The Impact of Dodd-Frank Act Compliance Cost on the Hedge Fund Industry

by

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ABSTRACT

A common complaint suggests that compliance with financial regulation brings increasing returns to scale and predominantly affects smaller firms. Many studies have shown that an inverse relationship exists between the size of regulated firms and the per-unit cost of compliance. Anecdotal evidence suggests that Title IV of the Dodd-Frank Act, mandating hedge fund adviser registration and increased disclosures, affects mostly smaller hedge fund advisers. To estimate the effect of Title IV on smaller hedge fund advisers, this study evaluates survey data collected after the registration effective date for hedge fund advisers under Title IV.

The author finds no evidence of an inverse relationship between the size of regulated hedge fund advisers and the per-unit cost of compliance. The cost of Title IV compliance and other independent variables as proxies for cost are associated with the size of hedge fund advisers as measured by assets under management (AUM). These findings are inconsistent with the hypothesis that the cost of financial regulation predominantly affects smaller firms. To explain these findings, the author evaluates hedge funds' use of single versus multiple investment strategies and the associated Title IV compliance costs.

Keywords: Hedge Funds, Dodd-Frank Act, Compliance Cost, Barriers to Entry

JEL Classification: G23, G24, G28, K22

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An important issue that relates to financial regulation and a common complaint is that financial regulation tends to hurt smaller firms more, because the cost of compliance favors larger firms (Langevoort [2007], Malloy [2012], Bainbridge [2006], Crain and Crain [2010]), resulting in barriers to entry for smaller firms (Macey [1994], Office of the Comptroller of the Currency [2003], Brown et al. [2008]). Many authors suggest that Dodd-Frank Act compliance costs affect smaller firms more than larger firms (112th Cong. 1 [2012], Financial Services Committee [2010]).

The most damning putative concern raised by regulatory compliance costs is that regulations in effect bring increasing returns to scale (Wheelock and Wilson [2012], Feldman et al. [2013], Elliehausen [1998], Murphy [1980], Schroeder [1985], Elliehausen and Kurtz [1985, 1988], Barefoot et al. [1993], Elliehausen and Lowrey [1997]). Many studies have shown that an inverse relationship exists between the size of a regulated firm and the per-unit cost of compliance (Bradford [2004], Office of Management and Budget [2013], Crain [2005], Crain and Crain [2010a], Hopkins [1995]). A minority of studies finds no relationship between size of firms and the per-unit cost of compliance (Brock and Evans [1986], Evans [1986], Bickerdyke and Lattimore [1997]). Most studies in this context evaluate the effect of financial regulation on smaller banks. Some studies have evaluated the effect of the Dodd-Frank Act on larger banks (Standard and Poor [2012], Gao et al. [2011]). However, substantial uncertainty still exists as to the full impact of the Dodd-Frank Act (Government Accountability Office [2012], Financial Stability Oversight Council [2011]). The effect of Title IV of the Dodd-Frank Act (Title IV) on smaller hedge fund advisers has not been examined by the literature. This study fills the gap in the literature.

There is some evidence that Title IV affects the hedge fund industry (Kaal [2013], Kaulessar [2012], Mirsky et al. [2013], Citi Prime Finance [2012]). Anecdotal evidence suggests that Title IV more than doubled the market entry threshold requirements for smaller hedge fund advisers. Setting up a hedge fund before the enactment of Title IV could be accomplished by raising around $25-50 million. After the enactment of the Dodd-Frank Act, this number may have increased to around $100 million. Below $100 million in initial assets under management (AUM), the administrative cost of running a hedge fund in a post Dodd-Frank environment could be prohibitive (Kaal [2013]). Another study suggests that "Because [compliance] costs are higher on a relative basis for smaller funds and lower for larger hedge funds," hedge fund managers should have more than $250 million AUM to cover their expenses (Citi Prime Finance [2012]). One study claims that: "Smaller hedge funds seem to be spending more, both as a percentage of AUM and relative to operating costs, than their larger counterparts." (Mirsky et. al. [2013]).

The anecdotal evidence, if true, could have significant policy implications. If the administrative and compliance costs created by Title IV should disproportionally affect smaller hedge fund advisers, it is conceivable that over time smaller fund advisers could get forced out of the market or merge with other funds. Advisers who are contemplating a startup may not enter the market. A disproportionate effect of Title IV on startup hedge funds and smaller advisers could create barriers to market entry and precipitate a trend toward consolidation among smaller hedge fund advisers. A surplus of larger private fund advisers with correspondingly larger amounts in AUM could increase systemic risk.

Title IV and Securities and Exchange Commission (SEC) rules implementing the requirements under Title IV have created a paradigm shift for the regulation of private

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funds in the United States. The new regulatory framework for private funds in the United States requires hedge fund manager registration in combination with enhanced disclosure of sensitive proprietary information (Dodd–Frank §§ 401, 402). Some of the more controversial requirements include disclosure obligations that require the reporting of, among others: positions held by the investment adviser, strategies and products used by the investment adviser and its funds, counterparties and credit exposure, risks metrics, performance and changes in performance, financing information, percentage of assets traded using algorithms, and the percentage of equity and debt (SEC [2011d], SEC [2013c], SEC [2013b]). The true impact of these regulations on the hedge fund industry is unclear.

