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New Product Strategies and Firm Performance: CEO Optimism

ABSTRACT

We examine the role of CEO optimism in explaining firm performance associated with new product introductions. New product introducing firms with high levels of CEO optimism experience better announcement-period abnormal returns and long-term stock performance than introducers with moderate or low levels of CEO optimism. Changes in abnormal operating performance following new product announcements are also more favorable for firms with high-optimism CEOs than for firms with moderate-optimism or low-optimism CEOs. The results hold after controlling for other potential explanatory factors and accounting for endogeneity. The evidence highlights the importance of CEO optimism in assessing the valuation effect of corporate product strategies.

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New Product Strategies and Firm Performance: CEO Optimism

1. Introduction

Shareholders on average reap significantly positive abnormal stock returns when firms invest in new products (Chaney et al., 1991; Kelm et al., 1995; Chen & Ho, 1997; Chen et al., 2002; Chen et al., 2005; Chen, 2008; Chen et al., 2012). New products can create opportunities for differentiation and competitive advantage, and this can have a positive effect on firm earnings and shareholder value. The value of a new product announcement is more favorable for firms in more technologically based or high-concentration industries, for firms that make original-product or multiple-product announcements, for firms with better investment opportunities or higher R&D intensity, and for focused firms or first-moving firms in the marketplace (Chaney et al., 1991; Kelm et al., 1995; Chen & Ho, 1997; Lee et al., 2000; Chen et al., 2002; Chen, 2008). The converse is that new product introductions result in poorer value for larger firms, for firms with more free cash flow, for firms facing higher interest rates, and for firms competing in high-strategic interaction industries (Chaney et al., 1991; Kelm et al., 1995; Chen et al., 2002; Chen et al., 2012).

While the studies examining the shareholder value effect of corporate product strategies are insightful, they do not consider the role of CEO optimism, where CEO optimism is defined as the tendency of CEOs to think that they are better than they really are in terms of ability, judgment, or prospects for successful outcomes (see, e.g., Heaton, 2002; Malmendier & Tate, 2005, 2008; Malmendier et al., 2011). As people tend to be more optimistic about their performance on difficult rather than easy tasks (Griffin & Tversky, 1992), optimistic CEOs may be likely to engage in risky, challenging, and promising projects (Hirshleifer et al., 2012). New product development is risky and challenging, so one would expect CEO optimism to be important for such undertakings. Optimistic CEOs of firms introducing new products do not necessarily have a negative effect on firm value. They may in fact increase firm value, because optimistic CEOs are

likely to undertake risky but valuable innovations (Hirshleifer et al., 2012).

We examine the role of CEO optimism in determining the performance of firms announcing new product introductions. Firm performance is measured in terms of short-term and long-term stock performance and operating performance associated with the announcements. If optimistic CEOs tend to engage in risky but promising new product investment projects, new product strategies are likely to have a more favorable economic impact for introducing firms whose CEOs have a high level of optimism.

We examine a sample of 451 corporate new product announcements from 1993 through 2009. We find that firms introducing new products led by CEOs with high levels of optimism experience better announcement-period abnormal returns and long-term stock performance. Announcing firms with high-optimism CEOs exhibit an average two-day announcement-period abnormal return of 1.059%, which is significantly higher than the average abnormal return of 0.467% for firms with moderate-optimism CEOs and −0.065% for firms with low-optimism CEOs. The average five-year buy-and-hold abnormal return is 26.875% for firms with high-optimism CEOs compared to −0.608% for firms with moderate-optimism CEOs and 12.750% for firms with low-optimism CEOs. We also find more favorable changes in abnormal operating performance following new product announcements for firms with high levels of CEO optimism than for firms with moderate-optimism or low-optimism CEOs. These results hold even after we control for other potentially influential variables and account for endogeneity. Our overall findings suggest that the level of CEO optimism is important in assessing the valuation effect of firms' new product strategies.

This study is different from other studies that examine how CEO optimism affects R&D expenditures and patent activities (Galasso & Simcoe, 2011; Hirshleifer et al., 2012; Bereskin & Hsu, 2013; Chen et al., 2014). Kelm et al. (1995) highlight the importance of examining the valuation effects of specific investment projects. Kelm et al. (1995), Katila (2002), Katila and

Ahuja (2002), and Hall et al. (2005) also suggest that investors use different criteria when they value investments made during the innovation stage of R&D and patent activities and the commercialization stage (when new products are launched). While the determinants of firm performance associated with new product investments can differ from those associated with R&D spending and patent activities, earlier studies do not take into account the impact of CEO optimism. We aim to fill this gap by examining the role of CEO optimism in explaining the performance of firms announcing specific new products.

Our work also differs from Simon and Houghton (2003), who show that optimistic managers are more likely to introduce a pioneering product introduction that creates a distinct market category. First, they focus on the relation between managerial optimism and product newness, but they do not examine how CEO optimism affects firm performance associated with new product investments. Chaney et al. (1991), Kelm et al. (1995), Chen and Ho (1997), Chen et al. (2002), Chen et al. (2005), and Chen (2008) indicate that the economic value embodied in a new product investment may vary. New product investment does not necessarily create positive economic value. It may in fact have a negative economic impact if the investment is wasteful. Second, Simon and Houghton (2003) provide limited insight because they focus only on small companies in the computer industry. We examine new product investments in a comprehensive list of industries. Thus, we can investigate potentially significant differences in the relation between CEO optimism and firm performance associated with new product investments across different industries. Finally, Simon and Houghton's (2003) measure of managerial optimism is based on data from interviews and surveys and hence is noisy and less precise. Our primary measure of CEO optimism follows those of Malmendier and Tate (2005, 2008), Campbell et al. (2011), Malmendier et al. (2011), and Hirshleifer et al. (2012) and is based on stock option holding/exercise decisions.

In addition, a number of empirical studies have examined how CEO optimism affects such corporate investment decisions as capital expenditures and mergers and acquisitions (M&As).

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See, for example, Malmendier and Tate (2005) for capital expenditures; Cai and Vijh (2007), Billett and Qian (2008), Liu and Taffler (2008), Malmendier and Tate (2008), Ferris et al. (2013), and Kolasinski and Li (2013) for M&As, and Ben-David et al. (2013) for total investment, which is the sum of capital expenditures and M&As. While a large and growing body of literature has investigated the role of CEO optimism in explaining the valuation effect of capital expenditures and M&As, the performance impact of executive optimism on other important types of corporate investment decisions, such as new product investments, has so far escaped the attention of researchers. We attempt to fill this gap.

