

# Research on Changes in the Value of Dual-Class Share Companies Over the Life Cycle

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**Abstract:** This paper adopts a quantitative research approach by using Tobin's  $q$  value to measure the value of a firm. Simultaneously, using OLS regression analysis, in which Tobin's  $Q$  is used as the dependent variable and financial performance, perpetual type, industry, and time as independent variables, to explore the factors that influence firm valuation. Research shows that organizations with sunset provisions are worth much more in the third year of their life cycle than those without them, which supports the call for sunset clauses to some extent.

**Keywords:** Corporate Governance, Firm Valuation, Dual-class Share Regime, Sunset Clauses, Agency Costs, Business Life Cycle, Tobin's  $Q$ .

## 1. Introduction

This study aims to explore the issue of how the value of dual-class firms develops over their life cycle and whether sunset clauses dual-class companies are consistently more valuable than perpetual dual-class companies throughout their life span, based on life cycle, agency costs, and other theories. Dual-class share structures have long been a topic of intense debate on a worldwide scale. In recent years, the dual-class share structure has grown in popularity among US businessmen and entrepreneurs as it can provide the company's founders with more control and its unequal voting rights enable the founders to exert greater influence over the operations and future strategic direction of the company after they become public (Dunkley, 2019). The dual-class system has many advantages, such as dual-class companies tend to be valued at IPO at a higher level than one-share companies, but this valuation premium decreases over time (Cremers et al., 2018). This is due to the dual-class system also having some disadvantages, such as the prominence of agency problems, the potential for abuse by incompetent managers, and higher borrowing costs (Aggarwal et al., 2022; Chemmanur and Jiao, 2012; Lee et al., 2022). Research has shown that dual-class enterprises lose value as they progress through the life span because they exhibit lower operating profits, lower creativity, and lower worker productivity than one-share one vote companies (Lin et al., 2022).

In order to maintain their competitive advantage, business owners of contemporary technological companies seek to more effectively implement dual-class share structures (Condon, 2018). In this context, it has been suggested that sunset clauses can be applied to dual-class companies. The sunset clause is a provision that limits the duration of the activity, and it forces a statute to expire on the date specified, unless the legislature extends it (Kouroutakis, 2016). The existence of a sunset clause converts a company's dual-class share regime into a single-class share regime after a given amount of time has passed or after the occurrence of certain events. Such provisions are considered to be effective in solving agency issues, providing incentives to the company's managers, and promoting long-term value addition to the company (Weng and Hu, 2022).

The dual-class share system is a relatively new policy that

has not been in place for a long time in many countries, such as China and the UK (Sun et al., 2020). Therefore, there is a large theoretical gap in the applicability of their regulations and regimes. For example, dual-class joint stock companies were not permitted to list in China until 2018, which resulted in those utilizing this structure only being listed outside of China, leading China to lose out on a number of outstanding high-tech firms (Sun et al., 2020). Additionally, there is a lack of many UK technology firms that went public on the London Stock Exchange (LSE), and there is a lack of cutting-edge technology businesses such as Google (Reddy, 2020). The UK Government considers the promotion of UK innovative firms' IPO as a vital policy because the Government is worried about British high-tech corporations being taken over by overseas acquirers (Reddy, 2020). Therefore, exploring this field can assist enterprises to increase their understanding of the underlying theory of dual-class share structures and apply the resulting related systems, such as sunset clauses. This will enable enterprises to take advantage of the system for long-term growth and minimise the governance deficiencies that may occur as a result. In addition, this study can better assist local governments and institutions to introduce dual-class listing provisions, suitable for their own countries, to enrich the depth and breadth of capital markets.

This paper adopts a quantitative research approach. Over 1,000 secondary data have been collected from the WRDS database for a total of 123 companies, including basic financial data and industry indicators. The paper uses the value of Tobin's  $q$  to measure the worth of the company. Tobin's  $Q$  is an indicator which is often used in corporate governance to evaluate the business performance of firms, and "Q is the ratio of the market value of the existing shares (share capital) to the replacement cost of the total physical assets" (Ishaq et al., 2021, p. 426). In this paper's research analysis, Tobin's  $Q$  value was calculated for each company using the data collected on total assets, the book

value of the common stock, and the market value of the common stock. Tobin's  $Q$  value was then grouped by year and a line graph was created whereby the trend in the median value of corporate Tobin's  $Q$  over the years can be seen in a clear format. This study found that the value of a dual-class joint stock company decreases as the company matures. Moreover, dual-class companies with sunset clauses are

consistently more valuable than perpetual dual-class companies in the first four years after listing. Five OLS (Ordinary Least Square) regression models were used with a total of ten independent variables, to further investigate the factors that could have contributed to changes in the value of dual-class corporations over the course of the four years after their listing. The research found that many of the independent variables showed a significant correlation with the value of Tobin's Q within four years of the company's listing, such as the amount of cash and short-term investments held by the firm and the amount of R&D investment. However, the variable of whether the firm has a perpetual dual-class share structure shows significance only in the third year with the value of the firm's Tobin's Q. This means that sunset clause dual-class companies are significantly more valuable in their third year after listing than permanent dual-class companies. Due to the limitations of the sample year, this research was unable to collect sufficient data on companies with sunset clauses five years after listing. However, Jackson Jr's (2018) research has shown that the difference in valuation between sunset provision dual-class companies and perpetual dual-class companies begins to emerge between the third and sixth year and becomes significant after the seventh year. Therefore, this paper proposes that the study of the value change of dual-class joint stock companies over a longer post-IPO horizon may be a topic for future academic research.

