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Hedge Fund Activism and their Long-Term Consequences:

Unanswered Questions to Bebchuk, Brav and Jiang

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In our paper *"Activist" hedge funds: creators of lasting wealth? What do the empirical studies really say?"* (available here), we asked Lucian Bebchuk, Alon Brav and Wei Jiang questions of the sort that any referee/reviewer for a professional journal would raise about their paper *The Long-Term Effects of Hedge Fund Activism*. Their paper's aim is to examine the empirical basis for *"the long-standing claim that activist interventions are followed by declines in long-term operating performance"*

The reply we got from Professor Bebchuk was essentially that he had already answered all our questions in his reply to Wachtell Lipton "*Don't run away from the evidence*" and that our paper was not academically rigorous because "it expresses an opposition to relying on empirical evidence". He is wrong on both counts.

First, we must inform Bebchuk that we were once of the faith, believers in the power of statistical analysis to prove and disprove any and all assertions about social phenomena. We were, in short, empirical positivists who, like Bebchuk et al, asserted the superiority of statistical evidence and quantitative analysis over experience-based *empirical* knowledge and derided the "*self-reported impressions of business leaders*".

After running hundreds, if not thousands, of multivariate analyses since my days at MIT, having taught for years doctoral seminars on multivariate analysis, I (Allaire) grew increasingly doubtful that the tool kit of multivariate analysis always provided a superior grasp of complex social phenomena.

The ease of use and the power of computer algorithms produced a surfeit of papers with exaggerated claims, which did not withstand the scrutiny of expert analysis or the passage of time.

Too often, today's study and results are contradicted by tomorrow's study. Results vary and swing in significance as a consequence of slight changes in the definition of sample and variables, in the structure of equations, in included/omitted variables, in ways of dealing with several statistical pathologies, and so on.

For instance and for the benefit of readers who are not specialists in esoteric statistical analysis, let's examine briefly the issue of what causes deadly car accidents.

Several dozen statistical studies have been carried out to establish the correlates of deadly car accidents. Some find that speed limits do not have any statistically significant impact, other studies actually do; some find that seat-belt laws have an impact, others don't; generally, studies agree on the negative role of alcohol consumption but in some studies, this variable is just barely significant; age of driver is sometimes a significant factor, sometimes not; sex of driver also; even use of cell phones while driving is sometimes a significant factor, in other studies, it is not.

To try to fully account for the multiple factors, some studies include up to 50 variables (time of accident, weather conditions, lighting conditions, road conditions, etc.). Of course, there is high likelihood of interactions (of the non-linear type) among variables (time of accident, weather conditions, speed, alcohol consumption for instance may well interact in complex fashion). But to include all potential interactions would consume large number of degrees of freedom and make interpretation of results very difficult.

Another type of *empirical* evidence comes from the police investigators who have examined hundreds of deadly accidents and developed a sophisticated understanding of the key contributing factors.

What should policy makers do? Rely on the conclusions, variable in time, contradictory across studies, of researchers far removed from actual deadly car accidents or should they listen to the *empirical observations* of investigators with years of experience in the field?

Now to our case. Bebchuk, Brav and Jiang claim to have conclusively shown that "*activist interventions are followed by improved operating performance during the five-year period following the intervention*".

Their findings were broadcast widely, including in a ***Wall Street Journal*** op-ed by Professor Bebchuk (August 7th 2013).

In spite of the limited aim for their study ("*whether the long-standing claim that activist interventions are followed by declines in long-term operating performance*"), Bebchuk, Brav and Jiang get carried away and associate hedge fund intervention to the subsequent performance of companies long after the hedge funds have sold their shares.

One must examine closely the empirical basis for such claims of a quasi-causal relationship *as one should for a study purporting to show that hedge funds do great harm*.

UNANSWERED QUESTIONS

- **First, the database on which their study is based**. At first blush, it would appear rather easy to define what constitutes an activist hedge fund intervention. But as the following table shows, different definitions lead to vastly different numbers of hedge fund "interventions" (all drawn from disclosures made on the SEC's Schedule 13D filings):

