THE IMPACT OF B LAB CERTIFICATION ON FIRM GROWTH

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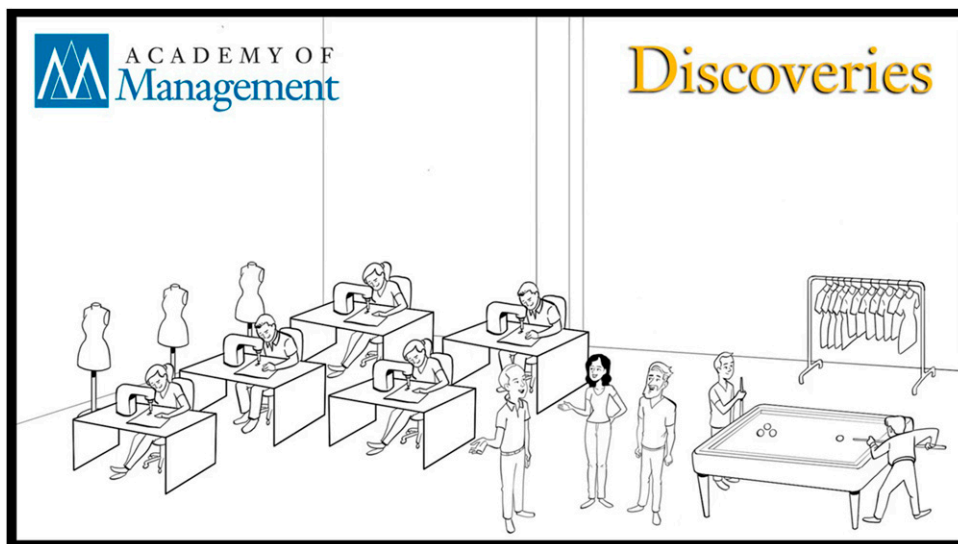**EDWARD N. GAMBLE**
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We investigate the impact of B Lab certification—a rapidly growing type of third-party certification for organizations with social and/or environmental missions—on the short-term growth rates of certifying firms. To date, this kind of certification has generally been regarded as an unalloyed good for the organizations that adopt it; but prior research has overlooked the possibility that it may also entail attentional deficits and internal organizational disruption, leading to a short-term growth slowdown. Our study reports results based on a novel, hand-collected dataset of 249 mainly privately held North American certified B Corporations over 2011–2014. Our results, derived from a difference-in-difference framework, and augmented with insights from a set of in-depth interviews, identifies a short-term growth slowdown arising from certification, which is more pronounced for the smallest and youngest firms. These findings highlight the need for management theorists to pay greater attention to internal re-organization costs and external benefits flowing from B Lab certification; they also carry important practical implications for organizations contemplating certification.

INTRODUCTION

Many firms seek third-party certifications that signal to external audiences their commitment to given social or environmental causes. A long-standing research question concerns the impact of these certifications on firms' social and financial performance. An extensive body of work spanning over four decades has explored the pains and gains of voluntary certification and third-party audits in the context of corporate social responsibility, unfortunately with mixed and inconclusive results (Orlitzky, Schmidt, & Rynes, 2003; Shen & Chang, 2009).

The present article is interested in the financial growth impact of a specific kind of certification known as "B Corporation" (or B Corp) certification. We focus on B Corp certification because it offers a unique balance of timeliness, relevance, and growing theoretical interest (Gehman & Grimes, 2017; Hiller, 2013). B Corp certification can only be awarded after completion of a successful voluntary social and environmental audit (VSEA). This VSEA is offered globally by a third party called B Lab, a U.S.-based 501(c)(3) not-for-profit organization. The mission of B Lab, and its certification process, is to promote and support the philosophy of "using the power of business to solve social and environmental problems". B Lab claims that "a strong mission is an asset not an obstacle" and points out that 26 Certified B Corps (CBCs) made it into the 2015 *Inc.* 5,000 fastest growing companies.[2] B Lab launched in 2007 when 49 ventures were certified worldwide: the number of awarded certifications has since grown to more than 2,000 companies certified in more than 50 countries and 130 industries. Notable growth success stories include a $1 billion valuation of The Honest Company and the acquisition of the CBC Plum Organics by Campbell Soup Company.

But once firms certify and become CBCs, is it really the case that they enjoy faster growth? Or are B Corps diverted from sales-driven logic, at the cost of lower top-line growth? To date, prior research on certification has largely adopted an external focus, emphasizing how certification can enable firms to credibly signal authentic commitment to social causes to customers, employees, and other stakeholders (Cao, Gehman, & Grimes, 2017; Dineen & Allen, 2016; Edelman, 2011). Credible signals which distinguish CBCs from other firms can in principle generate a separating equilibrium, which helps CBCs stand apart from less authentic competitors and obtain greater buy-in from external stakeholders.

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[2] https://www.bcorporation.net/blog/good-growth-26-b-corps-on-the-inc-5000-list.

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│   Author's voice: │
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That can be expected to enhance the CBCs' growth prospects, as consumers reward these firms for adhering to higher social and environmental standards.

On the other hand, to be credible, a signal must be costly, making its acquisition and transmission worthwhile for some agents but not for others. To be precise, the act of certifying needs to be sufficiently costly that authentically socially motivated firms are willing to pay those costs, whereas inauthentic, solely profit-motivated firms are not. Without some kind of cost, a pooling equilibrium could emerge in which every firm certifies, including the inauthentic ones—making the signal worthless (Bergh, Connelly, Ketchen, & Shannon, 2014; Edelman, 2011). Although B lab certification does account for direct fees that are involved with the process, these fees tend to be modest—only $500 for corporations making under $2 million in sales. By contrast, compliance with certification requirements, especially B Lab's certification standard, appears to be much more demanding. It takes a concerted effort to reorganize firms' operations and processes to comply with B Lab's standards; prepare, check, and file documentation for certification; and engage in follow-up interactions with B Lab. For example, re-organizations prompted by certification aspirations can encourage firms to make new specialized hires; change, create, and codify internal policies; reduce the number of suppliers; change production and distribution processes; and invest in retooling (Wilburn & Wilburn, 2014). These efforts may require stringent time and resource commitments from certifying firms.

The danger is that this may divert scarce managerial attention (Cyert & March, 1963; Simon, 1947) away from developing and exploiting new sales channels to increase top-line growth, and instead toward identifying and changing internal arrangements and operations to satisfy B Lab certification standards. That could negatively impact short-term growth, especially among the smallest and youngest firms which lack resources and organizational slack (Hillary, 2004). In contrast to prior literature on certification and hybrid organizations, which has with a few exceptions (Stevens, Moray, Bruneel, & Clarysse, 2015) largely ignored this issue, we are interested in exploring whether these attentional deficits may mitigate—or even overcome—any positive effects on the short-term growth rates of certifying firms.

Two principal issues motivate our research. First, prior research is divided on the question of whether voluntary certification impacts the financial performance of the firms which undertake it. By investigating a particularly demanding certification audit process, and utilizing a complementary combination of state-of-the-art quasi-experimental quantitative methods together with in-depth qualitative interviews, the present article hopes to bring greater clarity to the debate on certification impacts. Second, to date, there has been virtually no consideration of short-term growth impacts associated with certification, even though these impacts are critical for the survival of most firms. Any negative impacts of certification on short-term growth rates may therefore preclude the realization of long-term positive benefits from the creation (and signaling) of greater social and environmental value.

Based on our belief that short-run costs are potentially quite impactful, the present article addresses the issue using novel hand-collected data from a set of 249 mainly privately held, non-listed North American CBCs to analyze short-term growth impacts of certification. We obtain annual financial and other data from these respondents over 2011–2014, and combine them with publicly available data on the B scores that B Lab calculates and uses as the basis for determining whether firms are granted certification. Using a quasi-experimental difference-in-difference design, we estimate the short-term growth impacts arising from certification. The basic assumptions underlying our approach are that firms which prepare for certification divert scarce attention from growing their future sales, which impacts their sales directly after certification; this impact may be exacerbated if certified firms are further distracted immediately post-certification by mastering learning curves for new B Corp processes and engaging in additional B Corp–related activities. Over this very period, different firms that certify 1 year later are not yet impacted, so serve as an appropriate control group. Recognizing that the smallest and youngest firms tend to have the least internal slack, we also estimate how growth impacts vary across different firm sizes and ages. Our analysis makes important empirical contributions to the literature on certification and VSEAs in hybrid organizations. We also challenge the emphasis of present research on the external implications of certification, by highlighting the importance of internal factors which need to be considered alongside them.

DATA AND METHODS

Data

We collected a proprietary longitudinal data panel of 249 North American CBCs that merges private

> Author's voice:
> What was the most difficult or challenging aspect of this research project?

measures of firm-level performance with publicly available B scores over a 4-year window, 2011–2014. This dataset comprises more than one-quarter of the entire population of 918 North American CBCs in 2014.