This thesis follows the empirical and research framework of Jackson Jr (2018), where I have retained the same independent and dependent variables but selected data from different years and different companies, thus also yielding divergent findings. Contradictions are the beginning of new discoveries, and therefore this paper also encourages further academic research into the area of dual-class share regimes.

## 2. Literature Review

The dual-class system has grown to be one of the most contentious topics in current financial markets and corporate governance discussion, as evidenced by the increasing number of stock exchanges that are beginning to allow dual-tracked companies to list (e.g., Singapore Exchange (SGX) and Shenzhen Stock Exchange (SZSE)) and the US Council of Institutional Investors requires a reasonable time-based sunset provision for dual-class companies listed on US stock exchanges (Gurrea-Martínez, 2021).

A dual share system is a type of share structure that allows a company to issue multiple classes of shares, at least one of which has disproportionately greater voting power in comparison to cash flow or equity rights (Reddy, 2021). Such stock, with numerous voting rights per share, is typically owned by the company's founders and management, which allows them to retain their primary control rights of the company when it goes public (Gurrea-Martínez, 2021).

Dual-class share systems in initial public offerings are becoming more and more popular as a means of protecting founders against intervention or dismissal by common shareholders (Windén, 2018). Due to the information asymmetry, external shareholders do not fully comprehend what entrepreneurs are doing for companies and how they will affect the future, thus they are primarily concerned with short-term revenue growth, which will force executives to pursue higher profit margins in the near term (Cao et al., 2020). However, the use of the dual-class corporate structure may effectively resolve this problem. Superior voting rights shield founders from short-term market pressures and enable

them to use their unique abilities, such as operational and management skills, to pursue the long-term development and vision of the business and preserve its competitive edge (Schoen and Hallam, 2019). For instance, Mark Zuckerberg, the co-founder and CEO of Facebook, successfully negotiated the purchase of Instagram for \$1 billion via separate discussions in 2012 without consulting stockholders or board members (Bangert et al., 2021). Such action initially attracted a great deal of criticism, and without the protection of the dual-class share regime, for which Zuckerberg could have been held accountable by the board, the acquisition may not have gone ahead, yet today Instagram has a market value of over \$100 billion (Sharfman, 2019). This advantage could also attract an increased number of family entrepreneurs who are more concerned with maintaining family operations and control than short-term earnings; without a dual-class share system, such companies may turn to private funding rather than go public (Burson and Jensen, 2021). Therefore, the existence of a dual-class share regime expands the depth and scope of the capital markets and satisfies the demands of a larger spectrum of investors (Bangert et al., 2021).

In addition, due to the high cost, risk, and complexity of the technology industry, a dual ownership structure is widely used in high-tech companies (Cao et al., 2020). A dual share structure can fulfil the company's financial demands and assist entrepreneurs to maintain their independence and focus on significant innovations, which will help the firm stay stable and thrive over the long term (Wu, 2021). For young companies, the dual-class system is positively correlated with innovation (Atanassov et al., 2016). Additionally, the likelihood of acquisition is lower for dual-class stock enterprises (Jordan et al., 2016). This is due to the fact that the company's founders and key management own a majority of the voting rights, causing difficulty for an acquirer to purchase the firm by acquiring outstanding shares in the open market. Furthermore, research has shown that a dual-class sharing structure may increase the accuracy of financial reporting since insiders are less subjected to shareholder pressure and control and are therefore less likely to hide financial information (Forst et al., 2019).

The dual-class shareholding structure provides many advantages, but it also has noticeable drawbacks that must be considered. To utilise dual-class structures to their full extent, we must view them from a holistic and dialectical perspective. Firstly, agency costs can be substantial when a dual-class structure is used. This is because executives have additional voting rights but usually only have to shoulder a fraction of the financial impact of their choices, whilst maintaining the capacity to thwart acquisitions and consolidate themselves (Aggarwal et al., 2022). Moreover, the significant degree of disparity between ownership and control may be detrimental to the value of the company, the likelihood of a successful issue, and the long-term growth of the firm after the issue (Cumming et al., 2019). Furthermore, serious agency problems and opaque companies will increase the risk of share price collapse (Hong et al., 2017). Secondly, research has shown that the innovation capacity of dual-class businesses declines with time and the favourable correlation between dual-class structure and company technology innovation is only present for the first 10 years after IPO, with little advantage remaining beyond that (Baran et al., 2019). Thirdly, executives with too much control may be inclined to appoint relatives to key positions rather than select more suitable candidates from outside (Schoen and Hallam, 2019).

