

# **Value of Analyst Recommendations: International Evidence**

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## Abstract

This paper examines analyst recommendations in the G7 countries and evaluates the value of these recommendations over the 1993 to 2002 period. We find that the frequencies of sell and strong sell recommendations in all countries are far less than that of buy and strong buy recommendations. The frequency of sell recommendations is the lowest in the U.S. We also find that stock prices react significantly to recommendation revisions on the revision day and on the following day in all of these countries except Italy. We find the largest price reactions in the U.S., followed by Japan. We also evaluate trading strategies that buy upgraded stocks and sell downgraded stocks. Here again, we find the highest profits in the U.S., followed by Japan.

Stock analysts form an integral part of capital market operations. The analysts provide stock related research for their brokerage clients who use their research reports, earnings forecasts and stock recommendations for investment decisions. Recently, their role as investment advisors has come under intense scrutiny. Media reports and some anecdotal evidence suggest that analysts compromise their objectivity and issue positive recommendations to curry favor with potential investment banking clients of their employers, rather than for the benefit of the investors who rely on their advice. For instance, a recent Fortune article claims that the investment advice offered by analysts are “so dishonest and fraught with conflicts of interest that it has become worthless.”<sup>1</sup>

Analyst recommendations certainly do contain an element of bias towards being favorable. Earlier papers document that analysts rarely issue sell or strong sell recommendations. For instance, Jegadeesh, Kim, Krische and Lee (2003) report that the average analyst rating over the 1985 to 1999 period is close to a buy recommendation and sell or strong sell recommendation make up less than five percent of all recommendations, and Womack (1996) reports that there are seven upgrades to strong buy for every downgrade to strong sell. Furthermore, Lin and McNichols (1998) and Michaely and Womack (1999) find that the analysts employed by the lead underwriters for new equity issues issue more favorable recommendations for the stocks than the other analysts who follow the stock.<sup>2</sup>

In spite of any inherent biases, the extant literature finds that analyst recommendations do add value. For example, Stickel(1995) and Womack (1996) document that recommendation upgrades tend to outperform downgrades, and Barber,

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<sup>1</sup> See Gimein (2002).

<sup>2</sup> Also see Bradley, Jordan and Ritter (2003) for more evidence on conflicts of interest due to investment banking relationships.

Lehavy, McNichols and Trueman (2001), Jegadeesh et al. (2003), and Boni and Womack(2003) find that the stocks with the most favorable recommendations outperform the stocks with the least favorable recommendations. These findings indicate that investors could benefit from analysts' recommendations if they consider the relative levels of recommendations across stocks, or if they pay attention to changes in recommendations.

The conflict of interests due to the investment banking businesses has recently been subject to harsh criticism, despite the evidence that analyst recommendations on average do convey useful information. In a recent settlement with the NY attorney general and the SEC major Wall Street firms agreed to a \$1.4 billion settlement that includes provisions to restrict links between the investment banking and the stock research departments, and to promote independent research.<sup>3</sup> The terms of the settlements appear to anticipate that if the conflict of interest is removed, then analyst recommendations will be able to more accurately discriminate undervalued stocks from overvalued stocks.

How much value can analysts potentially add? This is certainly a hard question to answer because there is no natural benchmark. In a perfectly efficient market, analysts would not be able to add any value since any information they have would already be reflected in market prices. However, if analysts possess unique skills in collecting and analyzing value-relevant information, then they can add value, but its magnitude can only be empirically determined. Several papers have examined the value of analyst

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<sup>3</sup> Although the settlement restricts links between the investment banking operations and analysts, it does not entirely prohibit all links. For example, Raymond James Financial Service recently notes on its website that "Equity analysts' compensation is based on a salary and bonus system. Many factors enter into the bonus determination, including the analyst's ... general assistance in obtaining investment banking business."

recommendations in the U.S. to shed light on this issue. However, the recent controversy about the U.S. analysts' objectivity, and the debate about the usefulness of their recommendations indicate that our understanding of how much value analysts can add is far from complete. An examination of the value of analyst recommendations in other developed countries will give us a more complete picture of the extent to which the unique skills of analysts are useful for investors.

This paper examines analyst recommendations in the Group of Seven (G7) industrialized countries and evaluates their value for investors. We first examine the distribution of analyst recommendations in these countries. We find that the frequencies of sells and strong sells in all countries are far less than the frequencies of the buys and strong buys. However, the frequency of sell recommendations is the lowest in the U.S. In fact, during our sample period, sell recommendations are about four to five times as frequent in the other countries as in the U.S.

We use two approaches to assess the value of recommendations. In the first approach, we follow Womack (1996) and examine the event time performance of analyst upgrades and downgrades. This approach allows us to determine the extent of mispricing analysts are able to detect in various countries at the time of their recommendation changes. Among all countries in the sample, we find the largest price reactions to investment upgrades and downgrades by U.S. analysts. Indeed, even for ADRs and for U.S. stocks covered by both U.S. and foreign analysts, we find larger price reactions following recommendation revisions by the U.S. analysts than by the foreign analysts.

Our next set of tests analyzes the performance of calendar-time trading strategies that buy stocks with recommendation upgrades and sell stocks with recommendation

downgrades. The calendar-time strategies are implementable in practice, and hence their performances provide an indication of the extent to which investors can profit by using analyst recommendation changes as inputs in their trading strategy. Our trading strategies consider different holding periods, and different levels of delays between the time when the revisions are made and the time when the stocks enter the portfolios. Here again, we find that the trading strategies perform the best in the U.S. in virtually all instances.

The rest of the paper is organized as follows. Section I describes our data source and our sample. Section II compares the level of recommendations across the countries we examine. Section III presents the event-time analysis of the performance of analyst recommendations. Section IV examines the pattern of trading volume around recommendation revisions. Section V evaluates calendar-time trading strategies and Section VI presents our conclusions.

## **I. Data and Sample**

### **A. Data**

We obtain the stock recommendations data for the G7 countries from the IBES detailed file; stock returns, shares outstanding and trading volume data from Xpressfeed, which is a product of the Standard and Poor's corporation; and returns on market indices from Datastream. The sample period is from November 1993 to July 2002.

Our sample comprises all stocks that satisfy the following criteria:

- (a) There should be at least one analyst who issues a recommendation for the stock and revises the recommendation during the sample period,
- (b) The analyst code should be available on IBES,
- (c) The stock return data on the recommendation revision date should be available, and

- (d) The stock price should be at least \$1 on the day before the recommendation revision date.

We impose these criteria since our primary focus is on the performance of stocks after recommendation revisions. Therefore, we do not include recommendations in our sample if an analyst makes only one recommendation for the stock, or if IBES does not provide an analyst code since we need the code to identify revisions.

Table I presents the descriptive statistics for the sample. The analyst coverage is by far the most extensive for the U.S. stocks. On average, there are 3,054 stocks per year in the U.S. sample. Outside the U.S., the sample contains 278 stocks per year per country. Italy has the fewest stocks in our sample, with 85 firms per year on average.

## **B. Market Statistics**

Figure 1 presents the cumulative market returns in each of the countries during our sample period. All the countries in the sample except Japan experience strong positive returns until 1999 or 2000, and large market declines in 2001 and 2002. The Japanese market is relatively flat during most of the sample period, except in 1999. In 1999, the Japanese stock price increases nearly 70 percent but most of this gain is reversed in the following two years. Overall, the sample period contains both bull markets and bear markets for all countries.

Panel A of Table II presents the size of the stock market in various countries at the end of each year in the sample period. We obtain the market capitalization of publicly traded stocks in the G7 countries from Datastream. The U.S. is by far the largest market with capitalization ranging from a low of \$5, 056 billion in 1994 to a high of \$16,590

billion in 1999. Panel B of this table presents the aggregate market capitalization of the stocks in our sample at the end of each year, and Panel C presents the percentage of the total market that is included in our sample.

We have the most coverage in the U.S. at 83.65 percent on average, followed by Germany at 73.86 percent and Britain at 67.7 percent. The average aggregate market capitalization of our Japan sample is much larger than both Germany and Britain sample, although the percentage of market capitalization coverage is only 55.52 percent.

Panel D of Table II presents the median size of the firms in our sample for the G7 countries at the end of each year. For comparison, we also present the median size of NYSE traded firms. The average median size is the largest for Japan at \$1,851 million, which is about twice that of the median NYSE firm. Among the other countries, the average median sizes range from \$259 million in Canada, to \$730 million in Italy.

## **II. Average Recommendations**

This section examines the average recommendation levels in each country. Most commonly, analyst recommendations rate stocks as "strong buy," "buy," "hold," "sell," and "strong sell." Analysts do use other labels such as "market underperform" and "market outperform," or "underweight" and "overweight," to convey their opinions, but IBES standardizes the recommendations, and converts them to numerical scores where "1" is strong buy, "2" is buy, and so on.

Figure 2 presents average analyst recommendations at the end of each month in each country. To compute the averages in this figure, we average across all outstanding recommendations in each country on the last day of each month. Since more analysts



follow large firms than small firms, our averaging procedure gives more weight to large firms than to small firms.

One of the striking evidence in this figure is that the U.S. stocks are more favorably recommended on average than stocks in any other country in the sample for almost the entire sample period. The average recommendations in Canada are the second most favorable, except in the last quarter of 1994, when the Canadian stocks are recommended more favorably than the U.S. stocks. The order of average recommendations among the other countries across varies over time.

We compute the frequencies of different recommendation levels among the active recommendations each month, and Table III presents the annual averages for each country. On average, only 3.3% of the recommendations are either sell or strong sell in the U.S. Even the hold recommendations decline during the bull market of the nineties. The percentage of hold recommendations declines from 38.4% in 1995 to 27.8% in 2000, the year that marked the end of the strong market run up in recent years. Buys and strong buys increase from 57% to 70.1% during this period. However, the trend of rising buy recommendations reverses course in 2001 and 2002, and in these two years buy and strong buy recommendations account for 61.5% and 58.1% of all recommendations, respectively.

We observe the general pattern of changes in buy and sell recommendations in the U.S. in the other countries as well. The buy recommendations increase from 1993 to 2000, and then decrease in 2001. The sell recommendations follow the opposite path. This pattern indicates that analysts tend to issue more buy recommendations during bull markets than during bear markets, and more sell recommendations during bear markets

than during bull markets. In unreported results, we found that the proportion of the strong buy recommendations is significantly related to the past six-month market returns both in the U.S. and in all countries outside the U.S. as a group. Therefore, the general level of optimism among analysts depends on the past market performance.

Sell recommendations are generally less common than buy recommendations in countries outside the U.S. as well. Overall, there are 15.3% sell or strong sell recommendations in these countries compared with 46.9% buy or strong buy recommendations. However, the frequency of sell recommendations outside the U.S. is much larger than that in the U.S. The higher frequency cannot be due to any relation between analyst recommendations and past market performance, because the pattern of market returns in most of these countries is similar to that in the U.S. Our results indicate that analysts in these countries are far less reluctant to issue sell recommendations than in the U.S.

One of the criticisms that the U.S. analysts encounter is that they do not sufficiently discriminate across stocks since they often do not use the full range of recommendations. The recommendations in the other countries have larger variability, and if this were a desirable feature then the recommendations in these countries should be more valuable. However, the bias in the average recommendation levels is fairly transparent, and the market can easily see through this bias. For instance, investors can treat a buy recommendation as a market perform rating, and a hold or lower recommendation as a market underperform rating, and decide on their investments accordingly. Therefore, if investors are able to correctly read the signals then the particular label for a recommendation should not matter. In any event, our empirical tests will help us assess

whether the higher propensity of analysts outside the U.S. to issue sell recommendations than the U.S. analysts adds value for investors in those countries.

### **III. Recommendation Changes: Event-Time Analysis**

This section examines the performance of stocks that analysts either upgrade or downgrade in an event study framework. The methodology here is similar to that in Womack (1996)'s study of analysts' recommendations in the U.S.

#### **A. Distribution of Upgrades and Downgrades**

We categorize recommendation revisions as either upgrades or downgrades by comparing them with the previous recommendation for the stock by the same analyst. We exclude all new recommendations that are reiterations of old recommendations.

Table IV presents the distribution of upgrades and downgrades within each country. We count each recommendation change as one observation. For instance, if two analysts make recommendation upgrades for a stock and one analyst makes a downgrade, then we count the stock twice in the upgrade category and once in the downgrade category. There are a total of 50,238 upgrades and 63,444 downgrades in the U.S., and 37,728 upgrades and 39,764 downgrades in the other countries.

We also separately examine upgrades to strong buys and upgrades from sell or strong sell, and downgrades to sell or strong sell and downgrades from strong buy. Since strong buy is the highest recommendation level, it is possible that a recommendation revision to or from this category conveys a stronger signal about the analyst's opinion than a revision to or from any of the other recommendation levels. Also, as we note in the last section, analysts rarely issue sell or strong sell recommendations. Therefore, additions to or

removal from these categories may be viewed as a stronger signal by the market than other recommendation revisions.

Our U.S. sample size for upgrades to strong buy is 29,188. Our sample size is much larger than the 694 upgrades in Womack's (1996) sample. In part, Womack's sample is smaller because his sample period is shorter (from January 1989 to June 1990), and his sample comprises only recommendation revisions issued by analysts from the top 14 brokerage houses. However, in unreported results, we found that our sample contains far more revisions to strong buys per month from the top 14 brokerage houses (based on the number of analysts in the IBES database) than in the Womack sample. The difference between our sample sizes is most likely due to the fact that Womack constructs his sample from a text search of First Call analyst reports while we rely on IBES codes for analyst recommendations.