Finally, we complement a growing literature on the determinants and consequences of new product introductions (see, e.g., Chaney et al., 1991; Kelm et al., 1995; Chen & Ho, 1997; Lee et al., 2000; Chen et al., 2002; Chen et al., 2005; Chen, 2008; Chen et al., 2012; Lin & Chang, 2012; Hu et al., 2013; Ma, 2015; Hoefele, 2016). The current study suggests CEO optimism can affect firm value through new product introductions. In addition, few empirical studies have examined whether CEO optimism matters in new product introductions (e.g., Simon & Houghton, 2003; Simon & Shrader, 2012). We complement this stream of research by investigating the impact of CEO optimism on firm performance of new product introducers, both short-term and long-term. Previous new product introduction studies also mainly focus on survey data to measure CEO optimism, to the best of our knowledge; ours is the first study to use stock option holding/ exercise decisions of CEOs, and it covers more industries and a longer period. It also controls for the possible influence of endogeneity.

The paper is organized as follows. Section 2 describes data and methodology. Section 3 provides empirical results. Section 4 provides discussions and additional evidence. The final section offers conclusions.

2. Data and methodology

2.1. Sample selection

Following Chaney et al. (1991) and Chen et al. (2002), we collect an initial sample of announcements of new product introductions by firms listed on the New York Stock Exchange (NYSE) or the American Stock Exchange (AMEX) from the *Dow Jones News Retrieval Service* database.[1] Words or phrases and their synonyms commonly used to describe new product introductions are selected as keys for a database search routine. Examples are *introduce*, *new product*, *unveil*, *launch*, *received approval*, *to market*, *test market*, and *begin selling*. The announcement date is defined as the date of the publication in which the company's initial announcement appears. The sample period runs from January 1993 through December 2009. The sample period ends in December 2009 because we track long-term abnormal stock returns and operating performance following new product introductions.

We exclude new product announcements from the final sample in accordance with several criteria: (1) To avoid any confounding events that could distort the measurement of the valuation effects, we exclude announcements by firms that have made other announcements five days before and five days after the initial announcement date; (2) we exclude announcing firms if they do not have return data and financial information available from CRSP (Center for Research in Security Prices) and Compustat; (3) we exclude announcing firms if they do not have a CEO optimism measure available in the ExecuComp database; (4) we exclude announcing firms with missing values for control variables used in the regressions; and (5) we exclude announcements made by public utilities (Compustat SIC codes 4900–4999) or financial institutions (SIC codes 6000–6999). There are 451 new product announcements in the final sample.[2]

Table 1 provides the sample distribution by year of announcement and by two-digit SIC industry group as classified by Compustat. Panel A shows that the number of new product announcements fluctuates over time. Panel B shows that most of the announcements come from

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[1] While a sample from this data source may not represent all new products, it likely represents a sample of significant new product announcements that are more likely to have valuation impacts (Chaney et al., 1991; Chen et al., 2005).

[2] To address any possible problem associated with overlapping data, we also exclude repeat new product introductions in the announcement year or in the five-year post-introduction period. The results are similar.

three groups: chemicals and allied products (about 13.304%), industrial machinery and equipment (about 19.512%), and business services (about 16.851%). These three industry groups constitute about 50% of the total sample. Industrial machinery and equipment account for the single largest category of announcements (about 19.512% of the total sample).

[Insert Table 1 here]

2.2. Measuring CEO optimism

Malmendier and Tate (2005, 2008) and Malmendier et al. (2011) define CEOs as optimistic if they hold stock options that are more than 67% in the money (i.e., the stock price exceeds the exercise price by more than 67%).[3] To identify CEOs with relatively high optimism, we follow Campbell et al. (2011) and require CEOs to hold stock options that are more than 100% in the money. Campbell et al. (2011) argue that, to the extent that the 67% cutoff identifies optimistic CEOs, the 100% cutoff should identify the set of CEOs who are even more optimistic.

We compute option moneyness by first using Core and Guay's (2002) approximation method to estimate the average exercise price of the aggregated options. We then define the average percent moneyness of the options as the per-option realizable value divided by the estimated average exercise price (as in Campbell et al., 2011). To identify CEOs who chose to hold options that could have been exercised, we use the variables from ExecuComp that include only exercisable options.

To complement the high-optimism measure, we follow Campbell et al. (2011) and define a relatively low-optimism CEO as one who exercises stock options that are less than 30% in the money and does not hold other exercisable options that are greater than 30% in the money. We compute the percentage moneyness of the exercised options by first using Campbell et al.'s (2011)

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[3] Malmendier and Tate (2005, 2008), Hirshleifer et al. (2012), Banerjee et al. (2015), and Hribar and Yang (2016) indicate that inside information, signaling, board pressure, risk tolerance, risk underestimation, taxes, and dividends cannot explain the delay in the exercise of executive options among optimistic CEOs.

procedure to estimate a per-option value realized from exercising as the total value realized from exercising stock options divided by the number of options exercised. We then calculate the estimated average exercise price of the exercised options as the stock price at the fiscal year end minus the per-option value realized from exercising. The average percent moneyness of the exercised options is the per-option value realized from exercising divided by the estimated average exercise price.

Once low-optimism and high-optimism CEOs are defined, we classify CEOs as moderately optimistic if they hold and/or exercise options with moneyness between 30% and 100%. As noted by Campbell et al. (2011), under the three option-based definitions, it may not be possible to classify some CEOs as having low, moderate, or high optimism. Like Campbell et al. (2011), therefore, we omit unclassified CEOs.

