

Data Appendix to “The Case Against Corporate Royalty”

In this appendix we briefly explain the data and methodology behind the analysis described in Commissioner Jackson’s speech *The Case Against Corporate Royalty*. In Part 1, we describe the data we used to analyze the differences between firms with perpetual dual-class stock and firms that contain sunset provisions to their dual-class stock. In Part 2, we describe our analysis and provide tables and figures which present our results. Part 3 explores the robustness of our findings, and Part 4 concludes.

We consider this analysis preliminary; and we especially welcome inquiries and further analysis on this important policy issue. For that reason, we are simultaneously making our data available on the SEC’s website. Should you have any questions, please do not hesitate to contact Commissioner Jackson at jacksonro@sec.gov or 202-551-5070.

Part 1: Sample

The initial sample is drawn from Jay Ritter’s list of dual-class IPOs.¹ From this sample, we keep common stock public listings from January 1, 2001 through December 31, 2016. We exclude foreign-incorporated firms, and we require that each IPO has matching CRSP pricing data that begins within five days of the IPO date. We also require a match to Compustat for accounting data. Next, we locate each company’s original certificate of incorporation on the SEC’s Edgar site and we read through the charter to record whether the dual-class stock contains a sunset provision.² We drop several observations for firms that did not contain dual-class stock at the IPO date. This process results in a sample of 157 dual-class IPOs over the 16 year period of 2001-2016.³

¹ Available at: <https://site.warrington.ufl.edu/ritter/ipo-data/>.

² Charters that contain no sunset provisions are coded as perpetual. If a charter allows for the transfer of shares into a trust, we code this as perpetual even though we do not have access to complete details regarding the structure of the trust.

³ This sample represents a subset of the universe of dual-class public listings. According to Capital IQ, as of February 6, 2018, there were 852 U.S.-incorporated firms with dual-class stock that were publicly traded on the major U.S. stock exchanges, with an aggregate market capitalization of \$5.1 trillion.

We also look up each firm in Capital IQ and note whether this database lists the firm as having single-class stock. For these firms, we read through their historical annual reports on Edgar and identify the dates upon which their dual-class stock was unified into a single-class. We record 14 such unification dates. Firms in our sample are coded as having either perpetual dual-class stock or dual-class stock containing a sunset provision. After unification into a single-class of stock, we code the perpetual/sunset variable as missing and these subsequent firm-years are excluded from the dual-class analysis.

Part 2: Analysis

Table A.1 reports the number of dual-class IPOs in our sample by year, and the number and percentage of those with sunset provisions versus perpetual classes. While the percentage varies somewhat by year, overall the sample averages 55% perpetual from 2001 to 2016.

We follow the empirical framework of Cremers, Lauterbach, and Pajuste (2018).⁴ They show that firm valuations evolve over time and that firms go through a life-cycle. In the first few years after IPO, dual-class firms have higher valuations. However, as firms continue in their life-cycle, this valuation premium declines. Cremers et al. conduct a matching analysis to control for differences between single-class and dual-class firms. Since our sample comprises only dual-class firms, we do not need to construct a matched set of control firms. Our analysis focuses on potential life-cycle differences between perpetual versus sunset-constrained dual-class common stock. We measure standardized firm valuations using Tobin's Q, calculated at fiscal-year end as: the market value of common stock, minus the book value of common stock, plus the book value of assets, minus deferred taxes (or zero if missing), all divided by the book value of assets. Other variables are defined in the tables.

Figure A.1 graphs the median Tobin's Q ratio for perpetual dual-class firms versus sunset dual-class firms at various stages in their life-cycles following IPO. Perpetual dual-class firms initially have

⁴ Cremers, Martijn, Beni Lauterbach, and Anete Pajuste, 2018, The Life-Cycle of Dual Class Firms, Working Paper, available at: <https://ssrn.com/abstract=3062895>.

higher valuations at IPO than sunset dual-class firms, but this valuation premium declines over time. Beyond nine years after the IPO, perpetual dual-class firms have a median Tobin's Q ratio of 1.49 compared to 1.83 for sunset dual-class firms. This represents a valuation discount of approximately 19% for perpetual dual-class firms. However, this figure does not control for various firm-level, industry, or timing differences among the firms, which could be correlated with valuation differences.