## **B. Past Returns and size**

Table V presents the past three- and six-month return ranks and size ranks for various upgrade and downgrade categories. For each recommendation revision we compute the cumulative returns over the three- and six-month period prior the revision date. We then assign a return rank based on the return decile over the corresponding period, across all stocks in the sample for that particular country. We assign a rank of 10 to the highest return decile, 9 to the next decile, and so on.<sup>4</sup>

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<sup>4</sup> If any stock in the revision sample does not have return data over a particular return period, we exclude the stock from the sample for computing past return ranks, but we do include that stock in the sample when we compute future returns.

The average six-month return rank for upgrades in the U.S. is 6.12, which is significantly larger than the return rank of 5.57 for downgrades.<sup>5</sup> The average six-month return rank for upgrades to strong buy is 6.25 and for downgrades to sell or strong sell is 5.26. The three-month return ranks are also larger for upgrades than downgrades. Clearly, the U.S. analysts favor high price momentum stocks, and this evidence is consistent with the findings in earlier papers by Womack (1996) and Jegadeesh et al. (2003).

Interestingly, we observe a similar pattern in all the other G7 countries as well. Specifically, we find that the upgrades have higher price momentum rank than downgrades, except for Britain, and upgrades to strong buy have the highest rank while downgrades to sell or strong sell have the lowest. Jegadeesh et al. (2003) find that the value of analyst recommendation levels is largely attributable to the fact that analysts tilt their recommendations toward high momentum stocks. A momentum strategy that buys past winners and sells past losers is profitable in the U.S. as well as in Canada and in the European countries.<sup>6</sup> Therefore, to some extent, analyst recommendations in North America and in Europe benefit from this phenomenon. However, the momentum strategy is not profitable in Japan (see Chui, Titman and Wei, 2000), but the Japanese analysts also favor high momentum stocks. In fact, the spread between upgrades to strong buy and downgrades to sell or strong sell in Japan is the largest among all G7 countries. This evidence suggests that analysts' favorable ratings for past winners may stem from the "everybody likes a winner" phenomenon, rather than by an attempt by analysts to benefit from the empirical association between past returns and future performance.

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<sup>5</sup> The average past return ranks for both upgrades and downgrades are larger than the average rank for the entire sample because analysts tend to not actively follow many of the past losers.

<sup>6</sup> See Jegadeesh and Titman (1993, 2001) and Rouwenhorst (1998) for evidence on the profitability of momentum strategies in the U.S. and Europe, respectively.

Table V also presents the average size rank for upgrades and downgrades. To facilitate comparability across countries, we use the NYSE size decile cutoffs for all countries. Except for Canada, the average size decile ranks for upgrades and downgrades are above the average NYSE size decile rank. Although the median sizes in Table II are smaller than the NYSE median, the average size ranks in this table are bigger for all countries except Canada because our unit of observations here is a recommendation revision. The larger firms are generally followed by more analysts and hence they experience more revisions. Therefore, our recommendation sample is tilted towards larger firms. The results here indicate that the firms in the upgrade sample tend to be bigger than those in the downgrade sample.

### C. Performance

For each recommendation revision, we compute  $CR_k(T)$ , the  $T$ -day cumulative market-adjusted return for stock  $k$ , as follows:

$$CR_k(T) = \prod_{t=0}^T (1 + R_{k,t}) - \prod_{t=0}^T (1 + R_{mkt,t})$$

where,  $t=0$  is the recommendation revision date,  $R_{k,t}$  and  $R_{mkt,t}$  are the day  $t$  return for stock  $k$  and the market index for the country of listing, respectively. We measure the event time in trading days and not in calendar days.

Table VI presents the market-adjusted returns for stocks in each category, within each country. Since multiple recommendations revisions are made on many days, the returns for stocks for which the event windows overlap in calendar time would be correlated. To allow for this cross-sectional dependence in our statistical tests, we follow

the approach in Jegadeesh (2000). We first compute the average market-adjusted returns for all recommendations revision in each calendar month. The average abnormal return for each category is the weighted average of the abnormal returns for the monthly cohorts in the sample, where the weights are proportional to the number of observations in the respective cohorts. Specifically,

$$\overline{AR} = \mathbf{w} \mathbf{AR},$$

where,

$\overline{AR}$ : Average abnormal return

$\mathbf{w}$ : Vector of weights where the  $j^{\text{th}}$  element is the ratio of the number of observations in month  $j$  divided by the total number of observations over the sample period

$\mathbf{AR}$ : Vector of average abnormal return where the element  $AR_j$  is the average abnormal return for the  $j^{\text{th}}$  monthly cohort.

The variance of  $\overline{AR}$  is given by:

$$\text{Var}(\overline{AR}) = \mathbf{w} V_A \mathbf{w}$$

where  $V_A$  is the variance covariance matrix of  $\mathbf{AR}$ . Since the return measurement intervals for different monthly cohorts overlap, we allow for the first- through sixth-order serial covariance of monthly cohort return to be non-zero, and set the higher order serial covariances to equal zero. To be specific, let  $\nu_{i,j}$  be the  $ij^{\text{th}}$  element of  $V_A$ . The estimator for  $V_A$  is:

$$\begin{aligned}
v_{i,j} &= (AR_i - \overline{AR})^2 \forall i = j, \\
&= (AR_i - \overline{AR})(AR_j - \overline{AR}) \quad \forall 1 \leq |i - j| \leq 6, \text{ and} \\
&= 0 \quad \text{otherwise.}
\end{aligned}$$

For the U.S., the average abnormal returns on day 0 is 1.76% for upgrades and is -3.19% for downgrades. In comparison, the day 0 abnormal return on for upgrades to strong buy is 1.91%, which is not significantly different from that for all upgrades. Similarly, the abnormal return for downgrades that result in sell or strong sell is -2.39%, which is also not significantly different from that for all downgrades.

Figure 3 presents the cumulative returns over the next six months for each country. The prices continue to drift up for upgrades and drift down for downgrades over the next two to six months in all countries. In the U.S., the cumulative return for all upgrades is 4.75% over the first six months, and for all downgrades is -6.20%.

The abnormal returns in the other countries are generally smaller than the abnormal returns in the U.S. For example, on the revision date, the average response for upgrades ranges from a marginal .04% in Italy to .46% in Japan. Similarly, the returns for downgrades range from -.09% in Italy to -.45% in Canada. Although the abnormal returns are significantly different from zero in all countries except Italy, the magnitude of returns is much smaller than that in the U.S.

The six-month return for upgrades is significantly positive only in Japan. For instance, the six-month abnormal return in Japan after upgrades is 4.21%, but it is close to zero or marginally negative in all the other countries. Therefore, the weaker stock price reaction on the upgrade dates in countries outside the U.S. cannot be attributed to slower market reaction on the event dates. Rather, the upgrades have either small or no value in



the other countries. Furthermore, upgrades that result in either strong buys or removal from sell or strong sell are also of limited value in these countries.

For the downgrades, however, the longer term price changes are significant in most countries. The six-month abnormal return after downgrades ranges from - 5.86% in Germany to -.45% in Japan. Although the abnormal returns after six-months are not significant in Japan and Britain, they are significantly negative over shorter periods. Here again, we do not find a significant difference between all downgrades, and downgrades that result in removal from strong buy or addition to sell or strong sell. Therefore, the signal that matters is the recommendation revision, rather than the recommendation level before or after the revision. Overall, the results indicate that in the countries outside the U.S., downgrades convey more information than upgrades.

The difference between the abnormal returns following upgrades and downgrades provides a measure of the overall value of recommendation revisions in various countries. The six-month abnormal return difference is 10.96% in the U.S., which is the largest among the G7 countries. The six-month abnormal returns in the other countries range from 1.93% in Italy to 4.66% in Japan.

#### **D. Returns Prior to Recommendation Changes**

Much of the superior performance of recommendation revisions for the U.S. stocks is due to the bigger price impact on day 0 in the U.S. than in the other countries. For instance, the average abnormal return for upgrades is larger than that for the downgrades by 4.95% on day 0 in the U.S. In comparison, the day 0 abnormal return differences in the other countries range from .12% in Italy to .87% in Japan. Possibly, we observe a smaller price impact outside the U.S. on day 0 because analysts in these

countries privately communicate their revisions to their clients before they make them public on day 0. If this were the only reason for the difference in price impact on day 0, then we should see stronger price changes prior to day 0 in the other countries.

Figure 4 presents the cumulative abnormal returns from day -10 through day 10 for upgrades (Panel A) and downgrades (Panel B) in each country. For upgrades, the cumulative abnormal return from day -10 through day -1 in the U.S. is smaller than that in all the other countries except Canada. For example, the cumulative abnormal return from day -10 through day -1 is 1.64% in Japan compared with .64% in the U.S. For the downgrades, however, the U.S. has the largest cumulative price decline by day -1.

If analysts do communicate privately before revisions, the pre-revision price impact would be larger for upgrades than for downgrades because most investors do not short sell securities. Therefore, the pattern of pre-revision price changes we find is consistent with early communication in some countries. However, by day 0, we find that both for upgrades and downgrades, the cumulative price impact is larger in the U.S. than in the other countries. Therefore, even after accounting for possible early dissemination in some countries, recommendation changes by the U.S. analysts have the largest price impacts.

## **E. Cross-border Recommendations**

The superior performance of the U.S. analysts' recommendations suggests that they are more skilled than their counterparts in the other developed countries. However, it is also possible that the markets in the other countries price their stocks more efficiently, and therefore offer the domestic analysts little opportunity to uncover any mispricing. It is difficult, if not impossible, to precisely quantify the relative efficiency of different

markets in order to evaluate the latter possibility. However, we can assess whether analysts from different countries exhibit different levels of skills by evaluating the performance of their recommendations when they follow the same set of stocks.

This subsection examines the performance of recommendations for two sets of stocks that are followed by both U.S. analysts and foreign analysts. The first set comprises U.S. stocks that are followed by at least one analyst from a U.S. brokerage and also one from a foreign brokerage in the same year. The second set comprises American Depository Receipts (ADRs) of companies in the G7 countries (excluding the U.S.) that have at least one recommendation revision by an analyst at a U.S. brokerage, and at least one revision for the underlying stock in the home countries by a domestic analyst. None of the ADRs in our sample are Canadian stocks, and therefore, the ADR sample comes only from the other five G7 countries.

Most of the brokerages follow stocks only in a single country. We categorize the other brokerages as U.S. brokerages if they make more recommendations for U.S. stocks than foreign stocks, and foreign brokerages otherwise.<sup>7</sup>

Table VII presents the descriptive statistics for the sample we use in this subsection. On average, there are 84 U.S. stocks and 49 ADRs per year in the sample. This sample is considerably smaller than the full sample since most stocks do not have cross-border coverage. The U.S. stocks that are also followed by foreign analysts are bigger stocks that are followed by more analysts than average. For example, the average number of analysts following the U.S. stocks is 6 in Table VII, while it is 3 for the full

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<sup>7</sup> Most of the large brokerages have operations both in the U.S. and abroad. For example, Merrill Lynch analysts follow U.S. stocks while analysts from its international affiliates such as Merrill Lynch International follow foreign stocks. We categorize Merrill Lynch as a U.S. brokerage, and Merrill Lynch International as a foreign brokerage.

sample in Table I. The ADRs are also bigger than the average public firm in the respective countries, since larger firms are more likely to cross-list in the U.S. than smaller firms. Interestingly, even in this sample, the average recommendations by U.S. brokerages are lower than those by foreign brokerages. For example, the average U.S. and foreign brokerage recommendations for the U.S. stocks here are 2.25 and 2.58, respectively. Therefore, the tendency of the U.S. analysts to issue more optimistic recommendations for the stocks they follow is solely due to differences in stock characteristics.

Table VIII presents the event time performance of recommendation revisions. For the U.S. stocks, the difference between upgrade and downgrade returns on day 0 is 5.64 percent for U.S. analysts, and 1.46 percent for foreign analysts. For all ADRs, the abnormal returns difference on day 0 is 1.51 percent. In comparison, when the foreign analysts revise their recommendations for the underlying stocks in their home countries, the abnormal return difference is .39 percent.

In virtually all instances, we find that the revisions by the U.S. analysts have larger price impacts than revisions by foreign analysts. Since both the U.S. analysts and foreign analysts follow the same stocks in this sample, our evidence indicates that the U.S. analysts do indeed identify larger mispricings. Although it is hard to pin point why the U.S. analysts are more skilled than their foreign counterparts, it is likely that the higher compensation that the analysts in the U.S. command attracts more skilled analysts. In any event, when we take a comprehensive look, there is no support for the notion that the value added by U.S. analysts is compromised because of any conflicting incentives.