2.3. Measuring short-term and long-term abnormal stock price performance

We measure short-term stock price responses to announcements of new product introductions using the two-day buy-and-hold abnormal return (BHAR) over the period from day –1 through day 0, where day 0 is defined as the initial announcement date. The two-day BHAR measures the difference in the two-day compound return between product-introducing firms and matching firms. We select matching firms in accordance with several criteria: (1) Matching firms must be listed on the same stock exchange as the product-introducing firm; (2) they must not have had a new product announcement in the five years before the product-introducing firm's announcement date;[4] and (3) they must be within the same size decile, book-to-market (B/M) quintile, and CEO type (a high, moderate, or low level of optimism) as the product-introducing firm. From all firms meeting the criteria, we then select five matching firms on the basis of the closest size and B/M ratio to the product-introducing firm (as in Lee, 1997;

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[4] There is no look-ahead bias in this restriction (Loughran & Vijh, 1997). We find similar results when we include firms with no new product announcement within the last five or the next five years, although this procedure may suffer from a look-ahead bias.

Chan et al., 2004; Chen & Wang, 2012). The average compound return of the five matching firms over the two-day announcement period is used as the benchmark.[5]

We measure post-new-product-introduction long-term abnormal returns using the BHAR method. We measure the abnormal return performance over the five-year period after the new product announcement. We calculate the BHAR relative to the matched control sample as described above.

2.4. Measuring long-term abnormal operating performance

Following John and Ofek (1995), Barber and Lyon (1996), Loughran and Ritter (1997), and Chen (2006), we measure the operating performance of each product-introducing firm using the ratio of earnings before interest and taxes (EBIT) to book value of assets.[6] We estimate abnormal operating performance as a product-introducing firm's operating performance minus its matched firm's operating performance. The procedure for choosing matched firms is similar to that of Loughran and Ritter (1997). That is, matching firms must be listed on the same stock exchange as the product-introducing firm and must not have had a new product announcement in the five years before the product-introducing firm's announcement date. From this universe, firms within the same industry (two-digit SIC codes) and with the same CEO type with asset size as of the end of the announcement year (year 0) between 25% and 200% of the product-introducing firm are ranked by their year 0 operating performance measure. The firm with the closest operating performance measure among these non-product-introducing firms is picked as the matching firm. We then compare the abnormal operating performance variable in year 0 with that in year +5 to measure the change in the firm's operating performance following the new product announcement.

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[5] Conclusions remain unchanged when we identify matching firms on the basis of size and B/M only, when we use five matched firms based on the closest CEO optimism measure to the announcing firm, or when we use only one control firm.

[6] We obtain similar results if EBIT is divided by cash-adjusted total assets (i.e., total assets minus cash and cash equivalents).

2.5. Control variables

We include several control variables suggested in the literature that may affect the performance of firms announcing new product introductions (Chaney et al., 1991; Kelm et al., 1995; Chen & Ho, 1997; Lee et al., 2000; Chen et al., 2002; Chen, 2008; Chen et al., 2012). Data on these control variables are obtained from Compustat, *Dow Jones News Retrieval*, and the U.S. Department of Commerce. To reduce the effects of a few extreme values, we winsorize all the variables at the first and 99th percentiles.

2.5.1. Announcing firms' characteristics

(1) *Investment opportunities*, estimated by a simple measure of Tobin's *q*: the ratio of the market to book value of the firm's assets, where the market value of assets is estimated as the book value of assets minus the book value of common equity plus the market value of common equity. The *q* variable is the average *q* ratio for the three fiscal years prior to the announcement of new product introductions.[7]

(2) *Free cash flow*, defined as operating income before depreciation minus interest expense, taxes, preferred dividends, and common dividends, divided by book value of total assets, for the fiscal year preceding the announcement of new product introductions.

(3) *Debt ratio,* measured by the ratio of the book value of long-term debt to the book value of total assets for the fiscal year prior to the announcement of new product introductions.

(4) *Firm size*, measured by the logarithm of the firm's book value of total assets for the fiscal year preceding the announcement.

(5) *Relative firm R&D intensity*, defined as the R&D intensity of a firm (measured as R&D per dollar of net sales) divided by its industry's R&D intensity for the fiscal year prior to the

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[7] A three-year average gives a better estimate of a firm's true *q* (e.g., Lang et al., 1989).   The results are similar when we use the *q* variable over the last year prior to the announcement.

announcement, where industry is defined by the four-digit primary SIC code in Compustat.[8] The industry R&D intensity is measured as the aggregate amount of R&D expense in the same four-digit SIC code divided by the aggregate number of net sales in the same four-digit SIC code. If a firm's R&D is missing, we follow the literature and set it equal to zero (e.g., Pinkowitz et al., 2006).[9]

(6) *Organizational form*, measured by a revenue-based Herfindahl index and calculated as the sum of the squares of each segment's revenue as a proportion of total revenue.

2.5.2. Industry characteristics

(1) *Industry concentration*, measured by the sum of the squared fraction of industry sales by all firms in the four-digit primary SIC industry for the fiscal year prior to the announcement.

(2) *Technological opportunities*, measured by industry R&D intensity and defined as R&D expenditures by all firms in the four-digit primary SIC industry divided by industry net sales.

(3) *Strategic interaction,* measured by a competitive strategy measure (CSM) and defined as the coefficient of correlation between: (a) the ratio of change in the announcing firm's quarterly net income to change in its quarterly net sales and (b) the change in the rest-of-industry quarterly net sales, over 28 quarters prior to the announcement quarter.

2.5.3. Product announcement characteristics and other control variables

Product announcement characteristics are identified using a structural content analysis on the news contents (as in Firth & Narayanan, 1996; Lee et al., 2000; Chen et al., 2002; Chen, 2008; Chen et al., 2012). A pilot study is conducted to extract the relevant keywords for later characterization. Two rounds of content analysis are carried out to ensure the appropriateness of the classification. *Multiple* equals one for multiple-product announcements and zero for single-product announcements. *Newness* equals one if the product is an original product and zero

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[8] Our conclusions are unchanged if industry classifications are based on three-digit NAICS codes, six-digit GICS codes, Fama and French (1997) 48 industries, and Hoberg and Phillips (2010) 500 industries.
[9] We obtain similar results in our regressions if we add a R&D missing dummy, a dummy variable which is equal to one if a firm's R&D is missing.

if it is an update. *Time* equals one if the announcing firm is the first mover (i.e., the first firm to announce the introduction of a new product in the industry) and zero otherwise. *Announcement frequency* is the number of new product announcements made by an announcing firm within 12 months preceding the announcement date.[10] *Interest rates* are measured by the average of the 90-day Treasury bill rates for the announcement year.