Entrepreneurs may also act in their personal interests rather than those of shareholders due to a lack of regulation, such as related party transactions, and the special skills of governance possessed by controllers may diminish over time (Schoen and Hallam, 2019). Furthermore, the dual-class share system may also be abused by incompetent or unskilled operators to reduce or damage the value of the company (Chemmanur and Jiao, 2012). Fourthly, research has indicated that the use of a dual-class structure may also exacerbate over-investment, resulting in the misuse of the company's financial resources and lowering the effectiveness of the company's investments (Beladi et al., 2022). Fifthly, lending institutions may use superior information to put pressure on dual-class companies that are highly dependent on banks, making it more expensive to borrow money throughout the middle periods of their life spans, compared to single-class ownership businesses (Lee et al., 2022). Sixthly, if small and medium-sized shareholders with minority voting rights do not have their interests effectively protected in the company's dual-class share regime, they may choose not to invest and thus give up the whole capital market (Martínez, 2018). This would be detrimental not only to the company's founders, who would find it more difficult to raise money in the future but also to regulators such as stock exchanges, whose reputation and independence would be impaired (Martínez, 2018).

Over the last several years, dual-class share regimes have become more widely accepted, and the debate around them has also intensified. There is currently no consensus regarding the effect of dual-class share systems on business performance and whether sunset provisions should be mandatory. However, it is undeniable that the shortcomings of the system can be mitigated or even eliminated by a number of measures and instruments to make it more suitable for entrepreneurs and small and medium-sized shareholders. For example, a study has suggested that institutional investors with large shareholdings can exert control over executives so that they do not cut back on R&D to meet short-term objectives and encourage businesses to move towards value maximisation (Bushee, 1998). In addition, various academics have proposed that firms should be obliged to implement time-based sunset clauses in order to solve the governance inefficiencies that are linked to a perpetual dual-class structure and to safeguard the interests of their public shareholders (Bebchuk and Kastiel, 2017). Sunset provisions provide for the automatic conversion of some or all of the higher voting shares to lower voting shares upon the occurrence of certain events; there are several common types of sunset clauses: Dilution sunset, Transfer sunset, Triggering-event sunset, and Time-based sunset (Li, 2022). A dilution sunset occurs when the number of high-voting shares falls below a certain proportion of the total number of shares, resulting in the conversion of special voting shares into normal voting shares (Winden, 2018). The transfer sunset occurs when the non-founder shareholder acquires the particular voting shares from the creators, resulting in the transferred particular voting shares changing to ordinary shares (Li, 2022). Triggering-event sunset is the conversion of shares with special voting rights into ordinary shares when a specific event occurs, such as the founder's disability, death, or retirement (Bebchuk and Kastiel, 2017). Time-based sunset is the automated conversion of special voting shares into common voting shares after a given period of years has elapsed since the original public sale of the ordinary voting share (Winden, 2018). These sunset provisions not only help

business owners preserve a dual-class structure over time as they seek innovation and vision, but they also lessen the possibility of value decrease as a result of ineffective internal decision-making and control (Fisch and Solomon, 2019). Research has shown that institutional investors favour dual-class share companies with sunset clauses as they perceive a greater risk of unsatisfactory governance and financial performance for permanent dual-class companies (Burson and Jensen, 2021). Baran et al. (2019) also suggest that, as a company evolves, the disadvantages caused by value-damaging agency costs tend to outweigh the advantages offered by value-based innovation, and therefore unequal voting rights should be phased out. A study revealed that firm innovation is related to the life cycle of a company. For instance, when a company is young and has a dual-class share system, it is more likely to be innovative than when it is more mature and less transparent (Atanassov et al., 2016). In addition, the core management of a dual-class joint stock corporation may also maintain control and prevent the unification of stocks by selling low-voting shares and holding onto high-voting shares (Sharfman, 2019). All of the aforementioned arguments illustrate the need to introduce a sunset clause.

### 3. Methodology

#### 3.1. Research Method

This paper adopts a quantitative method. Quantitative methods are commonly used to analyse and interpret the data collected from various sources, such as surveys, research, questionnaires and secondary data after pre-processing by computer. The goal of quantitative research is to explain particular events or generalise findings across groups of people by gathering numerical data (Satinem, 2016). In contrast to qualitative research, which presents theories or hypotheses, quantitative research focuses more on testing theories and hypotheses mathematically and statistically, requiring a larger sample size, collecting and analysing information from an objective perspective, and typically presents its findings in the form of graphs and figures (Streefkerk, 2019). A quantitative technique is thus more suitable for this research since it is intended to explore how the value of dual-class share corporates with and without sunset clauses and how evolves over time.

Secondary data collection was the primary form of data gathering employed in this study. Secondary analysis is defined as “a research strategy, which makes use of pre-existing quantitative data or pre-existing qualitative research data for the purposes of investing new questions or verifying previous studies” (Heaton, 2004, p. 16). The feasibility of using current data for studies is becoming increasingly common in an era where enormous volumes of data are being gathered and preserved by scholars across the globe (Johnston, 2017). The advantage of secondary analysis is that it is very cost-effective, as the availability of existing data means that researchers do not need to invest a lot of time and effort in processing and calculating the raw data, but can instead make direct use of large, high-quality datasets (Johnston, 2017). This not only broadens the depth and breadth of the sample study but also helps to enhance the researcher's research capabilities to a large extent (Johnston, 2017), and “the quality and breadth of large datasets are often beyond the reach of individual researchers” (Cole and Trinh, 2017, p. 354). Furthermore, secondary data analysis can also assist in

improving quality assurance by validating the primary study, thereby increasing the openness, credibility, and dependability of research results (Andrews et al., 2012). In this study, by using the WRDS database, financial data and ROA ratios were able to be obtained for over 100 companies directly, rather than having to search through each company's annual report by year to find the pertinent data and calculate it. This greatly reduced the time I had to spend collecting and analysing the data, as well as the likelihood of human error.

