

Using an Index to Benchmark Non-Controlling Shareholder Risk

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Abstract

Not only are private minority equity holders hindered with cash flow, they assume a larger degree of risk relative to a minority public investor. Cash flow adjustments can compensate for existing policy, but not for future decisions that can destroy minority investor value. Many small businesses have ownership characteristics that concentrate control with one owner. The typical public company ownership and governance structure is much more diverse. Benchmarking and understanding the control concentration in an entity gives insight into shareholder risk faced by a non-controlling minority shareholder. We developed a concentration index to objectively calculate ownership concentration in simple one and two class equity structures. We used the concentration index to benchmark 100 NYSE stocks. The resulting statistics can be used to benchmark ownership concentration relative to minority private equity holders. The index and benchmark study can be used to differentiate public vs. private minority ownership risk. When using unadjusted discount rates developed from public company data, the index can provide support for a discount for lack of control.

Introduction

The returns from public equity markets used to establish discount rates do not consider the level of control (minority vs. majority) or the concentration of control. Appraisers must consider the ownership characteristics of risk when valuing entities. While public companies are largely minority owned, most private entities exhibit high levels of ownership concentration. As our benchmark study reveals, most public companies are entirely minority owned and therefore do not have a controlling shareholder. The implication is that the risk assumed by a minority owned private entity with a controlling owner is greater than a minority owned public entity without a controlling owner.

Through control, an owner can affect the value of debt and equity in an entity. Since most public companies are entirely minority owned, no one owner has control over the operating decisions in the organization. Through a vesting of control to the board of directors, a degree of ownership risk is mitigated in public entities. Anyone holding the equity of an entity with one majority owner assumes more risk.

The risk taken by a minority owner in a controlling entity with a majority owner/manager is that management does not act in a manner that maximizes shareholder wealth. Overaggressive or passive management decisions can lead to excessive or stagnant growth, abnormal future compensation levels or misuse of leverage.

Adjusting cash flows to a minority level of value can compensate for existing policy, but not for future decisions that can destroy value. Risk is much lower in a public company where external boards of directors are held accountable for monitoring the performance and actions of

management. Even if the privately held entity does not exhibit these negative attributes now, the possibility that they will occur is higher in an entity with a high degree of owner concentration.

We present a diversity index as a simple way to benchmark ownership concentration. The resulting concentration index is used objectively to compare ownership concentration in simple ownership structures.

The Index

Diversity indexes have been used extensively in the social sciences for many years. They have successfully measured biodiversity in ecosystems and demographic characteristics in populations using a Simpson's diversity index. The Justice Department has used a form of a diversity index known as the Herfindahl-Hirschman Index to help understand market concentration in competition law and anti-trust cases. We propose that valuation practitioners can use this type of index to benchmark the control concentration in an entity that is one factor of non-controlling minority shareholder risk.

The concentration index can take values from near 0% to 100%. Generally, higher values mean more concentration of power within the entity. Notwithstanding super majority voting provisions, in many jurisdictions shareholders with more than a 50% interest have control rights. Based on a simple majority voting rule, a 50% plus shareholder actually controls all of the decisions taken in an entity. So having a majority vote is effectively the same as 100% control. For this reason, the index is constructed to give the most weight to the largest shareholder. The remaining shareholders are ranked by the largest percentage of ownership. The second through ninth shareholders receive less weight. Because ownership can be very diverse, we simplify the calculation by only considering the ten largest percentage shareholders. The equation follows:

$$C = L + \sum_{i=2}^9 S_i^2$$

Where C is the concentration of ownership index and L is the largest proportionate control owner in percentage terms. S_i is the percentage ownership of second largest owner in the entity. If an entity has four owners in a one class equity structure, each with a 25% ownership stake, the index calculates a control concentration value of 43%. Contrast that with an 80% owner and two 10% owners. In this case, the concentration index value is $0.80 + 0.10^2 + 0.10^2 = 82\%$.

Benchmarking with the Index

In order to understand the difference between public and private ownership concentration in the U.S., we studied the stock ownership in 100 public companies. We selected the stocks represented in the New York Stock Exchange's 100 index. The NYSE U.S. 100 Index tracks the top 100 U.S. stocks trading on the NYSE. We chose this index because the companies represented have a market capitalization of roughly \$5.95 trillion, which covers approximately 47% of the entire market capitalization of U.S. companies and over 62% of U.S. companies listed on the NYSE.

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We examined the beneficial ownership interests and the degree of ownership by the largest percentage shareholders. We used the data as reported on Yahoo! Finance as of December 1, 2010. Actual reporting periods for various institutional and mutual funds varied. We calculated a concentration index as described above for 95 of the 100 stocks listed. Five of the securities did not have data readily available at the time (NYSE: BRK/B, COP, EMC, USB, XTO). We believe the inclusion of these stocks would not materially impact the result of the benchmark study.