Table A.2 attempts to control for other factors that may impact the differences in valuations of dual-class firms, such as accounting performance, leverage, industry, organic growth prospects, time periods, etc. We rely on Cremers et al. for these variables and the basic regression framework. Our four ols regressions analyze the valuations of dual-class IPO firms at four different time periods: the first fiscal year-end after their IPOs, one to two years after the IPOs, three to six years after the IPOs, and seven or more years after the IPOs. The dependent variable in each regression is the Tobin's Q for each firm, and the independent variables include an indicator for perpetual dual-class stock at the IPO (versus dual-class stock with a sunset provision) and other control variables. Industry and year fixed effects are included in all models, and robust p-values from standard errors clustered at the firm level are included in parentheses.

The first two models in Table A.2 show that the valuations of perpetual dual-class stock firms are not statistically different from those of dual-class firms with sunset provisions immediately following the IPO date and for the following two years. This implies that the initial difference reported in Figure A.1 may be driven by other factors such as industry, IPO years, or firms' cash holdings.

The third and fourth models in Table A.2 show that by the third year and all subsequent years following the IPO, firms with perpetual dual-class stock have valuations that are approximately 0.66 to 0.67 lower than firms with sunset provisions. This relation is statistically significant at the 1% level in both models three and four. The median Tobin's Q of firms with sunset provisions in years 3+ equals 1.783; thus, the valuations of firms with perpetual dual-class stock at least three years after IPO are 37% lower ($= 0.66 / 1.783$) than the valuations of firms with sunset provisions in these years.

Using the predicted values of Tobin's Q from the regression models, we graph the median relative valuations of dual-class firms in Figure A.2. Firms with sunset provisions have valuations that are similar to firms with perpetual provisions in the IPO year and in years one and two in their public life cycle. This is driven by the insignificant coefficients on *Perpetual* in models (1) and (2) of Table A.2. The valuations begin to diverge in years three through six and are significantly different in years seven and beyond in the life cycle. By year seven in the life cycle, firms with perpetual dual-class stock exhibit valuations that are significantly lower than those of firms with sunset provisions. Since this graph uses the predicted values from the regressions, these valuation results are robust to differences across firms in accounting performance, industry, and time.

We further explore the small sample of 14 unifications in which firms drop their dual-class of common stock and unify into one single class. We compare the change in Tobin's Q from the fiscal year-end prior to the unification to that in the fiscal year-end following the unification. These results are reported in Figure A.3. Overall, unifications are associated with a median increase in Tobin's Q of +0.19. The seven firms with sunset provisions experience a median increase of +0.17 and the seven firms with perpetual dual-class stock experience a median increase of +0.45 in Tobin's Q.

Part 3: Robustness

One limitation of the regression results in which we measure Tobin's Q at different intervals is that this may fail to capture important delisting events for the two samples. For example, if the samples experience bankruptcy rates or acquisitions at differing rates, the remaining firms may present a distorted impression of the overall value implications for shareholders over time. As a robustness check to the Tobin's Q results, we examine monthly portfolio returns for the samples of perpetual and sunset dual-class IPOs over time.

First, we construct equal-weighted monthly average returns for the two samples in calendar time, from January 2002 through December 2017. We then construct a long-short portfolio return by calculating the difference in returns for the sunset firms minus the perpetual firms. The monthly