	Bebchuk, Brav, Jiang (2013)	Brav, Jiang and Kim (2012)[a]	Brav, Jiang and Kim (2013)[b]	Boyson and Mooradian (2007)	Clifford (2008)[d]	Klein and Zur (2011)[e]	Greenwood and Schor (2009)[f]
1994	**10**		8	13[c]		5	10
1995	**37**		29	20		21	10
1996	**99**		83	34		28	30
1997	**212**		178	91		38	66
1998	**161**		137	42	82	41	74
1999	**118**		98	34	62	42	90
2000	**120**		98	24	63	44	84
2001	**96**	92	83	21	71	36	83
2002	**134**	120	118	33	94	50	89
2003	**127**	122	112	43	106	61	67
2004	**148**	144	133	42	118	70	87
2005	**237**	234	210	21	192	98	153
2006	**269**	252	259			101	137
2007	**272**	208	297				

a From Brav, A., Jiang, W., and H. Kim "Hedge Fund Activism", Chapter 7 in *Research Handbook on Hedge Funds, Private Equity and Alternative Investments*, Edited by Phoebus Athanassiou, 2012.

b From *Hedge Fund Activism Updated tables and figures*, September 2, 2013, p.19.

c 1994 *or before*

d The author compares active and passive blocks; the table shows the events considered as "active"

e Initial SEC Schedule 13D Filings

f Full sample, including non-hedge fund activism

The study reviewed here appears in the first column; the next two columns report on studies using the very same database. The other columns are drawn from studies where researchers adopted different definitions of what constitute an "activist" hedge fund intervention. Obviously, for the very same years, the number of observations varies widely. Which study uses the appropriate definition of hedge fund "intervention"?

In a recent study by Becht *et al.* (2014), the authors write:

"We compile a database of public targets of activism covering Asia, Europe and North America. It included all interventions initiated between January 2000 and December 2010. We also had access to the databases compiled by Greenwood and Schor (2008) and Brav et al. (2008) for the U.S., covering the periods 1994-2006 and 2001-2006, respectively."

Then, in a footnote, they add:

"*There are a considerable number of cases in Brav et al* [the data base used for the Bebchuk, Brav and Jiang study] *that are not in our database and vice versa. We examine the first 80 cases alphabetically from a combination of Brav et al and our sample and find that in 27 cases there is overlap in the two data bases;* ***19 cases are in our sample but not in Brav et al, 34 cases are in Brav et al but not in our sample. Reasons for nonoverlapping samples appear to be differences in exclusion criteria and search techniques***." (Emphasis added)

Several authors are wary of including interventions when the stated purpose listed on the 13D filing refers to "general undervaluation" because it may collect too many passive investments. The database used by Bebchuk, Brav and Jiang contains 1,212 events (61% of the sample) where "General undervaluation" was given as the stated purpose on the 13D filing.

Again, who is to establish which definition of "intervention" is the best one? How do the authors explain the much larger number of cases in their study? How would Bebchuk *et al*'s results vary with a different definition of the "interventions"?

- Bebchuk *et al* claim to have identified 2,040 cases of activist hedge fund interventions (but do not specify the number of different hedge funds and the number of individual targets). Yet, their first two tables are based on 1,584 and 1,611 observations. What explains the difference: missing data or what? Have they eliminated cases where the intervention failed? [There is some evidence that failure rate hovers between 17% and 37% (See Brav, Jiang, Partnoy & Thomas, 2008; Klein & Zur, 2009)]. We are not told!

  Then after five years, the number of observations drops to 694 and 710 with nary an explanation by the authors. What accounts for the difference? How many companies failed? How many firms were targeted by more than one activist? How many were liquidated? How many were sold or merged? What impact does this shrinkage of the dataset have on the results?

  When Wachtell Lipton raised this issue, Bebchuk did not explain the reasons for the shrinkage but stated evasively: "*[O]ur key findings regarding operating performance are based on a regression analysis, not the summary statistics of Tables 2 and 3*"

THEN, LET'S EXAMINE THE STATISTICAL ANALYSIS

- The number of observations for the purpose of their regression analyses is staggering, well over ***120,000***! With 2,000 interventions and 9 years, one would get at the very most 18,000 observations (actually far fewer because of missing data and shrinkage of all sorts already noted). How do the authors, without a word of explanation, arrive at this number of observations? Is it possible that the regression analysis is carried out on monthly data? But as ROA and Tobin's Q are available, at best, on a quarterly basis (a datum highly sensitive to seasonality), it would mean that the regression is carried out where 80,000 times the dependent variables (ROA or Tobin's Q) would in fact be repetition of the other 40,000 observations. That seems far-fetched but how else can these numbers of observations be explained? We are still waiting for an explanation from Bebchuk *et al*.
- In their regression analysis, the authors use the natural logarithm of the age of the firm as control variable. In the literature, this variable is frequently used; the well-known relationship is that as firms grow older, the ROA tends to decrease. But in the Bebchuk *et al* study the coefficient of Ln(age) is *positive and statistically significant* on all the regressions using ROA as dependent variable and yet negative and significant when Tobin's Q is the dependent variable. The authors give no explanation for this surprising result, which may be an indication that the ROA regressions suffer from a common, but serious, econometric problem called "multicollinearity", making the interpretation and significance of all regression coefficients subject to great caution.