2.6. Summary statistics

Table 2 reports information on several variables used in this study. Panel A shows the number of different types of CEOs. In our sample, we have 147 high-optimism CEOs, 282 moderate-optimism CEOs, and 22 low-optimism CEOs. Panel B reports the summary statistics of the sample. For the overall sample, the average and median two-day BHARs for the firms announcing new products are 0.006 and 0.002, both statistically significant at the 1% level based on a *t*-test and a Wilcoxon signed-rank test. Thus, the shareholders of our sample firms on average experience significant announcement effects associated with new product introductions, similar to those found in prior studies. Table 2 also shows that the mean and median five-year BHARs are 0.090 and −0.086, both statistically insignificantly different from zero at conventional levels. That is, for the sample as a whole there is no evidence of long-term abnormal stock performance following new product introductions, consistent with findings in Akhigbe (2002) and Sorescu and Spanjol (2008). Table 2 further shows that new product announcers experience mean and median changes in abnormal operating performance of 0.032 and 0.023 over the five-year post-introduction period, both statistically significant at the 1% level. Thus, shareholders of our sample firms on average experience significant improvements in operating performance following new product introductions, consistent with the evidence of Xin et al. (2008).

[Insert Table 2 here]

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[10] We obtain similar results if we measure announcement frequency by the number of new product announcements over the 17-year sample period.

3. Empirical analyses

3.1. Analysis of stock price performance and operating performance for announcing firms based on CEO optimism

We perform univariate tests of the relation between CEO optimism and the stock price and operating performance of firms introducing new products. We split the whole sample into three CEO optimism categories to examine whether firms with relatively high-optimism CEOs perform differently from firms with moderate or low levels of CEO optimism. For firms with high-optimism CEOs than for firms with moderate-optimism or low-optimism CEOs, we expect better firm performance associated with new product strategies, as measured by stock price reactions to new product announcements and changes in abnormal operating performance following the announcements.

3.1.1. Stock price performance

Table 3 presents the initial stock price reactions to corporate new product introduction announcements. We use *t*-tests and Wilcoxon signed-rank tests to test the hypotheses that the means and medians in the three subsamples are equal to zero. Differences in means and medians are assessed using a *t*-test and a Kruskal-Wallis test.

[Insert Table 3 here]

Panel A compares the two-day BHAR between high-optimism and moderate-optimism groups. The mean and median two-day BHARs of the high-optimism group are 1.059% and 0.459%, both statistically significant at the 1% level. The mean and median two-day BHARs of the moderate-optimism group are 0.467% and 0.178%, also both statistically significant at the 1% level. The mean and median differences between the announcement returns for the high-optimism and moderate-optimism groups are 0.592% and 0.281%, statistically significant at the 5% level or

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better. The results indicate that firms introducing new products with high levels of CEO optimism experience better announcement-period abnormal returns than introducers with moderate levels of CEO optimism.

Panel B shows no significant differences in mean and median two-day BHARs between moderate-optimism and low-optimism groups. The mean and median two-day BHARs of the low-optimism group are −0.065% and −0.231%, both statistically insignificant at conventional levels. The mean and median differences between the announcement returns for the low-optimism and moderate-optimism groups are −0.532% and −0.409%, both statistically insignificant at conventional levels.

The overall findings in Table 3 indicate more favorable initial stock price reactions to new product announcements for introducing firms with high levels of CEO optimism. Firms introducing new products with high-optimism CEOs tend to enjoy better announcement effects than introducers with moderate or low levels of CEO optimism. The results support the notion that high-optimism CEOs of firms introducing new products create higher value for their shareholders because they are more likely to undertake risky but valuable product innovation.

In Table 4, we use five-year BHARs to examine the long-term abnormal stock performance of corporate new product announcements in the three subsamples. The results are similar if we measure long-term abnormal stock performance using the Fama and French (1993) three-factor model, the Carhart (1997) four-factor model, the Fama and French (2015) five-factor model, and the Daniel et al. (1997) characteristic adjustment method. To save space, we do not report them here.

[Insert Table 4 here]

Panel A compares five-year BHARs between high-optimism and moderate-optimism groups. The mean and median five-year BHARs of the high-optimism group are 26.875% and 1.942%,

statistically significant at the 5% and 10% levels, respectively. The mean and median five-year

BHARs of the moderate-optimism group are −0.608% (statistically insignificant at conventional

levels) and −17.869% (statistically significant at the 5% level). The mean and median differences

between the five-year BHARs for the high-optimism and moderate-optimism groups are 27.483%

and 19.811%, both statistically significant at the 5% level. The results indicate that firms

introducing new products with high levels of CEO optimism experience better long-term stock

performance than introducers with moderate levels of CEO optimism.

Panel B shows no significant differences in mean and median five-year BHARs between

moderate-optimism and low-optimism groups. The mean and median five-year BHARs of the

low-optimism group are 12.750% and 0.273%, both statistically insignificant at conventional

levels. The mean and median differences between the announcement returns for the low-optimism

and moderate-optimism groups are 13.358% and 18.142%, both statistically insignificant at

conventional levels.

The findings in Table 4 indicate more favorable long-term stock price reactions to new

product announcements for introducers with high levels of CEO optimism. New product

introducers with high-optimism CEOs exhibit better long-term stock performance than

introducers with moderate or low levels of CEO optimism. The results again support the notion

that high-optimism CEOs of new product introducers tend to create more value for shareholders

because they are more likely to undertake risky but promising product innovation.

3.1.2. Operating performance

Table 5 examines changes in abnormal operating performance after a corporate new product

announcement in the three subsamples. We measure the operating performance of each firm

announcing a new product using EBIT divided by book value of assets. The results are similar if

we measure operating performance as the ratios of EBIT to sales, net income (NI) to sales, or NI

to book value of assets. To save space, we do not report these results here.

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[Insert Table 5 here]

Panel A compares changes in five-year abnormal operating performance following new product announcements for high-optimism and moderate-optimism groups. The mean and median changes in five-year abnormal operating performance of the high-optimism group are 5.815% and 3.865%, both statistically significant at the 1% level. The mean and median changes in five-year abnormal operating performance of the moderate-optimism group are 1.604% and 1.990%, statistically significant at the 5% level or better. The mean and median differences between the change in five-year abnormal operating performance for the high-optimism and moderate-optimism groups are 4.211% and 1.875%, both statistically significant at the 1% level. The results indicate that new product announcers with high levels of CEO optimism experience greater improvements in long-term abnormal operating performance than announcers with moderate levels of CEO optimism.