We looked at the reported percentage of direct beneficial ownership or the largest institutional owner to determine the largest shareholder. If direct beneficial ownership was greater than the largest institutional holding, we investigated the largest single shareholder. It should be noted that when beneficial owner concentration was high, the largest shareholder was typically another company or Trust (example NYSE:WMT), not an individual decision maker. Next, we calculated the concentration index with the largest owner and the next nine largest percentage ranked owners. We tabulated the results and created a histogram of the data to illustrate the degree of control represented in the companies within the NYSE 100 index. The bin range is a grouping of concentration index values, while the frequency indicates the count of companies that fell within that range. The histogram and graphical representation of the study follow:

FIGURE I

<i>Bin Range</i>	<i>Frequency</i>	<i>Cumulative %</i>
0%- 9%	78	82.11%
10%-19%	12	94.74%
20%-39%	1	95.79%
40%-69%	2	97.89%
>70%	2	100.00%

FIGURE II

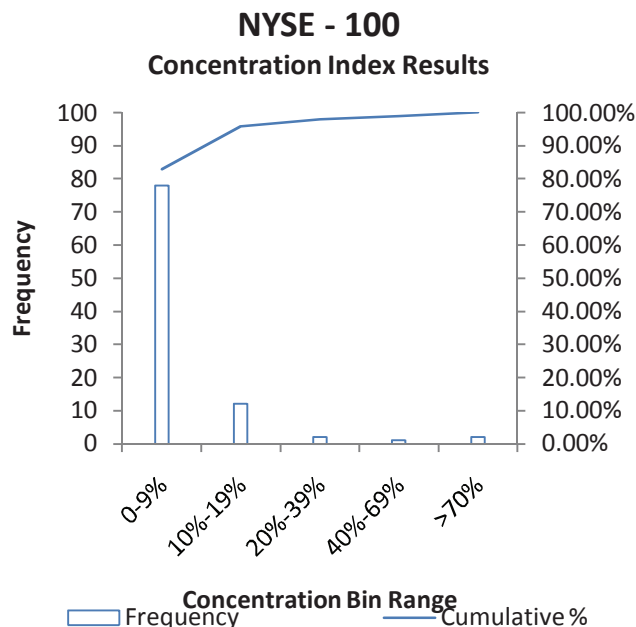


Figure I illustrates that 82% of NYSE stock represented in the NYSE 100 index have concentration index values less than 10%. 95% of the stocks have concentration index values less than 40%. The data also illustrates that the U.S. NYSE 100 index stocks have a high level of ownership dispersion. Approximately 95% of the stocks listed in the index have more than four non-controlling owners. Another published study of ownership statistics in the U.S. (Becht, 2001) found that 99% of median voting blocs held by beneficial owners are below 50% of the votes. The result of having low owner concentrations, or, said differently, high ownership dispersion, is that a few shareholders cannot control the voting decisions. Therefore, the risk of shareholder inequality; abnormal compensation and excess leverage is less than with an entity having relatively few minority owners. Of course, the identity and history of the minority owners are important factors in assessing individual risk.

Ownership vs. Control

Being a majority owner of an Entity may not be the same as having control of the Entity. In simple one class structures, ownership and control are usually analogous. Both ownership and control may reside in one individual. Indirect ownership may shift control, or control can be shifted to others through indirect voting rights in corporate governance documents. Therefore, in multi-class structures, or where agreements exist, majority ownership and control can be quite different. Consider an entity described in Figure III which holds 100 voting units among three partners and 9,900 non-voting units held between two unrelated members. Here the majority owners do not control the entity. When voting agreements or two or more classes exist, look to the class holding a majority of the cash flow rights when performing the concentration index calculation. For example, in this case the 100 voting right units were afforded a vote on distribution decisions. Therefore, the index would be calculated based on the three voting members ($0.40 + 0.35^2 + 0.25^2 = 58.5\%$). Here, a 58% concentration index value represents a strong concentration of control.

FIGURE III

	Voting Units	Voting Percentage	Non-voting Units	Non- Voting Percentage
Member 1	40	40%		
Member 2	35	35%		
Member 3	25	25%		
Member 4			5,000	50.51%
Member 5			4,900	49.49%
Totals	100	100%	9,900	100.00%

Other complex tiered entity structures such as cross holdings, pyramids, rings, and webs can prove more difficult to determine where the control lies. Entities exhibiting these characteristics should consider both direct and indirect holdings when determining the ultimate controlling shareholders. For entities with these structures, Levy (2009) proposes more sophisticated methods for isolating ownership and control.