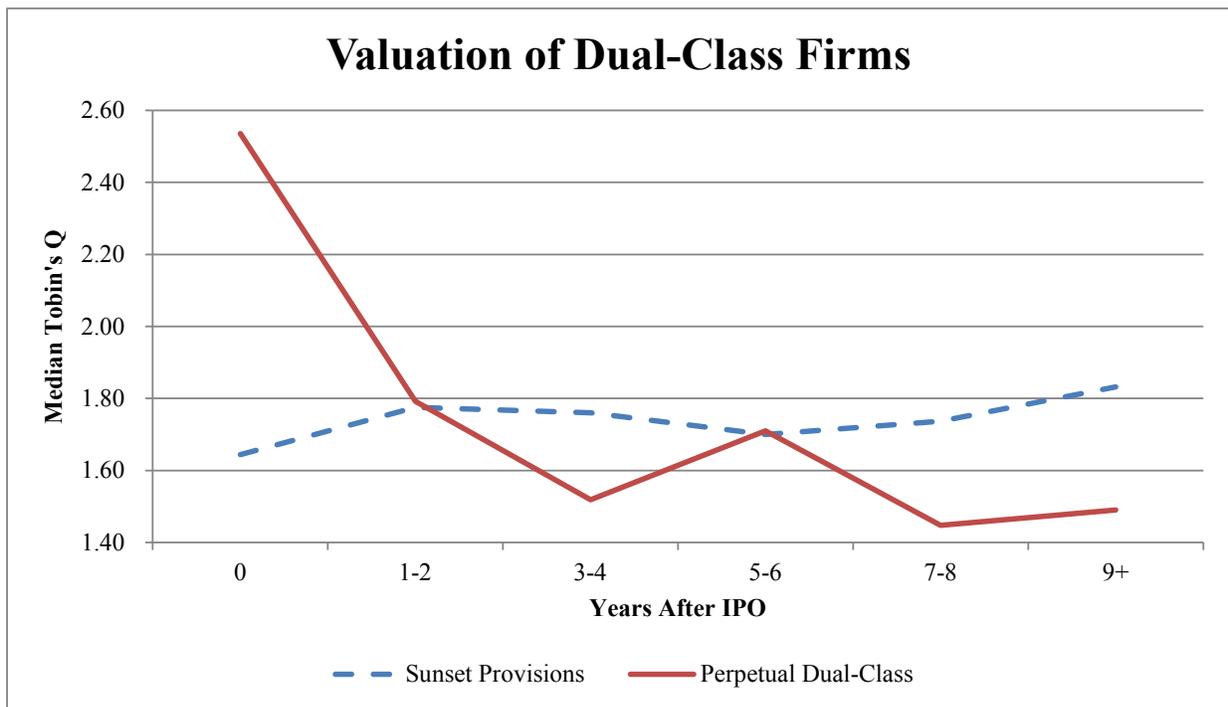
compounded return over this 16 year period equals +38.3%, which represents a compound annual return of +2.05%. This is consistent with the Tobin's Q results in that over time, perpetual dual-class firms tend to underperform dual-class firms with sunset provisions.

Second, we perform the above robustness check in event time. We construct equal-weighted monthly portfolios beginning in each firm's IPO month and then we measure subsequent monthly returns through 48 months after the IPO. We again construct a long-short portfolio return difference. This monthly compounded return over 48 months equals +24.2%, which represents a compound annual return of +5.56%. This is consistent with the Tobin's Q results in that over the life cycle of a newly-listed firm, perpetual dual-class firms tend to underperform firms with sunset provisions.

Part 4: Conclusions

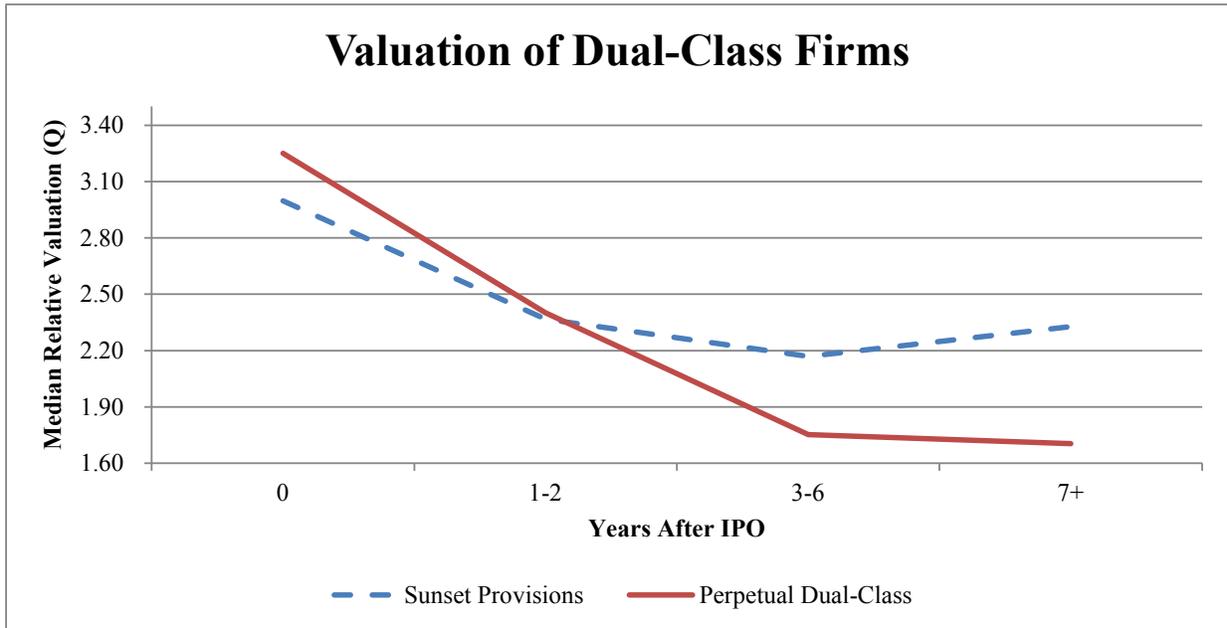
The findings indicate that dual-class IPO firms experience valuation changes throughout their life-cycles that differ based on a key feature of dual-class stock. These firms have similar valuation during the first two years after going public. However, later in the life-cycle, perpetual dual-class stock firms tend to underperform those firms that contain a sunset provision. In a small sample of firms that unify these classes into a single class of common stock, the unification events are associated with an increase in valuations. This increase is greater in magnitude among those firms that eliminate their perpetual dual-class stock.