After more than thirty years of controversy between the hedge fund industry and regulators, with both sides asserting their positions in an effort to determine the appropriate level of regulatory oversight, the enactment of Title IV was divisive. Industry representatives were concerned that Title IV could unnecessarily burden investment advisers and undermine clients' secrecy (Strasburg [2009]). Legislators opposing Title IV predicted that the enactment would promote unaccountable and unrestrained regulatory agencies (Ferullo et al. [2010]). The Treasury Department favored the enactment of Title IV to facilitate strong oversight for critical financial institutions (Department of the Treasury [2009]). The SEC also supported the enactment of Title IV to increase its understanding of the hedge fund market including the type of risk-taking in that market, the types of securities involved, and the total dollar amount at stake. Rep. Paul E. Kanjorski (D-PA) (H14420) stated: "[F]or the first time regulators will have the information needed to better understand exactly how these entities operate and whether their actions pose a threat to the financial system as a whole." (155 Cong. Rec. H14419-

20 [2009]).

Prior attempts by the SEC to register hedge fund advisers precipitated an upsurge in scholarly assessments (Kaal [2011]). Brown et al. [2008] evaluate the effects of hedge fund manager registration. Professor Douglas Cumming and his co-authors have provided important insights on the effects of hedge fund regulation before the enactment of Title IV (Cumming and Dai [2009, 2010b, 2010a], Cumming and Johan [2008]). Several other studies evaluate the effects of hedge fund regulation and governance in a pre Dodd-Frank Act regulatory environment (Hu and Black [2007], Kaal [2013, 2009]).

The analysis in this paper is consistent with the existing literature but adds several important findings pertaining to the effects of Title IV on the hedge fund industry. The author shows that the size of hedge fund advisers as measured by AUM is associated with the cost of Title IV compliance and other independent variables as proxies for compliance cost. The regression results are consistent across all independent variables. The findings of this study are inconsistent with the hypothesis that smaller hedge fund advisers are more affected by the cost of Title IV compliance. There is no evidence of an inverse relationship between the size of a regulated firm and the per-unit cost of compliance. Accordingly, industry concerns over the effect of Title IV compliance cost and possible barriers to entry for smaller funds and startups seem to be unjustified. Based on these findings, adviser size may not matter as much for policy adjustments and SEC rule making as the hedge fund industry and its representatives claimed.

Title IV and SEC Implementation

Prior to the enactment of Title IV, the SEC had attempted to increase the regulatory oversight of hedge fund industry on several occasions (Kaal [2009]). Congress enacted the Private Fund Investment Advisers Registration Act of 2010 in Title IV of the

Dodd-Frank Act (PFIARA, Act, or Title IV) (Dodd-Frank §§ 401-416) to close regulatory gaps and end the speculative trading practices that contributed to the 2008 financial market crisis. The Act amends the Investments Advisers Act of 1940 (Advisers Act) and establishes rules and regulations for the registration of private funds with the SEC. Title IV attempts to provide greater protections for investors by expanding the reporting requirements of private advisers to the SEC (H.R. Rep. No. 111–517 [2010]).

Title IV mandates hedge fund adviser registration to increase record-keeping and disclosure (Dodd-Frank § 408). Hedge fund advisers with more than $150 AUM are required to register as investment advisers and have to disclose information about their trades and portfolios to the SEC (Dodd-Frank §§ 408, 403, SEC [2011a], SEC [2013a], [2011d], SEC [2013b]).

Registered investment advisers are required to maintain records and any other information that may be necessary and appropriate to avoid systemic risk (Dodd-Frank §§ 404, 405). Investment advisers must provide reports with respect to certain information related to systemic risk (Dodd-Frank § 404(b)(3)), such as trading practices, trading and investment positions, the amount of AUM, valuation policies, side letters, the use of leverage, including off-balance sheet leverage, counterparty credit risk exposures, and other information deemed necessary (Dodd-Frank § 404(b)(3)(H)). These reports are confidential and not publicly available.

Systemically relevant information includes information about the funds managed by the investment advisor, information about the investment advisor, and information about individual investors (17 C.F.R. §279.9 (2012), SEC 2013c). Investment advisers are required to disclose information pertaining to their strategies, performance and changes in performance, the products used by the investment adviser, financing information, risks metrics, credit exposure, and positions held by the investment advisor, among others (SEC 2013c).

As for the hedge funds advised by investment advisers, investment advisers are required to list Net Asset Value (NAV) managed by hedge fund strategy (SEC 2013c) and the percentage of the reporting fund's NAV managed by using computer-driven trading algorithms (SEC 2013c). Investment advisers also have to disclose the reporting fund's greatest net counterparty credit exposure (SEC 2013c), including the name of the creditor and the dollar amount owed to each creditor, information about the collateral and credit support, and changes in market factors and their effect on the long and short components of the portfolio as a percentage of NAV.

Hypothesis

This study evaluates if Title IV affects hedge fund advisers across the AUM spectrum equally. Based on the available hedge fund literature, anecdotal evidence (Kaal 2013), and industry- and alternative views on how hedge fund advisers may respond to Title IV under the Dodd-Frank Act (Cumming and Dai [2009, 2010a, 2010b, 2008], Agarwal et al. [2003], Agarwal and Naik [2011], Liang [1999, 2000, 2003], Lo and Hasanhodzic [2007], Naik et al. [2007], Hu and Black [2007], Fung and Hsieh [1997, 2000, 2001, 2002, 2004, 2011], Dichev and Gwen Yu [2011], Ding and Shawky [2007]) the core hypothesis of this article is:

- <u>Hypothesis: Dodd-Frank Effect on Hedge Fund Category.</u> Smaller hedge fund advisers pay more relative to their size than larger hedge fund advisers for Title IV Compliance.