Between August 2014 and August 2015, the authors contacted all 918 of the then-certified privately held CBCs in North America by telephone to determine their willingness to participate in a research study. Based on a pilot study involving *C*-level managers at 10 well-known CBCs, the research team developed an informational video and project webpage, which described the essence of the research project. This was emailed to a CEO, CFO, or COO in every North American CBC during the data collection period, along with a link to a 10-minute survey. The survey included questions on contact information, years in business, industry sector, fiscal year end, currency used to present financial results, revenue data from the most recent 4 years, and employee figures for the most recent 4 years (2011–2014). In total, 115 survey responses were received from the first wave of requests. Five months later, we sent out a second wave to those who had not responded to the first request. We received 134 surveys on the second pass with 14 telephone conversation requests. In total, we elicited responses from 249 CBCs, giving a response rate of 27 percent. Of the respondents, 84 percent (n = 210) were based in the United States, 14 percent (n = 34) were based in Canada, and the remaining 2 percent (n = 5) were located in Mexico.

The database was supplemented with the audited B Lab scores (B scores hereafter) for each firm, taken directly from B Lab's website https://www.bcorporation.net/. Since 2012, B scores have been calculated as the sum of B scores awarded over four major components: Governance, Worker, Environmental, and Community. Organizations which score a minimum sum of 80 (out of a maximum of 200) achieve certification and are designated as "Certified B Corporations (CBCs)." We also gathered data on the year each firm was certified as a CBC, geographical location, and organizational form. Further efforts were made to determine whether a certified B Corporation was also legally registered as a benefit corporation because B Lab had also successfully lobbied for a new legal status, which at the time was available in 30 states in the United States. The legal "Benefit Corporation" status is a new legislated corporate

form, which mandates companies to consider the impacts of its business on society and the environment, with careful consideration of a broad set of stakeholders. The B Lab certification and Benefit Corporation legal status are distinct, and independent of each other. Only 6 percent of the sample availed themselves of the legal rights and obligations associated with this status; all our results were robust to their inclusion or exclusion and we control for this in all the reported analyses (see following text).

We further supplemented the quantitative data collection with a set of in-depth interviews with sample respondents. Data from these interviews complemented the quantitative analysis by checking several salient aspects of the empirical research design and delving into the mechanisms underlying our empirical findings. Details about the interview sample follow the discussion of the quantitative data analysis and results.

Data Analysis

We compared growth rates before and after certification to check whether there is a significant difference between them. Any firm that certifies in year t is assigned to a group C, whereas any firm which certifies for the first time at $t + 1$ belongs to a group N. In our data $t = 2013$, so we compare the difference in growth rates for C firms between $t - 1$ and $t + 1$ (i.e. between 2012 and 2014), denoted by D^C, with the corresponding difference in growth rates over exactly the same time span for N firms, D^N. Hence, one can regard N as a quasi-control group. N firms do end up certifying, but only a year after C firms (i.e. in 2014), so they are comparable in the sense that they applied for certification at a similar time and thus also incurred costs required to prepare and submit their application. The control group N should therefore be similar to the "treatment" group C in all respects except the exact date of certification. The date when B Lab grants certification is reported for

each company on the B Lab website. Given the length and uncertainty of the certification process, it is to some extent random whether a firm ends up certified in 2013 or 2014. Therefore, firms that receive their certification in 2013 immediately face a growth impact associated with membership, whereas firms that receive their certification in 2014 do not experience such impact in 2013.

The first column of Table 1 summarizes a simple univariate difference-in-difference (DD) statistic which can test for differences between D^C and D^N. An unpaired mean difference test can be used to assess the significance of this statistic. However, it does not take account of the possibility that some other factors, X_i, affect the growth rates of C and N firms differently, where i indexes each CBC case in the sample. To control for this possibility, a regression can be run to obtain a multivariate DD statistic, γ_3, the details of which are summarized in the second "multivariate" column of Table 1. If certification increases (respectively, reduces) subsequent performance, one would expect $\gamma_3 >$ (respectively, $<$) 0.

Our empirical strategy first computes these DD statistics for the full sample, and then reruns the regressions for sub-samples which differ by size and age, to investigate whether the growth impact of certification varies by these characteristics. "Small" firms are defined as those with 10 employees or less (the sample median), whereas "large" firms employ more than 10 people. This definition of "small" firm purposely differs from that used by national statistical agencies because CBCs are much smaller on average than non-CBCs. This definition also has some precedents in prior research on social enterprises; for example, Stevens et al. (2015) used exactly this cut-off in their analysis of Belgian social enterprises. This cut-off also corresponds to the smallest size category used by B Lab in its own categorization of CBCs (<10 employees are the smallest category, followed by 10–49 employees, and finally "50+" employees). In a similar fashion, "young" firms are

TABLE 1
Difference-in-Difference (DD) Statistics

Univariate	Multivariate
$D^C - D^N$,	$\boldsymbol{\gamma_3}$,
where	where
$D^C = g_{t+1}^C - g_{t-1}^C, \quad D^N = g_{t+1}^N - g_{t-1}^N$	$g_{i\tau} = \gamma_1 I(i \in C) + \gamma_2 I(\tau = t+1) + \gamma_3 [I(i \in C) \times I(\tau = t+1)] + X_i\beta + \epsilon_{i\tau}$

DD statistics in bold. All terms in the Univariate column are defined in the text. The terms in the Multivariate column are as follows:
$I(i \in C)$ is an indicator variable, taking the value 1 if firm i is a C firm and 0 otherwise.
$I(\tau = t + 1)$ is an indicator variable, taking the value 1 if the year τ is $t + 1$ and 0 otherwise.
$[I(i \in C) \times I(\tau = t + 1)]$ is the product of the two foregoing indicator variables: it is the DD term.
$X_i\beta$ captures the effects from control variables.
$\epsilon_{i\tau}$ are the error terms.

defined as those less than 10 years old at the time of certification (the sample median), whereas "old" firms are 10 years or older at the time of certification.

Justifying the Control Group and the Identification Strategy

In our research, we emphasize "when" rather than "whether" companies certify. Hence, we deliberately eschewed a control group based on non-certifying firms, as explored by Chen and Kelly (2015), for example. Those authors identified performance and other differences between B Corps and their publicly traded industry competitors. However, the decision of whether to certify is clearly endogenous, so a control group comprising non-certifiers is unsuitable for obtaining cleanly identified estimates of growth impacts from certification.

A potentially more appropriate control group may be those firms which applied for B Lab certification but marginally failed to obtain it. Those are firms which scored just less than 80 on the B Impact Assessment (BIA). The logic for this identification strategy is similar to the one used in regression discontinuity designs; by comparing observations lying closely on either side of the 80 threshold, one can, in principle, estimate an average treatment effect (Imbens & Lemieux, 2008). This relies on an assumption of more or less random assignment either side of the boundary. That assumption can be checked by inspecting the density of observations either side of the threshold (McCrary, 2008); only if the density exhibits a lack of discontinuities is it likely to be tenable. Although we only have data on firms with B scores of 80 and above (because these

are the CBCs), we were able to check this by analyzing plots of data on all companies that completed version 3 of the BIA. These data were graciously shared with us by Ke Cao, Joel Gehman, and Matthew G. Grimes in a private communication. A sharp discontinuity was observed around the threshold, with, for example, 205 firms falling within the (70, 80) range, 603 firms falling within the (80, 90) range, and 359 falling within the (90, 100) range (n = 2,979). Narrower ranges generated the same results. Thus, the pronounced discontinuity around 80 clearly rules out use of an alternative control group who just missed the cut, as certification does not seem to be random around the threshold.

Turning now to our own control group, some empirical justification is needed for the claim that it is comparable with the treatment group in all respects apart from the (largely random) timing of the certification. In terms of the practicalities of obtaining certification, the long and uncertain delays involved in the B Lab auditing process certainly support the notion that the date at which certification is obtained has a random component to it. Indeed, our in-depth interviews with 29 CBC respondents support this contention, as we go on to document in the following text. Yet, several statistical checks can also be performed to probe this assumption.