#### IV. Trading Volume

So far our analysis focused on the price impact of recommendation revisions. This section examines the extent to which investors' trades are influenced by these revisions. To do so, we compute a measure of standardized volume during an event window covering 20 days before and 20 days after recommendation revisions. We define standardized volume ( $SV_t^i$ ) for stock  $i$  on day  $t$  as:

$$SV_t^i = \frac{Volume_t^i}{\left( \sum_{\tau=-20}^{-2} Volume_{\tau}^i + \sum_{\tau=2}^{20} Volume_{\tau}^i \right) \times \frac{1}{38}},$$

Where  $Volume_t^i$  is the number of shares traded on day  $t$ , suitably adjusted for any splits within this window.<sup>8</sup>

Figure 5 plots the standardized volumes for upgrades and downgrades within each country.<sup>9</sup> The standardized volume is significantly different from one on days -1, 0 and 1 in all countries except Italy, and in Italy is it significantly different on days -1 and 0. The U.S. stocks experience the largest increase in trading volume around recommendation revisions. The standardized volume on day 0 is 1.67 for upgrades and 2.3 for downgrades in the U.S. The standardized volume reverts to 1 by day 3 or day 4 in all of the countries except the U.S. and Japan. In the U.S., the standardized volume reverts to one on day 7 for upgrades and on day 8 for downgrades. In Japan, the standardized volume is similar to that in the other non-U.S. countries on day 0, but it remains significantly greater than one up to day 5 for the upgrades, and up to day 3 for downgrades. Interestingly, we find

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<sup>8</sup> If the number of days within an event window for which volume data are available is less than 38, we divide by that number, instead of 38

<sup>9</sup> In our sample there are a total of 873 observations (0.37% of the sample) where the standardized volume is greater than 30. We exclude these outliers.

that analysts add the most value in the U.S. and Japan, and the investors in these countries trade more intensely following recommendation revisions than in the other countries. These findings suggest that the extent to which analysts are able to influence investors' trades depend on the value of their recommendations.

## **V. Calendar-Time Strategy**

So far we have considered the value of analyst recommendations in an event study framework. The event-time analysis provides a perspective on the magnitude of mispricing that analysts are able to detect when they revise their recommendations. However, as Barber et al. (2001) point out, the event time analysis does not measure the profits to an implementable investment strategy. To assess the value of analyst recommendations from a trader's perspective, this section examines the profitability of calendar time strategies.

The prior literature considers many different kinds of trading strategies based on recommendation levels as well as recommendation revisions. For example, Barber et al. (2001) and Jegadeesh et al. (2003) examine the performance of trading strategies based on consensus recommendations with U.S. data. Specifically, these papers sort stocks based on consensus recommendation levels and buy the most favorably recommended category of stocks and sell the least favorably recommended stocks. In unreported tests, we examined the profitability of trading strategies similar to the ones in these papers. We found that none of these strategies was profitable in any country in our sample, including the U.S. In most countries, these strategies performed poorly in 2000 and 2001, and this poor performance wipes out the profits during the earlier part of the sample period.

Barber et al. (2002) previously find that such strategies are extremely unprofitable in these two years in the U.S., and we found similar results in the other countries as well.

One of the possible reasons why the consensus recommendations perform poorly is because some of the recommendations that enter into the consensus can be fairly stale. Analysts often leave their recommendations unchanged for long periods of time and the forecasts generally become less informative over time. The poor performance of consensus forecasts could perhaps be due to the staleness of some of the inputs. Also, as Jegadeesh et al. (2003) find, the recommendations are generally more favorable for growth stocks than for value stocks. The growth stocks performed much worse than the value stocks towards the end of our sample period, which in turn could account for much of the poor performance of the recommendations.

To avoid these potential problems associated with trading strategies based on consensus recommendation levels, we examine the performance of trading strategies based on recommendation revisions. On each date we identify all stocks that had upgrades or downgrades over the past  $T$  months. We examine the performance of trading strategies with  $T$  equal to 1, 3 and 6 months. Each stock that enters a portfolio stays there for  $T$  months, and hence  $T$  represents the holding period. Although the strategies with shorter holding periods use fresher information, they entail more transactions. In practice, an investor will have to balance the costs of trading with the benefits of fresh information while deciding on the appropriate holding period. We do not explicitly consider trading costs, but the range of strategies that we examine will provide a perspective on the decay rate of the value of recommendation revisions.

We also examine the effect of delays between the time a revision is made and the time the stock enters a portfolio. In practice, investments based on revisions could be delayed either because investors do not receive the signals in a timely manner, or because there is a delay between the time the signal is received and action is taken. Our strategies allow for delays of 0, 1 and 5 days.

On each day, all upgrades over the prior  $T$  months, with a  $d$  day delay comprise the "Buy" portfolio, and all downgrades over this sample period comprise the "Sell" portfolio.<sup>10</sup> We examine the performance of an equal-weighted strategy as well as a value-weighted strategy. The value-weighted strategy has its appeal because the portfolio weights are proportional to the market-index weights. Also, a value-weighted strategy is a buy-and-hold strategy, and hence it can be implemented in practice. However, because the sizes of the largest few firms are orders of magnitude larger than that of the small firms, the performance of large firms will dominate in the value-weighted strategy, and the performance of small firms will not be evident in this strategy. Therefore, we also examine the performance of an equal-weighted portfolio. Since the sample comprises more small firms (relative to the NYSE median) than large firms, the equal-weighted portfolio returns tilt towards the small firm performance. The equal-weighted portfolio, however, is hard to implement in practice since it requires daily rebalancing.<sup>11</sup>

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<sup>10</sup> If a stock has both an upgrade and a downgrade within a  $T$ -month period, then we include the stock in both Buy and Sell portfolios for the appropriate periods.

<sup>11</sup> The equal-weighted returns are on average biased upwards because of the bid-ask bounce (see Blume and Stambaugh, 1983, Canina, Michaely, Thaler and Womack, 1998 and Lyon, Barber and Tsai, 1999). This bias is severe for low priced stocks, but many of these low priced stocks do not enter our sample because of our price cut-off and because analysts typically do not follow low-priced stocks. Also, we examine the difference between the returns for the upgrades minus downgrade portfolio. Since the firm sizes are similar for upgrades and downgrades, we expect that any such bias would be negligible.



For each of these strategies, we first compute the daily equal- weighted returns for Buy portfolio ( $DR_{ew,t}^b$ ) and Sell portfolio ( $DR_{ew,t}^s$ ) as follows:

$$DR_{ew,t}^b = \frac{1}{N_{b,t}} \sum_{i \in I_{b,t}} R_{i,t}, \text{ and}$$

$$DR_{ew,t}^s = \frac{1}{N_{s,t}} \sum_{i \in I_{s,t}} R_{i,t},$$

where  $I_{b,t}$  and  $I_{s,t}$  are the sets of stocks in the Buy and Sell portfolios on day  $t$ , and  $N_{b,t}$  and  $N_{s,t}$  are the number of stocks in these portfolios.

Similarly, we compute the daily value weighted returns buy portfolio  $DR_{vw,t}^b$  and sell portfolio  $DR_{vw,t}^s$  as follows:

$$DR_{vw,t}^b = \frac{\sum_{i \in I_{b,t}} S_{i,t-1} \times P_{i,t-1} \times R_{i,t}}{\sum_{i \in I_{b,t}} S_{i,t-1} \times P_{i,t-1}}, \text{ and}$$

$$DR_{vw,t}^s = \frac{\sum_{i \in I_{s,t}} S_{i,t-1} \times P_{i,t-1} \times R_{i,t}}{\sum_{i \in I_{s,t}} S_{i,t-1} \times P_{i,t-1}},$$

where,  $S_{i,t}$  and  $P_{i,t}$  are the number of shares outstanding, and the price for stock  $i$  on date  $t$ , respectively. We compound the daily returns for the Buy and Sell portfolio within each calendar month, and the Buy minus Sell returns is the trading strategy profit.

For each Buy minus Sell portfolio, we compute the CAPM alpha using the following regression:

$$PR_{i,t} = \alpha_i + \beta_i R_{mkt,t} + e_{i,t},$$

where,  $PR_{i,t}$  is the month  $t$  buy portfolio minus sell portfolio return for strategy  $i$ , and  $R_{mkt,t}$  is the market return in that country. The regression intercept  $\alpha$  is the CAPM excess return (per dollar long or short) per month.

Panel A of Table IX presents the monthly excess returns for the equal-weighted Buy minus Sell portfolios for various holding periods and delays. One of the striking patterns that we find here is that the portfolio excess returns decline rapidly with an increase in delay. For example, for the one-month holding period, as we move from no delay to a five-day delay, the excess return declines from 5.79% to 1.38% in the U.S. We also find a similar pattern in the other countries. This pattern reflects the relatively large returns we observe on days 0 and 1 in Table VI.

In all countries, the trading strategy is less profitable as we increase the holding period. For example, in the U.S., the profit declines from 5.79% for the one-month holding period to 1.10% for the six-month holding period. The profits are significantly positive for all holding periods and all levels of delays in the U.S., Canada, France and Japan. The strategies are reliably profitable in Germany in most cases. The profits in Britain are generally insignificant beyond a one-month holding period, and the profits are not reliably different from zero in most cases in Italy.

Table IX also presents the excess returns separately for large firms and small firms. To facilitate comparability, for all countries we classify firms as large and small based on the median size of NYSE-listed stocks on the last trading day of the calendar year before the portfolio formation date. The profits are generally bigger for small firms than large firms. Analyst recommendations, therefore, add more value for small firms than for large firms.

Panel B of Table IX presents the value-weighted excess returns. The pattern of the value-weighted excess returns is generally similar to the pattern of equal-weighted excess returns, both across holding periods and across delays. However, for the full sample and for the large firm sample, the value-weighted excess returns are generally much smaller than the equal-weighted excess returns. For example, the value-weighted excess return is 2.07% for the one-month holding period with no delay in the U.S., compared with the equal-weighted excess return of 5.79%. In US, Britain and Canada, the value-weighted excess returns are significantly different from zero for the one-month holding period with no delay. However, outside the U.S., the excess returns are not significantly different from zero for longer holding periods and for longer delays, except in a few cases.

The excess returns are generally larger for the small firm sample than the large firm sample. In fact, for the small firms the value-weighted excess returns are close to the equal-weighted profits in most countries. For example, the value-weighted excess return for small firms is 7.20% for the one-month holding period with no delay in the U.S. and the corresponding equal-weighted excess return is 7.88%. Therefore, within the small firm segment of the market, the value that analyst add is not related to firm size.

Overall, the trading profits are by far the largest for the U.S. Japan ranks second. In fact, the trading profits for small firms are about the same in the U.S. and Japan. The magnitudes of the profits for the equal-weighted strategy are about the same across the other countries for a one-month holding period. The value-weighted strategy is not profitable in these countries except in a few cases.

## **VI. Conclusion**

This paper examines analyst recommendations in the G7 countries and evaluates the value of these recommendations. We find that stock prices react significantly to recommendation revisions on the day of recommendation and on the following day in all of these countries except Italy. Stock prices continue to drift up for upgrades and down for downgrades over the next two to six months. We find the largest price drifts in the U.S., followed by Japan. These are the two largest markets in the world, and our evidence indicates that the value of analyst recommendations is the largest in these countries.

We also examine the performance of calendar-time trading strategies that buy upgraded stocks and sell downgraded stocks. We consider several strategies with different holding periods, and with different delays between the time when revisions are made and the time when the stocks enter the portfolios. The equal-weighted strategies with no delays and with holding periods of one month are profitable in all countries, except Italy, before transaction costs. The value-weighted strategies, however, are profitable only for a one-month holding period strategy that is initiated without a delay. All of these strategies are more profitable for small firms than for large firms. Among the G7 countries, we find that the trading strategies are the most profitable in the U.S., across all horizons.

Our evidence indicates that the market is not semistrong form efficient in the countries in our sample, in spite of the fact that these countries have the most developed stock markets in the world. Although the profits from these trading strategies are probably smaller than reasonable transaction cost bounds, it is possible that investors may be able to profitably use recommendation revisions in combination with other signals in their trading strategies. For instance, Jegadeesh et al. (2003) show that in the U.S.,

recommendation revisions in combination with several momentum and value signals earn significant profits, and such strategies may work in the other countries as well.

Our comparative analysis of the value of analyst recommendation in developed countries also provides a basis for assessing the likely benefits of the recent regulatory settlements with brokerage firms for investors. This settlement includes provisions to restrict links between the investment banking and the stock research departments, and to promote independent research. The settlement will likely promote more ethical practices, and will likely make the analysts less reluctant to issue sell recommendations than they have been in the past. In fact, we examined the recommendations in the first three months of 2003 and found that analysts in the U.S. about 12% of them were sell or strong sell, compared with only 3.3 % such recommendations during the 1993 to 2002 sample period.<sup>12</sup> The recommendations also exhibit more cross-sectional variation in 2003 than in the earlier years.

Neither the frequency of sell recommendations nor the cross-sectional variability, however, need translate into more value for investors. During our sample period, the U.S. had the lowest frequency of sell recommendation among all of the countries we examine. Also, the issue of analysts' conflict of interest has not been a major public concern outside the U.S. However, analyst recommendations in the U.S. provide the most value for investors.

It seems likely that the U.S. investors were able to see through potential conflicts of interests, even prior to the settlement. Furthermore, the evidence that analysts in all of

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<sup>12</sup> In comparison, the frequency of sell recommendations in the other G7 countries increased from 15.3% in our sample period to 17.6% during the first quarter of 2003. The fact that the frequency of sell recommendations increase much more sharply in the U.S. than in the other countries indicates that this change was at least partly driven by the settlements with the SEC and the NY state.

the most developed countries add only a modest amount of value through their recommendations suggests that these markets are fairly efficient, and it is unlikely that analysts can routinely uncover larger mispricings. Therefore, we do not see any reason to expect that the recommendations of the U.S. analysts will perform any better in the future, even with the current efforts to remove their conflicting incentives, than what they have in the past.