Prior studies have demonstrated that registration and increased compliance requirements under the Dodd-Frank Act marginally increase the cost structure of hedge funds (Kaal [2013]). To preview initial findings, Figures X and Y show that linear, robust, and non-linear regression models show positive and statistically significant coefficients. Compliance costs per unit AUM do not diminish in the sample. There is thus no support for the hypothesis.

However, anecdotal evidence suggests that Title IV and Form PF compliance cost are affected by the strategies employed by hedge fund advisers. Form PF is structured in a way that allows single strategy fund advisers to collect and provide a fraction of the information a multi strategy adviser would be required to make available under Form PF. Accordingly, hedge fund advisers that apply only a single strategy to their respective portfolios may incur overall lower compliance cost.

Methodology

The author tests the hypothesis of this article with linear, robust, and non-linear regression specifications. Linear Model 1 applies a least-squares linear regression (LSLR), Model 2 uses a robust regression specification, Models 3 and 4 use different weighted regression specification, and Model 5 a non-linear regression specification. The dependent variable for this study is AUM (Y=AUM). AUM for the fund managers in the sample is the AUM reported on or around the registration effective date for hedge fund managers under Title IV. The independent variable of principal interest is (i) cost of Title IV compliance, additional independent variables are (ii) median cost measures, (iii) annual time required for Title IV compliance, (iv) median annual time measures for Title IV compliance, (v) number of strategic responses, (vi) preferred asset size after Title IV enactment.

a is the Y-intercept of the regression equation, and *b* is the slope of the regression equation. LSLR helps determining the best-fit calibration line of the size of the hedge fund adviser as measured by assets under management (AUM) vs. the cost associated with Title IV (Cost). The regression equation for the linear model is:

$$\hat{Y} = a + bX \qquad (1)$$

In the LSLR model, *a* and *b* are selected to minimize the sum of residuals squared, maximizing the probability that best describes the relationship between X and Y. The equations for *a* and *b* are:

$$a = \frac{\sum X_i^2 \sum Y_i - \sum X_i \sum X_i Y_i}{n \sum X_i^2 - (\sum X_i)^2} \qquad (2)$$

$$b = \frac{n \sum X_i Y_i - \sum X_i \sum Y_i}{n \sum X_i^2 - (\sum X_i)^2} \qquad (3)$$

LSLR is non-robust to violations of its underlying assumptions and can produce misleading results. The LSLR model can be non-robust to outliers. In the presence of outliers, LSLR predictions can be dragged towards the outliers and the variance of the LSLR estimates can be artificially inflated. LSLR can be especially non-robust if outliers in the sample resulted from a violation of standard ordinary least squares assumptions. LSLR also typically assumes homoscedasticity, i.e. the LSLR model assumes that for each value of x, there is a subpopulation of y-values normally distributed, the means of all the subpopulations of y lie on the same straight line, and all the subpopulations of y-values have equal variance.

The heteroscedasticity of the distribution in the sample of this study suggests that it would be unreasonable to assume that each data point should be treated equally. Treating each data point equally would allocate inappropriate weight to the data points in the distribution. The author first used a robust regression (Model 2) to account for possible violations of LSLR assumptions in the survey data generating process and to account for heteroscedasticity.

Another simple and effective way to address the shortcomings of LSLR is the use of weighted LSLR. Weighted LSLR methodology appropriately utilizes available data points in smaller datasets and provides useful regressions for datasets with data points of varying importance. Weighted LSLR incorporates extra nonnegative constants for each data point into the fitting criterion and maximizes the efficiency of parameter estimation by allocating proper weights for data points over parameter estimates. Rather than using a particular function to describe the relationship between the process variables, weighted LSLR reflects the behavior of the random error in the model. Adjusting the nonnegative constants for the fitting criterion to find the parameter estimates enables the nonnegative constants to determine the contribution for each data point to the final parameter estimates (Carrol and Ruppert 1988). A downside of weighted LSLR methodology is its dependence on estimated weights. Contrary to the theory behind weighted LSLR methodology, in real applications, such as the application in this study, the exact weights are almost never exactly determinable.