Panel B shows no significant differences in changes in five-year abnormal operating performance after new product introductions for moderate-optimism and low-optimism groups. The mean and median changes in five-year abnormal operating performance of the low-optimism group are 5.342% (statistically significant at the 5% level) and 0.508% (statistically insignificant at conventional levels). The mean and median differences between the change in five-year abnormal operating performance for the low-optimism and moderate-optimism groups are 3.738% and −1.482%, both statistically insignificant at conventional levels.

The findings in Table 5 show more favorable changes in abnormal operating performance following new product announcements for firms with high levels of CEO optimism than for firms with moderate-optimism or low-optimism CEOs. New product introducers with high-optimism CEOs exhibit greater improvements in long-term operating performance than introducers with moderate or low levels of CEO optimism. The results again suggest that new product introductions by high-optimism CEOs result in better firm performance because high-optimism

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CEOs are likely to engage in risky, challenging, and promising projects.

3.2. Cross-sectional regression analyses

We present cross-sectional regression analyses of initial and long-term stock price reactions to new product announcements and those of the change in post-introduction operating performance measure from year 0 to year +5, respectively. We follow Campbell et al. (2011) and use separate indicator variables to indicate high-optimism and low-optimism CEOs (*High-optimism* and *Low-optimism*), respectively. Moderately optimistic CEOs are the omitted group and thus serve as the baseline. The coefficients on the *High-optimism* and *Low-optimism* indicator variables indicate the valuation effects of corporate product strategies compared to those for firms with moderately optimistic CEOs. We compute *t*-values with heteroskedasticity-consistent standard errors (White, 1980) and clustered at the firm level to address the possible bias in standard errors as suggested by Petersen (2009).

Model 1 includes the *High-optimism* and *Low-optimism* indicator variables as the only explanatory variables. Model 2 includes all the control variables as the explanatory variables except the *High-optimism* and *Low-optimism* indicator variables. Model 3 combines Model 1 and Model 2.

3.2.1. Association between announcement-period abnormal returns and CEO optimism

Table 6 reports cross-sectional regression analyses of two-day (−1, 0) announcement-period BHARs. Model 1 shows that the coefficient on *High-optimism* is positive and statistically significant at the 1% level, while the coefficient on *Low-optimism* is negative but statistically insignificant at conventional levels. The results suggest that firms introducing new products with high-optimism CEOs experience better announcement-period abnormal returns than introducers with moderate-optimism or low-optimism CEOs.

[Insert Table 6 here]

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Model 2 shows that *Firm size*, *Free cash flow*, *Relative firm R&D intensity*, and *Newness* are statistically significantly at the 10% level or better. That is, the announcement-period abnormal return of new product introductions is more favorable for firms with higher R&D intensity and for firms that make original-product announcements, and it is poorer for larger firms and for firms with more free cash flow. The results are consistent with findings in previous studies.

Model 3 shows that after controlling for other potentially influential variables, new product introducers with high-optimism CEOs still exhibit better announcement-period abnormal returns than introducers with moderate-optimism or low-optimism CEOs. The coefficient on *High-optimism* is significantly positive at the 1% level, while the coefficient on *Low-optimism* is statistically insignificant at conventional levels. The relations between the announcement effect and the control variables remain unchanged, except for *Interest rates* (marginally negative at the 10% level). The overall results in Table 6 support the notion that the level of CEO optimism is an important consideration in assessing the short-term valuation impact of corporate product strategies.

3.2.2. Association between long-term stock performance and CEO optimism

Table 7 reports cross-sectional regression analyses of long-term stock price reactions to new product announcements, where the dependent variable is the five-year BHAR. Model 1 shows that the coefficient on *High-optimism* is positive and statistically significant at the 5% level, while the coefficient on *Low-optimism* is also positive but statistically insignificant at conventional levels. The results suggest that new product introducers with high-optimism CEOs experience better long-term abnormal returns than introducers with moderate-optimism or low-optimism CEOs. Model 2 shows that *Organizational form*, *Technological opportunities*, and *Time* are significantly positive at the 10% level or better. The long-term stock performance of a new product introduction is more favorable for focused firms, firms in more technologically based

industries, and first-moving firms in the marketplace.

[Insert Table 7 here]

Model 3 shows that after controlling for other potential explanatory factors, new product introducers with high-optimism CEOs still experience better long-term stock price reactions than introducers with moderate-optimism or low-optimism CEOs. The coefficient on *High-optimism* remains significantly positive at the 5% level, while the coefficient on *Low-optimism* remains statistically insignificant at conventional levels. The relations between long-term stock performance and the control variables remain essentially unchanged. The overall evidence in Table 7 again supports the notion that the level of CEO optimism is important in determining the long-term valuation impact of new product introductions.

3.2.3. Association between changes in operating performance and CEO optimism

Table 8 reports cross-sectional regression analyses of changes in five-year abnormal operating performance following new product announcements. Model 1 shows that the coefficient on *High-optimism* is positive and statistically significant at the 1% level, while the coefficient on *Low-optimism* is also positive but statistically insignificant at conventional levels. The results suggest that new product introducers with high-optimism CEOs experience greater improvements in operating performance than those with moderate-optimism or low-optimism CEOs. Model 2 shows more favorable post-introduction operating performance for firms with better investment opportunities or higher R&D intensity and first-moving firms in the marketplace, and it is poorer for larger firms and for firms with more free cash flow.

[Insert Table 8 here]

Model 3 shows that after controlling for other potentially influential factors, new product

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introducers with high-optimism CEOs still exhibit greater improvements in post-introduction operating performance than introducers with moderate-optimism or low-optimism CEOs. The coefficient on *High-optimism* remains significantly positive at the 1% level, while the coefficient on *Low-optimism* remains statistically insignificant at conventional levels. The relations between long-term operating performance and the control variables remain unchanged, except for *Investment opportunities* and *Relative firm R&D intensity*, which now lose their significance. The overall findings in Table 8 indicate that the level of CEO optimism is important in assessing the long-term operating performance of corporate new product strategies.

