their troubles are spreading abroad. Consequently, cross-border portfolio flows are moving away from the U.S. Chart 2 shows that flows into non-US developed markets in 2001 were the strongest since 1997. Chart 3 shows that the breadth of flows into emerging markets was the highest since 1998.

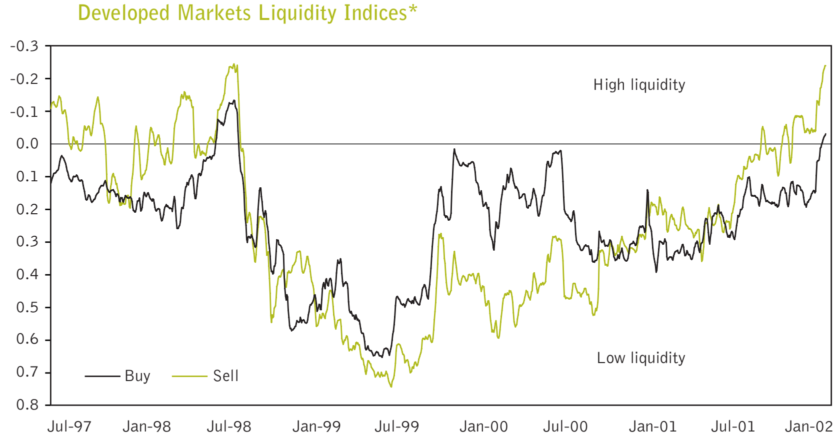
Several factors suggest that flows may continue to

**Chart 4**
**Year-to-date Cumulative Non-U.S.Developed Markets Portfolio Flow Indicators**




Source: State Street

**Chart 5**
**Developed Markets Liquidity Indices***




* The liquidity Index measures the co-movement between equity returns and cross-border equity trades.
The verticle axis measures the percentage cost per basis point of market cap flow.
Source: State Street

## There are tentative signs that investor preferences may be shifting once again.

move away from the U.S. These factors include the relative evolution of the price-to-earnings ratios of MSCI US and EAFE. They also include improvements in the risk/return profile of emerging market investments. But let us revert to another factor related to the observation of portfolio flows: liquidity conditions.

Liquidity is a concept that is difficult to define, let alone quantify. There are numerous proxies for liquidity (bid-ask spreads, volume data etc.), but each has its own shortcomings. Liquidity data can be used to try to measure the cost of undertaking equity transactions for cross-border investors. A daily measure of the co-movement between equity prices and cross-border equity trades, it depicts an investor's ability to move in and out of global equity markets without driving the price against them.

Let's illustrate this again using our historical timeline. Chart 5 shows that liquidity conditions suffered a severe setback in the wake of the 1998 Russian and Long-Term Capital Management (LTCM) crises, continuing to deteriorate into the middle of 1999. Y2K monetary injections had a positive but temporary impact on liquidity in global equity markets. Recently, however, the price impact has improved significantly, returning to pre-LTCM levels. The aggressive, coordinated policy response from the G7 in the aftermath of September 11th was extremely effective in preventing sustained market dislocation. More importantly, however, liquidity conditions appear to be on an uptrend, with equity trading transactions costs currently at their lowest level in three years. This also argues for an improvement in cross-border capital flows into non-U.S. developed markets.

### Conclusion

As global goods and capital markets have become more open, there has been an explosion in cross-border portfolio flows. In such an environment, international portfolio managers need a timely understanding of investor flows and positions sizes. Such analysis can offer investors an improved understanding of risk and correlations between assets, sectors, and countries through the use of tools such as portfolio flow indicators, portfolio holdings indicators and liquidity indicators

During the last decade, investors have often exhibited shifting preferences for risk and diversification. The first half of the 1990s noted a trend toward international diversification, with portfolio flows finding their way into most major developed economies and into emerging markets. The late 1990s, however, noted a sudden shift in investor preferences, leading to a targeted and somewhat inequitable distribution of global portfolio flows, with virtually all non-U.S. developed markets and emerging markets falling out of favour and global portfolio flows gravitating towards the U.S. In essence, diversification across countries became "passé," and investors chose to concentrate more of their exposure in the U.S.

There are tentative signs that investor preferences may once again be shifting. The weightings of recent positions are tilted towards the U.S.; however, unattractive valuations and lacklustre growth may lead to a re-evaluation of these holdings, with a potential shift out of U.S.-heavy positions.

Timely access to this kind of portfolio flow data can alert international portfolio managers to developing trends, allowing them to adjust their portfolios and manage risk more efficiently by identifying pressure points, herding behaviour or "runs to benchmark." Given the ever-increasing relative importance of global portfolio flows and their availability to provide further analysis tools, investors can now benefit from an extra layer of information and added clarity in order to better manage their investment portfolios. ▮

1 One such measure is value at risk (VAR), which is based on historic volatilities and return correlations.