The weighting factor for the unweighted LSLR is equal to one. This weight is usually impractical and other weights are favorable. After experimenting with several other weighting factors with less optimal fit. Weighting factors that produced less balanced results included: $w_i = 1$, $w_i = 1/y^{1/2}$, $w_i = 1/y$, $w_i = 1/y^2$, $w_i = 1/x^{1/2}$, $w_i = 1/x$. The models for the weighting factor are:

$$\text{Model 3: } w_i = 1/x \tag{4}$$

$$\text{Model 4: } w_i = 1/x^2 \tag{5}$$

To account for the respective LSLR weighting factor equation (2) and (3) can be adjusted (i) by replacing n with Σw_i and (ii) by inserting w_i into every summation field. The equations for the regression parameters for Model 3 and 4 (weighted regression) are then:

$$a = \frac{\sum W_i X_i^2 \sum W_i Y_i - \sum W_i X_i \sum W_i X_i Y_i}{\sum W_i \sum W_i X_i^2 - (\sum W_i X_i)^2} \tag{6}$$

$$b = \frac{\sum W_i \sum W_i X_i Y_i - \sum W_i X_i \sum W_i Y_i}{\sum W_i \sum W_i X_i^2 - (\sum W_i X_i)^2} \tag{7}$$

Because of bounded variables, ordinal rankings, and non-normal distribution of the LHS variable, LSLR and LSLR-based regressions have several limitations. The author uses Poisson as an alternative approach to help overcome the downsides of the LSLR models. While selection bias is generic problem in social sciences, concerns over selection bias in this study due to the lower sample sizes for Model 1-5 is a valid concern

(Kaal 2013). To allay concerns over multicollinearity of the independent variables, the author ran variance inflation factor tests.

Data and Descriptive Statistics

The data used for the analysis in this article was collected in the context of a 2012 survey study (Kaal [2013]) with a population of 1,264 private fund advisers, registered before the SEC's registration effective date for private funds, March 30, 2012. Respondents in the survey (N=94) answered questions in several categories designed to identify the effects of Title IV under the Dodd-Frank Act. The survey categories relevant for the analysis in this article are also the independent variables for the regression models 1-5 in this study: cost of Title IV compliance, median cost measures, (annual time required for Title IV compliance, median annual time measures for Title IV compliance, number of strategic responses, preferred asset size after Title IV enactment.

Exhibit 1: The Effect of Title IV on the Industry

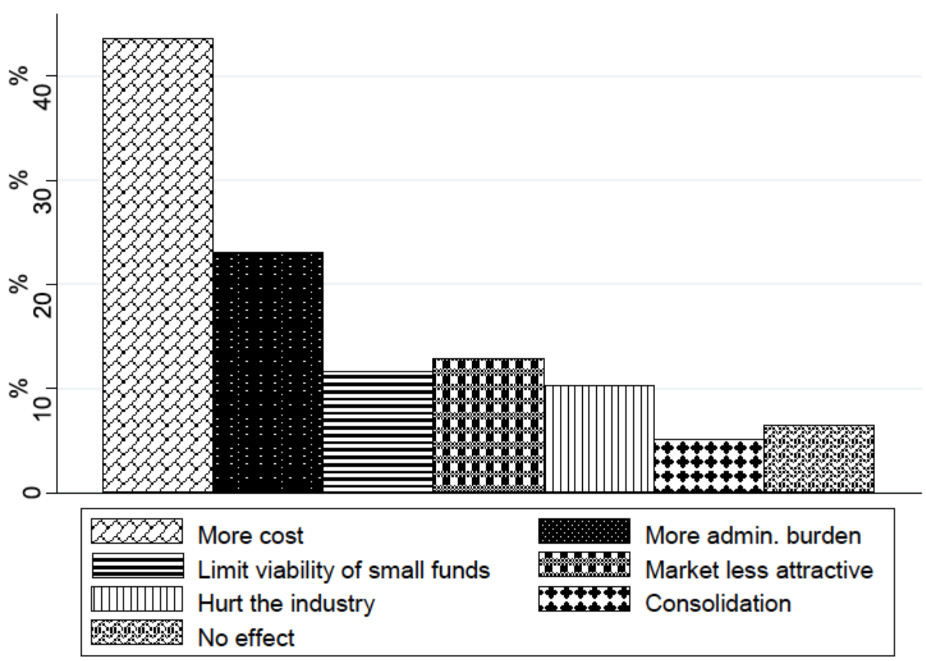

Exhibit 1 shows a % breakdown of responses to open-ended survey question number five, pertaining to the effects of Title IV on the hedge fund industry. Exhibit 1 illustrates that an overwhelming majority of respondents (43.59%) opined that the industry would be affected predominantly by increased costs.

Exhibit 2: Descriptive Statistics for Entire Sample

Variable	N	Mean	Std. Dev	Min	Max
Cost	50	189150	145435.3	5000	500000
Median Cost	71	149102.1	122515	5000	781250
Annual Time	49	470.3061	340.5501	50	1500
Median Annual Time	77	471.2078	353.2104	175	1500
Strategic Responses	82	3.378049	1.660286	1	8
Asset Sixe after Title IV	60	1,420,000,000	2,190,000,000	125,000,000	11,100,000,000

Exhibit 3: Descriptive Statistics for Single Strategy Subsample

Variable	N	Mean	Std. Dev	Min	Max
Cost	12	264583.3	193196.3	50000	650000
Median Cost	17	191176.5	155357.7	75000	650000
Annual Time	11	387.2727	363.3274	50	1000
Median Annual Time	18	427.7778	371.0962	175	1500
Strategic Responses	18	3.055556	1.830211	1	7
Asset Sixe after Title IV	12	1,590,000,000	1,290,000,000	325,000,000	4,980,000,000

Exhibit 4: Descriptive Statistics for Multi Strategy Subsample

Variable	N	Mean	Std. Dev	Min	Max
Cost	37	166418.9	121830	5000	500000
Median Cost	51	137965.7	111095.9	5000	781250
Annual Time	37	487.4324	336.7236	50	1500
Median Annual Time	57	414.4737	354.466	175	1500
Strategic Responses	61	3.491803	1.639339	1	8
Asset Sixe after Title IV	45	1,430,000,000	2,440,000,000	125,000,000	11,100,000,000

Exhibit 5: Annual Title IV Compliance Cost.