4. Discussion and additional evidence

4.1. Survival bias

One limitation of our option-based optimism measures is related to the survival bias. As we do not have detailed information regarding CEO stock option holdings, we follow Campbell et al. (2011) and Hirshleifer et al. (2012) in using the average moneyness of their stock option holdings to construct the measures of CEO optimism. Most stock options are granted at the money, so the optimism measures themselves are affected by stock returns after the stock option grant date (i.e., the optimism measures reflect a firm's history). A firm with a great product to introduce, for example, may have rising stock prices, so the stock option is in the money, while a firm with a poor product to introduce may experience a stock decline, so its stock option is not in the money.

As our stock option data do not reflect the date of option grant, we use a method similar to Hirshleifer et al. (2012) that takes into account the historical movement of stock prices. We control for the prior one-year buy-and-hold stock return relative to the new product announcement period (*Prior one-year return*). As a robustness check, we also replace *Prior one-year return* by the cumulative stock returns over a CEO's tenure before the new product announcement period (*Prior return over tenure*), where data on CEO tenure are obtained from ExecuComp. Table 9 presents the regression analyses of firm performance associated with new

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product introductions by adding *Prior one-year return* in Panel A and *Prior return over tenure* in Panel B. To save space, we do not report coefficient estimates for the intercept and other control variables. Columns 1 through 3 present the results for short-term stock price response, long-term stock performance, and long-term operating performance, respectively. Both Panels A and B reveal similar results after accounting for the potential effects of past stock returns. That is, we continue to see more favorable firm performance associated with new product strategies for firms with high-optimism CEOs than for firms with moderate-optimism or low-optimism CEOs. The coefficients on *Prior one-year return* and *Prior return over tenure* are not consistently statistically significant across regression models.

[Insert Table 9 here]

4.2. Different horizon lengths of long-term performance

Our long-term firm performance measures are based on five years after a new product announcement. This might lead to compounded effects, as many events take place in five years. To assess the robustness of our results, we also use one-year, two-year, and three-year horizons to measure long-term firm performance subsequent to new product announcements. Table 10 presents the regression results for long-term stock performance in Panel A and long-term operating performance in Panel B. Again, for brevity we do not report coefficient estimates for the intercept and other control variables. Both Panels A and B show that our main conclusions remain unchanged when we use shorter horizon lengths to measure the long-term performance of firms announcing new product introductions.

[Insert Table 10 here]

4.3. Significance of new product launch

While our regression analyses have taken into account the potential effects of product

announcement characteristics (i.e., product newness, single-product or multiple-product announcement, entry timing, and announcement frequency), there remains a concern about the significance of new product launch. The iPhone, for example, was first launched by Apple Inc. in 2007 when *BusinessWeek* named it one of the most important products of the year. Thus, the iPhone, as an extremely significant event for Apple, had great implication for Apple's performance. To better characterize the significance of a new product launch, we use *BusinessWeek*'s list of the best or most important products of the year, reported every year from 1998 through 2007. We create a dummy variable, *Significant product,* that equals one if the new product launched by a firm is on *BusinessWeek*'s list of the best or most important products of the year, and zero otherwise. We also define *Significant product* by adding the *Time* magazine list of the best products of the year, reported only between 1993 and 1995.

Table 11 presents the regression analyses of firm performance associated with new product introductions by adding *High-optimism × Significant product*, *Low-optimism × Significant product*, and *Significant product*, where the measure of *Significant product* is based on *BusinessWeek* in Panel A and based on both *BusinessWeek* and *Time* in Panel B. There are fewer observations because of data availability. We do not report coefficient estimates for the intercept and other control variables. Both Panels A and B show significantly positive coefficients on *High-optimism × Significant product*. That is, the more significant a new product launch, the greater the impact of a high-optimism CEO on firm performance is. Both panels also show that the coefficients on *High-optimism* remain significantly positive. Table 11 further indicates that the coefficients on *Low-optimism* and *Low-optimism × Significant product* are all statistically insignificant. The coefficients on *Significant product* are significantly positive for both short-term and long-term stock performance, and are positive but statistically insignificant for long-term operating performance.

[Insert Table 11 here]

4.4. Endogeneity

In Tables 6 through 8, we have documented a significantly positive relation between *High-optimism* and firm performance associated with new product introductions. The measure of CEO optimism, however, is likely to be correlated with other unobservable variables, which is problematic for identification. We therefore follow Deng et al. (2013) and Benmelech and Frydman (2015) and estimate a two-stage least squares (2SLS) regression to deal with the omitted variable bias.

To perform the 2SLS regression, it is important to find an instrumental variable that is related to CEO optimism but is uncorrelated with the error term in the regression analyses of firm performance. One such instrument documented in the literature is the age of a CEO (*CEO age*) (see, e.g., Crawford & Stankov, 1996; Palia, 2001; Bruine de Bruin et al., 2012; Ho et al., 2016). Conducting a series of cognitive tests for younger and older adults, Crawford and Stankov (1996) find that older adults show more overconfidence than younger adults. Bruine de Bruin et al. (2012) also suggest that, for demanding jobs, the relationship between age and the degree of confidence is positive. Extending their logic, for demanding jobs like that of CEO, older people behave more overconfidently than younger people. Taken together, *CEO age* is positively related to CEO overconfidence. For the exclusion restriction related to a suitable instrument, there is no economic rationale as to why *CEO age* should have a direct impact on firm performance. We therefore use *CEO age* as our instrument for *High-optimism*, where data on *CEO age* are obtained from ExecuComp.

The 2SLS procedure is performed as follows. In the first stage, we perform a logistic regression and use *CEO age* to instrument the endogenous *High-optimism* variable.[11] In the second stage, we use the fitted value of *High-optimism* derived from the first stage to perform the regression analyses of the valuation impact of corporate new product strategies. Table 12 presents the results. Column 1 reports the first-stage results. Consistent with Ho et al. (2016), *CEO age* is

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[11] We obtain similar results if we use an ordinary least squares (OLS) regression in the first stage.

significantly positively related to *High-optimism*. Columns 2 through 4 report the results from the second-stage regressions of short-term stock price response, long-term stock performance, and long-term operating performance against the fitted value of *High-optimism* and other variables. Consistent with our previous results, the coefficients on the fitted value of *High-optimism* are all significantly positive for the three performance measures. The coefficients on *Low-optimism* remain statistically insignificant. Thus, our results hold even after taking into account the potential endogeneity bias.