First, we tested whether the 2012 mean revenue growth rate (reported in Table 2) differed significantly between the C and N groups. A two-sample t test with unequal variances was unable to reject the null hypothesis of equal means, with the difference being insignificant at the 10 percent level. Second, we plotted whether (a) annual revenue growth rates

TABLE 2
Mean Growth Rates

	Revenue			Employment		
	Mean	**Std. Dev.**	**Obs.**	**Mean**	**Std. Err.**	**Obs.**
A. All						
$g_{i,2012}$	0.258	0.600	192	0.168	0.321	203
$g_{i,2013}$	0.324	0.551	216	0.177	0.368	225
$g_{i,2014}$	0.219	0.535	225	0.162	0.297	235
One way ANOVA	$F(2,630) = 1.99$ ($p = 0.14$)			$F(2,660) = 0.12$ ($p = 0.89$)		
B. Certified in 2013, C						
$g^C_{i,2012}$	0.314	0.461	65	0.133	0.182	66
$g^C_{i,2014}$	0.122	0.428	65	0.264	0.373	49
C. Certified after 2013, N						
$g^N_{i,2012}$	0.142	0.613	41	0.172	0.390	45
$g^N_{i,2014}$	0.176	0.238	41	0.152	0.295	45

All variables are described in the text. The number of observations in Panel A falls below 249 in a given year because of missing revenue and employment figures for some cases. Numbers of observations in Panels B and C are smaller still for two reasons. First, matched pairs are needed to compute growth rates, so if either of 2012's or 2014's figures are missing, the growth rate takes on a missing value. Second, some firms in the sample were certified before 2013, and so are excluded from these panels.

for each year (2012, 2013, and 2014) and (b) log revenues for each year 2011–2014 differed by membership of *C* or *N* groups. The plots were very similar in both cases, see Figure 1. It is noteworthy how heterogeneous the sample is, making any significant mean effect that we do find all the more striking. Third, we performed a MANOVA test to check whether the *C* and *N* groups were similar in terms of observable characteristics. MANOVA tests for the difference in several vectors of means, where the vectors included age in 2015; whether non-US; whether a benefit corporation; log revenue; log employment; revenue growth in 2012; and whether a small firm. The *F* statistics based on Wilk's lambda and three related statistics reported in STATA all took the value $F(7,104) = 0.53$, whose *p*-value of 0.81 failed to reject the null hypothesis of similar observable characteristics.

At this juncture, it is worth explaining why data limitations meant only 2013 could be used as a certification year for the treatment group. We could not use 2012 because we would have needed revenue data from 2010 to calculate a pretreatment growth rate in 2011; and we could not use 2014 because we would have needed revenue data from 2015 to calculate a posttreatment growth rate in 2015. Hence, we lack the data to graph parallel trends for *N* and *C* groups. Interestingly though, the patterns of pre- and post-2013 growth means for both groups (see Table 2) mirror the results of Card and Krueger (1994), who also studied two sets of cases one period before and one period after an exogenous treatment change in one of those cases.

Finally, as a robustness check, we can broaden the control group of 2014 certifiers to also include other firms that certified in 2011 and 2012. These other firms have already experienced revenue impacts from certification; if these impacts are short-lived, they should not affect the 2012–2014 growth comparison, making them suitable controls. Moreover, if the results with this broader control group turn out to be similar to those based on the 2014 certifiers alone that would strengthen the argument that unobserved heterogeneity is more pronounced between certifiers and non-certifiers than within certifiers.

Dependent, Independent, and Control Variables

Our focus is on revenue growth, consistent with the possible existence of trade-offs between reorganizing a firm and attending to customers and sales growth opportunities.

The main dependent variable was therefore Revenue Growth, defined as the difference in log revenues in consecutive years. For comparative purposes, we also measured Employment Growth, defined as the difference in log number of employees in consecutive years. Revenue and employment data are available for many CBCs before certification as well as after it.

The difference-in-difference design determines a simple structure for the independent variables. First, the certification/non-certification indicator variable

FIGURE 1
Plot of Log Revenues by *C* or *N* Firm

Graphs by whether a C firm (no = 0, yes = 1)
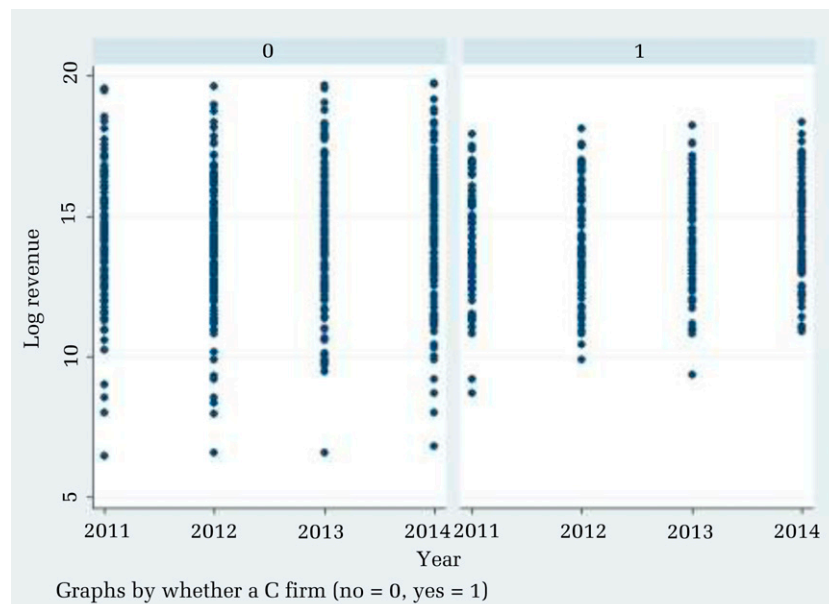
($I(i \in C)$ in Table 1) was coded to take the value of 1 for CBCs that certified in 2013, and 0 for CBCs that certified the following year. Second, the time indicator variable ($I(\tau = t + 1)$ in Table 1) takes the value 1 if the year τ is 2014 and 0 otherwise. Third, the interaction of these two variables forms the key independent variable from which the difference-in-difference regression estimate can be obtained (see column 2 of Table 1).

Several control variables were also included in the regression model. First, to account for possible cohort effects, we include the organization's Age in 2015 as one control variable. Second, firms based in the United States may differ systematically in their growth prospects from those located elsewhere, leading us to include Non-US as a binary control. Third, as noted earlier, we controlled for whether the firm had a Benefit Corporation legal form. Fourth, the literature on firm dynamics highlights the possibility of size-based regression to the mean effects (Haltiwanger, 2006). That motivated the inclusion of lagged size (Lagged Log Revenue or Lagged Log Employment) as another control; this variable also captures any size-related factors impacting firms at the start of the difference-in-difference window. Finally, industries are known to exhibit different growth trajectories, so a complete set of Industry Dummies, coded by a research assistant and validated by the authors, was also included.

RESULTS

Quantitative Analysis

Table 3 reveals a heavily skewed distribution of annual revenues with a survey median of $1.36 million; the interquartile range is $5.7 million.

Median employment is 10 workers. The median firm age is 9 years and the mean is just under 13 years. There is a wide dispersion in firm age, ranging between 1 and 67 years in 2015, when the data collection was completed. In terms of industry composition, the most frequently occurring industry sectors are "Consulting, HR, and Marketing Services" (23 percent); "Food and Drink" (19 percent); IT, Software, and Web Design (12 percent); "Financial Services" (12 percent); and "Light Manufacturing, Crafts, and Apparel" (11 percent).

Figure 2 provides a histogram of the B scores. The threshold for B certification of 80 is the modal B score in the sample. The distribution of B scores is positively skewed, with most of the values lying between 80 and 106. Table 3 also provides more information about the distribution of B scores, of which there are 310 values, reflecting the fact that some firms updated their B score, giving them multiple B scores within the sample window. The breakdown of the B scores into its four components in Table 3 shows that "Community" tends to have the largest values, whereas "Governance" has the lowest. The fact that some firms score zero on each of these components testifies to the heterogeneous social missions of different B Corps. The correlation matrix for the various B score components reveals only two statistically significant entries: -0.27 between "Environment" and "Worker" components, and -0.38 between "Environment" and "Community." This suggests that if a B Corp has an environmental focus, it tends to come at the expense of other social outcomes, at least as measured by B Lab. Appendix Table A1 gives the full correlation matrix: none of the correlations cause collinearity problems in any of the specifications reported in the following text.

TABLE 3
Descriptive Statistics

Variable	Mean	St. Dev.	Min.	Max.	25 percent	50 percent	75 percent	Obs.
Revenue, $ million	10.85	36.45	0	373.20	0.29	1.36	6.00	904
No. emp.	40.32	106.14	0	1,300	3	10	33	951
Age in 2015	12.68	11.49	1	67	5	9	15	996
Non-US	0.16	0.36	0	1	—	—	—	996
Benefit corporation	0.06	0.24	0	1	—	—	—	996
Lagged log revenue	14.13	2.19	6.45	19.65	12.71	14.15	15.62	633
Lagged log employment	2.47	1.43	0	7.09	1.39	2.30	3.43	706
B score	108.21	21.77	80	174	91.33	105	119	310
B worker	25.47	7.31	0	61	22	24.94	29	270
B environment	21.19	17.23	0	83.18	9	14.47	30	310
B community	41.32	21.21	0	106	24.58	37.23	55	310
B governance	15.36	6.39	0	58.65	12	14.66	17	306