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**Table I**  
**Sample Descriptive Statistics**

This table presents the descriptive statistics for the sample. The sample includes all firms in the G7 countries that have at least two active recommendations from the same analyst in the IBES international recommendations database, and also have stock return data on recommendation revision dates. The sample excludes all stocks priced lower than \$1 on the day before the recommendation revision date. The columns present the average number of stocks per year, the average number of analysts per year, the average number of brokerage firms per year, and the mean and median number of analysts per stock, and per brokerage firm. The sample period is from November 1993 to July 2002.

Country	Stocks	Analysts	Brokerage firms	Analysts per stock		Analysts per brokerage firm	
				Mean	Median	Mean	Median
US	3,054	2,019	170	3	2	12	5
Britain	511	475	43	3	2	12	7
Canada	275	285	46	4	3	6	3
France	232	379	41	5	3	9	8
Germany	186	317	41	4	3	8	6
Italy	85	133	28	3	3	5	4
Japan	382	183	15	2	1	12	10
Average (Excluding US)	278	295	35	4	2	9	6
Average (All countries)	675	541	55	3	2	9	6



**Table II****Market Size and the Sample Coverage**

This table presents an overview of the total market size and median market value of equity in the G7 countries. Panel A presents the total stock market capitalization; Panel B presents the market capitalization of the firms in our sample as of the first day of each calendar year; Panel C presents the fraction of the market covered by our sample; and Panel D presents the median market capitalizations of the stocks in the sample. The row titled “NYSE” in Panel D presents the median market capitalization of New York Stock Exchange listed stocks. The sample period is from November 1993 to July 2002.

<b>Panel A: Total Market Capitalization of G7 countries (unit: \$U.S. billions)</b>										
Country	Average	1993	1994	1995	1996	1997	1998	1999	2000	2001
US	10,498	5,129	5,056	6,910	8,466	10,451	12,747	16,590	15,117	14,015
Britain	1,940	1,139	1,165	1,384	1,702	2,042	2,274	2,926	2,689	2,137
Canada	415	211	214	265	355	447	447	603	641	548
France	865	452	461	519	600	667	973	1,501	1,443	1,170
Germany	874	437	509	585	675	816	1,082	1,431	1,267	1,068
Italy	413	134	184	214	263	343	563	727	766	525
Japan	3,063	2,912	3,619	3,595	3,060	2,053	2,430	4,440	3,177	2,279

<b>Panel B: Sample Market Capitalization of G7 Countries (unit: \$U.S. billions)</b>										
Country	Average	1993	1994	1995	1996	1997	1998	1999	2000	2001
US	8,781	1,131	3,922	5,463	6,826	9,118	11,537	14,574	14,024	12,436
Britain	1,313	728	761	911	1,153	1,386	1,497	2,011	1,793	1,580
Canada	240	67	116	146	220	292	291	355	349	323
France	425	141	191	234	302	362	543	732	732	588
Germany	646	300	402	391	475	625	797	1,121	881	820
Italy	246	57	95	91	148	191	333	371	586	339
Japan	1,701	238	1,730	2,270	1,700	1,299	1,079	3,139	2,115	1,736

**Table II** — *Continued*

<b>Panel C: Sample Coverage (Panel A/Panel B, %)</b>										
Country	Average	1993	1994	1995	1996	1997	1998	1999	2000	2001
<u>US</u>	83.65	22.06	77.57	79.06	80.63	87.24	90.50	87.85	92.77	88.74
Britain	67.70	63.95	65.31	65.81	67.73	67.85	65.86	68.73	66.67	73.96
Canada	57.91	31.47	54.31	55.09	62.09	65.49	65.19	58.90	54.42	59.04
France	49.12	31.15	41.42	45.01	50.38	54.37	55.82	48.78	50.70	50.23
Germany	73.86	68.68	78.99	66.84	70.42	76.60	73.65	78.34	69.54	76.78
Italy	59.43	42.68	51.33	42.60	56.14	55.67	59.20	50.99	76.47	64.60
Japan	55.52	8.18	47.80	63.16	55.54	63.27	44.40	70.68	66.56	76.16

<b>Panel D: Median Market Capitalization of the Sample (Unit: \$U.S. mil)</b>										
Country	Average	1993	1994	1995	1996	1997	1998	1999	2000	2001
US	462	789	296	342	381	422	360	463	487	617
Britain	499	666	557	568	566	465	388	544	378	357
Canada	259	549	329	256	247	224	147	167	195	215
France	425	1,077	619	391	358	279	307	321	240	229
Germany	549	1,293	491	546	596	564	375	535	400	140
Italy	730	816	388	379	376	670	834	1,121	1,216	767
Japan	1,851	1,976	2,406	2,075	1,510	881	1,952	2,428	2,355	1,079
NYSE	836	679	615	715	794	945	813	825	986	1,149

**Table III****Distribution of Recommendation Levels in the G7 Countries**

This table presents the distribution of recommendation levels in the G7 countries. The sample includes all firms with valid recommendations in the IBES. At the end of each month, we compute the frequencies of each recommendation level. The table reports the averages of the monthly frequencies. The sample period is from November 1993 to July 2002.

Country		1993- 2002	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
US	Strong Buy	28.6	31.6	27.1	26.3	29.1	31.6	30.4	28.9	32.8	25.0	24.4
	Buy	33.6	24.8	28.3	30.7	31.5	33.3	35.0	37.4	37.3	36.5	33.7
	Hold	34.5	38.2	40.2	38.4	35.2	32.0	32.3	31.4	27.8	35.8	38.2
	Sell/Strong Sell	3.3	5.3	4.4	4.7	4.2	3.1	2.3	2.4	2.1	2.7	3.7
Britain	Strong Buy	24.3	25.7	26.9	24.4	27.4	30.9	23.3	21.2	24.3	19.2	17.9
	Buy	22.3	13.2	14.3	16.2	13.2	17.7	24.0	28.6	32.8	29.5	27.7
	Hold	41.7	48.4	46.2	45.5	45.9	40.5	41.1	39.8	35.4	40.0	38.3
	Sell/Strong Sell	11.8	12.7	12.6	14.0	13.5	10.9	11.5	10.4	7.5	11.3	16.1
Canada	Strong Buy	29.4	35.0	38.8	33.0	29.6	32.9	27.3	25.4	28.6	23.6	20.5
	Buy	28.6	13.4	15.7	15.9	22.0	23.5	33.3	37.1	40.3	39.4	35.0
	Hold	29.9	29.8	29.4	36.8	31.7	29.9	28.0	28.0	24.1	28.9	34.3
	Sell/Strong Sell	12.1	21.7	16.0	14.3	16.7	13.6	11.4	9.4	7.0	8.2	10.2
France	Strong Buy	24.7	24.9	27.8	28.0	23.7	28.3	24.6	25.4	23.6	21.4	16.1
	Buy	28.3	13.4	19.2	22.6	25.9	26.7	30.1	32.4	39.8	31.1	30.7
	Hold	31.1	45.9	40.0	32.4	28.5	28.9	31.4	27.9	24.8	31.5	32.5
	Sell/Strong Sell	15.9	15.8	13.0	16.9	22.0	16.1	13.9	14.3	11.8	16.0	20.7

**Table III** — *Continued*

Country		1993- 2002	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Germany	Strong Buy	18.3	21.9	23.9	23.4	15.9	18.5	20.3	14.7	17.7	14.5	12.9
	Buy	20.3	8.4	8.9	13.1	15.2	18.8	21.1	25.5	31.6	27.4	25.2
	Hold	41.5	43.9	47.0	42.6	40.8	37.9	40.9	43.8	38.6	40.8	40.2
	Sell/Strong Sell	19.9	25.9	20.1	21.0	28.1	24.8	17.7	16.0	12.1	17.3	21.7
Italy	Strong Buy	19.2	18.5	21.4	26.4	19.7	23.0	20.9	16.2	17.3	14.2	10.6
	Buy	20.0	6.0	9.7	9.9	15.1	15.8	21.7	28.5	30.1	26.7	28.7
	Hold	47.1	56.5	53.4	45.6	46.8	48.3	46.8	45.8	44.7	46.5	42.7
	Sell/Strong Sell	13.6	19.0	15.4	18.2	18.5	12.9	10.7	9.4	7.9	12.6	17.9
Japan	Strong Buy	23.6	17.8	28.2	34.8	28.6	24.5	16.3	14.3	25.4	21.9	16.0
	Buy	22.4	11.6	8.4	6.9	15.5	24.3	27.4	32.0	31.7	29.9	31.4
	Hold	35.7	43.6	40.4	37.2	36.3	34.9	32.2	34.7	32.4	34.5	38.0
	Sell/Strong Sell	18.3	27.0	23.0	21.1	19.6	16.4	24.2	19.0	10.5	13.7	14.7
Average (Ex the US)	Strong Buy	23.2	24.0	27.8	28.3	24.1	26.3	22.1	19.5	22.8	19.1	15.7
	Buy	23.7	11.0	12.7	14.1	17.8	21.1	26.3	30.7	34.4	30.7	29.8
	Hold	37.8	44.7	42.8	40.0	38.3	36.7	36.7	36.7	33.3	37.0	37.7
	Sell/Strong Sell	15.3	20.3	16.7	17.6	19.7	15.8	14.9	13.1	9.5	13.2	16.9
Average. (All countries)	Strong Buy	24.0	25.1	27.7	28.0	24.8	27.1	23.3	20.9	24.2	20.0	16.9
	Buy	25.1	13.0	14.9	16.5	19.8	22.9	27.5	31.6	34.8	31.5	30.3
	Hold	37.3	43.8	42.4	39.8	37.9	36.0	36.1	35.9	32.5	36.8	37.7
	Sell/Strong Sell	13.6	18.2	14.9	15.7	17.5	14.0	13.1	11.6	8.4	11.7	15.0

**Table IV**  
**Distribution of Analyst Recommendation Revisions in G7 Countries**

This table presents the distribution of recommendation revisions in the sample. We characterize each revision as an upgrade or a downgrade by comparing the revised recommendation with the previous recommendation for the stock by the revising analyst. We further classify upgrades and downgrades into revisions to and from strong buy and from and to sell or strong sell. "All revisions" column includes both upgrades and downgrades. The first column in each revision category presents the number of revisions, and the second column presents the percentages across all revisions in that country. The sample period is from November 1993 to July 2002.

Country	All Revisions No.	Upgrades						Downgrades					
		All		to Str. Buy		from Sell/Str. Sell		All		To Sell/Str. Sell		from Str. Buy	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
US	113,682	50,238	44.19	29,188	25.68	3,578	3.15	63,444	55.81	4,587	4.03	35,057	30.84
Britain	21,993	10,930	49.70	5,144	23.39	3,166	14.40	11,063	50.30	3,152	14.33	5,265	23.94
Canada	20,165	9,667	47.94	4,605	22.84	2,084	10.33	10,498	52.06	2,187	10.85	5,268	26.12
France	13,408	6,510	48.55	2,766	20.63	2,229	16.62	6,898	51.45	2,460	18.35	2,951	22.01
Germany	10,965	5,252	47.90	2,131	19.43	2,053	18.72	5,713	52.10	2,160	19.70	2,382	21.72
Italy	3,794	1,847	48.68	766	20.19	596	15.71	1,947	51.32	552	14.55	827	21.80
Japan	7,167	3,522	49.14	1,548	21.60	1,291	18.01	3,645	50.86	1,209	16.87	1,763	24.60
Total(ex US)	77,492	37,728	48.69	16,960	21.89	11,419	14.74	39,764	51.31	11,720	15.12	18,456	23.82
Total(all G7)	191,174	87,966	46.01	46,148	24.14	14,997	7.84	103,208	53.99	16,307	8.53	53,513	27.99

**Table V**

**Past Returns and Size Characteristics of Analyst Recommendation Revisions across G7 Countries: 1993 to 2002**

This table presents average past returns ranks and size ranks for the recommendation revisions in the sample. We characterize each revision as an upgrade or a downgrade by comparing the revised recommendation with the previous recommendation for the stock by the revising analyst. We further classify upgrades and downgrades into revisions to and from strong buy and from and to sell or strong sell that analysts upgrade or downgrade. For each revision, we compute past three- and six-month returns and separately assign return decile ranks based on the returns for the corresponding period for all stocks in the respective countries. We assign rank 1 to stocks in the lowest return decile, rank 2 to the next return decile, and so on. To determine the size ranks, we compute the market value of the stock as of the end of the month before the revision. For all countries, we assign size ranks based on NYSE size decile break points. We assign rank 1 to stocks in the smallest size decile, rank 2 to the next size decile, and so on. The column titled “6m” and “3m” report average six- and three-month return ranks, and column titled “Size” reports the average size ranks. The sample period is from November 1993 to July 2002.