However, the use of secondary data also has several drawbacks. For instance, since the secondary investigator was not engaged in the data gathering process, they are unaware of the details of how it was carried out, the effectiveness of the data collection, and whether the presence of some issues influenced the data (Johnston, 2017). Furthermore, since pre-collected and processed data was not intended to address a particular research issue, such statistics may be missing important information and frequently need to be processed further before being utilized in quantitative analysis (Cole and Trinh, 2017). Moreover, when utilising secondary data, it is also important to pay attention to missing data and consider the sample size, appropriateness, and chronology (Doolan and Froelicher, 2009). In this study, I have marked missing research and development expenses and fixed asset items as zero and marked the lacking ROA data as directly missing. Regardless of the volume of missing data within the WRDS database, it nevertheless had an impact on the regression analysis's findings.

### 3.2. Philosophical Stance

As the basis for the quantitative approach, this paper is guided by positivism as the main philosophy. Science is a field of study that emphasizes empirical investigation, where all phenomena reflect empirical indicators that describe reality (Sale et al., 2002). The quantitative research method employs the ontological stance that there is only one single objective reality and that it is independent of human experience (Sale et al., 2002). This means that facts are not altered by the research process, and researchers cannot be affected. Hence, observations were taken from an objective perspective and worked for their intrinsic value and meaning. In addition, positivism also derives from assumptions, which are presented as facts or claims with the presumption that they will hold up to scrutiny. They are also presented as basic facts or principles that form the foundation of or provide the impetus for other ideas. For example, if perpetual dual-class companies are worth less than sunset dual-class companies over their entire life cycle, then we can encourage more aggressive application and factual sunset clauses for dual-class companies. This will reduce the risk and uncertainty associated with dual-class share regimes and help increase the long-term value of the business.

I have developed the following hypothesis in accordance with the thesis' central ideas and research directions:

H1: The value of companies with a sunset clause is higher than companies without a sunset clause.

### 3.3. Data Collection and Research Process

Firstly, a list from the Council of Institutional Investors (2022) of all US-registered companies with a market capitalization of at least US\$200 million and unequal voting rights between 2010 and 2020 was collected. Secondly, the identification of all companies with time-based sunsets from 2010 to 2020 from another list named Companies with Time-

Based Sunsets On Dual-Class Stock, provided by the Council of Institutional Investors (2022). Thirdly, the two samples were matched and identified 40 dual-class companies with sunset clauses and 105 permanent dual-class companies between 2010-2020. Fourthly, the identified samples were matched with accounting data from the 'Compustat' database and excluded data for companies acquired within 5 years of going public as the acquisition event would have changed the capital structure of the company, resulting in a final sample of 87 permanent dual-class companies and 36 dual-class companies with sunset clauses.

Perpetual dual-class businesses and dual-class firms with sunset provisions were the two types of coded firms in the sample, and they each served as a comparison control group for the other. After the dual-class corporation converted to one share one vote due to a sunset provision, the data was categorised as missing for the following years and it was subsequently omitted from the dual-class analysis.

After determining the final sample, the data was then collected from the WRDS database on the sample companies' shares outstanding (CSHO), annual closing price (PRCC\_F), common stock/common equity (CEQ) and total assets (AT) data. I then calculated Tobin's Q for the sample companies for each of the four years following the IPO based on Tobin's Q's defined formula "the book value of assets (at) plus the market value of common shares (prcc\_f × csho) minus the book value of common shares (ceq), all measured by the book value of assets (at)" (Ghaly et al., 2015, p. 57). Tobin's q, developed by Nobel Prize-winning economist James Tobin, is defined as the market value of a corporation divided by the replacement cost of its assets, which is a tool for determining if a given firm or industry is overpriced or underpriced, where the q-ratio indicates the link between market value and inherent worth (Hayes, 2021). Within this study, Tobin's Q is used to measure the value of the business. After determining Tobin's Q values for the firms, they were listed in the order of IPO year, the first year, second year, third year and fourth year. I then calculated the median Tobin's Q for each year for all permanent dual-class firms and sunset clause dual-class firms in the sample separately, and finally, a line graph was used to display their trend.

Moreover, variables were investigated that might impact the change in a firm's Tobin's Q value with the use of the SPSS program. The value of dual-class IPO enterprises was examined using four OLS (Ordinary Least Square) regression models over a four-year period, including the year of the IPO, the first year following the IPO, the second year following the IPO, the third year following the IPO, and the fourth year following the IPO. Regression is a popular statistical approach for determining connections between data (Huang and Yu, 2015). To investigate the strength of the relationship between the independent and dependent variables, regression analysis maybe used (Lo et al., 2020). One of the most common methods of performing a regression analysis is linear regression, which has three main objectives, they are to comprehend the relationship between the dependent and independent variables, to determine whether the independent variable has an effect on the dependent variable and to forecast the value of another variable, based on the identified variable (Permai and Tanty, 2018). For linear regression models, the most used estimate approach is Ordinary Least Squares (Frost, 2018).

