



Location and excess comovement[☆]



Aditya Kaul¹, Vikas Mehrotra², Carmen Stefanescu^{*}

University of Alberta School of Business, Edmonton, AB T6G2R6, Canada

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ABSTRACT

Firms that switch from NASDAQ to the NYSE between 1988 and 2000 show an increase in the comovement of their order flows with aggregate NYSE order flow, and a decline in comovement with NASDAQ order flow. These changes in comovement are coincident with the switch, large relative to firms that remain on NASDAQ and the NYSE, and not explained by the growth in indexing over the sample period, a possible selection bias inherent in the decision to switch to the NYSE or a delayed response to cross-market information. Cross-sectional analysis shows that large, institutionally owned, value-oriented and dividend paying firms experience greater changes in comovement following the move to the NYSE. Our evidence is consistent with an important role for style investing in generating excess comovement, as in Barberis and Shleifer (2003).

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1. Introduction

1.1. Contribution

Evidence of excess comovement—or comovement in excess of that due to common changes in cash flows or discount rates—is now substantial.³ Much of the evidence comes from settings marked by significant frictions (e.g. stocks traded in international markets) or by natural underlying demand (e.g. index additions). In this paper we examine changes in comovement after firms switch their exchange listing from NASDAQ to the NYSE. Focusing on order flow, we find that comovement with aggregate NYSE order flow increases and comovement with NASDAQ order flow drops post-switch. These shifts are statistically and economically significant and consistent with location induced excess comovement. An important contribution of our study is an examination of the determinants of excess comovement. We evaluate various explanations including style investing, imperfect/costly information (herding), and transaction costs.

We find that large and value-oriented firms experience greater changes in comovement when they move to the NYSE. High institutional ownership too is associated with greater excess comovement. In interpreting these results, we document significant style differences between the two exchanges, with the typical NYSE stock being large, value-oriented and low volatility compared to the average NASDAQ stock.

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^{*} Corresponding author. Tel.: +1 780 248 2063.

E-mail addresses: akaul@ualberta.ca (A. Kaul), vmehotr@ualberta.ca (V. Mehrotra), carmens@ualberta.ca (C. Stefanescu).

¹ Tel.: +1 780 492 5027.

² Tel.: +1 780 492 2976.

³ Evidence supporting excess comovement comes from index additions (Barberis, Shleifer and Wurgler, 2005), mergers (Brealey et al., 2010), stock splits (Green and Hwang, 2009), international exchange switches (Chan et al., 2003) and so-called Siamese twin stocks (Froot and Dabora, 1999).

Our results suggest that stocks of a certain style are more susceptible to correlated buying and selling when they move to an exchange that has a similar style profile.⁴ Further analysis shows a decline in the mean fraction of switching firm shares owned by institutions that tend to hold NASDAQ stocks, and an increase in the fraction owned by NYSE institutions, after the switch to the NYSE.⁵ Analyzing trade size effects, we find somewhat stronger changes in comovement for medium and large order flow. These findings point to the importance of institutions, rather than retail traders, in generating locally correlated trading.

Overall, our results favor a style-based, quasi-behavioral explanation proposed by Barberis and Shleifer (2003, henceforth B&S) wherein investors segregate assets into different categories or styles for investment purposes. Mullainathan (2002) provides an inertial Bayesian updating model and reaches similar conclusions. B&S note that their setting is especially likely to obtain for institutions that follow formal rules regarding the classes of assets they invest in, likely guided by fiduciary prudence.

Our findings have several implications. First, they indicate that excess comovement is present in domestic settings with low frictions and suggest that style-conscious institutional investors are key contributors to this excess comovement. Second, the excess correlations of order flow as well as returns within an exchange cast doubt on the diversification benefit of investing in a large basket of stocks if the basket in question is style-bound. Third, our study relates to the financial fragility literature, which shows that correlated ownership and trading can lead to higher return volatility: our results suggest that a potential channel for such fragility is location.⁶ Finally, to the extent that location is associated with particular investment styles, it may give rise to local return predictability as in Wahal and Yavuz (2013), although we do not explore this issue in our study.