<u>Country</u>	<b>Upgrades</b>									<b>Downgrades</b>								
	<b>All</b>			<b>to Str Buy</b>			<b>from Sell/Str Sell</b>			<b>All</b>			<b>to Sell/Str Sell</b>			<b>from Str Buy</b>		
	6m	3m	size	6m	3m	size	6m	3m	size	6m	3m	size	6m	3m	size	6m	3m	size
<b>US</b>	6.12	5.93	6.42	6.25	5.97	6.35	5.50	5.54	6.62	5.57	5.54	5.94	5.26	5.45	6.08	5.71	5.64	5.93
<b>Britain</b>	5.57	5.51	6.51	5.66	5.57	6.33	5.33	5.33	6.90	5.72	5.67	6.46	5.49	5.47	6.85	5.77	5.71	6.24
<b>Canada</b>	5.94	5.82	4.71	6.08	5.89	4.88	5.49	5.50	4.32	5.87	5.88	4.58	5.44	5.58	4.11	5.97	5.94	4.70
<b>France</b>	5.81	5.80	5.80	6.13	6.05	5.93	5.46	5.60	5.63	5.45	5.34	5.57	5.12	5.03	5.41	5.76	5.54	5.67
<b>Germany</b>	6.02	5.97	6.86	6.22	6.08	7.03	5.73	5.77	6.57	5.57	5.38	6.61	5.09	4.94	6.31	5.90	5.66	6.84
<b>Italy</b>	5.95	5.90	6.01	6.17	6.11	6.23	5.42	5.54	5.95	5.78	5.62	6.06	5.17	5.33	6.17	6.10	5.88	6.20
<b>Japan</b>	6.24	6.21	7.40	6.66	6.47	7.55	5.85	5.99	7.41	5.76	5.52	7.21	5.28	5.14	7.22	6.11	5.79	7.17
<b>Total(all G7)</b>	6.00	5.87	6.26	6.17	5.94	6.25	5.51	5.57	6.26	5.62	5.57	5.92	5.28	5.31	5.99	5.77	5.68	5.91
<b>Total(ex US)</b>	5.85	5.79	6.04	6.04	5.90	6.07	5.52	5.58	6.14	5.70	5.61	5.89	5.29	5.26	5.96	5.89	5.76	5.88

**Table VI**  
**Cumulative Returns following Analyst Recommendation Revisions in the G7 Countries**

This table presents the cumulative abnormal returns following recommendation revisions. We characterize each revision as an upgrade or a downgrade by comparing the revised recommendation with the previous recommendation for the stock by the revising analyst. We further classify upgrades and downgrades into revisions to and from strong buy and from and to sell or strong sell. The abnormal return is the raw return minus the market return in the respective country over the corresponding period. For the U.S., the market return is the CRSP value-weighted index returns and for the other six countries, the market returns are the Datastream index returns for the countries. Day 0 is the revision date and other days in the columns are the number of trading days from the revision date. The average returns reported in bold face are statistically significant at least at the five percent level (absolute value of  $t$ -statistics greater than 1.96). We use heteroskedasticity and serial correlation consistent standard errors to compute the  $t$ -statistics. The sample period is November 1993 to July 2002.

Country	Recommendation Revision	Number of Trading Days after the Revision Date						
		0	1	2	22	44	132	
US	Upgrades	All	<b>1.76</b>	<b>2.10</b>	<b>2.20</b>	<b>3.34</b>	<b>3.65</b>	<b>4.75</b>
		to strong buy	<b>1.91</b>	<b>2.29</b>	<b>2.41</b>	<b>3.59</b>	<b>3.84</b>	<b>4.64</b>
		From sell/strong sell	<b>0.66</b>	<b>0.78</b>	<b>0.82</b>	<b>1.23</b>	<b>1.57</b>	0.77
	Downgrades	All	<b>-3.19</b>	<b>-3.38</b>	<b>-3.50</b>	<b>-4.20</b>	<b>-4.76</b>	<b>-6.20</b>
		to sell/strong sell	<b>-2.39</b>	<b>-2.41</b>	<b>-2.66</b>	<b>-3.42</b>	<b>-4.04</b>	<b>-5.74</b>
		From strong buy	<b>-3.16</b>	<b>-3.35</b>	<b>-3.44</b>	<b>-4.26</b>	<b>-4.87</b>	<b>-6.42</b>
	Upgrades minus Downgrades		<b>4.95</b>	<b>5.48</b>	<b>5.70</b>	<b>7.54</b>	<b>8.41</b>	<b>10.96</b>
Britain	Upgrades	All	<b>0.18</b>	<b>0.28</b>	<b>0.37</b>	<b>1.02</b>	1.16	0.40
		to strong buy	<b>0.18</b>	<b>0.30</b>	<b>0.44</b>	<b>1.26</b>	1.34	0.69
		From sell/strong sell	<b>0.18</b>	<b>0.21</b>	<b>0.25</b>	<b>0.63</b>	0.93	-0.77
	Downgrades	All	<b>-0.18</b>	<b>-0.23</b>	<b>-0.26</b>	<b>-0.59</b>	<b>-0.79</b>	<b>-2.04</b>
		to sell/strong sell	<b>-0.30</b>	<b>-0.36</b>	<b>-0.41</b>	<b>-0.86</b>	<b>-0.93</b>	<b>-2.92</b>
		From strong buy	<b>-0.13</b>	<b>-0.16</b>	<b>-0.19</b>	<b>-0.65</b>	<b>-1.13</b>	<b>-2.41</b>
	Upgrades minus Downgrades		<b>0.36</b>	<b>0.50</b>	<b>0.63</b>	<b>1.61</b>	<b>1.95</b>	2.44 <sup>†</sup>
Canada	Upgrades	All	<b>0.40</b>	<b>0.54</b>	<b>0.60</b>	<b>1.06</b>	1.06	-1.38
		to strong buy	<b>0.47</b>	<b>0.69</b>	<b>0.68</b>	<b>1.06</b>	1.19	-1.18
		From sell/strong sell	0.14	<b>0.24</b>	0.37	-0.05	-0.79	<b>-4.09</b>
	Downgrades	All	<b>-0.45</b>	<b>-0.64</b>	<b>-0.71</b>	<b>-1.58</b>	<b>-2.35</b>	<b>-5.80</b>
		to sell/strong sell	<b>-0.66</b>	<b>-0.86</b>	<b>-0.98</b>	<b>-2.59</b>	<b>-4.53</b>	<b>-9.07</b>
		From strong buy	<b>-0.36</b>	<b>-0.55</b>	<b>-0.64</b>	<b>-1.32</b>	<b>-1.87</b>	<b>-5.22</b>
	Upgrades minus Downgrades		<b>0.85</b>	<b>1.18</b>	<b>1.31</b>	<b>2.64</b>	<b>3.41</b>	<b>4.42</b>

**Table VI** — *Continued*

Country	Recommendation	Revision	Number of Trading Days after the Revision Date					
			0	1	2	22	44	132
France	Upgrades	All	<b>0.32</b>	<b>0.38</b>	<b>0.42</b>	0.20	0.44	-0.90
		to strong buy	<b>0.43</b>	<b>0.55</b>	<b>0.62</b>	0.66	0.97	0.39
		From sell/strong sell	<b>0.16</b>	0.12	0.09	-0.50	-0.46	<b>-2.03</b>
	Downgrades	All downs	<b>-0.35</b>	<b>-0.48</b>	<b>-0.56</b>	<b>-1.50</b>	<b>-2.41</b>	<b>-5.20</b>
		to sell/strong sell	<b>-0.41</b>	<b>-0.52</b>	<b>-0.61</b>	<b>-2.06</b>	<b>-3.21</b>	<b>-6.66</b>
		From strong buy	<b>-0.33</b>	<b>-0.43</b>	<b>-0.53</b>	<b>-1.27</b>	<b>-2.01</b>	<b>-4.67</b>
	Upgrades minus Downgrades			<b>0.67</b>	<b>0.86</b>	<b>0.98</b>	<b>1.70</b>	<b>2.85</b>
Germany	Upgrades	All	<b>0.16</b>	<b>0.21</b>	<b>0.19</b>	0.09	-0.05	-1.93
		to strong buy	<b>0.23</b>	<b>0.43</b>	<b>0.41</b>	0.03	0.01	<b>-2.09</b>
		From sell/strong sell	0.14	0.12	0.00	-0.18	-0.32	<b>-2.69</b>
	Downgrades	All	<b>-0.22</b>	<b>-0.33</b>	<b>-0.38</b>	<b>-1.41</b>	<b>-2.91</b>	<b>-5.86</b>
		to sell/strong sell	<b>-0.31</b>	<b>-0.41</b>	<b>-0.51</b>	<b>-1.80</b>	<b>-3.34</b>	<b>-6.67</b>
		From strong buy	-0.13	<b>-0.30</b>	<b>-0.34</b>	<b>-1.28</b>	<b>-2.84</b>	<b>-5.78</b>
	Upgrades minus Downgrades			<b>0.38</b>	<b>0.54</b>	<b>0.58</b>	<b>1.50</b>	<b>2.86</b>
Italy	Upgrades	All	0.04	0.05	0.00	0.09	-0.03	-0.29
		to strong buy	-0.08	0.03	0.02	0.48	0.33	1.22
		From sell/strong sell	0.08	0.09	0.03	-0.30	<b>-1.40</b>	<b>-3.51</b>
	Downgrades	All	-0.09	-0.14	-0.09	-0.44	<b>-0.91</b>	<b>-2.22</b>
		to sell/strong sell	-0.09	-0.15	-0.07	<b>-0.97</b>	<b>-1.65</b>	<b>-4.71</b>
		From strong buy	-0.09	-0.04	0.08	-0.39	<b>-1.24</b>	<b>-2.38</b>
	Upgrades minus Downgrades			0.12	<b>0.19</b>	0.09	0.53	0.88
Japan	Upgrades	All	<b>0.46</b>	<b>0.74</b>	<b>0.90</b>	<b>1.61</b>	<b>2.36</b>	<b>4.21</b>
		to strong buy	<b>0.38</b>	<b>0.61</b>	<b>0.85</b>	<b>1.08</b>	<b>1.76</b>	<b>2.80</b>
		from sell/strong sell	<b>0.27</b>	<b>0.29</b>	<b>0.33</b>	0.67	<b>1.62</b>	3.18
	Downgrades	All	<b>-0.41</b>	<b>-0.71</b>	<b>-0.81</b>	<b>-1.00</b>	<b>-1.25</b>	-0.45
		to sell/strong sell	<b>-0.60</b>	<b>-0.94</b>	<b>-1.09</b>	<b>-1.59</b>	<b>-1.94</b>	-0.79
		from strong buy	<b>-0.29</b>	<b>-0.57</b>	<b>-0.56</b>	-0.79	<b>-1.29</b>	-1.17
	Upgrades minus Downgrades			<b>0.87</b>	<b>1.45</b>	<b>1.71</b>	<b>2.61</b>	<b>3.61</b>

†- Standard errors could not be determined because the serial correlation-consistent estimate of variance was negative.



**Table VII**

**Stocks with U.S. and Foreign Analyst Coverage: Descriptive statistics**

The "U. S. Stocks" sample comprises all stock with at least one recommendation revision by a U.S. analyst and by a foreign analyst, in the same calendar year. The "ADRs" sample comprises all American Depository Receipts (ADRs) of companies in the G7 countries (excluding the U.S.) that have at least one recommendation revision for the ADRs by a U.S. analyst and at least one revision for the underlying stock in the home country by a domestic analyst, in the same calendar year. "Average recommendation" is the average of the active recommendations across all U.S. analysts or foreign analysts. The sample period is from November 1993 to July 2002.

		Number of Firms per year	Number of brokers per year	Analysts per stock		Average Recommendation
				Mean	Median	
<b>U.S. stocks</b>						
	U.S. Brokerages	84	60	6	5	2.25
	non-US Brokerages	84	17	2	1	2.58
<b>ADRs</b>						
Britain	U.S. Brokerages	30	24	2	2	2.41
	British Brokerages	30	31	7	7	2.65
France	U.S. Brokerages	5	9	2	1	2.03
	French Brokerages	5	25	10	10	2.39
Germany	U.S. Brokerages	6	7	2	1	2.44
	German Brokerages	6	28	13	13	2.63
Italy	U.S. Brokerages	2	3	2	2	2.11
	Italian Brokerages	2	14	10	10	2.38
Japan	U.S. Brokerages	8	2	1	1	2.11
	Japanese Brokerages	8	10	3	3	2.57
<b>All ADRs</b>						
	U.S. Brokerages	49	43	2	1	2.38
	non-US Brokerages	49	101	7	7	2.63

**Table VIII**

**Cumulative Returns following Analyst Recommendation Revisions: Stocks with U.S. and Foreign Analyst Coverage**

This table presents the cumulative abnormal returns for upgrades and downgrades for stocks followed by analysts in the U.S. and abroad. The "U. S. Stocks" sample comprises all stock with at least one recommendation revision by a U.S. analyst and by a foreign analyst, in the same calendar year. The "ADRs" sample comprises all American Depository Receipts (ADRs) of companies in the G7 countries (excluding the U.S.) that have at least one recommendation revision for the ADRs by a U.S. analyst and at least one revision for the underlying stock in the home country by a domestic analyst, in the same calendar year. The abnormal return is the raw return minus the market return in the respective country over the corresponding period. Day 0 is the revision date and other days in the columns are the number of trading days from the revision date. The average returns reported in bold face are statistically significant at least at the five percent level (absolute value of *t*-statistics greater than 1.96). We use heteroskedasticity and serial correlation consistent standard errors to compute the *t*-statistics. The sample period is November 1993 to July 2002.