The specific meanings of the dependent variables included in the regression analysis are as follows:

The variable R&D, which is defined by research and development expenditure divided by total assets and is a useful indicator of a company's investment in innovation, and patents that are produced will be added to the intangible assets account and finally reported in the annual report. R&D expenditure can therefore be used to measure whether a dual-class share company is continuing to innovate and advance its mission as a way to achieve value growth after its IPO.

The variable Leverage, which is defined by total liabilities divided by total assets, is used to measure the capital structure of a business. Leverage can be divided into financial and operational leverage, which amplifies the profit or cash flow of a business by increasing its debt financing and fixed costs respectively, but which also usually exposes the business to an equal volume of risk (CFI Team, 2022c). A focus on leverage can help to better explore whether a firm's capital structure can have an impact on the value of the firm.

The variable PPE (Property, Plant, and Equipment) is defined by total fixed assets divided by total assets. PPE, also known as fixed assets, is a tangible, long-term asset that is important to a company's day-to-day operations and will provide long-term economic advantages and income to the company; increased investment in PPE is a positive sign that executives are confident in the future development and profitability of their company over the long-term (Murphy, 2022). Paying attention to PPE is to explore whether a firm's fixed asset holdings have an impact on the value of the firm.

The variable Size is defined by the natural log of total assets in this research. The total assets shown on the company's balance sheet are the sum of all of its current and long-term assets. Investigating whether the size of a firm's assets influences the value of the business is the goal of a focus on total assets.

The variable Cash is defined by cash and short-term investment divided by total assets. Cash is a vital liquid asset used in the daily operations of a business. Short-term investments here are not held by the business for investment purposes and are therefore highly liquid and can be regarded as a cash equivalent. By focusing on cash and short-term investments, we can determine if these assets have an influence on the value of the business.

The variable CapEx is defined by capital expenditures divided by total assets. Capital expenditure is a type of investment that a company makes to buy long-term assets such as property and equipment, which is vital for a firm to sustain and expand its business (CFI Team, 2022a). Regression analyses for this experiment also explore the impact of corporate capital expenditure on firm value.

ROA (Return on Assets), which is defined by net income divided by average assets, is often used to assess the relationship between a company's profitability and total assets, and it reflects the company's financial performance; the greater the return, the more effectively the organisation is using its financial resources (CFI Team, 2022b). The ROA values used in the regression are all sourced directly from the WRDS database, rather than being calculated.

### 3.4. Validity and Reliability

The raw data in this paper were obtained from the authoritative WRDS database. Tobin's  $q$  values were also calculated according to a standard formula, and the results

were tested and examined multiple times to ensure high finding accuracy. In addition, two versions of the OLS regression analysis were conducted; the first included industry and year-specifics, and the second included neither, to explore more fully the relationship between specific variables and firm value. This study includes almost entirely dual-class share companies listed between 2010 and 2020 and therefore has a large sample size. Therefore, the results of this study can be viewed as reliable and valid.

### 3.5. Ethical Considerations

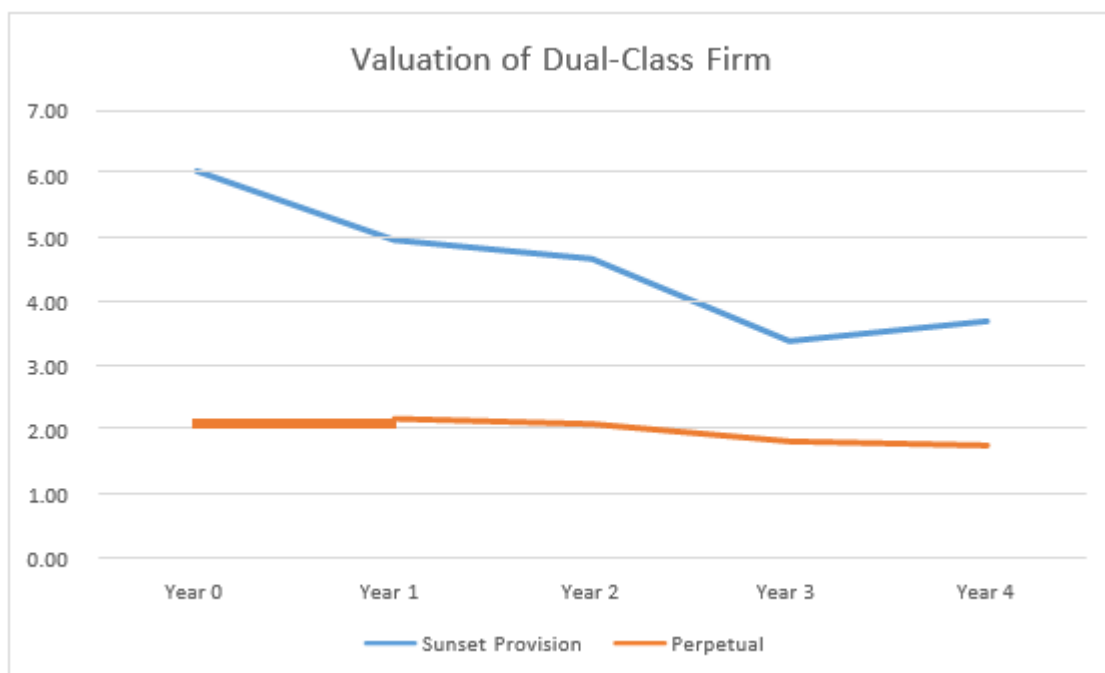
The issue of ethics in academic research is critical. In academic research, researchers are expected to have high ethical standards and refrain from misconduct behaviour such as fraud and falsification which include copying the work of others and misrepresenting research data; such actions not only harm the reputation of academic researchers but may also expose them to legal penalties (Nurunnabi and Hossain, 2019). In order to guarantee the completeness and effectiveness of the research, it is crucial to recognise that the purpose of the study is to enrich communal knowledge, rather than to support expected results (Elsevier Author Services, n.d.). This study follows strictly the ethical guidelines of academia. There is no plagiarism in the work of others and the literature cited is listed according to the rules provided by Lancaster University. There was also no falsification or fabrication of experimental data, and all experimental data were generated in a natural way, which is reasonable and traceable and there is no personal bias. Furthermore, there was no manipulation of the experimental procedures in this study to achieve the desired results.