[Insert Table 12 here]

5. Conclusion

This study examines the role of CEO optimism in explaining firm performance associated with new product strategies. Using a sample of 451 corporate new product announcements from 1993 to 2009, we find that announcing firms with high levels of CEO optimism experience better announcement-period abnormal returns and long-term stock performance than announcers with moderate-optimism or low-optimism CEOs. We also find more favorable changes in abnormal operating performance following new product announcements for firms with high levels of CEO optimism than for firms with moderate-optimism or low-optimism CEOs. The results hold even after controlling for other potential explanatory factors and accounting for endogeneity. The overall evidence suggests that the level of CEO optimism is an important consideration in assessing the valuation effect of corporate new product introductions.

References

Akhigbe, A. (2002). New product innovations, information signalling and industry competition. *Applied Financial Economics*, *12*, 371-378.

Banerjee, S., Humphery-Jenner, M., & Nanda, V. (2015). Restraining overconfident CEOs through improved governance: Evidence from the Sarbanes-Oxley Act. *Review of Financial Studies*, *28*, 2812-2858.

Barber, B. M., & Lyon, J. D. (1996). Detecting abnormal operating performance: The empirical power and specification of test statistics. *Journal of Financial Economics*, *41*, 359-399.

Ben-David, I., Graham, J. R., & Harvey, C. R. (2013). Managerial miscalibration. *Quarterly Journal of Economics*, *128*, 1547-1584.

Benmelech, E., & Frydman, C. (2015). Military CEOs. *Journal of Financial Economics*, *117*, 43-59.

Bereskin, F. L., & Hsu, P. H. (2013). New dogs new tricks: CEO turnover, CEO-related factors, and innovation performance. SSRN Working Paper.

Billett, M. T., & Qian, Y. (2008). Are overconfident CEOs born or made? Evidence of self-attribution bias from frequent acquirers. *Management Science*, *54*, 1037-1051.

Bruine de Bruin, W., Parker, A. M., & Fischhoff, B. (2012). Explaining adult age differences in decision-making competence. *Journal of Behavioral Decision Making*, *25*, 352-360.

Cai, J., & Vijh, A. M. (2007). Incentive effects of stock and option holdings of target and acquirer CEOs. *Journal of Finance*, *62*, 1891-1933.

Campbell, T. C., Gallmeyer, M., Johnson, S. A., Rutherford, J., & Stanley, B. W. (2011). CEO optimism and forced turnover. *Journal of Financial Economics*, *101*, 695-712.

Carhart, M. M. (1997). On persistence in mutual fund performance. *Journal of Finance*, *52*, 57-82.

Chan, K., Ikenberry, D., & Lee, I. (2004). Economic sources of gain in stock repurchases. *Journal of Financial and Quantitative Analysis*, *39*, 461-479.

Chaney, P. K., Devinney, T. M., & Winer, R. S. (1991). The impact of new product introductions on the market value of firms. *Journal of Business*, *64*, 573-610.

Chen, S. S. (2006). The economic impact of corporate capital expenditures: Focused firms versus diversified firms. *Journal of Financial and Quantitative Analysis*, *41*, 341-355.

Chen, S. S. (2008). Organizational form and the economic impact of corporate new product strategies. *Journal of Business Finance and Accounting*, *35*, 71-101.

Chen, S. S., Chen, P. J., & Lin, W. C. (2012). The impact of strategic interaction on earnings expectations associated with corporate product strategies. *Journal of Banking and Finance*, *36*, 66-77.

Chen, S. S., & Ho, K. W. (1997). Market response to product-strategy and capital-expenditure announcements in Singapore: Investment opportunities and free cash flow. *Financial Management*, *26*, 82-88.

Chen, S. S., Ho, K. Y., & Ho, P. H. (2014). CEO overconfidence and long-term performance following R&D increases. *Financial Management*, *43*, 245-269.

Chen, S. S., Ho, K. W., & Ik, K. H. (2005). The wealth effect of new product introductions on industry rivals. *Journal of Business*, *78*, 969-996.

Chen, S. S., Ho, K. W., Ik, K. H., & Lee, C. F. (2002). How does strategic competition affect firm values? A study of new product announcements. *Financial Management*, *31*, 67-84.

Chen, S. S., & Wang, Y. (2012). Financial constraints and share repurchases. *Journal of Financial Economics*, *105*, 311-331.

Core, J., & Guay, W. (2002). Estimating the value of employee stock option portfolios and their sensitivities to price and volatility. *Journal of Accounting Research*, *40*, 613-630.

Crawford, J. D., & Stankov, L. (1996). Age differences in the realism of confidence judgements: A calibration study using tests of fluid and crystallized intelligence. *Learning and Individual Differences*, *8*, 83-103.

Daniel, K., Grinblatt, M., Titman, S., & Wermers, R. (1997). Measuring mutual fund performance

with characteristic-based benchmarks. *Journal of Finance*, *52*, 1035-1058.

Deng, X., Kang, J. K., & Low, B. S. (2013). Corporate social responsibility and stakeholder value maximization: Evidence from mergers. *Journal of Financial Economics*, *110*, 87-109.

Fama, E. F., & French, K. R. (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, *33*, 3-56.

Fama, E. F., & French, K. R. (1997). Industry costs of capital. *Journal of Financial Economics*, *43*, 153-193.

Fama, E. F., & French, K. R. (2015). A five-factor asset pricing model. *Journal of Financial Economics*, *116*, 1-22.

Ferris, S. P., Jayaraman, N., & Sabherwal, S. (2013). CEO overconfidence and international merger and acquisition activity. *Journal of Financial and Quantitative Analysis*, *48*, 137-164.

Firth, R. W., & Narayanan, V. K. (1996). New product strategies of large, dominant product manufacturing firms: An exploratory analysis. *Journal of Product Innovation Management*, *13*, 334-347.

Galasso, A., & Simcoe, T. S. (2011). CEO overconfidence and innovation. *Management Science*, *57*, 1469-1484.