- The adjustment for "industry peers", a common practice in econometric studies, brings up a host of problems rarely, if ever, mentioned in these econometric studies: in many instances, the "peers" are not really comparable companies; companies often operate in several 3-digit SIC classification; newer types of companies are difficult to classify in this old classification (e.g. Google, Facebook, etc.). Indeed, since 1997, a new system, the North American industrial classification system (NAICS), has been developed to replace SIC codes; "NAICS codes provide a greater level of detail about a firm's activity than SIC codes…There are 358 new industries recognized in NAICS, 250 of which are services producing industries. Additionally, NAICS codes are based on a consistent, economic concept, while SIC codes are not". Canada has shifted totally to the NAICS while the U.S. is doing so gradually.

- Regardless of the limitations of the SIC classification, we believe the authors should have provided descriptive statistics showing the number of interventions by industry, the size of targeted firms compared to industry peers. However, subsequent tables for 2,624 hedge fund "interventions" between 1994 and 2011 (Brav, June 2014; Brav, Jiang, and Kim, September 2013) show that

    - the median market value of targeted companies was $134.6 million and on average $835.3 million;

    - a so-called group of "matched firms" had average market value of $2.741 billion, a very significant difference with targeted firms!

    - the median original investment by hedge funds was $13.5 million; in only the top 5% (or some 130 targeted firms) did the hedge fund investment reach a median value of $185.1 million; it appears that the Bebchuk, Brav, and Jiang study is heavily weighted with small companies and relatively small investments by hedge funds. Do the results published by Bebchuk *et al* hold for larger targeted companies?

    - the median duration of hedge fund intervention was 348 days, but for hostile interventions, that median duration was 179 days; the authors consider that these hedge funds are therefore not short-term investors. It is a strange financial world where investments for one year or so qualify as long-term.

We have raised several other questions in our paper which have remained unanswered but the above suffices to show that answers to critical questions must come forth before the validity of the claims made by Bebchuk, Brav and Jiang is established.

Bebchuk concluded his note on our paper by stating:

"I would welcome future empirical work that aims at improving upon ours in some methodological or other way".

In this spirit, may we suggest that Bebchuk, Brav and Jiang open up their database to all researchers as Reinhart and Rogoff have done for their data on financial crises and Saez, Piketty *et al* for their vast database on inequality.

CONCLUSIONS

Future research on the effects of activism should consider alternative research methods to econometrics: for instance extensive case studies of a significant number of hedge funds, interviews with managers and board members of targeted firms.

For example, Becht, Franks, Mayer and Rossi (2009) have studied 20 re-structuring "interventions" carried out by the Hermes U.K. Focus Fund. Their study shows the following results:

	2 years before the intervention	1 year before the intervention	1 year after the intervention	2 years after the intervention
Mean EBITDA[a] (million £)	547.9	405.5	173.8	399.3
Mean total assets (million £)	5,388	5,735	3,463	3,725
Mean number of employees	25,817	26,689	16,438	16,336
Mean return on assets (ROA) %	10.17%	7.07%	5.02%	10.72%

[a] EBITDA = ROA*Mean total assets

Most research in financial economics in recent years would conclude that the significant ROA improvement from year t-1 to year t+2 is indicative of a positive effect of the activist intervention. All other indicators are barely mentioned. Of course, what we shall never know is whether the boards of directors and management, observing a decreasing ROA, would have taken actions to correct the situation without any "activist hedge fund" to hold their hand.

In any case, the assessment of hedge fund activism must factor in a broader array of outcomes as well as their impact on other stakeholders. Some studies have documented their impact on bondholders and employees (e.g. Klein and Zur, 2011; Xu and Li, 2010, Aslan and Maraachlian, 2009; Brav et al., 2008) – but even when there is a clear evidence of "expropriation effect", activism is still qualified as "positive" as long as return to shareholders increases or some performance ratio improves.

Some activist interventions might help create some real enduring value (and not just wealth transfer). What are those interventions? What is the context surrounding those events? What are the characteristics of useful interventions? Are there ways to encourage interventions that do contribute to better governance and discourage "interventions" that will only harm companies?

The paper by Bebchuk, Brav and Jiang, warts and all, has launched a useful debate about the pros and cons of hedge fund activism but their study cannot be considered the definitive answer but merely an opening salvo.

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