Country	Broker Origin	Revision Type	Number of Revisions	Number of Trading Days after the Revision Date					
				0	1	2	22	44	132
<b>US stocks</b>									
	U.S.	Upgrades	2,006	<b>2.15</b>	<b>2.30</b>	<b>2.38</b>	<b>2.22</b>	2.65	<b>8.78</b>
	Brokerages	Downgrades	2,516	<b>-3.48</b>	<b>-3.66</b>	<b>-3.78</b>	<b>-5.56</b>	<b>-5.81</b>	-1.63
		Upgrades-Downgrades			<b>5.64</b>	<b>5.97</b>	<b>6.16</b>	<b>7.77</b>	<b>8.45</b>
	non-US	Upgrades	535	0.17	0.28	0.59	0.20	-0.88	<b>-7.11</b>
	Brokerages	Downgrades	749	<b>-1.29</b>	<b>-1.60</b>	<b>-2.22</b>	<b>-4.28</b>	<b>-4.21</b>	<b>-7.40</b>
		Upgrades-Downgrades			<b>1.46</b>	<b>1.87</b>	<b>2.81</b>	<b>4.48</b>	3.33
<b>ADRs</b>									
Britain	U.S.	Upgrades	404	<b>0.89</b>	<b>1.08</b>	<b>1.32</b>	<b>2.99</b>	<b>2.52</b>	0.64
	Brokerages	Downgrades	385	<b>-0.42</b>	<b>-0.62</b>	<b>-0.77</b>	-0.45	-0.87	-1.99
		Upgrades-Downgrades			<b>1.32</b>	<b>1.70</b>	<b>2.09</b>	<b>3.43</b>	<b>3.39</b>
	British	Upgrades	1,515	<b>0.16</b>	<b>0.23</b>	<b>0.30</b>	<b>0.68</b>	<b>1.28</b>	1.79
	Brokerages	Downgrades	1,513	<b>-0.19</b>	<b>-0.27</b>	-0.27	-0.44	-0.39	0.28
		Upgrades-Downgrades			<b>0.35</b>	<b>0.50</b>	<b>0.57</b>	<b>1.12</b>	<b>1.68</b>

**Table VIII**— *Continued*

Country	Broker Origin	Revision Type	Number of Revisions	Number of Trading Days after the Revision Date					
				0	1	2	22	44	132
<b>ADRs</b>									
France	U.S. Brokerages	Upgrades	46	0.79	0.63	1.13	2.34	2.47	3.25
		Downgrades	55	-1.21	-1.24	-0.95	<b>-3.74</b>	<b>-4.89</b>	-4.41
		Upgrades-Downgrades		<b>2.00</b>	1.87	2.08	<b>6.08</b>	<b>7.36</b>	7.66
	French Brokerages	Upgrades	268	0.15	0.30	<b>0.69</b>	0.68	1.53	1.83
		Downgrades	305	-0.45	-0.25	-0.44	-0.53	0.04	2.06
		Upgrades-Downgrades		<b>0.60</b>	0.56	<b>1.13</b>	1.21	1.49	-0.23 <sup>†</sup>
Germany	U.S. Brokerages	Upgrades	51	0.51	1.86	<b>2.63</b>	1.89	4.22	4.03
		Downgrades	58	<b>-1.42</b>	-1.35	-1.21	-1.72	-2.64	<b>-9.58</b>
		Upgrades-Downgrades		<b>1.93</b>	<b>3.21</b>	<b>3.85</b>	3.61	6.87	13.61 <sup>†</sup>
	German Brokerages	Upgrades	482	0.12	0.02	0.05	-0.35	-0.89	-0.56
		Downgrades	519	-0.13	-0.24	-0.06	-0.22	-0.17	-0.43
		Upgrades-Downgrades		0.25	0.25	0.11	-0.12	-0.71	-0.13
Italy	U.S. Brokerages	Upgrades	17	-0.10	0.34	0.82	3.71	8.71	6.84
		Downgrades	15	0.39	0.93	0.92	-0.89	1.42	-5.84
		Upgrades-Downgrades		-0.48	-0.59	-0.09	4.60	7.30	12.68
	Italian Brokerages	Upgrades	104	-0.14	0.06	0.20	0.16	0.11	0.34
		Downgrades	114	<b>-0.39</b>	-0.43	<b>-0.47</b>	-0.63	-1.21	-2.93
		Upgrades-Downgrades		0.25	0.49	<b>0.67</b>	0.79	1.32	3.27 <sup>†</sup>
Japan	U.S. Brokerages	Upgrades	47	<b>1.36</b>	<b>1.80</b>	<b>2.36</b>	3.06	<b>4.56</b>	7.14
		Downgrades	47	<b>-1.23</b>	<b>-1.84</b>	<b>-1.94</b>	-2.65	-2.91	-4.49
		Upgrades-Downgrades		<b>2.59</b>	<b>3.64</b>	<b>4.30</b>	<b>5.72</b>	<b>7.47</b>	<b>11.63</b>
	Japanese Brokerages	Upgrades	146	0.27	0.29	0.19	0.19	1.73	<b>11.05</b>
		Downgrades	155	<b>-0.62</b>	-0.63	<b>-1.08</b>	1.89	3.18	<b>7.55</b>
		Upgrades-Downgrades		<b>0.89</b>	0.92	<b>1.27</b>	-1.70	-1.45	3.50
<b>All ADRs</b>	U.S. Brokerages	Upgrades	565	<b>0.86</b>	<b>1.15</b>	<b>1.50</b>	<b>2.86</b>	<b>3.02</b>	1.82
		Downgrades	560	<b>-0.65</b>	<b>-0.82</b>	<b>-0.88</b>	-1.08	-1.54	-3.30
		Upgrades-Downgrades		<b>1.51</b>	<b>1.97</b>	<b>2.38</b>	<b>3.94</b>	<b>4.56</b>	<b>5.12</b>
	non-US Brokerages	Upgrades	2,515	<b>0.14</b>	<b>0.19</b>	<b>0.28</b>	0.43	0.86	<b>1.67</b>
		Downgrades	2,606	<b>-0.24</b>	<b>-0.29</b>	<b>-0.31</b>	-0.28	-0.14	0.53
		Upgrades-Downgrades		<b>0.39</b>	<b>0.48</b>	<b>0.59</b>	<b>0.71</b>	1.00	1.14

<sup>†</sup> - Standard errors could not be determined because the serial correlation-consistent estimate of variance was negative.

**Table IX**  
**Returns for Revisions-Based Trading Strategy in the G7 Countries**

This table presents the average monthly returns for trading strategies based on analysts revisions. On each day, the trading strategies buy all upgrades and sells all downgrades that are made in the previous  $T$  months. The table presents the profits for trading strategies with  $T$  equal to one, three and six months, and the column headings indicate  $T$ . The trading strategies also vary the delay between the time a revision is made and the time the stock enters the portfolios. The rows present the number of days of delay. The table presents the returns for the trading strategies implemented with all of the firms in the sample, and also separately with the large firm and small firm subsamples. For all of the countries, the large firm subsample and the small firm subsample comprise stocks above and below the median market capitalization of equity of the NYSE listed stocks at the end of the calendar year before the revision date, respectively. We compute the daily returns for each trading strategy, and compound the daily returns to obtain the monthly returns.

$$PR_{i,t} = \alpha_i + \beta_i R_{mkt,t} + e_{i,t},$$

where,  $PR_{i,t}$  is the month  $t$  buy portfolio minus sell portfolio return for strategy  $i$ , and  $R_{mkt,t}$  is the market return in that country. Panel A reports intercepts from the equal-weighted portfolios, and Panel B reports the value-weighted returns. The intercepts reported in bold face are statistically significant at least at the five percent level (absolute value of  $t$ -statistics greater than 1.96). The sample period is November 1993 to July 2002.

Country	Delay after Revision	Panel A: Equal Weighted Portfolios								
		All firms			Large Firms			Small Firms		
		1 mon	3 mon	6 mon	1 mon	3 mon	6 mon	1 mon	3 mon	6 mon
US	0	<b>5.79</b>	<b>2.12</b>	<b>1.10</b>	<b>4.17</b>	<b>1.27</b>	<b>0.55</b>	<b>7.88</b>	<b>3.07</b>	<b>1.65</b>
	1	<b>2.40</b>	<b>0.98</b>	<b>0.58</b>	<b>1.66</b>	<b>0.52</b>	<b>0.21</b>	<b>3.39</b>	<b>1.61</b>	<b>1.03</b>
	5	<b>1.38</b>	<b>0.68</b>	<b>0.47</b>	<b>0.85</b>	<b>0.27</b>	0.11	<b>2.08</b>	<b>1.19</b>	<b>0.88</b>
Britain	0	<b>1.44</b>	3.33	1.62	<b>0.85</b>	<b>0.33</b>	<b>0.14</b>	<b>1.97</b>	3.78	1.90
	1	<b>1.17</b>	-0.48	-0.71	<b>0.63</b>	<b>0.29</b>	<b>0.14</b>	<b>1.67</b>	-0.11	-0.45
	5	-0.16	-0.67	-0.88	<b>0.61</b>	<b>0.22</b>	0.10	0.13	-0.42	-0.71
Canada	0	<b>1.90</b>	<b>0.86</b>	<b>0.43</b>	<b>1.07</b>	0.22	0.08	<b>1.65</b>	<b>0.74</b>	<b>0.44</b>
	1	<b>1.38</b>	<b>0.70</b>	<b>0.37</b>	0.37	0.06	0.05	<b>1.07</b>	0.52	0.40
	5	<b>0.91</b>	<b>0.50</b>	<b>0.30</b>	-0.05	-0.08	0.02	0.56	0.37	0.20
France	0	<b>1.56</b>	<b>0.97</b>	<b>0.52</b>	<b>0.78</b>	<b>0.31</b>	<b>0.29</b>	<b>2.48</b>	<b>1.53</b>	<b>0.75</b>
	1	<b>0.96</b>	<b>0.59</b>	<b>0.31</b>	0.32	0.19	<b>0.24</b>	<b>1.74</b>	<b>1.09</b>	<b>0.50</b>
	5	<b>0.82</b>	<b>0.76</b>	<b>0.42</b>	0.20	<b>0.28</b>	<b>0.27</b>	<b>1.42</b>	<b>1.04</b>	0.46
Germany	0	<b>1.27</b>	<b>0.77</b>	<b>0.50</b>	<b>0.69</b>	0.22	0.12	<b>1.85</b>	<b>1.19</b>	<b>0.69</b>
	1	<b>1.03</b>	<b>0.69</b>	<b>0.46</b>	<b>0.50</b>	0.15	0.07	<b>1.35</b>	<b>1.04</b>	<b>0.60</b>
	5	<b>1.11</b>	<b>0.59</b>	0.30	<b>0.54</b>	0.05	0.01	<b>1.35</b>	<b>1.06</b>	<b>0.55</b>
Italy	0	0.62	<b>0.42</b>	0.29	0.52	0.33	0.21	0.79	0.56	0.45
	1	0.49	0.30	0.18	0.28	0.30	0.18	0.57	0.31	0.34
	5	<b>0.67</b>	<b>0.35</b>	0.19	0.54	<b>0.40</b>	0.15	0.85	0.35	0.41

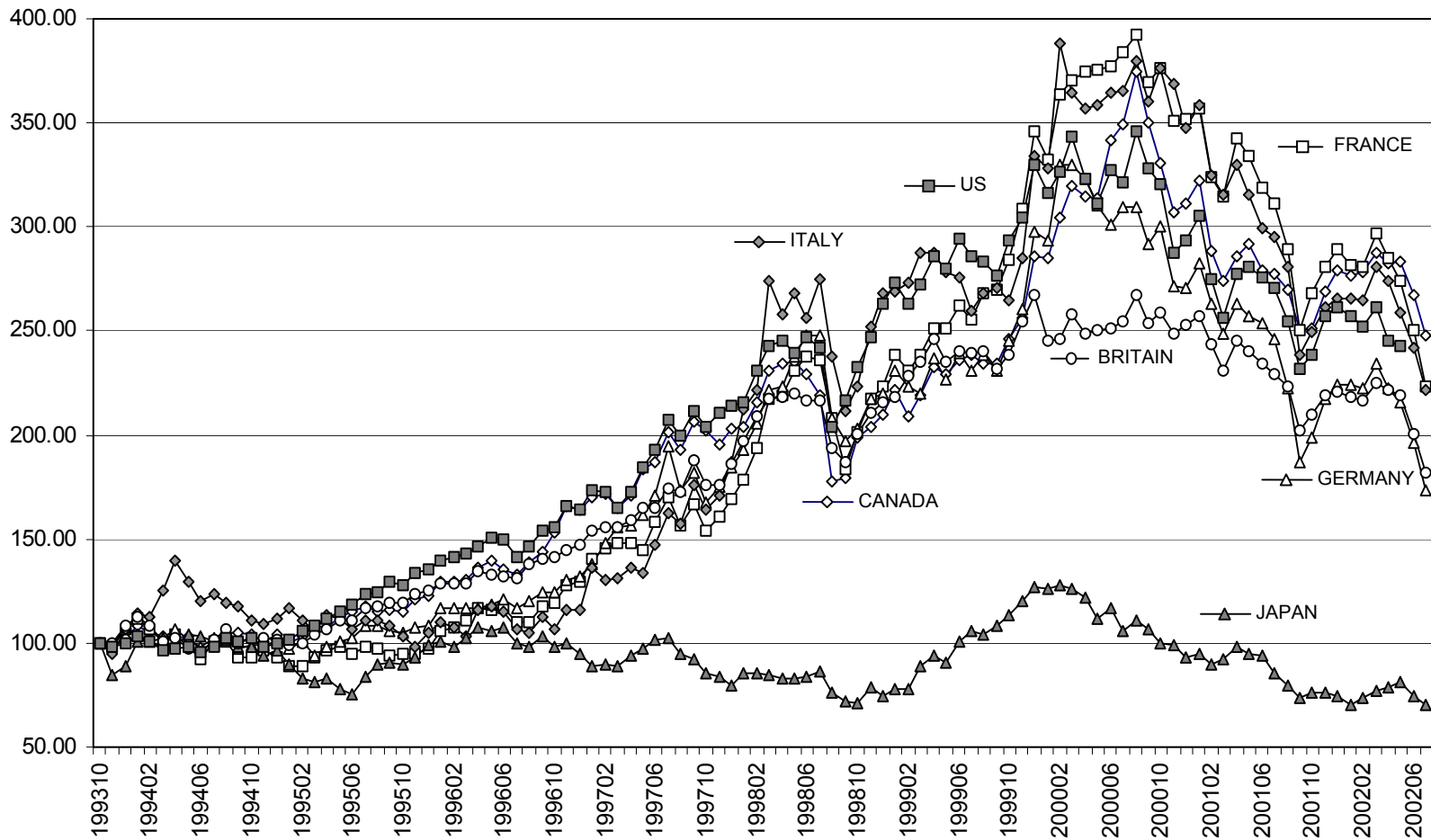
Japan	0	<b>2.74</b>	<b>1.41</b>	<b>0.83</b>	<b>2.45</b>	<b>1.07</b>	<b>0.58</b>	<b>5.89</b>	<b>3.27</b>	<b>2.50</b>
	1	<b>1.99</b>	<b>1.29</b>	<b>0.76</b>	<b>1.66</b>	<b>0.85</b>	<b>0.42</b>	<b>4.89</b>	<b>2.61</b>	<b>2.26</b>
	5	<b>0.93</b>	<b>0.82</b>	<b>0.42</b>	<b>0.82</b>	<b>0.64</b>	0.25	<b>2.15</b>	<b>1.99</b>	<b>1.68</b>