Figure A.1



Median Tobin's Q of firms at various points in time after IPO year. Tobin's Q equals the market value of common stock, minus the book value of common stock, plus the book value of assets, minus deferred taxes (or zero if missing), all divided by the book value of assets, at fiscal year-end.

Figure A.2



Median predicted values of Tobin's Q of firms from models in Table A.2. Tobin's Q equals the market value of common stock, minus the book value of common stock, plus the book value of assets, minus deferred taxes (or zero if missing), all divided by the book value of assets, at fiscal year-end.

Figure A.3

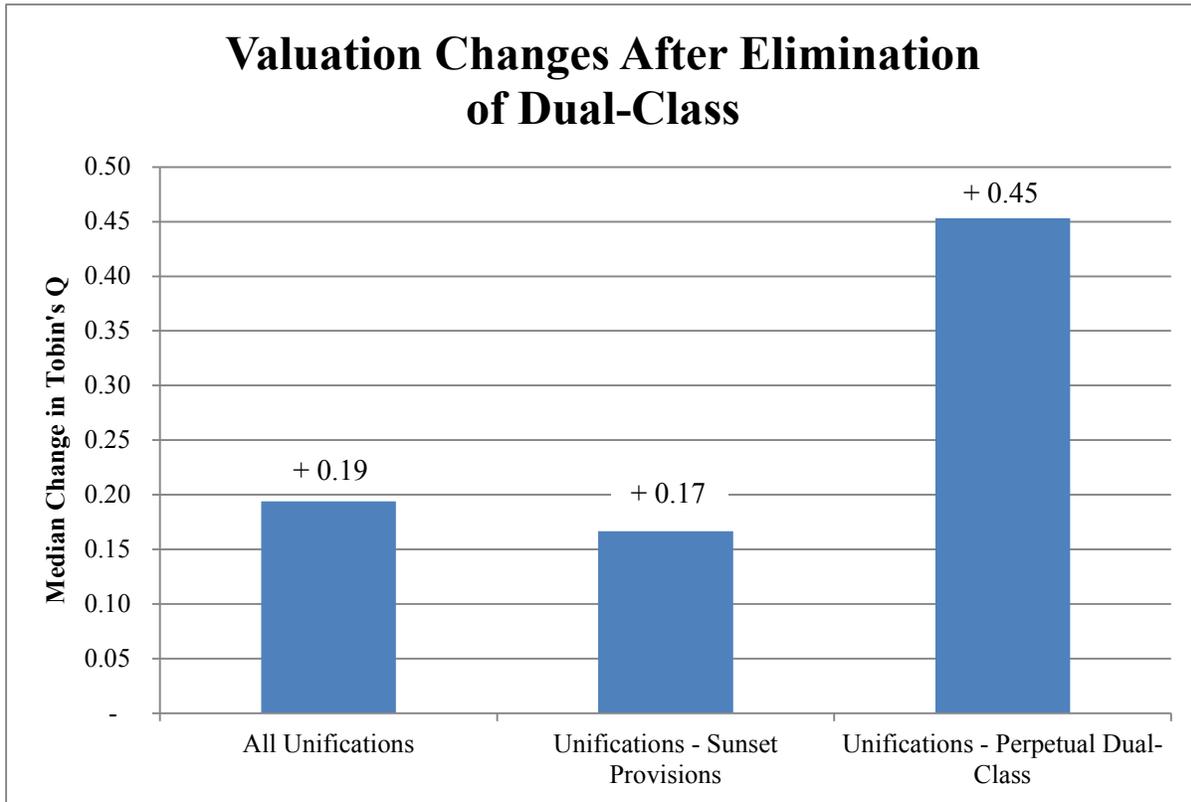


Table A.1

<u>IPO Year</u>	<u># Dual- Class IPOs</u>	<u># Sunsets</u>	<u># Perpetual</u>	<u>% Perpetual</u>
2001	5	4	1	20%
2002	10	2	8	80%
2003	4	1	3	75%
2004	10	7	3	30%
2005	16	8	8	50%
2006	5	2	3	60%
2007	10	4	6	60%
2008	2	1	1	50%
2009	5	4	1	20%
2010	7	2	5	71%
2011	7	3	4	57%
2012	8	4	4	50%
2013	23	10	13	57%
2014	18	7	11	61%
2015	22	9	13	59%
2016	<u>5</u>	<u>3</u>	<u>2</u>	<u>40%</u>
Total	157	71	86	55%

Table A.2

	(1)	(2)	(3)	(4)
	IPO Year	Years 1-2	Years 3-6	Years 7+
<i>Median Tobin's Q</i>	1.86	1.78	1.70	1.61
Perpetual	-0.161 (0.795)	-0.209 (0.506)	-0.660 *** (0.005)	-0.667 *** (0.002)
Size	0.065 (0.759)	0.069 (0.559)	0.060 (0.487)	0.039 (0.525)
ROA	-0.028 (0.988)	-0.410 (0.503)	1.022 * (0.061)	1.463 *** (0.003)
CapEx	7.929 (0.106)	1.990 (0.486)	8.201 * (0.063)	2.752 (0.403)
R&D	0.334 (0.952)	-0.755 (0.721)	3.807 (0.167)	2.717 (0.180)
PPE	-1.998 (0.326)	0.904 (0.390)	-2.228 ** (0.021)	1.549 ** (0.019)