Maximum sample size is 996, representing 4 years of 249 observations over 2011–2014. Lower numbers of observations in the final column reflect missing values (e.g. lagged log revenue does not exist for firms entering the sample in 2012). Recent B scores and their components were observed only once for most firms in the sample, giving rise to numbers of observations ranging from 270 to 310.
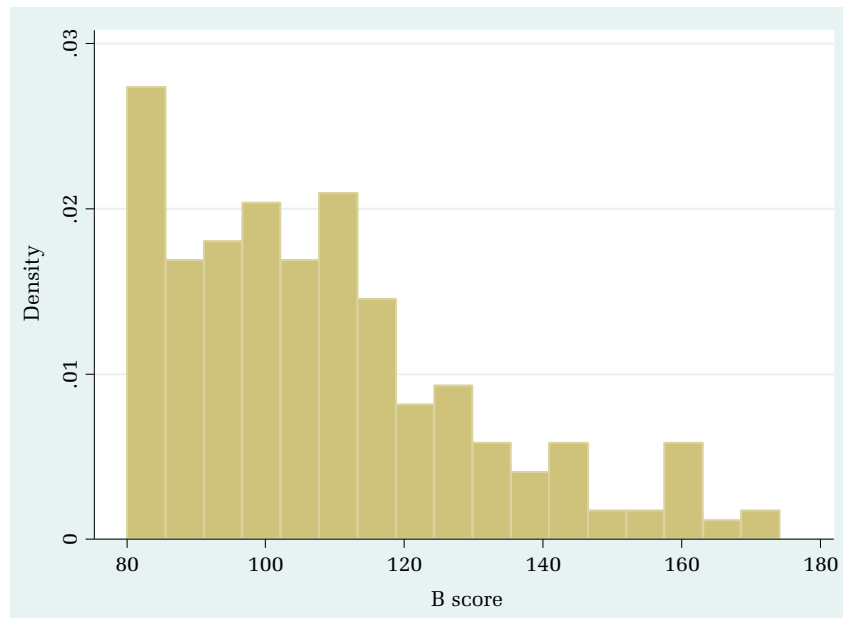
FIGURE 2
Histogram of B Scores

Table 2 provides descriptive statistics on mean growth rates. Panel A of Table 2 shows that average B Corp revenue growth rates have varied over time, rising from 25.8 percent in 2012 to 32.4 percent in 2013, before dropping back to 21.9 percent in 2014. However, a one-way ANOVA test reveals no significant difference between these means, reflecting the high standard deviations of revenue growth (high cross-firm heterogeneity). Average employment growth rates were much more stable, varying by at most by 1.5 percent over the same period; these differences are also not jointly statistically significant. Table 2 also provides background information for the difference and univariate DD statistics. They separate the "*C*" firms which were certified in 2013 from the "*N*" firms which were certified in 2014. Mean revenue growth rates of *C* firms remained positive but declined substantially between 2012 and 2014, unlike those of *N* firms, which were positive and increased slightly over this period, suggesting an adverse effect of certification. For both firm types, employment growth rates declined slightly between 2012 and 2014.

The large drop in the mean *C* firm revenue growth rate from 31.4 percent in 2012 to 12.2 percent in 2014 is certainly noteworthy. It is possible that firms that were certified in 2013 ramped up their growth rates before undergoing certification—leading to the observed drop. For example, strong firm growth might have been the impetus for certification. Although we cannot completely rule that possibility out, the lack of a similar pattern for 2014 certifiers casts serious doubt on it. It seems more likely that the 31.4

percent mean really is an artifact of random sampling variation.

Table 4 reports the significance tests of the differences noted previously, first for *C* firms and then for *N* firms. Consistent with our earlier arguments, the mean difference of revenue growth in 2014 relative to 2012 is statistically significant in the case of *C* firms, but not in the case of *N* firms. No employment growth differences are significant for either type of firm. The final columns of Table 4 reports the univariate DD statistics (column 1 of Table 1): there is evidence of a significant difference of more than 20 percent between *C* and *N* firms for revenue growth rates between 2012 and 2014, pointing to an adverse short-term effect from certification. No significant difference for employment growth rates between the two firm types is detected.

Table 5 runs the DD analysis within a regression framework. Column (1) estimates a random effects model of revenue growth including all three terms of equation (1) and the set of control variables used in the MANOVA—but no industry dummies. The regression is statistically significant, and the DD term is negative and statistically significant, pointing to a 21 percent revenue growth slowdown. These findings, which remain similar in column (2) where industry dummies are included, are consistent with the findings in Table 4. So are the findings in columns (3) and (4) which point to no impact of certification on employment growth. This robust pattern of findings lends support to the notion that B certification decelerates short-term revenue growth.

TABLE 4
Mean Difference and Difference-In-Difference Test Statistics

	Difference				Difference-in-Difference	
	D^C		D^N		$D^C - D^N$	
	Revenue	Employment	Revenue	Employment	Revenue	Employment
Mean	−0.19	0.11	0.03	−0.02	−0.23	0.13
St. Err.	0.08	0.06	0.10	0.06	0.13	0.08
t_{obs-1}	−2.33	1.76	0.35	−0.36	−1.76	1.53
H_a: $D < 0$: $\Pr(T < t)$	0.01**	0.96	0.64	0.36	0.04**	0.94
H_a: $D \neq 0$: $\Pr(\|T\| > \|t\|)$	0.02**	0.08*	0.73	0.72	0.08*	0.13
H_a: $D > 0$: $\Pr(T < t)$	0.99	0.04**	0.36	0.64	0.96	0.07*
Obs.	65	49	41	45	41	45

Sample size differences within Panel B of Table 2 accounts for the mean difference of 0.11 in the "Employment" cell of D^C in this table.

The three rows of hypothesis tests perform mean difference tests with a null hypothesis H_0: $D = 0$ (equal variances not assumed). The first alternative hypothesis H_a: $D < 0$ is for a one-tailed test of a negative mean difference; the second alternative hypothesis H_a: $D \neq 0$ is for a two-tailed test of a mean difference of either sign; and the third alternative hypothesis H_a: $D > 0$ is for a one-tailed test of a positive mean difference.

* denotes significance at 10 percent, ** at 5 percent, and *** at 1 percent.

Table 6 re-runs the regressions splitting up the sample into small and large firms, and then young and old firms (see previous text for how firms were classified). Some observations are lost owing to some missing data on employment levels. Strikingly, the results in columns (1) and (2) reveal that the smallest firms experience a substantial revenue growth slowdown, of up to 48 percent. By contrast, the estimated coefficients for larger firms in columns (3) and (4) are insignificantly different from zero. This suggests that the internal adjustments pending certification are size-contingent.

The correlation coefficient between the age and size classifying variables is 0.34. Hence, although there is some overlap between age and size categories, that overlap is far from complete. Columns (5) through (8) of Table 6 rerun the analysis distinguishing between young and old firms. Yet these results mirror closely the findings for size: substantial negative certification impacts on growth of −48 percent are observed for young firms but not for their older counterparts. This suggests that the internal adjustments pending certification are not only size-contingent, but also age-contingent: both

TABLE 5
Difference-In-Difference Panel Regressions

	Revenue Growth		Employment Growth	
	(1)	(2)	(3)	(4)
$I(i \in C)$	0.167*(0.092)	0.190**(0.092)	−0.003 (0.054)	0.019 (0.053)
$I(\tau = t + 1)$	0.053 (0.088)	0.060 (0.088)	0.002 (0.043)	0.015 (0.043)
$I(i \in C) \times I(\tau = t + 1)$	−0.215**(0.112)	−0.211*(0.112)	−0.007 (0.054)	−0.011 (0.054)
Age in 2015	−0.004 (0.004)	−0.000 (0.004)	−0.003 (0.002)	0.000 (0.003)
Non-US	−0.012 (0.108)	−0.008 (0.108)	−0.033 (0.068)	−0.029 (0.067)
Benefit corporation	0.137 (0.214)	0.061 (0.258)	−0.073 (0.133)	−0.229 (0.160)
Lagged log revenue	−0.050***(0.019)	−0.069***(0.021)	—	—
Lagged log employment	—	—	−0.043**(0.020)	−0.085***(0.023)
Industry dummies?	No	Yes	No	Yes
$\chi^2(10)$ test of industry dummies	—	15.99*	—	20.87**
R^2	0.09	0.17	0.07	0.19
Wald χ^2 (p value)	21.74***(0.00)	38.07***(0.00)	13.21**(0.07)	34.99***(0.00)
No. observations	212	212	201	201
No. groups	106	106	102	102
σ_u^2, ρ	0.19, 0.25	0.18, 0.21	0.18, 0.50	0.17, 0.47

See notes of Table 4 for asterisks.

"No. groups" is the number of distinct firms used in the regressions. There are 2 years per firm, giving a maximum "No. observations" of double the number of groups. In cases where the latter is less than double the former, it is because of missing values of some variables in the regressions.