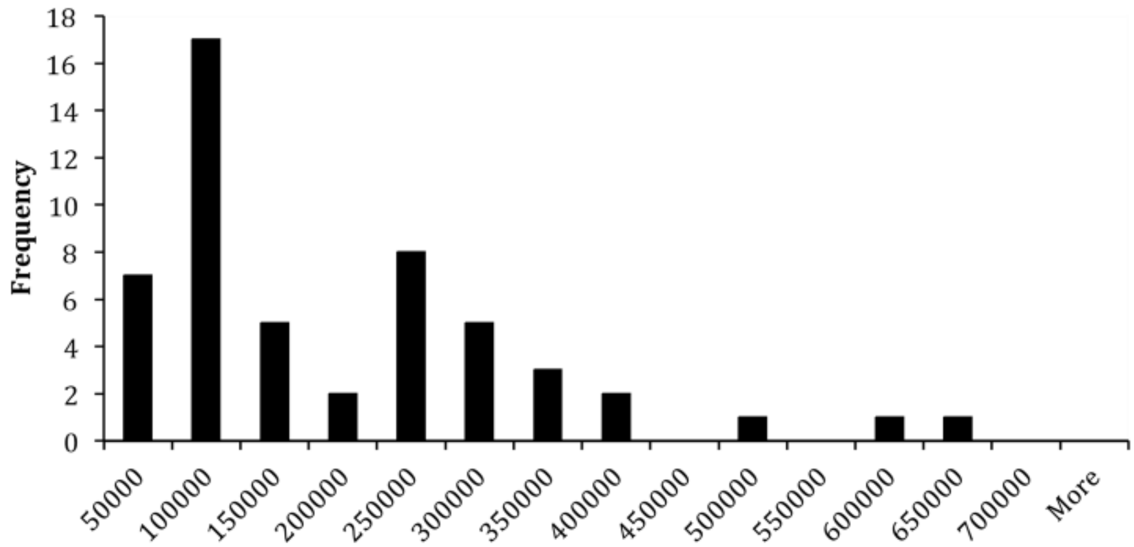

Exhibit 5 shows the frequency of survey responses pertaining to the cost of compliance (in US$) of Title IV. The majority of respondents believed that Title IV compliance costs $100,000.00 annually.

Exhibit 6: Median Cost Measures for Title IV Compliance

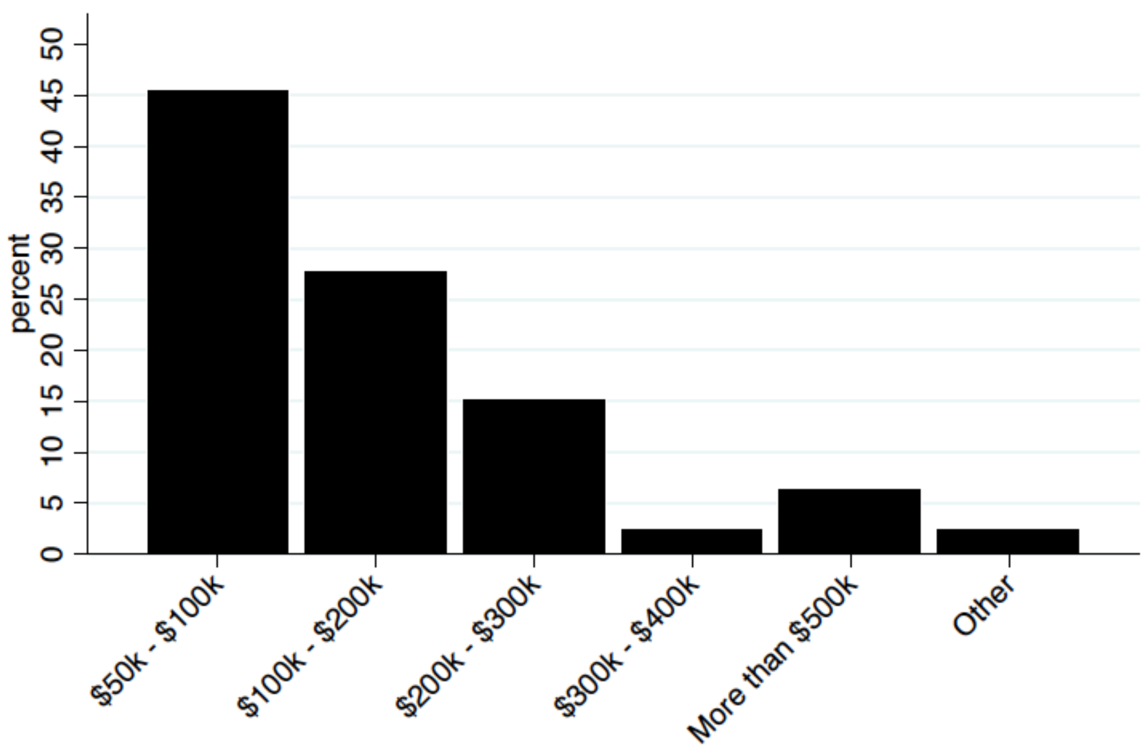

Exhibit 6 shows a percentage breakdown of annual Title IV compliance cost in six ranges ($50,000 - $100,000, $100,000 - $200,000, $200,000 - $300,000, $300,000 - $400,000, More than $500,000, and "Other"). The most common fund adviser response (47.67%) estimates the annual compliance cost of Title IV in the range of $50,000 - $100,000. The total number of respondents who answered Question 6bi was 86.