There are also various ethical issues that need to be considered in the use of secondary data. Data which is often readily accessible via the internet, books, or another medium allows for further research and evaluation, provided that ownership of the source data is recognised (Tripathy, 2013). All the data for this study was sourced from the WRDS (Wharton Research Data Services) database, which has a vast collection of historical data on various financial, management, and marketing industries and its web-based portal allows users to easily access the data (Hall, 2015). Hence, I was required to follow the WRDS database guidelines and terms regarding the use of the data. For example, subscribers are not permitted to use the data collected from the WRDS database for commercial or non-academic purposes (Wharton Research Data Services, 2020). This database is protected by U.S. domestic and global legislation and agreements, and it contains copyrighted content, trademarks, and other exclusive information that belongs to WRDS, its suppliers and other parties (Wharton Research Data Services, 2020). Users are not permitted to utilise patented technology materials without prior written permission, with the exception of what is specified in the Subscription Agreement's terms (Wharton Research Data Services, 2020). This paper's entire research and data gathering process was conducted in a way that complied with all applicable laws and regulations.

## 4. Findings and Evaluation of the Findings

**Table 1.** Sample companies

IPO Year	Dual-Class IPOs	Sunets	Perpetual	%Perpetual
2010	6	1	5	83%
2011	4	1	3	75%
2012	7	2	5	71%
2013	9	1	8	89%
2014	11	1	10	91%
2015	15	2	13	87%
2016	6	2	4	67%
2017	19	5	14	74%
2018	12	6	6	50%
2019	18	7	11	61%
2020	16	8	8	50%
Total	123	36	87	71%

**Table 2.** Valuation of Dual-Class Firm

Median Tobin's Q of companies at different stages following the IPO year. Tobin's Q equals the market value of ordinary equity, plus the book value of assets (AT), minus the book value of ordinary equity (CEQ), all divided by the book value of assets.

Tobin's Q: The market value of ordinary equity (CSHO \* PRCC\_F), plus book value of assets (AT), minus the book value of ordinary equity (CEQ), all divided by the book value of assets (AT).

Perpetual is an indicator variable that all permanent dual-class companies are marked as 1 and all sunset clauses dual-class companies are marked as 0.

Size is the natural log of total assets.

Leverage: Current Liabilities (DLC), plus Long-Term Debt (DLTT), all divided by total assets (AT).

PPE: Property, Plant and Equipment (PPEGT), divided by

total assets (AT).

Cash: Cash and Short-term Investment (CHE), divided by total assets (AT).

R&D: Research and Development Expense (XRD), divided by total assets (AT).

CapEx: Capital Expenditures (CAPX), divided by total assets (AT).

ROA data is exported directly from the WRDS database.

The industry is defined by a two-digit SIC level. The four-digit SIC can be exported

directly from the WRDS database and then extracted the first two digits for regression analysis.

For year effects, companies listed in 2010 are marked as 0, those listed in 2011 are marked as 1, those listed in 2012 are marked as 2, and so on.

The robust standard errors' P-values are in parentheses, and the symbols \* and \*\* denote statistical significance at the 5% and 1% levels, respectively.