**Table IX**—*Continued*

<u>Country</u>	Delay after Revision	Panel B: Value Weighted Portfolios								
		All firms			Large Firms			Small Firms		
		1 mon	3 mon	6 mon	1 mon	3 mon	6 mon	1 mon	3 mon	6 mon
US	0	<b>2.07</b>	<b>0.57</b>	<b>0.21</b>	<b>1.94</b>	<b>0.51</b>	<b>0.17</b>	<b>7.20</b>	<b>2.55</b>	<b>1.24</b>
	1	<b>0.67</b>	<b>0.20</b>	0.06	<b>0.60</b>	<b>0.22</b>	<b>0.09</b>	<b>3.06</b>	<b>1.22</b>	<b>0.64</b>
	5	0.20	0.11	<b>0.09</b>	0.16	0.08	0.06	<b>1.75</b>	<b>0.85</b>	<b>0.53</b>
Britain	0	<b>0.67</b>	2.69	-0.11	<b>0.59</b>	0.07	-0.09	<b>1.93</b>	3.64	0.56
	1	<b>0.53</b>	-1.00	-1.15	0.45	0.02	-0.07	<b>1.74</b>	-0.20	-0.51
	5	-0.63	-1.13	-1.21	0.35	-0.05	<b>-0.16</b>	0.01	-0.57	-0.70
Canada	0	<b>0.95</b>	0.11	0.00	<b>0.88</b>	0.16	-0.04	<b>1.30</b>	0.38	0.13
	1	0.46	0.08	0.05	0.44	0.09	-0.04	0.78	0.19	0.14
	5	-0.04	-0.18	-0.02	-0.13	-0.08	-0.02	0.58	0.14	0.01
France	0	0.25	0.13	0.04	0.14	0.07	<b>0.10</b>	<b>2.22</b>	<b>1.14</b>	<b>0.48</b>
	1	-0.07	-0.12	-0.12	-0.18	0.00	0.09	<b>1.46</b>	<b>0.74</b>	0.27
	5	0.06	<b>0.27</b>	<b>0.19</b>	-0.04	0.20	<b>0.15</b>	<b>1.12</b>	<b>0.76</b>	0.33
Germany	0	0.51	0.28	0.22	<b>0.66</b>	0.19	0.09	0.59	0.70	<b>0.72</b>
	1	0.28	<b>0.41</b>	0.35	0.33	0.22	0.09	0.43	<b>1.16</b>	<b>1.34</b>
	5	0.51	-0.02	0.12	0.41	0.05	0.08	-0.13	0.40	<b>0.62</b>
Italy	0	0.37	0.22	0.09	0.33	0.22	0.14	0.70	0.35	0.48
	1	0.13	0.17	0.02	0.00	0.22	0.12	0.59	-0.07	0.24
	5	0.25	0.26	0.01	0.15	0.30	0.08	1.11	-0.11	0.17
Japan	0	1.10	-0.08	-0.09	<b>1.51</b>	0.25	0.14	<b>5.09</b>	<b>2.43</b>	<b>1.86</b>
	1	0.37	0.12	-0.08	0.76	0.24	0.03	<b>4.12</b>	<b>1.91</b>	<b>1.57</b>
	5	0.32	-0.06	-0.15	0.40	-0.03	-0.10	<b>2.07</b>	<b>1.55</b>	<b>1.10</b>

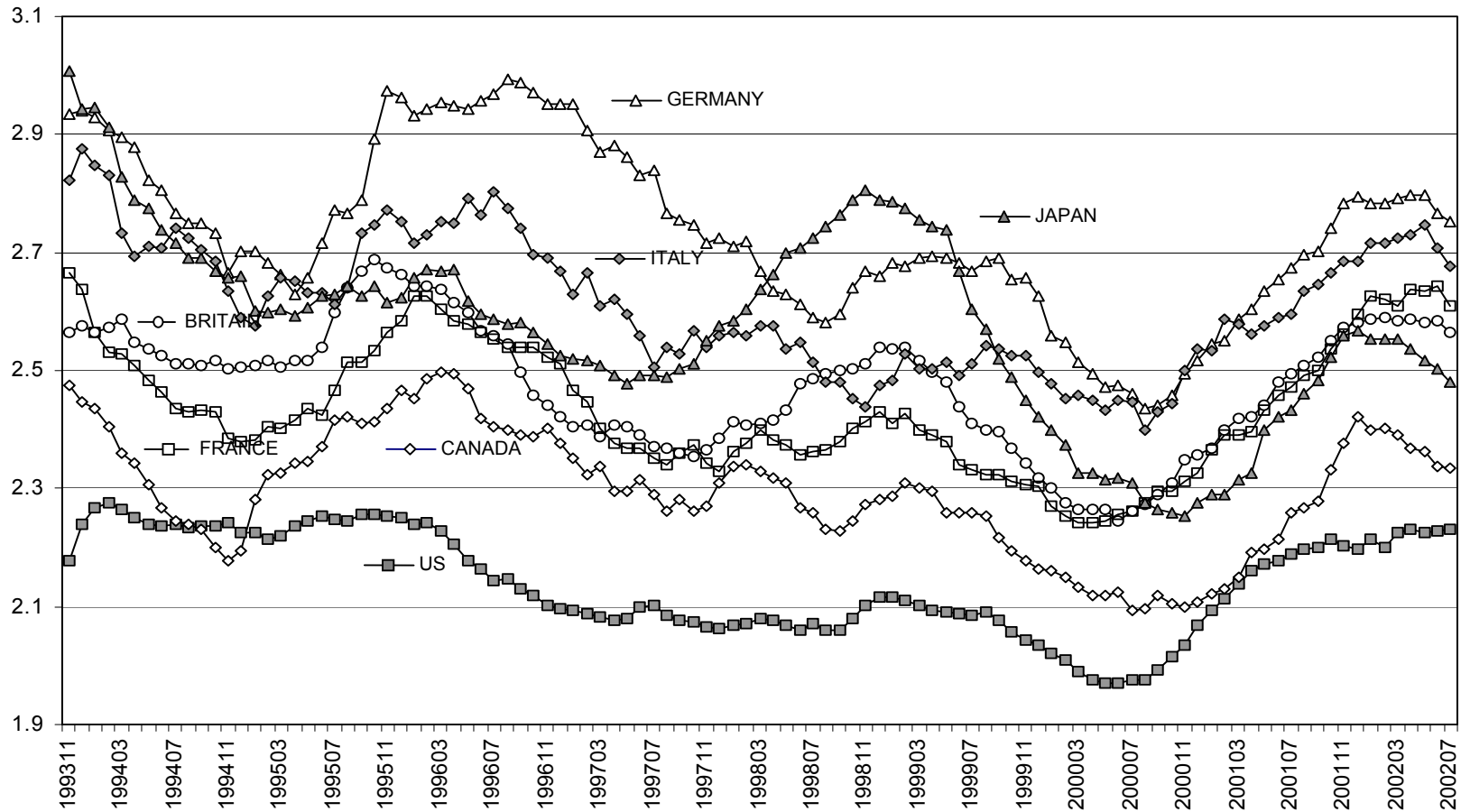
**Figure 1**  
**Cumulative Stock Market Returns in the G7 Countries.**

This figure presents the cumulative stock market returns in the G7 countries from November 1993 to July 2002. We use the CRSP value-weighted index to represent the U.S. market, and the Datastream indices for the other markets.



**Figure 2. Average Recommendation Levels in the G7 Countries**

This figure presents the average recommendation levels in the G7 countries. The sample includes all firms with valid recommendations in the IBES. At the end of each month, all active recommendations are identified and the frequencies of recommendations in various categories are computed. The recommendations range from 1 (strong sell) to 5 (strong buy). The sample period is from November 1993 to July 2002.



**Figure 3. Cumulative Return Response to Recommendation Revisions for G7**

This figure presents the cumulative abnormal returns following recommendation revisions. The abnormal return is the raw return minus the market return in the respective country over the corresponding period. For the U.S., the market return is the CRSP value-weighted index returns and for the other six countries, the market returns are the Datastream index returns for the countries. Day 0 is the revision date and other days in the columns are the number of trading days from the revision date. The sample period is November 1993 to July 2002.

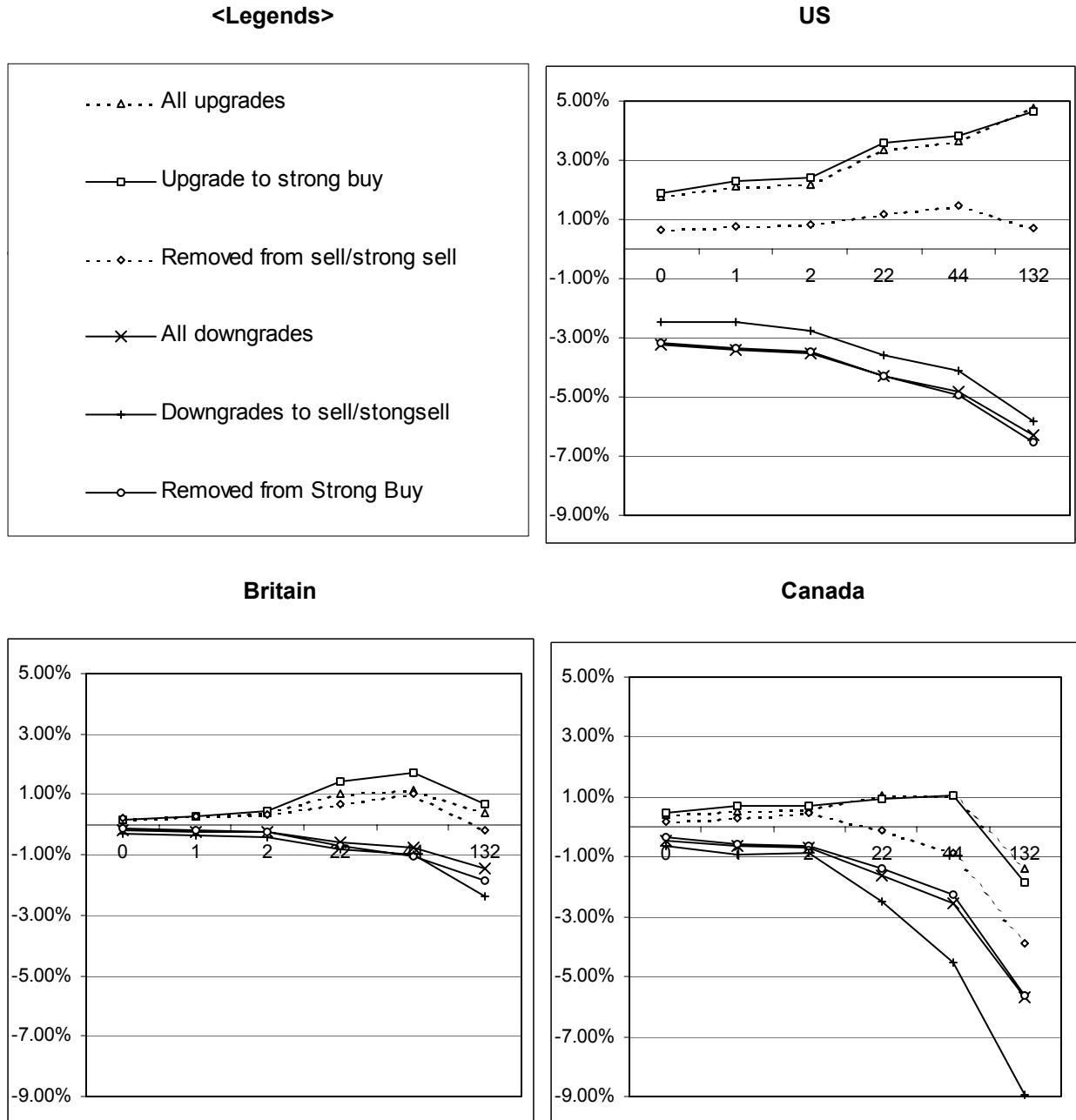
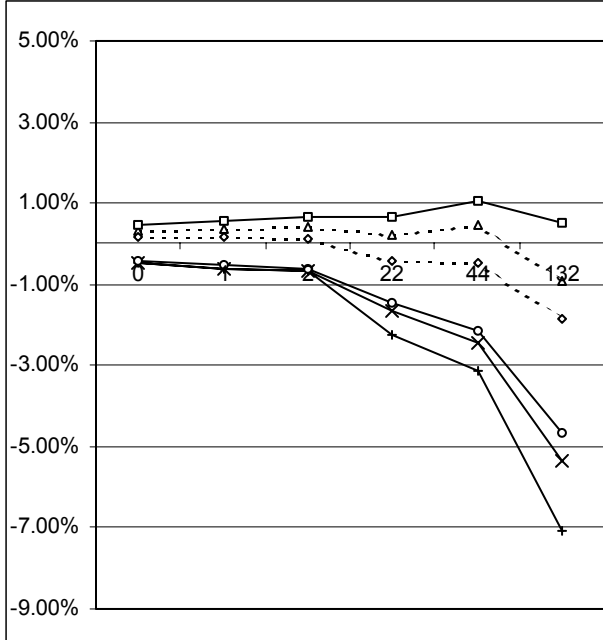