TABLE 6
Difference-In-Difference Panel Regressions: Revenue Growth Effects by Size and Age

	Small Firms		Large Firms		Young Firms		Old Firms	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$I(i \in C)$	0.418**(0.178)	0.418**(0.180)	−0.008 (0.068)	0.046 (0.071)	0.396**(0.196)	0.384**(0.197)	−0.016 (0.052)	0.003 (0.054)
$I(\tau = t+1)$	0.154 (0.189)	0.152 (0.191)	−0.033 (0.057)	−0.034 (0.057)	0.163 (0.187)	0.170 (0.190)	0.004 (0.051)	0.005 (0.051)
$I(i \in C) \times I(\tau = t+1)$	−0.479**(0.241)	−0.448*(0.244)	0.045 (0.073)	0.037 (0.073)	−0.484**(0.231)	−0.481**(0.234)	0.026 (0.066)	0.027 (0.067)
Age in 2015	−0.018 (0.012)	−0.006 (0.012)	−0.005*(0.002)	−0.005**(0.002)	0.012 (0.050)	0.057 (0.052)	−0.002 (0.002)	−0.002 (0.002)
Non-US	0.015 (0.242)	0.046 (0.239)	0.001 (0.074)	−0.052 (0.077)	0.107 (0.282)	0.095 (0.294)	0.014 (0.056)	0.022 (0.057)
Benefit corporation	0.506 (0.440)	0.208 (0.445)	−0.047 (0.138)	−0.112 (0.179)	0.577 (0.524)	0.502 (0.515)	−0.098 (0.111)	−0.272*(0.162)
Lagged log revenue	−0.115***(0.044)	−0.117***(0.045)	−0.011 (0.019)	0.004 (0.023)	−0.124**(0.052)	−0.134**(0.055)	−0.006 (0.010)	−0.012 (0.013)
Industry dummies?	No	Yes	No	Yes	No	Yes	No	Yes
χ^2 industry dummies	—	22.08***	—	11.83	—	11.33	—	10.46
R^2	0.18	0.30	0.07	0.22	0.14	0.27	0.03	0.14
Wald χ^2 (p value)	20.62***(0.00)	51.18***(0.00)	6.90 (0.44)	19.10 (0.26)	18.96***(0.01)	29.59**(0.02)	3.26 (0.86)	13.85 (0.54)
No. observations	93	93	119	119	94	94	118	118
No. groups	52	52	65	65	47	47	59	59
σ_u^2, ρ	0.20, 0.16	0.12,0.06	0.15,0.41	0.14, 0.37	0.28,0.27	0.23,0.21	0.08,0.19	0.07,0.17

See notes of Table 4 for asterisks.

"No. groups" is the number of distinct firms used in the regressions. There are 2 years per firm, giving a maximum "No. observations" of double the number of groups. In cases where the latter is less than double the former, it is because of missing values of some variables in the regressions.

In the final row σ_u^2 is the variance of the individual firm component of the error variance, whereas ρ is the fraction of the total error variance accounted for by σ_u^2.

smaller and younger B Corps are vulnerable to growth slowdowns, whereas larger and older B Corps are not. We can rule out the possibility that age and size effects are driven by the large number of CBCs located in the consulting/service sector, because when sectoral dummies were included in the specifications in Tables 5–7 none of the findings changed; nor did they change when observations from consulting/service sectors were excluded from the analysis. Qualitative data will be used to delve deeper into the factors underlying these findings in the following text.

If certification diverts scarce managerial and employee attention away from top-line growth, greater compliance with B Lab criteria, as reflected in a higher B score, could amplify the growth penalty. To explore this possibility, we investigated whether there are linear associations between B scores and growth rates. We do so by estimating a random-effect panel data model. Most firms in the sample only record one B score in the sample window, so a fixed-effects panel model cannot be used because fixed effects would be perfectly collinear with B scores. Also, it takes time for B scores to be submitted and released, so the most recent B score that can be related to current growth is the B score in the previous year. For firms with multiple B scores, the most recent one is used subject to this restriction. B Lab changed its methodology for coding B scores after 2011 (with the old component "Accountability" changed to "Governance" and "Employee" changed to "Worker"). To guard against the possibility that values of these components changed systematically, each pre-2012 B score component is scaled by the quotient of mean score for that component post-2011 and respectively pre-2012. Although this made little difference to the scores, it helped ensure comparability within the sample window. Our results turned out to be insensitive to this precaution.

Table 7 presents the results of the panel data growth regressions in which B scores are the independent variables. As we are no longer in a difference-in-difference framework, the entire sample is used for maximum statistical power. The first three columns report the regressions for revenue growth. Even with a maximal sample size, very little is statistically significant, and neither the B score nor any of its components come close to achieving statistical significance (these findings do not change if only 2013 and 2014 certifiers are analysed—results available from the authors on request). Thus, although B Lab Certification seems to be associated with lower revenue growth, neither the B score itself nor its components have any statistically significant influence on growth. Taken at face value, these

findings may seem rather puzzling; we discuss them further in the closing section of this article.

For completeness, the final three columns of Table 7 report the results for employment growth. A similar story holds here too; B scores and their components generally lack explanatory power. One exception is the small impact from environmental B scores, which is negative and significant. This result suggests that firms that prioritize environmental issues tend to grow slowly in terms of headcount. That might be because such firms tend to be more capital intensive on average and so can scale without taking on many more workers. We also find that younger firms have higher employment growth rates, a well-known and robust finding in the prior literature (Haltiwanger, 2006).

We close this section with four robustness checks. First, we relax the assumption that B scores can only influence performance after a time lag. It was previously assumed that it takes firms time to signal their commitment to social causes via their B scores. Now, allowing B scores (and their components separately) at $t + 1$ to affect growth between t and $t + 1$ generates a new set of results. However, these were qualitatively identical to those presented in Table 7. Hence, the results in Table 7 are not simply an artifact of assumptions about signaling lags.

Second, we re-run the regressions in Table 5 using a broader control group of all firms which certified in years other than 2013. The results, which appear in Table A2 of the Appendix, do not change when this broader control group is used. We therefore infer that our results are not sensitive to using 2014 certifiers as the control group. Third, we check whether our results were sensitive to an omitted variable problem, namely the lack of control variables capturing external trends or consumer receptiveness to B Corps. Some locations host numerous CBCs whereas others do not, suggesting that impacts of certification may be affected by the existence of these locational factors. To capture this, we use the geographical markers in the data to code a dummy variable *RegDensity* for whether a state or province had an above- or below-average number of B Corps co-located there, where the average was computed across the sample. Adding *RegDensity* to the regressions in Tables 5–7 made no difference to the results, with estimated coefficients for this variable being uniformly statistically insignificant. For example, adding it to columns (1) of Tables 5–7 yielded coefficient (and standard error) estimates of −0.026 (0.081), −0.027 (0.166), and −0.093 (0.062), respectively. This suggests that our results are not sensitive to external consumer responsiveness to CBCs—supporting further our contention of salient internal mechanisms.

TABLE 7
Panel Data Growth Regressions

	Revenue Growth			Employment Growth		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
B Score	—	−0.000 (0.002)	—	—	−0.001 (0.001)	—
B worker	—	—	0.003 (0.005)	—	—	−0.002 (0.003)
B environment	—	—	−0.002 (0.003)	—	—	−0.006***(0.001)
B community	—	—	−0.002 (0.002)	—	—	−0.000 (0.001)
B governance	—	—	0.001 (0.007)	—	—	0.001 (0.003)
Age in 2015	−0.013***(0.002)	−0.006*(0.003)	−0.005 (0.003)	−0.007***(0.001)	−0.006***(0.002)	−0.005***(0.002)
Non-US	0.015 (0.076)	0.084 (0.095)	−0.000 (0.104)	0.064 (0.042)	0.059 (0.059)	0.080 (0.057)
Benefit corporation	0.035 (0.122)	0.130 (0.144)	0.104 (0.148)	0.031 (0.064)	0.023 (0.085)	0.031 (0.079)
Consulting, HR, and marketing	−0.042 (0.105)	−0.018 (0.128)	−0.017 (0.138)	−0.110**(0.056)	−0.126*(0.074)	−0.188***(0.073)
IT, software, and web design	0.153 (0.118)	−0.009 (0.137)	0.165 (0.147)	0.012 (0.063)	0.010 (0.081)	−0.075 (0.079)
Light manuf., crafts, and apparel	0.002 (0.120)	−0.206 (0.203)	−0.054 (0.154)	−0.028 (0.064)	−0.064 (0.081)	0.036 (0.080)
Environmental services	−0.267*(0.153)	0.037 (0.133)	−0.193 (0.223)	−0.243***(0.081)	−0.039 (0.122)	0.079 (0.496)
Food and drink	0.149 (0.107)	−0.064 (0.136)	0.049 (0.142)	0.121**(0.058)	0.094 (0.078)	0.103 (0.121)
Financial services	−0.130 (0.117)	−0.275 (0.544)	−0.093 (0.152)	−0.109*(0.062)	−0.025 (0.080)	0.066 (0.075)
Architecture and construction	−0.017 (0.148)	−0.337*(0.189)	−0.358*(0.193)	0.024 (0.084)	0.073 (0.122)	−0.101 (0.079)
Real estate, workspaces, community, and volunteering	0.190 (0.165)	0.040 (0.197)	−0.115 (0.209)	−0.064 (0.086)	−0.173 (0.114)	0.047 (0.114)
Constant	0.423***(0.097)	0.274 (0.203)	0.273 (0.250)	0.291***(0.052)	0.366***(0.122)	−0.208*(0.110)
R^2	0.110	0.079	0.092	0.138	0.111	0.162
Wald χ^2 (*p* value)	53.55***(0.000)	18.30(0.107)	18.09(0.258)	76.71***(0.000)	27.45***(0.000)	37.09***(0.000)
No. observations	663	273	240	664	287	253
No. groups	225	160	142	235	168	149
σ_u^2, ρ	0.275, 0.246	0.235, 0.237	0.266, 0.304	0.147, 0.221	0.154, 0.286	0.118, 0.189

See notes of Table 6 for asterisks and explanations of "No. observations," "No. groups," and σ_u^2, ρ.

