

# Connected Stocks via Business Groups: Evidence from an Emerging Market

S.M. Aghajanzadeh\*      M. Heidari\*      M. Mohseni\*

\* Tehran Institute for Advanced Studies, Khatam University, Tehran, Iran

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## Abstract

We link stocks through direct and indirect common owners, and we show that having common ownership and belonging to a business group (indirect common owner) affect the co-movement. Our analysis is based on the daily ownership of blockholders on the Tehran Stock Exchange. The study found that belonging to a business group had more impact than being a common owner, and a common owner influenced only movement within business groups. In addition, co-movement in business groups is explained by simultaneous trades in the same direction.

## 1 Introduction

The phenomenon of "co-movement" has been observed by researchers and analysts. There is an increase in interest in risk models, notably after the financial crisis of 2008. According to these models, price correlation plays a significant role in risk measurement. Companies' return co-movement was traditionally attributed to their fundamentals. (For example [Shiller \(1989\)](#))

Although, in recent years, it has been recognized that the co-movement rises from non-fundamental sources. [Barberis and Shleifer \(2003\)](#) and [Barberis et al. \(2005\)](#) provided theoretical models for predicting a co-movement between fundamentally unrelated companies. The following are some of the other sources of co-movement. Index inclusion ([Barberis et al. \(2005\)](#)), investors' attention to the companies ([Wu and Shamsuddin \(2014\)](#)), Investment banks' underwriting ([Grullon et al. \(2014\)](#)), correlated beliefs ([David and Simonovska \(2016\)](#)), shareholders' coordination ([Pantzalis and Wang \(2017\)](#)),

and preference for companies' dividends ([Hameed and Xie \(2019\)](#)) are among contributing factors to co-movement that have been identified by researchers.

Furthermore, [Anton and Polk \(2014\)](#) examined on the effect of common ownership on co-movement<sup>1</sup>. This paper suggests that co-movement increases by increasing common ownership. Also, as the mutual fund ownership data was accessible to the author, it is shown in the paper that the co-movement increases when there is a significant net flow, either in or out-flow in the months.

In addition, according to [Koch et al. \(2016\)](#) companies show co-movement considering their owners' correlation in their liquidity needs. The author also adds that companies with higher mutual fund ownership have a more liquidity correlation than others. This paper contends that in order for companies to have co-movement, there is no need for common ownership. Plus, common ownership can explain companies' liquidity correlation.

According to the restriction of data in the US that only fund ownership data is available, investigations in this area are limited to the fund ownership impact on co-movement. This type of owners perform particular types of behavior due to their needs and the fact that they are intermediates. Nevertheless, in Iran, the block holders' daily ownership data, including mutual fund ownership, is publicly accessible. So research through this data can show whether common ownership other than mutual fund ownership can lead to co-movement or not.

Additionally, there are business groups with a share of almost 85% of the Iran stock market. Business groups are essential phenomena that can be seen in developed and developing countries. This paper analyzes co-movement in business groups. Two papers are found in the literature debate this subject, considering co-movement in business groups.

Although the co-movement in business groups is accepted, the co-movement channels remained undiscovered. Both [Cho and Mooney \(2015\)](#) and [Kim et al. \(2015\)](#) studied the South Korean market and suggested two different sources for the co-movement in business groups. The first paper attributed co-movement to the companies' fundamentals. However, the second paper presents that the investors' category/habitat behavior is responsible for co-

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<sup>1</sup>The common ownership concept has been observed in financial literature in recent years. There has been a surge in the popularity of index investing in the United States, which has led to an increase in common ownership. For instance, [Azar et al. \(2018\)](#) claims that an increase in mutual ownership in airline companies leads to less competitive ticket pricing. However, this subject is controversial and many papers discuss whether mutual ownership affects companies' behavior. For example, [Lewellen and Lowry \(2021\)](#) realized that in previous investigations, other effective factors have wrongly been replaced by mutual ownership effect.

movement.

In this paper, we consider the co-movement of the companies in business groups. Best of our knowledge, it is the first study that compares direct and indirect common ownership. A modified measurement is introduced in this paper to calculate the common ownership of the companies.

We realize that common ownership is crucial for predicting the co-movement. Business groups play a more critical role in predicting correlation of companies' return than common ownership. We show that common ownership can predict co-movement only inside the business groups.

We extend our analysis in order to validate the prominence of business groups. First, restrict the study to high level of common ownership for distinguishing effect of high level of common ownership and business groups. In this subset, like the mentioned ones, business groups have a significant impact. Second, if business group affect co-movement, there is no need to restrict our investigation to commonly hold pairs. In order to distinguish the impact of common ownership and business group, we built all possible pairs in the market. We show that for all the firms in the market, business group can increase firms' co-movement.

Finally, we show that correlated trade in business groups is the channel of co-movement. We provide evidence that the volume and direction of trades in business groups are related, and firms in the business groups with higher relation in trade have a higher level of co-movement.

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