Exhibit 7: Annual Time Required for Title IV Compliance

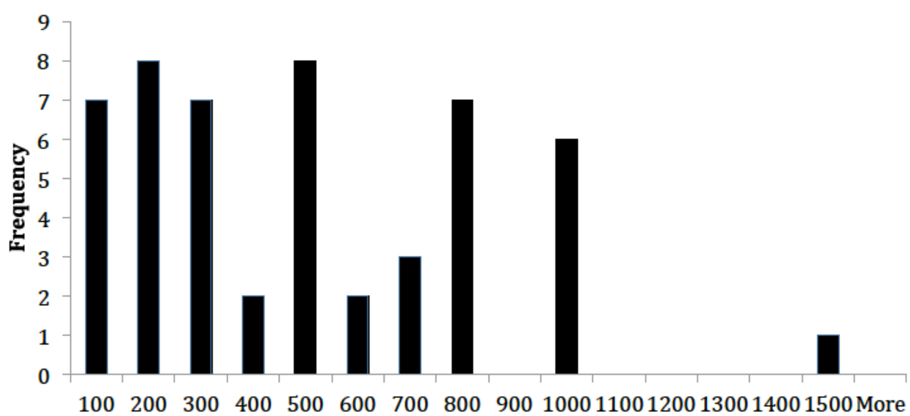

Exhibit 7 shows the frequency of survey responses pertaining to the annual time required (in hours) to comply with Title IV requirements. High frequency responses range from 100 hours to 1000 hours per year for Title IV compliance.

Exhibit 8: Median Annual Time Measure for Title IV Compliance

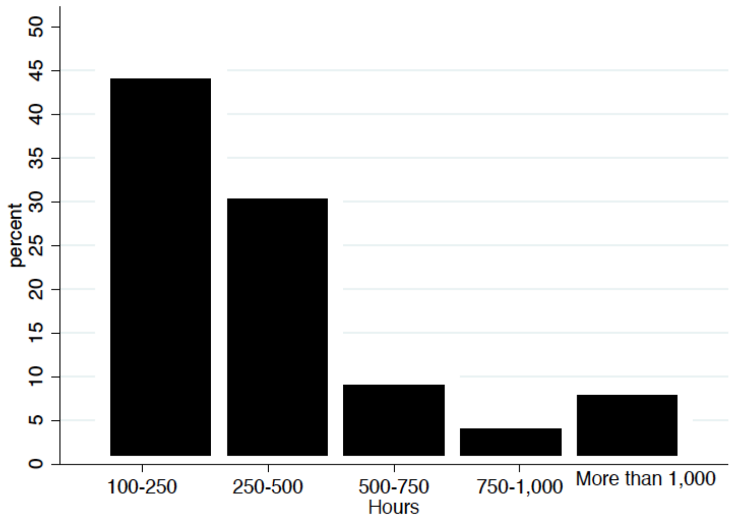

Exhibit 8 shows the median annual time measure (in hours) for Title IV compliance divided into five groups. 46% of respondents opined that it would take them between 100 and 250 hours to comply with requirements in Title IV. 32% of respondents believed it would take them between 250 and 500 hours per year.