Cash	6.810 *** (0.006)	5.267 *** (0.000)	3.138 *** (0.000)	0.867 (0.135)
Leverage	0.074 (0.965)	-0.462 (0.482)	0.797 (0.229)	-0.147 (0.734)
Constant	1.662 (0.488)	0.563 (0.631)	1.200 * (0.063)	1.578 *** (0.002)
Ind. Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
N	137	250	241	171
Adjusted R ²	27.22%	48.58%	51.28%	80.93%

Variables are defined as in Cremers, Lauterbach, and Pajuste (2018).⁵ All variables are defined at fiscal year-end. *Tobin's Q* equals the market value of common stock, minus the book value of common stock, plus the book value of assets, minus deferred taxes (or zero if missing), all divided by the book value of assets. *Perpetual* is an indicator variable that equals one if a firm has perpetual dual-class stock and zero if a firm has dual-class stock containing a sunset provision. *Size* is the natural log of total assets, *ROA* is net income divided by total assets, *CapEx* is capital expenditures divided by total assets, *R&D* is research and development expense divided by total assets or zero if missing, *PPE* is property, plant, and equipment divided by total assets, *Cash* is cash and short-term investments divided by total assets, and *Leverage* is long-term debt divided by total assets. Industry is defined at the two-digit SIC level. P-values from robust standard errors clustered at the firm level are included in parentheses, with ***, **, and * indicating statistical significance at the 1%, 5%, and 10% levels, respectively.

⁵ Cremers, Martijn, Beni Lauterbach, and Anete Pajuste, 2018, The Life-Cycle of Dual Class Firms, Working Paper, available at: <https://ssrn.com/abstract=3062895>.