1.2. Methods and key results

Our analysis and setting offer several advantages. First, uncovering excess comovement is challenging since almost any event can be linked to fundamentals. For instance, faced with increased market volatility, investors may exchange part of their stock holdings for safer treasuries, thereby generating contemporaneous sell orders in many stocks. Such risk mitigation motives could explain the correlated buy–sell imbalances across both investors and stocks documented in Kumar and Lee (2006). We suppress fundamentals by examining the change in comovement for a sample of switching firms, and comparing this to the change in comovement for control samples of similar (size, price and industry matched) firms that remain on NASDAQ and the NYSE. This difference-in-difference analysis allows us to isolate the effect of listing venue on excess comovement.⁷ Moreover, we focus on a narrow window of two years around the switch, thereby reducing the chances of trends or secular shifts in comovement affecting our results.

Second, our setting involves two prominent domestic markets with low trading costs and no obvious frictions, unlike studies involving international boundaries that are an important part of the excess comovement literature (e.g. Chan et al., 2003; Froot and Dabora, 1999). Our experiment thus abstracts from the effects of significant barriers and transactions costs and allows us to assess other (e.g. style-based) sources of excess comovement. Third, our primary variable of analysis is order flow rather than returns, although we repeat our major tests using returns. By focusing on the order flow primitive, and analyzing order flow broken down by trade size, we are able to link excess comovement to buying or selling by particular investor groups.

We measure comovement at the intraday (15-minute), daily and weekly frequencies in order to examine whether comovement varies with interval length. We find that after a firm switches to the NYSE, there is a significant increase in the comovement of its order flow with aggregate NYSE order flow, and a significant decrease in comovement with NASDAQ order flow. Our results are robust at all frequencies. Importantly, this shift coincides with the switch, rather than occurring slowly over a long period, suggesting that it is the exchange switch, and not gradual changes in firm characteristics, that drives the change in comovement. In contrast, the comovement changes for control samples of NASDAQ and NYSE resident stocks are statistically insignificant or small.

We explore the cross-sectional determinants of the comovement changes for switching stocks. Large, institutionally owned, and value-oriented (i.e. low *MB* and dividend paying) stocks that switch to the NYSE see the greatest jump in the comovement of their order flow with NYSE order flow and the strongest decoupling with NASDAQ order flow following the switch. The change in order flow comovement for smaller, growth and low institutional ownership firms is less extreme.

We explore alternative explanations for these results, including information delays and exchange-level indexing, and find little support for these explanations. The results also survive a Heckman correction for the fact that firms are not randomly assigned to the NYSE but, rather, choose to switch. A final concern is that the documented changes in comovement are due to differences in the market structures of the NYSE and NASDAQ. We believe such effects are likely to be small. First, we examine how the order flow for a stock is influenced by the total order flow at each exchange, with the latter aggregated across all NYSE specialists and all NASDAQ dealers. This aggregation should minimize the inventory concerns of individual specialists and dealers. Second, such effects are expected to be transitory. Yet, we document similar results not just at the intraday frequency but also at the daily and weekly frequencies.

The explanation that fits our results best is one based on style. Our descriptive statistics show that the NYSE and NASDAQ offer distinct styles. Firms that share style characteristics with the NYSE experience a larger increase in order flow comovement with NYSE order flow

⁴ We thank an anonymous referee for shaping this interpretation.

⁵ A NYSE institution is defined as one that holds a larger fraction of its portfolio in NYSE stocks than in NASDAQ stocks, and a NASDAQ institution as one that holds a larger fraction of NASDAQ than NYSE stocks.

⁶ For models of financial fragility, see, among others, Allen and Gale (2004) and Greenwood and Thesmar (2011). A common theme in these papers is the presence of correlated shocks that affect market liquidity.

⁷ Greenwood (2008) uses similar methods to uncover excess return comovement in Japan. He measures the return comovement for firms that are over-weighted in the Nikkei index relative to that of other stocks in the index and compares this to the return comovement of stocks that are underweighted in the index with that of other stocks. Our study differs from Greenwood (2008) in that we do not find evidence that *de facto* indexing is the primary influence on exchange-based comovement.

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