Interpreting the Index

The idea behind the concentration index is to have a simple way to objectively determine the control concentration of an entity. Intuitively, values above 50% indicate that control exists or that control is concentrated enough to suggest that risks are higher than in an entity exhibiting weak control. Values near or below 50% are also important because they indicate fragile control. A swing vote could influence control around the 50% threshold. A large equity holder could align themselves with another owner which could turn into a control situation which may be a detriment to a minority owner. Therefore, an entity with moderate control exhibits moderate risk. Concentration risks can be higher in family-owned entities where history or rivalry plays a role. So in the end, specific risk adjustments are also based on the facts and circumstances of the subject.

- Values above 50% indicate strong control characteristics
- Values between 40% - 49% indicate fragile control characteristics (varies based on state statute)
- Values below 40% indicate weak control characteristics

Concentration index values below 10% are typically seen in public entities where there is less risk in control induced shareholder inequality or other types of obscured benefits.

A special case exists with two 50% owners. If an entity has two owners in a one class equity structure, each with a 50% stake, the index calculates an ownership concentration of 75%. This would indicate a strong control relationship. However, in this particular case, consensus must be attained in order to make decisions. While not indicative of control, a high risk factor (capability to attain consensus) still exists relative to public equity ownership.

Implications of Relative Control Concentration

Several implications exist for entities that exhibit high control concentration. Relative risk is much greater in an entity with strong control characteristics. A highly concentrated ownership structure carries risks of shareholder inequality. These risks include excess leverage and other private benefits that could accrue to the controlling owner. The level of risk is dependent on the specific owner, history, and relationships with other shareholders.

Using the Index in Practice

When using methods that rely on public investment returns like public market derived discount rates, ownership and control characteristics are generally not considered. Minority interests in public companies and minority private companies may have different risk profiles due in part to ownership concentration. The difference in risk due to owner concentration should be considered when valuing an entity.

The concentration index is used to objectively determine and highlight the difference in owner concentration. Perform the quick calculation to determine the concentration index value of the subject entity. Use the concentration index values of the public data in Figure II to establish the foundation of your risk adjustment. In addition, use direct observable indicators to further support your position. For example, a history of bad business decisions by a controlling shareholder would support a higher level of risk.

One method of addressing the concentration risk element in a valuation is to increase the specific company risk premium. Alternatively, a discount for lack of control could be applied to a minority interest valuation. Use the relative concentration index values in Figure IV to help support a discount for lack of control. If concentration index values for the subject are fragile (40 - 50%), “swing vote” risk may be present and should be evaluated.

FIGURE IV

Concentration	<u>Index</u>
Subject Entity	55%
95% of Public Entities	< 20%

Like other specific company risk factors, the magnitude of the adjustment is based on judgment. A probability density function could also be developed and applied to quantify the magnitude of concentration risk, but again those variables would likely be determined with some judgment.

Conclusion

An index for determining ownership concentration in one and two class equity structures is developed. The purpose of the concentration index is to provide a simple calculated benchmark of ownership concentration between public and private entities. We calculated the ownership concentration of the NYSE 100 index which covers approximately 47% of the U.S. public market capitalization. We found that nearly 95% of the stocks in that index have concentration index values below 20%. Comparing the concentration of ownership in a private entity with a public entity provides support for a risk adjustment or lack of control discount. Even if shareholder inequality is not present, the likelihood is much greater when ownership is concentrated with a few owners and much more likely with a controlling owner.

A minority equity holder in an entity with strong ownership concentration is not only hindered by cash flow, they assume a larger degree of risk than a public minority investor. Cash flow alone is not the primary determinant of value to a minority non-controlling owner. Using unadjusted discount rates from public entities falls short of capturing the overall risk relative to the public market. Highly concentrated ownership carries risks of shareholder inequality, excess leverage, and other private benefits. The degree of risk is certainly dependent on the character and history of the controlling owner. Higher risk would be given to those owners with a history of oppressive or risky behavior. The broad degree of ownership dispersion and corporate governance policy in U.S. public entities lowers these risks considerably. Much of the risk in public company ownership is mitigated with internal controls, external boards, investors, and analysts, all who monitor management’s actions. Therefore, when deriving valuation conclusions using methods based on public markets for determining the discount rate, consideration should be given for the higher risk in private equity minority interests.

Sources:

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4. Shares held by institutions, insiders and five percent owners as reported by Yahoo! Finance available online at:
 - a. URL: <http://finance.yahoo.com>
5. NYSE 100 Index Components as of February 2010
 - a. URL: www.nyse.com



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