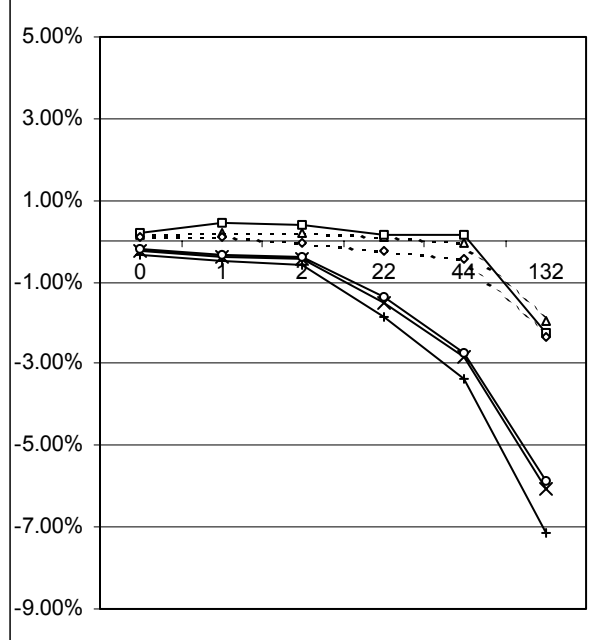


Figure 3 — Continued

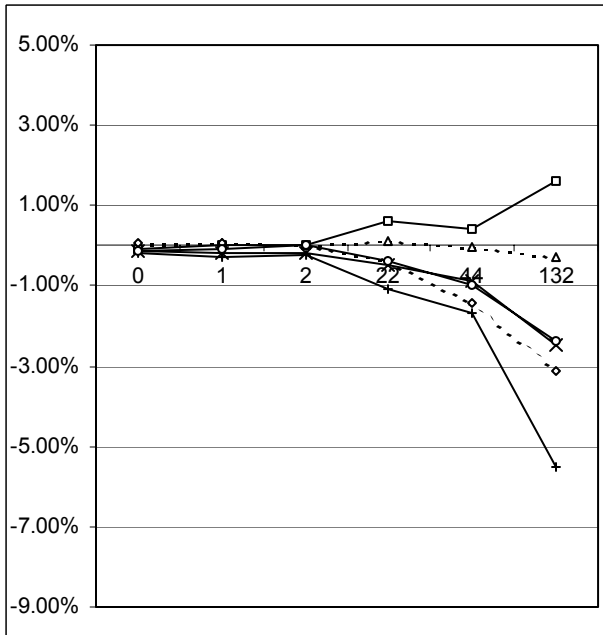
France



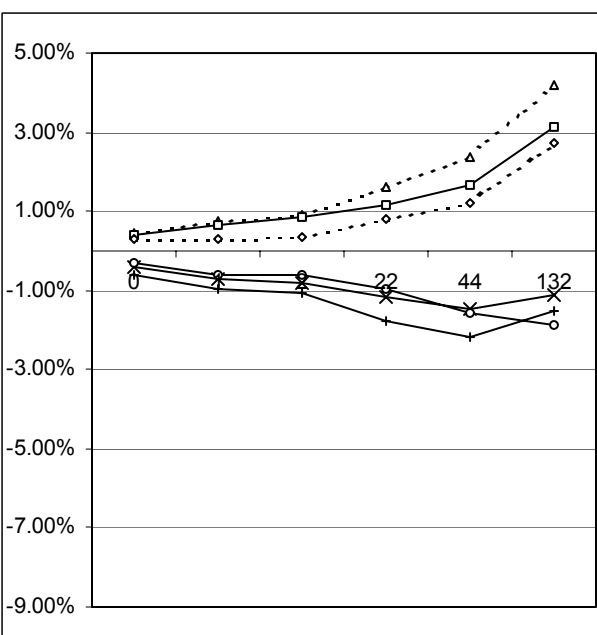
Germany



Italy

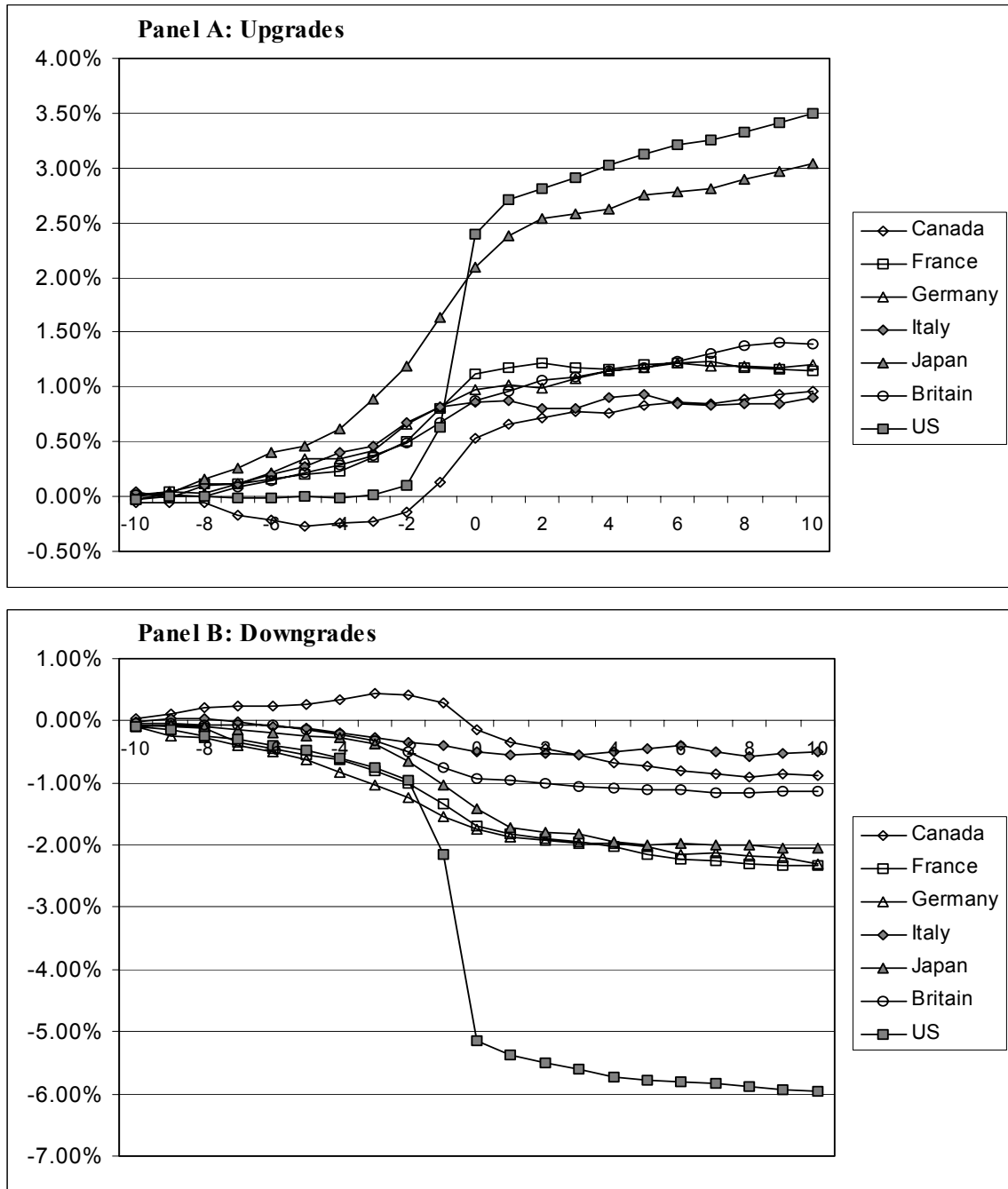


Japan



**Figure 4. Cumulative Returns around Recommendation Revisions in G7 Countries**

This figure presents the cumulative abnormal returns from ten days before through ten days after recommendation revisions. We characterize each revision as an upgrade or a downgrade by comparing the revised recommendation with the previous recommendation for the stock by the revising analyst. The abnormal return is the raw return minus the market return in the respective country over the corresponding period. For the U.S., the market portfolio is the CRSP value-weighted, and for the other six countries the market portfolios are the Datastream indices. The sample period is November 1993 to July 2002.



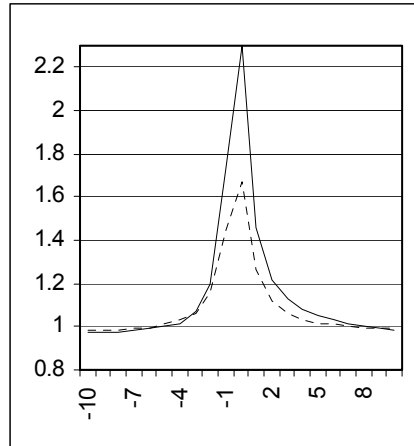
**Figure 5. Average Abnormal Trading Volume around Revision Date**

These figures present average abnormal trading volumes for 10 days before and after recommendation revisions date. For each revision, abnormal volume at date  $t$  is the relative magnitude of volume at date  $t$  compared to average volume from date  $-20$  to date  $+20$ , excluding date  $-1,0,1$ .

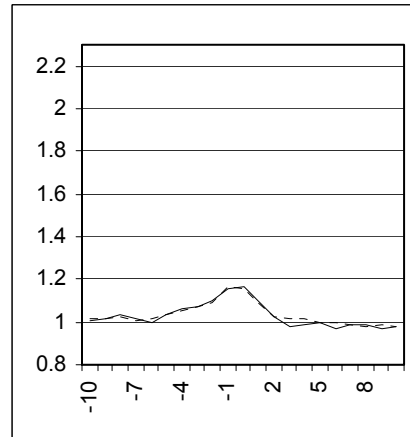
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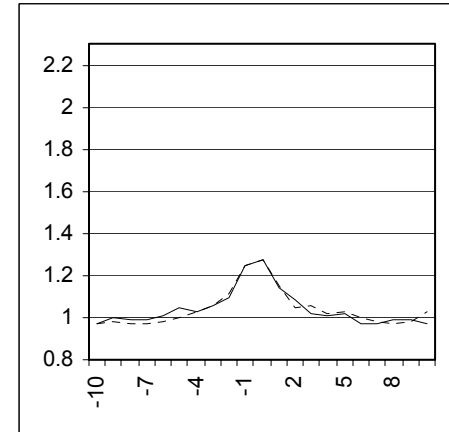
**The US**



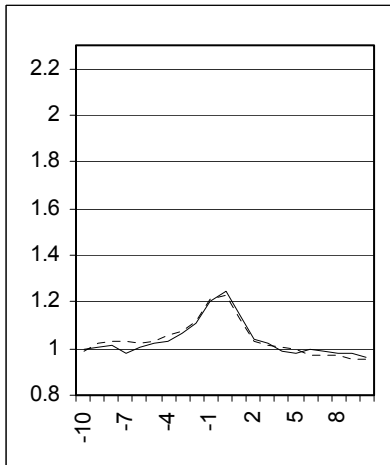
**Britain**



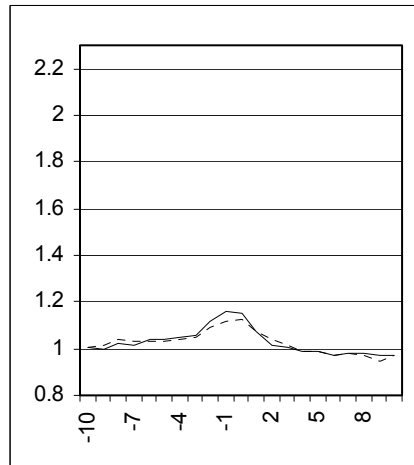
**Canada**



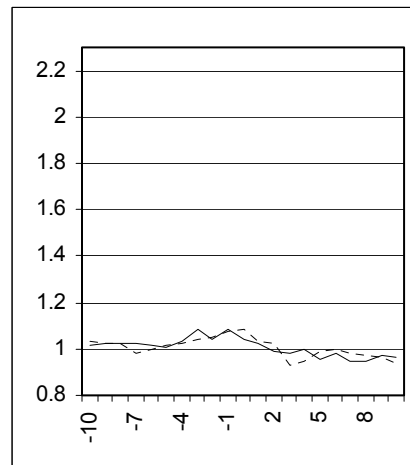
**France**



**Germany**



**Italy**



**Japan**