**Table 3.** OLS regression analysis results

	(1)	(2)	(3)	(4)	(5)
	IPO Year	Years 1	Years 2	Years 3	Years 4
Median Tobin's Q	3.20	2.59	2.74	2.59	2.06
Perpetual	-0.497 (0.555)	0.776 (0.388)	0.47 (0.584)	2.659* (0.012)	1.649 (0.119)
Size(Log10_Asset)	0.045 (0.949)	1.221 (0.087)	0.486 (0.459)	0.311 (0.668)	-0.024 (0.969)
Leverage	-1.081 (0.563)	-0.007 (0.997)	0.463 (0.774)	0.51 (0.776)	-0.473 (0.707)
PPE	-0.135 (0.949)	-0.031 (0.988)	-0.595 (0.749)	-1.375 (0.518)	-0.882 (0.633)
cash	6.503** (0.001)	10.319** (0.000)	8.878** (0.000)	9.943** (0.000)	5.150* (0.020)
R&D	4.436 (0.271)	4.847 (0.268)	10.185 (0.042)	5.372 (0.308)	10.315* (0.046)
CapEx	-2.382 (0.823)	14.744 (0.255)	15.523 (0.134)	9.534 (0.502)	16.06 (0.287)
ROA	1.263 (0.368)	3.531 (0.151)	4.739 (0.1)	-1.947 (0.55)	1.122 (0.713)
Constant	-0.457 (0.868)	-9.086** (0.004)	-5.833 (0.052)	-4.576 (0.162)	-3.66 (0.202)
Ind. Fixed Effects	0.02 (0.365)	0.032 (0.18)	0.022 (0.315)	0.006 (0.828)	0.046* (0.049)
Year Fixed Effects	0.266* (0.039)	0.505** (0.000)	0.489** (0.001)	0.404* (0.034)	0.24 (0.177)
N	99	112	100	81	70
Adjusted R 2	0.323	0.383	0.389	0.341	0.286

Table 1 lists the overall number of dual-class initial public offerings (IPOs) in the sample by year, as well as the number of IPOs with sunset clauses, the number of permanent-type IPOs, and the proportion of permanent-type IPOs to total IPO dual-class offerings. According to statistics, 71% of the companies in the sample are of the permanent type from 2010 to 2020. These samples weren't purposefully chosen; rather, they were created naturally via matching and reasonable filtering (dual-class companies acquired within 5 years of listing were excluded from the sample due to changes in the capital structure).

This paper adheres to the empirical approach developed by Jackson Jr (2018) by focusing on the examination of probable life-cycle variations between perpetual and sunset clause type dual-class PLCs and using Tobin's Q to evaluate standardized business value. Table 1 displays the median Tobin's Q value for permanent dual-class enterprises and sunset clause dual-class enterprises at different points in their post-IPO life cycles. According to the median corporate Tobin's q, the valuation of dual-class stock companies with sunset clauses is highest in the year of the first public offering (IPO), and then there is a resulting significant decrease from 6.04 to 3.38 in the three years following the IPO. In the year of listing and the following four years, their valuations were significantly higher than those of perpetual dual-class companies. For permanent dual-class share corporations, the values are comparable in the zero and second years, with an insignificant rise in the first year, but they also decline throughout the progress of the company's lifetime. For all dual-class share corporations, there is a more pronounced decline in value from 3.20 to 2.59 during the first year after listing, a small fluctuation between one and three years after listing, and a continuation of the decline between the third and fourth years. In the fourth year after listing, the median Tobin's Q was 3.69

for sunset dual-class companies, 1.73 for permanent dual-class companies, and 2.06 for all dual-class companies, implying a valuation discount of approximately 38.9% for sunset dual-class companies, 16.8% for permanent dual-class companies, and 35.6% for all dual-class companies. These statistics, however, do not consider potential changes in valuation attributed to company-level, industry, and temporal factors. This is partly consistent with the findings of Cremers et al. (2018), which revealed that dual-class corporate values are higher during the IPO year but tend to decline as the firm matures. However, this research's findings diverge somewhat from those of Jackson Jr. (2018), who discovered that at the time of their initial public offerings, perpetual dual-class businesses are valued much higher than sunset dual-class businesses, however, as the companies mature, the difference between their valuations gradually closes, and by the third and fourth years of their life cycles, sunset provision dual-class corporations begin to outperform perpetual dual-class corporations and more significantly in the seventh year of their life cycle. Currently, the reasons for this discrepancy are not yet clear.

The paper aimed further explore the above factors that affect a firm's valuation such as perpetual, assets, ROA, industry, and time. According to the results of the OLS regression analysis (see table 3), there is a continuous and more significant effect of firm cash holdings on the valuation of firms. This indicates that a rise in a company's cash and short-term investments may, to some degree, boost the value of the company between the four years after its listing. Moreover, a company's R&D expenditure shows significance in the fourth year of the life cycle in relation to the valuation of the company. This may be attributable to the fact that the rapid growth in sales during the growth phase of the life cycle allows companies to invest more in research and development



to support sustainability and increase the value of their businesses. Additionally, factors such as whether the firm is a perpetual dual-class firm and the industry in which the firm operates also show significance in relation to the firm's valuation in a given year. The findings of this regression are also strongly influenced by the year factor. On the other hand, the company's return on assets (ROA), the volume of its total assets, its capital structure, and its capital expenditures, do not seem to have an effect on the value of the business in the four years after the IPO.