Exhibit 9: Number of Strategic Responses to Title IV

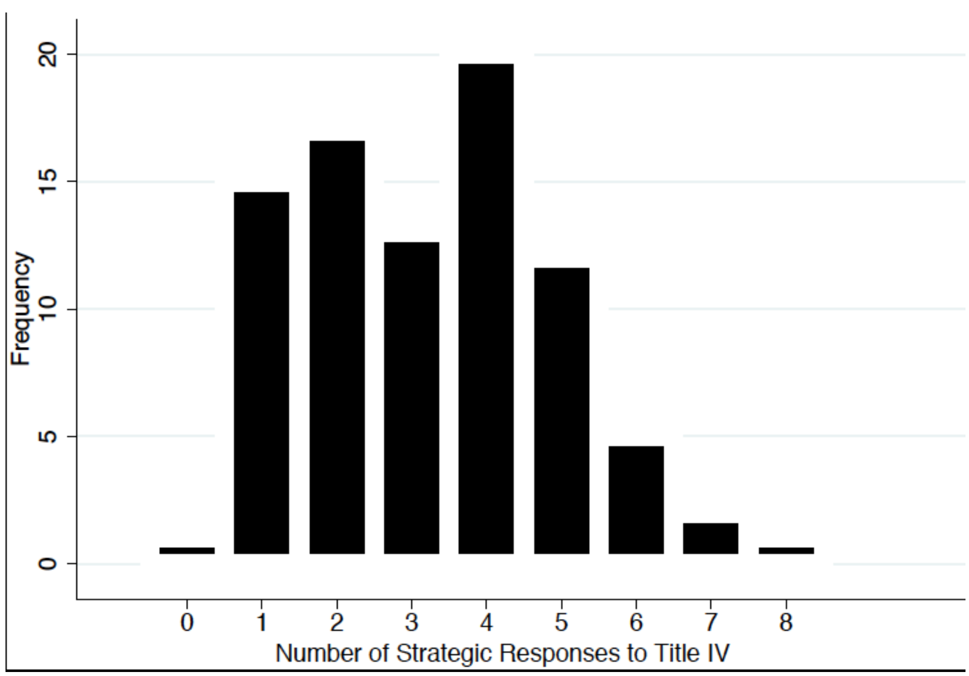

Exhibit 9 shows the number of strategic responses respondents instituted to address the requirements in Title IV of the Dodd-Frank Act. A majority of respondents engaged in four strategic responses to Title IV.

Exhibit 10: Preferred Asset Size after Title IV Enactment

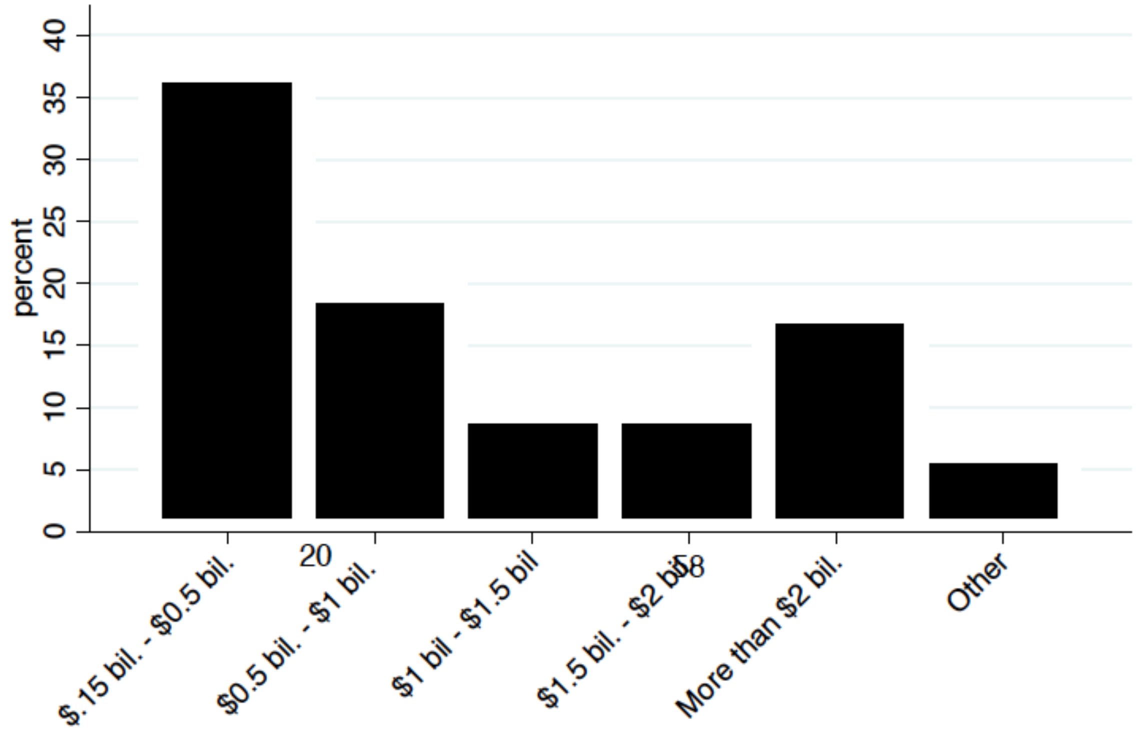

Exhibit 10 shows the percentage of respondents by preference of asset size after the enactment of Title IV. The clear majority of respondents prefer an assets size above the registration threshold of $150 million AUM.

Results

Exhibit 11: Estimation Results – Entire Sample

	Assets under Management				
Explanatory Variables	OLS	RReg	WLS1	WLS2	Poisson
Cost (N = 51)	4250.1*	113.9	5903.4***	5481.3**	0.00000258***
	(2.27)	(0.41)	(3.67)	(3.16)	(116592.00)
Median Cost (N = 73)	3319.0+	5165.2***	8649.6**	5295.0+	0.00000173***
	(1.82)	(9.55)	(3.33)	(1.98)	(88819.05)
Annual Time (N = 50)	1395191.4	2048	3248797.1+	1958167.9	0.000806***
	(1.15)	(0.02)	(1.77)	(1.45)	(84941.94)
Median Annual Time (N = 78)	1532606.2	206026.8	1357418.7	1559250	0.000643***
	(1.35)	(1.48)	(0.37)	(0.78)	(105319.29)
Strategic Responses (N = 83)	308383377	16751539	121898570.7	200146692.4	0.176***
	(1.19)	(0.54)	(0.39)	(0.77)	(120110.09)
Asset Size after Title IV (N = 60)	1.794***	1.793***	0.718***	1.420***	3.45e-10***
	(40.83)	(38.53)	(5.22)	(15.35)	(517989.55)

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
t-statistics in parentheses