Fourth, we made some effort to explore whether response bias might have tainted the sample composition. We did so by running a MANOVA on the key control variables described earlier when discussing the validity of the control group. Specifically, we compared the characteristics of the sample of 115 first-round respondents with the sample of 134 second-round respondents. The F statistics based on Wilk's lambda and three related statistics reported in STATA all took the value $F(7,182) = 1.29$, whose p-value of 0.26 failed to reject the null hypothesis of similar observable characteristics. Hence, the responsiveness of CBCs to answering our questionnaire does not seem to have biased the sample composition, lending further credence to our results.

Qualitative Analysis

Although our statistical results are robust, they cannot speak directly to the underlying mechanisms. The challenge of specifying the underlying mechanisms is threefold: First, we need to attribute the slow-down in growth to factors uniquely triggered by, and in the immediate aftermath of, B Lab formally granting certification; second, we need to explain how these factors actually slow down growth; and third, we need to elucidate why these factors disproportionately affect small and young firms.

When initially collecting the quantitative data, 35 of the founding entrepreneurs who agreed to our survey request solicited some clarifications. These discussions were not audio-recorded; however, detailed notes on the conversations were taken by one of the authors. These preliminary phone interviews invariably mentioned the costs associated with certification. Several founders stated that they struggled with figuring out how much it would cost to implement the practices they had committed to, and these costs loomed larger for firms which had to build new sets of practices from scratch. Larger and older firms were more confident at estimating and planning for additional expenses. This was not merely because they had greater slack: having overhauled their systems and structures before, many of them were better prepared for changes mandated by the certification process. Our conversations also revealed that younger and smaller firms found up-front estimation of costs to be quite difficult; most used the label of "investments" to underscore the duration and the significance of these commitments relative to the slack available.

These early interview notes did not uncover any other patterns by size or age. Nor did they enable us to check on the assumptions used in the quantitative analysis or reveal the mechanisms underlying the findings from that analysis. To gain deeper insights, we conducted a second and more in-depth set of interviews by systematically sampling our firms by size and age. Of the 48 candidate firms we identified, 32 were willing to speak to us, with 29 ultimately finding the time to do the interviews. Two of the author team conducted the interviews, which lasted, on average, 32 minutes, ranging from 20 to 47 minutes in length. All interviews were semi-structured. Of the 29 respondents, eight were founders and/or CEOs; seven were partners and/or owners; and the rest held various senior management positions, such as head of marketing. These interviews were all recorded, and the responses coded for subsequent analysis.

The second, in-depth, round of interviews sheds light on the following questions:

a) Was the length of the certification process random?
b) Was the certification growth penalty associated with costs of adjustment and attentional deficits, or some other factors?
c) Were other dimensions of heterogeneity salient?

Consider a) first. Of the respondents who were able to recall their first discussions with B Lab, most reported being advised that the length of the process would depend on several factors, including the time needed to collect internal data on business practices and receive and incorporate feedback and guidance from B Lab. Of the 16 respondents who discussed the timing issue, 13 reported being unable to predict when the certification process would terminate. This suggests that timing of achieving certification was largely random. For example, several respondents referred to there being "a lot back and forth" between their organizations and B Lab, injecting uncertainty into the length of the process. One respondent reported that this process "*took quite a while … thought-provoking questions were asked of us that we never really thought through before … so we had to go back and reconsider policies and whether we could rewrite them*". Another confided that "*we were in 'hurry-up' mode… contacted them the year before… knew it would be tough for us to do*". Overall, the time it took for applicants to get through the certification process varied widely, regularly taking as long as 8 months.

The data also do not support other causes of non-randomness in timing, including internal governance issues or de-growth objectives, which could influence certification timing. The pattern that emerged strongly from our interviews was that firms approached the decision point of certification gradually and steadily, with an often unexpected final

impetus that finally convinced them to initiate it. The impetus often came out of nowhere, as a "straw that breaks the camel's back"—which is more consistent with the random timing assumption than the converse. Also, our interviews uncovered no evidence of outsourcing of certification activities from our qualitative study. Indeed, the changes required by B Lab tend to be too deeply connected to the operations of the firm to be easily separated from existing operations and outsourced to a third party to expedite. In short, the qualitative interview evidence therefore largely bears out the identifying assumption, used in the quantitative work, of random certification dates.

Turning to b), we asked respondents about the rigor of the certification process, and the time, attention, and costs they devoted to certifying. Respondents agreed that the process of B Lab certification is demanding in terms of the standards required: it surprised many of them in terms of its depth and rigor. They highlighted that the process is time-consuming, diverting effort away from building the business and attending to customers' needs. This accords with the notion of attentional deficits underlying the growth slowdown. Indeed, the certification process involved even greater attention deficits for small and young firms. According to one respondent: "Being smaller it took a greater amount of our resources in terms of me, but the information was a little easier to get". Another stated: "if you only have a few people working on the company that has to fill out the survey, that is burdensome to fill out and then make the changes, and especially when you are small and wearing many hats, then it's taking away from your ability to do other things". Two further respondents noted that "the small firms will have to face the base costs, and they are relatively more significant for small firms"; and "many of the small and young companies have not yet put into play a lot of what B corps asks them to do, while larger firms have these processes in place already".

Taking stock of the interview evidence, it seems that although for the larger and older ventures, the adoption of new practices was understood as a set of incremental changes in existing routines that largely served the underlying values quite well already, small and young firms seemed to be somewhat out of their depth. It took time for them to understand what they were lacking; some of these respondents told us that they had adopted radically innovative models that were hard for B Lab to comprehend—and at odds with the incremental improvement logic build into the assessments. This is not to say that the small and young were too good for the B Lab assessments. Quite the contrary, many found it challenging, and one key reason why they kept investing so much time and effort was that they needed to interpret specific items to begin with (Sharma, Beveridge, & Haigh, 2018). From the vantage point of smooth running at scale, larger or older peers may have found it a lot easier to determine which practices made easy, well-fitting additions (Parker & van Wittellostuijn, 2010). Because internal systems—involving routine, the structure, and the process—were not yet in place for many young and small firms, they may have had to effectively hit the brakes and figure out what was missing to begin with. For many, the figuring out what to add was not just iterative—but also took them back to filling out gaps in business operations they had not yet evolved organically.

Although all the backfilling was costly on its own, even more straining was the recurrent realization of what was missing, the hard trade-offs of time and attention, and the sheer emotional energy required by founders of small and young firms in full stride but hardly in routine mode of operations. In retrospect, many of these respondents felt they might have rushed into certification a bit too soon, before fully understanding what it would take, and even more so by presuming their strong values sufficiently readied them for external acknowledgement. Because the B Lab assessment was so rigorous, it effectively helped them diagnose all the ways in which their emerging nascent or small-scale operations were not yet commensurate with these strong values—many respondents told us they had initially thought they were already doing everything right. Coming to grips with the fact that they were falling short on their own values gave most of them pause——and rekindled their resolve to do more—often more than they could afford financially or humanly. They proverbially bit off more than they could chew, committing to too many or too drastic changes in practices. Because they deemed these worthwhile, they could not cut back or drop out. But they could, and did, slow down—pacing themselves with small token investments (hundreds of dollars and tens of hours) whenever the business could take it. As one small firm respondent put it:

> "At the end of the day we felt it was worth it, so we made the investments to make the changes to do it, but all the while I was questioning it because it was a massive investment of time. If you are spending hundreds of hours, because of our age we are really like an elite start-up in a lot of ways and that amount of time spent on anything is a major distraction from getting new customers and you know fundraising. Now I felt it was worth it because of the long-term benefits like the creditization you are talking about; but we did not have a chance to amortize it."

To address question c), we explored further dimensions of heterogeneity, including differences in responses by type of firm, and different motivations for certifying. For example, one plausible reason for a reduced growth rate post-certification is that firms which slow down operate in more sluggish sectors. We therefore pulled out sector-matched firms, for example, small vs. large firms operating in the exact same industry—but the same patterns observed in the quantitative analysis held fast. We were also curious as to whether the nature of the underlying investments, which again can vary widely between product and service sectors, explained the statistically robust differential. It did not. In fact, service firms often undertook significant investments in systems or structures, such as HR software, or physical recycling infrastructure, just like product firms. Although service firms obviously could not invest in restructuring their supply chains, they often undertook practice changes requiring comparable time and attention, for example sorting through potential clients according to their goals, or making substantial concessions to fellow B Corps. Although we cannot rule out some sectoral effects on balance, our inductive findings reassure us that identical mechanisms are at play across a wide range of industry sectors.