In the third year after listing, the value of firms with sunset provisions was approximately 2.66 higher than the worth of companies in the permanent dual category. The third year of the regression analysis model shows that this association is statistically significant at the 5% level. However, the perpetual indicator did not demonstrate a significant correlation with the value of Tobin's Q in the fourth year, which may have been caused by a small sample size or a particular industry, among other factors. Research has shown that the values of businesses with sunset provisions and businesses with permanent dual-classes begin to deviate in year three and become noticeably different by year seven and beyond (Jackson Jr, 2018). Due to the limitations of the sample size, the research was temporarily unable to gather sufficient indicator data on sunset clause firms five years after listing to investigate longer-term and substantial changes in patterns.

In light of this, hypothesis H1: 'the value of firms with a sunset clause is greater than companies without a sunset clause' holds true in this research. According to the results of the regression analysis, the valuation of businesses with sunset provisions is much greater than that of businesses with permanent dual-class structures in the third year of the life cycle. However, the change in the value of the two types of business aforementioned in the fifth year of the life cycle and beyond is subject to further exploration.

## 5. Conclusion & Recommendations

This study's primary objective was to explore how the value of permanent dual-class firms and dual-class companies with sunset provisions varies over the course of the last four years since they were listed. A quantitative research approach was adopted for this study. Firstly, I have matched and screened the data from two tables of the CII organisation (Council of Institutional Investors) and the Compustat database to identify

a final sample of 87 permanent dual-class companies and 36 sunset clause dual-class companies (see Table 1). I then used the financial data collected from the Compustat database to calculate Tobin's Q values for the sample companies, organising them according to years, and created a line graph reflecting the trend in their enterprise value (see Table 2). Moreover, I used the OLS regression method to further explore factors that have the potential to influence a company's Tobin's Q value, such as the firm's ROA, cash and short-term investments, fixed assets, and sunset clauses. Figure 3 displays the results of the regression analysis.

The results of the study show that dual-class companies experience changes in valuation over the course of their life. To be specific, according to Tobin's Q, the valuation of perpetual dual-class companies is similar in years 0 and 2 of the life cycle, with a small increase in year 1, followed by a gradual decrease as the company matures. The value of sunset clause dual-class firms is at its peak in the year of the first

public offering and then sharply declines from Year 0 to Year 3. The valuations of sunset dual-class companies are consistently greater than those of permanent dual-class companies during Year 0 to Year 4 of the life cycle. This supports Bebchuk and Kastiel's (2017) findings that the advantages of the dual-class structure, which is based on the excellent leadership of the founders, will fade over time as the company goes public and faces more management inefficiencies caused by the system itself. However, this calculation result does not consider other factors that may affect the worth of a company, such as financial condition, sector, and time. In order to conduct a more in-depth and precise study, I then took the above factors into consideration and used OLS regression analysis to arrive at the following results: the valuation of a company is not significantly related to whether or not it has a sunset clause in the two years following the IPO, and it is not until the third year of the life cycle that the value of a company with a sunset clause significantly exceeds the value of a company without a sunset clause. This, therefore, supports the call for a sunset clause to some extent. When using dual-class share listings, it is also advised that corporations add a sunset provision based on time, events, and dilution since, in the long run, companies with sunset provisions will be more valuable (Jackson Jr, 2018).

## 6. Critical Reflections

In this research, the deviations of the experimental results from the previous theory mainly exist in the following areas:

First, this study adopts the empirical framework of Jackson Jr. (2018), whose experiment shows that perpetual dual-class share firms are valued higher at the time of their initial public offerings (IPO), but that as the company matures, dual-class companies with sunset clauses will be valued higher than perpetual dual-class firms. According to the study findings, while the valuation of both types of companies aforementioned decreases as the company matures, the valuation of dual-class companies with sunset clauses is consistently higher than the valuation of perpetual dual-class companies for the first five years of their life cycle. This variation may be due to differences in sample selection or timing.

Second, in the OLS regression analysis, while dual-class companies with sunset provisions were significantly more valuable than perpetual dual-class companies in the third year after listing, their relationship did not show significance in the fourth year. According to Jackson Jr. (2018), the value of sunset clause dual-class companies will begin to surpass that of perpetual dual-class companies in the third to fourth year after listing and considerably surpass that of perpetual dual-class companies in the seventh year of their life cycle. Since a sample of only 36 sunset dual-class companies is included within this study, I did not have sufficient data to examine whether the change in the value of dual-class companies four years after the listing is correlated with their ownership of sunset provisions.

I am not yet able to determine clearly what the cause of the above discrepancy is, but academic papers often find conflicting results and therefore this is acceptable. The dual-class share system is a good regime that allows capable entrepreneurs to contribute

more to the long-term development of the firm, but it also must be used wisely to assist in increasing the value of the company. The implementation of the sunset clause helps



companies to avoid issues, such as inefficient governance and better protects the interests of minority shareholders, which optimizes the intrinsic value of the dual-class share regime. As dual-class share regimes are only just beginning to be accepted and incorporated into local capital markets in most parts of the world, there is a significant theoretical gap. Countries must actively investigate, implement, and enhance them into a system that is appropriate for their particular circumstances and capital markets. This study not only adds to the body of knowledge in the area of dual-class share regimes, but it also serves as a guide and a point of reference for further investigation.

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