Exhibit 12: Estimation Results – Single Strategy Subsample

	Assets under Management				
Explanatory Variables	OLS	RREG	WLS1	WLS2	Poisson
Cost (N=12)	242.5	151.6	7876.5	4013.5	0.000000159***
	(0.06)	(0.45)	(1.47)	(0.88)	(4007.38)
Median Cost (N=17)	729.2	5137.1+	2786.1	2409.9	0.000000365***
	(0.18)	(1.90)	(0.22)	(0.36)	(10357.48)
Annual Time (N=11)	-697871.3	-24847.8	6114566.4	923548.9	-0.000460***
	(-0.32)	(-0.11)	(0.82)	(0.24)	(-19882.04)
Median Annual Time (N=18)	1595725.6	-1174092.3	-948183.8	81828.5	0.000713***
	(1.03)	(-1.12)	(-0.18)	(0.03)	(56478.51)
Strategic Responses (N=18)	-253843297	-134713499	-6.52E+08	-396350299	-0.153***
	(-0.80)	(-0.87)	(-0.93)	(-0.91)	(-44572.42)
Asset Size after Title IV (N=12)	1.522***	1.109**	0.876**	1.166***	6.03e-10***
	(9.65)	(4.16)	(4.15)	(6.16)	(146041.33)

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
t-statistics in parentheses

Exhibit 13: Estimation Result – Multi Strategy Subsample

	Assets under Management				
Explanatory Variables	OLS	RREG	WLS1	WLS2	Poisson
Cost (N = 37)	7372.7**	168.1	6334.2**	6192.5**	0.00000490***
	(3.07)	(0.35)	(3.33)	(3.08)	(147144.85)
Median Cost (N = 51)	3760.1+	1369.7+	7980.5**	5164.1	0.00000202***
	(1.71)	(1.70)	(2.79)	(1.67)	(85318.33)
Annual Time (N = 37)	2307245.5	109219.8	3850395.3*	3083060.5+	0.00115***
	(1.52)	(0.65)	(2.53)	(2.02)	(111660.24)
Median Annual Time (N = 57)	1472643.5	304362.9*	2059534	2042253	0.000609***
	(1.00)	(2.14)	(0.43)	(0.78)	(87680.17)
Strategic Responses (N = 61)	559402039.6	47489787	601556339.8+	540403427.6+	0.262***
	(1.64)	(1.44)	(1.77)	(1.69)	(-156776.78)
Asset Size after Title IV (N = 45)	1.816***	1.821***	0.715***	1.505***	3.48e-10***
	(-40.83)	(-46.18)	(-4.08)	(-14.1)	(-465081.63)

0.10, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
t-statistics in parentheses

Exhibits 11-13 show that the compliance and administrative costs created by Title IV of the Dodd-Frank Act are associated with the size of hedge fund advisers' AUM. All regression models show positive and predominantly statistically significant coefficients. 18 out of 30 coefficients in the entire sample are statistically significant. Compliance costs per unit AUM do not diminish in the entire sample and in the multi strategy subsample. There is thus no support for the hypothesis.

The results of this study in Exhibits 11-13 contradict other studies that find an inverse relationship between the size of regulated firms and the per-unit cost of compliance. The results suggest that financial regulation does not bring increasing returns to scale in the private fund industry. The analysis in this paper shows that adviser size as measured by AUM is associated with cost and other independent variables as proxies for cost, such as number of strategic responses to Title IV, and annual time required to comply with Title IV.

Financial regulation has disparate effects on private fund advisers in comparison with other financial services providers. While financial regulation can bring increasing returns to scale in banking (Wheelock and Wilson [2012], Feldman et. al. [2013], Elliehausen [1998], Elliehausen and Kurtz [1985, 1988], Barefoot et al. [1993], Elliehausen and Lowrey [1997]), this study suggest that there is no such evidence for the private fund industry. Moreover, in contrast with several studies finding an inverse relationship between the size of regulated firms and the per-unit cost of compliance (Crain [2005], Crain and Crain [2010a], Hopkins [1995]), the results of this study show that there is no inverse relationship between the size of regulated hedge fund advisers and the per-unit cost of compliance. The results suggest that the private fund industry may be more robust and less affected by financial regulation than other financial services providers.

Several limitations in this study seem to suggest that additional research may be required to fully investigate the impact of Title IV on the private fund industry. The findings of this study are based on limited data and a small sample size. The Dodd-Frank Act could have disparate effects on different parts of the financial services industry. The implications of hedge fund adviser strategies remain unclear. While all coefficients are positive in each of the five regression models for the entire sample in Exhibit 11 and the multi strategy subsamples in Exhibit 13, the negative coefficients in the single strategy subsample in Exhibit 12 suggest that the strategy employed by hedge fund advisers could change the assessment of the effect of compliance cost on the hedge fund industry. It is noteworthy, however, that even in the single strategy subsample in Exhibit 12 only 9 of 30 coefficients are negative.

Conclusion

The findings of this study counter the most damning putative concern raised by regulatory compliance costs. There is no evidence that private fund adviser regulation in Title IV of the Dodd-Frank Act increases returns to scale. The findings contradict other studies that find an inverse relationship between the size of regulated firms and the per-unit cost of compliance. Based on these findings, there appears to be no immediate need for policy makers to address concerns over a possible effect of Title IV on startup hedge funds and smaller hedge fund advisers. A long-term study of the effects of Title IV compliance costs could change this assessment.

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