In terms of motives for certifying, regardless of size or age, our interview respondents ubiquitously justified incurring significant pre-certification costs on the grounds of them being the right investments, regardless of whether direct benefits would flow from them. Respondents consistently emphasized investments in B Lab practices as being "the right thing to do," framing them as clear and material proof of underlying values which they could convey to attentive internal and external audiences.

Furthermore, our follow-up interviews provided us with detailed estimates of firms' investments in certification. These included multiple metrics from financial ones to human capital diverted to fulfil certification commitments. Yet, these investments were hard to compare because of the idiosyncrasy of the firms' business models, as independently noted by several other authors (Cao et al., 2017; Grimes, Gehman, & Cao, 2018). Any direct comparisons were further limited by the fact that protagonists opted into rather different practices, interpreted them differently, and proceeded at different paces (Sharma et al., 2018). In summary, no clear picture emerged from probing these distinctions, so we tentatively conclude that other dimensions of heterogeneity were not salient for explaining or understanding our results.

DISCUSSION AND CONCLUSION

The results presented in this article reveal a substantial and significant negative impact of stringent

> Author's voice:
> Was there anything that surprised you about the findings?

third-party VSEA certification on short-term growth. Using carefully designed quasi-experimental methods, we find that B Lab certification generates an average revenue growth slowdown of 20 percent, an effect size which more than doubles for the smallest and youngest certifying firms in the sample. We bolster these quantitative findings with in-depth interviews of sample firms to provide greater insight and validation of these findings. In the following text, we discuss the theoretical and empirical implications of these findings for the categorization and certification literatures.

Hitherto, researchers have paid little attention to the internal adjustments and re-organizational costs brought about by certification compliance efforts. The view promulgated by B Lab and its supporters is that B Lab certification has strong, positive social and financial impacts (doing well by doing good). Much of this positive promotional messaging has relied implicitly or explicitly on the assumption that external signaling of authentic social missions via certification yields positive benefits which enhance both social and financial performance. Yet a small and emerging body of research is beginning to reveal nuances and inconsistencies in this narrative. For example, evidence about performance impacts from certification is mixed (Orlitzky et al., 2003; Shen & Chang, 2009); and in the specific context of B Certification, Gehman and Grimes (2017) have noticed that surprisingly few certified firms publicize their certification status to external stakeholders. Using novel, hand-collected data on 249 North American CBCs, we show that positive benefits are only part of the certification story. Specifically, there is also a significant and substantial short-term growth slowdown immediately following certification: although B corps in our sample do keep growing, they decelerate in the year following certification relative to peers who have not yet certified.

Our findings are consistent with the idea that given limited managerial attention (Cyert & March, 1963; Simon, 1947) and an absence of organizational or transient slack (George, 2005), the internal re-organizations required to comply with the certification process plausibly divert precious managerial and workforce attention away from promoting top-line growth. Indeed, the observed growth slowdown was even more pronounced for the smallest and youngest firms in our sample, consistent with the notion that attentional deficits are most acute in these firms. Our in-depth interviews revealed that

larger and older firms have well-established procedures and slack which make them less distracted by certification needs: many of them are prepared for the kinds of demanding internal process adjustments required for certification. By contrast, smaller and younger firms lack internal mechanisms and slack and tend to be less prepared for the attentional demands of certification, which distracts their attention from sales growth. It should be noted that these firms may nonetheless find it worthwhile to make costly adjustments for future benefits which in the long run change their life-course, helping them reach their desired destination.

Our findings challenge theorists who analyze scarce managerial attention within organizations to extend their theories to deal with the special circumstances of certifying organizations. There are at least three dimensions where theorizing can be fruitfully developed. One concerns how firms manage the internal dynamics of re-organizations promoted by certification efforts. The second relates to the implications for external stakeholders of attentional shifts away from managing external relationships and toward changing internal processes. A third area where theory can be developed in response to our findings is in formulating effective strategies for attention-constrained founders of certifying organizations to mitigate the short-run growth penalties they are liable to face.

More generally, our results suggest that certification brings challenges in its wake, which theorists who study hybrid organizations need to acknowledge. Whether these challenges are specific to B Lab certification or are just more accentuated for it, remains to be seen. It is noteworthy however that B Lab certification is receiving growing attention both in practice and in the scholarly literature on the certification of hybrid organizations (Cao et al., 2017; Gehman & Grimes, 2017; Hiller, 2013). To our knowledge, ours is the first study to examine the short-term growth impacts of B Lab certification.

Our results suggest the predominance of internal organizational over external signaling mechanisms. That is because external effects take time to disseminate and so would therefore generate long-run rather than short-run growth impacts; those impacts would moreover presumably be positive, not negative. If future research reveals that long-run growth impacts of certification really are positive, this combined with the short-run negative impacts that we have discovered would be consistent with costly signaling logic (cf. Bergh et al., 2014). Furthermore, our finding that smaller and younger firms are the most affected by a certification-related growth penalty are inconsistent with a competing argument based on the notion that smaller and younger firms are nimbler than their larger counterparts. That is because agility would presumably make re-organizations easier, and so mitigate the small and young firm growth penalty.

Nevertheless, other theoretical perspectives in organizational research may also be used to understand our results. For example, prior research has focused on the importance of the self-expression of values and identities in the venturing process and the complex demands placed on organizations that seek to integrate them (Fauchart & Gruber, 2011; Wry and York, 2017). For hybrid organizations specifically, struggles with multiple identities have been found to result in tensions that pose problems to governance and accountability to stakeholders (Ebrahim, Battilana, & Mair, 2014) that may in turn impact decision making (Pache & Santos, 2010). While setting out the advantages and disadvantages of strategies that organizations may undertake to deal with multiple identity issues, this line of work has not sufficiently established clear relationships with financial performance except around the fringes, such as the prompting of tension-heightened creativity (York, O'Neil, & Sarasvathy, 2016), the introduction of risk (Battilana & Lee, 2014), and the potential of organizational ambidexterity to moderate corporate social performance (Hahn, Pinkse, Preuss & Figge, 2016). Clearly, this body of research offers a different perspective for making sense of the observed growth slowdown of certifying firms, and further research on systematically separating out these mechanisms would be valuable.

It is remarkable that in further analysis, no associations were detected between growth impacts and B scores, which measure the extent of compliance with B Lab's criteria. That is the opposite of what one would expect to see if firms adopting more of B Lab's recommended practices experience more disruption and adjustment dislocations, hampering their growth. That this outcome is not observed in the data is something of a puzzle which calls for further research. One possibility is that the creativity unleashed within some organizations who successfully manage competing identities enables those organizations to both to certify and get high B scores, at the same time as other organizations whose competitive strategy is more centrally based around financial performance manage to certify but only just scrape through. This points to the underlying heterogeneity of certifying organizations, their missions, and sources of competitive advantage. Alternatively, the fact of reorganizing, rather than the types of changes made in the reorganization, might be what causes most internal disruption. For instance, once a reorganization effort is underway, it may be relatively straightforward to address several

additional B Lab concerns as part of the process of internal change. Clearly, however, these are just conjectures: further research is needed to investigate this possibility more thoroughly.

Before highlighting still further opportunities for future research, we should mention some limitations of the present study. First, although our discovery of a short-term growth penalty following certification is consistent with mechanisms relating to attention deficits, and a trade-off between sales focus and moves toward B Lab compliance, we can only infer this indirectly from relative revenue growth outcomes (and supporting qualitative interviews). Although plausible, alternative mechanisms may also be consistent with the evidence. One such mechanism may be de-growth as an intended consequence of certification. Thus, Ansara, Otero, Demaria, and Corbera (2015) review the origins and evolution of the theory of de-growth (de´ croissance), a term first coined by André Gorz in 1972. They emphasize the incompatibility between the limits of the socioenvironmental ecosystem with the material consumption germane to the capitalist system; underscore "the importance of reducing consumption and promoting values such as frugality, autonomy, and conviviality"; and suggest that democratic and redistributive downscaling of the biophysical size of the global economy offers a more sustainable pathway to the future (see also D'Alisa, Demaria, & Kallis, 2014; Demaria, Schneider, Sekulova, & Martinez-Alier, 2013). These scholars argue that de-growth can itself be a measure of socioecological transformation (Kallis, Demaria, & D'Alisa, 2014), demarcating a transition from thin sustainability, i.e. "meeting human needs, both now and in the future, without degrading the planet's life support systems" (Miller, 2013: 283) over to a "thick sustainability", whereby recognition of social priorities and environmental boundaries motivates firms to radically alter their growth expectations.

Although the alternative de-growth explanation is possible, it does not predict the size- and age-related boundary conditions on growth penalties that we find evidence for. Nevertheless, greater confidence in our inference about internal attention deficits and trade-offs can only be gained by obtaining more direct measures of these deficits. To the best of our knowledge, the data needed to do this thoroughly are currently unavailable.

A second, related, limitation emerges from our tight focus on internal mechanisms. Although external approval for certification may boost firm growth after certification is awarded, the results in this article suggest that the negative internal effects are even stronger than what we have inferred (we

capture, after all, a net effect on growth). Yet it would be informative to identify, measure, and compare the internal and external growth impacts separately, to obtain a more complete understanding of certification impacts (for example, see Hsu, Hannan, & Koçak, 2009; Leung & Sharkey, 2014; Negro & Leung, 2013 for studies relevant to category theory and producer and demand side effects that may be associated with certifications). We lack the capability to undertake this ambitious exercise at the time of writing.

A third limitation is that the empirical work presented in this article is based on a relatively short panel of 4 years. We lack data to explore longer term impacts on growth, which may reduce or even reverse the short-term penalty of more than 20 percent per annum (and the double penalty of more than 40 percent for small and young firms). Future research should try to obtain more data to estimate longer term impacts of certification—and explore the possibility that firms suffering unaffordable growth penalties choose to de-certify (several such cases have already been observed in practice). The short panel of data also limits the detail with which pretreatment trends can be assessed for the difference-in-difference analysis; and it restricts the degrees of freedom of the empirical estimates, reducing the precision of the regression parameter estimates. Also, One cannot rule out, with our data, the possibility that certification outcomes vary over the business cycle. For example, it is unclear whether internal reorganizations are more, or less, costly during recessions or booms. On the one hand, slack tends to be greater in recessions, but resources are scarcer when times are hard (Singh, 1986); and consumers may be more willing to reward CBCs during economic upturns when disposable incomes are relatively high. Future research can seek out longer spans of data to answer these questions.

Future research may also investigate short-term and internally driven growth impacts associated with other kinds of certification, not just B Lab's. We believe that B certification is an especially apposite context to study, in view of the rather stringent audit and compliance requirements it imposes, making impacts arguably easier to identify. Indeed, our findings may be of general interest to any organization contemplating or undertaking a shift into morally imbued categories (Jensen & Kim, 2015; Jones et al., 2012; Rao, Monin, & Durand, 2003). There are also a host of other settings where firms trade off

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Author's voice: What future research would you recommend based on your findings?	🔊)))

short-term growth, investing in internally disruptive reorganizations in return for the prospect of greater longer term positive impact. Some of these settings may be specific to hybrid organizations, including exogenous changes in stakeholders' valuations of particular social and environmental trends.

On the other hand, different certifications may impose different internal adjustment burdens on firms, which may impel researchers to gain a more nuanced understanding of how firms respond to different kinds of certification. B Lab certification could either amplify or mitigate the costs of gaining other certifications, depending on the existence of synergies or false comparisons obtained from one type of certification and then applied to another. Furthermore, we need to know more about how certification affects firm performance measured more broadly than just revenue growth. There are large gaps in our theoretical and empirical knowledge about social impacts from certification, and the causes and consequences for a range of financial outcomes.

Another fruitful line of future research would be to analyze the decision about whether to certify in conjunction with the growth impacts studied in this article. The decision to certify is clearly an endogenous one, and the growth penalties we have identified may discourage some firms from certifying altogether. We sidestepped the endogeneity issue by analyzing only firms which (at slightly different times) decided to certify: we studied the "when" not the "whether" question. One can imagine that different firms face different sales growth and mission trade-offs: this may affect the composition of the set of firms which certify. More generally, the analysis reported in this article has only begun to scratch the surface of the heterogeneity of firms in this regard. As well as size differences, future research could also investigate firm-level differences in social mission, organizational design, founding logics, and external market conditions, as well as adaptability capabilities. For instance, managers/entrepreneurs may choose to avoid certification if they do not believe it offers the competitive advantage of a strong separating equilibrium when contrasted against existing legitimacy or reputational advantages already held by a social purpose firm (Mishina, Block, & Mannor, 2012). A broad vista of research questions awaits researchers interested in discovering more about certification impacts—including the short- and long-run impacts on social missions.

Finally, we close with a few words about how the findings in this article may be used to improve the understanding of management and the functioning of organizations which are looking to adopt a pro-social certification. Our research suggests that founders of ventures contemplating B Corp certification need to be aware of the short-term adjustments in their growth trajectories; knowing what to expect and when to expect it can prove practically useful. For some organizations, this slowdown may be a price worth paying; but for others, it may simply stretch their financial viability to breaking point. A hard-headed evaluation of this trade-off should be made before a decision to seek B Lab certification is made.

Furthermore, B Lab certification does not merely involve one-off adjustments or re-organizations: it is intended to be recurrent. Once certified, B corporations file detailed annual reports; re-certification occurs every 2 years, encouraging ongoing monitoring of best practices and iterative improvements (Herrera, 2015). Hence, venture founders may want to anticipate ways of minimizing internal disruption to their organizations if they do decide to go ahead with certification. That may be as simple as deciding whether to advance, or postpone, the onset of the certification process, depending on the resources available and external pressures on the organization. For instance, firms may choose to defer certification until they are large enough to relax their attention-based constraints and more easily redeploy personnel without adverse impacts on the top line. Moreover, firms may seek to employ a strategy where they may seek to ramp up over time in a way that best suits their resource endowments.

Third parties such as B Lab also need to pay closer attention to the uneven distribution of costs and risks, and specifically on how the timing of assuming these costs and benefits may affect incoming members in the short and long term. Well-informed decisions about when and whether to certify could make or break an untold number of socially and financially valuable enterprises. B Lab may therefore do well to advise some of its more smaller and younger applicants to defer certification until they are better placed to accommodate the likely growth slowdown it entails. On the other hand, embedding good practices from the outset minimizes adjustment costs borne later on by companies which have to reorganize to meet certification criteria. This is just one of the many trade-offs which pervade the voluntary social and environmental certification domain.

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APPENDIX

TABLE A1
Correlation Matrix

	Rev. Growth	Emp. Growth	Age	Non-US	Benefit Corp.	Lag rev. Growth	Lag emp. Growth	B Score	B Worker	B Env.	B Com.
Revenue growth	1.00	—	—	—	—	—	—	—	—	—	—
Emp. growth	0.29	1.00	—	—	—	—	—	—	—	—	—
Age	−0.16	−0.21	1.00	—	—	—	—	—	—	—	—
Non-US	0.02	0.12	−0.14	1.00	—	—	—	—	—	—	—
Benefit corp.	0.00	−0.04	−0.18	−0.11	1.00	—	—	—	—	—	—
Lagged rev. growth	−0.23	−0.10	0.56	−0.10	0.01	1.00	—	—	—	—	—
Lagged emp. growth	−0.10	−0.10	0.55	−0.08	−0.04	0.79	1.00	—	—	—	—
B score	−0.10	−0.09	0.14	−0.16	0.29	0.03	−0.01	1.00	—	—	—
B worker	0.03	−0.01	0.14	−0.06	0.26	0.22	0.20	0.19	1.00	—	—
B environment	−0.15	−0.23	0.08	0.02	−0.10	0.16	0.01	0.19	−0.27	1.00	—
B community	0.01	0.08	−0.15	−0.04	0.12	−0.15	−0.10	0.41	0.05	−0.38	1.00
B governance	−0.01	0.02	0.02	0.06	0.09	0.00	−0.12	0.11	−0.10	−0.09	−0.08

TABLE A2
Difference-In-Difference Panel Regressions: Broad Control Group Sample Robustness Check

	Revenue Growth		Employment Growth	
	(1)	(2)	(3)	(4)
$I(i \in C)$	0.171*(0.091)	0.199**(0.090)	−0.026 (0.053)	0.008 (0.051)
$I(\tau = t + 1)$	0.063 (0.083)	0.056 (0.084)	−0.010 (0.045)	0.003 (0.045)
$I(i \in C) \times I(\tau = t + 1)$	−0.206**(0.106)	−0.191*(0.106)	0.033 (0.057)	0.027 (0.057)
Age in 2015	−0.004 (0.003)	−0.000 (0.004)	−0.003 (0.002)	−0.001 (0.002)
Year of latest B score/1,000	0.510***(0.120)	0.664***(0.245)	0.173***(0.029)	0.352***(0.125)
Non-US	−0.015 (0.098)	−0.028 (0.096)	−0.056 (0.059)	−0.064 (0.056)
Benefit corporation	0.052 (0.197)	0.006 (0.224)	−0.122 (0.110)	−0.178 (0.116)
Lagged log revenue	−0.059***(0.018)	−0.072***(0.019)	—	—
Lagged log employment	—	—	−0.046**(0.019)	−0.072***(0.019)
Industry dummies?	No	Yes	No	Yes
χ^2 (10) test of industry dummies	—	18.54**u	—	32.58***
R^2	0.10	0.18	0.09	0.22
Wald χ^2 (p value)	68.37***(0.00)	90.98***(0.00)	81.43***(0.00)	127.60***(0.00)
No. observations	238	238	248	248
No. groups	132	132	137	137
σ_u^2, ρ	0.21, 0.28	0.19, 0.24	0.17, 0.41	0.15, 0.33