Griffin, D., & Tversky, A. (1992). The weighing of evidence and the determinants of confidence. *Cognitive Psychology*, *24*, 411-435.

Hall, B. H., Jaffe, A., & Trajtenberg, M. (2005). Market value and patent citations. *Rand Journal of Economics*, *36*, 16-38.

Heaton, J. B. (2002). Managerial optimism and corporate finance. *Financial Management*, *31*, 33-45.

Hirshleifer, D., Low, A., & Teoh, S. H. (2012). Are overconfident CEOs better innovators? *Journal of Finance*, *67*, 1457-1498.

Ho, P. H., Huang, C. W., Lin, C. Y., & Yen, J. F. (2016). CEO overconfidence and financial crisis: Evidence from bank lending and leverage. *Journal of Financial Economics*, *120*, 194-209.

Hoberg, G., & Phillips, G. (2010). Product market synergies and competition in mergers and acquisitions: A text-based analysis. *Review of Financial Studies*, *23*, 3773-3811.

Hoefele, A. (2016). Endogenous product differentiation and international R&D policy. *International Review of Economics and Finance*, *41*, 335-346.

Hribar, P., & Yang, H. (2016). CEO overconfidence and management forecasting. *Contemporary Accounting Research*, *33*, 204-227.

Hu, C., Jiang, W., & Lee, C. F. (2013). Managerial flexibility and the wealth effect of new product introductions. *Review of Quantitative Finance and Accounting*, *41*, 273-294.

John, K., & Ofek, E. (1995). Asset sales and increase in focus. *Journal of Financial Economics*, *37*, 105-126.

Katila, R. (2002). New product search over time: Past ideas in their prime? *Academy of Management Journal*, *45*, 995-1010.

Katila, R., & Ahuja, G. (2002). Something old, something new: A longitudinal study of search behavior and new product introduction. *Academy of Management Journal*, *45*, 1183-1194.

Kelm, K. M., Narayanan, V. K., & Pinches, G. E. (1995). Shareholder value creation during R&D innovation and commercialization stages. *Academy of Management Journal*, *38*, 770-786.

Kolasinski, A. C., & Li, X. (2013). Can strong boards and trading their own firm's stock help CEOs make better decisions? Evidence from acquisitions by overconfident CEOs. *Journal of Financial and Quantitative Analysis*, *48*, 1173-1206.

Lang, L. H. P., Stulz, R., & Walkling, R. A. (1989). Managerial performance, Tobin's Q, and the gains from successful tender offers. *Journal of Financial Economics*, *24*, 137-154.

Lee, H., Smith, K. G., Grimm, C. M., & Schomburg, A. (2000). Timing, order and durability of new product advantages with imitation. *Strategic Management Journal*, *21*, 23-30.

Lee, I. (1997). Do firms knowingly sell overvalued equity? *Journal of Finance*, *52*, 1439-1466.

Lin, W. C., & Chang, S. C. (2012). Corporate governance and the stock market reaction to new product announcements. *Review of Quantitative Finance and Accounting*, *39*, 273-291.

Liu, Y., & Taffler, R. (2008). CEO overconfidence in M&A decision making and its impact on firm performance. University of Edinburgh Working Paper.

Loughran, T., & Ritter, J. R. (1997). The operating performance of firms conducting seasoned equity offerings. *Journal of Finance*, *52*, 1823-1850.

Loughran, T., & Vijh, A. M. (1997). Do long-term shareholders benefit from corporate acquisitions? *Journal of Finance*, *52*, 1765-1790.

Ma, Y. (2015). The product cycle hypothesis: The role of quality upgrading and market size. *International Review of Economics and Finance*, *39*, 326-336.

Malmendier, U., & Tate, G. (2005). CEO overconfidence and corporate investment. *Journal of Finance*, *60*, 2661-2700.

Malmendier, U. & Tate, G. (2008). Who makes acquisitions? CEO overconfidence and the market's reaction. *Journal of Financial Economics*, *89*, 20-43.

Malmendier, U., Tate, G., & Yan, J. (2011). Overconfidence and early-life experiences: The effect of managerial traits on corporate financial policies. *Journal of Finance*, *66*, 1687-1733.

Palia, D. (2001). The endogeneity of managerial compensation in firm valuation: A solution. *Review of Financial Studies*, *14*, 735-764.

Petersen, M. A. (2009). Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies*, *22*, 435-480.

Pinkowitz, L., Stulz, R., & Williamson, R. (2006). Does the contribution of corporate cash holdings and dividends to firm value depend on governance? A cross-country analysis. *Journal of Finance*, *61*, 2725-2751.

Simon, M., & Houghton, S. M. (2003). The relationship between overconfidence and the introduction of risky products: Evidence from a field study. *Academy of Management Journal*, *46*, 139-149.

Simon, M., & Shrader, R. C. (2012). Entrepreneurial actions and optimistic overconfidence: The role of motivated reasoning in new product introductions. *Journal of Business Venturing*, *27*,

29

291-309.

Sorescu, A. B., & Spanjol, J. (2008). Innovation's effect on firm value and risk: Insights from consumer packaged goods. *Journal of Marketing*, *72*, 114-132.

White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica*, *48*, 817-838.

Xin, J. Y., Yeung, A. C. L., & Cheng, T. C. E. (2008). Radical innovations in new product development and their financial performance implications: An event study of US manufacturing firms. *Operations Management Research*, *1*, 119-128.

Table 1

Sample distribution of new product announcements. This table summarizes the sample distribution of corporate new product announcements by year in Panel A and by industry group in Panel B. The sample is collected from the *Dow Jones News Retrieval Service* database. We exclude new product announcements from the final sample in accordance with several criteria: (1) To avoid any confounding events that could distort the measurement of the valuation effects, we exclude announcements by firms that have made other announcements five days before and five days after the initial announcement date; (2) we exclude announcing firms if they do not have return data and financial information available from CRSP and Compustat; (3) we exclude announcing firms if they do not have a CEO optimism measure available in the ExecuComp database; (4) we exclude announcing firms with missing values for control variables used in the regressions; and (5) we exclude announcements made by public utilities (Compustat SIC codes 4900–4999) or financial institutions (SIC codes 6000–6999). There are 451 announcements made by firms listed on the NYSE or AMEX from 1993 through 2009. The two-digit SIC code is the first two-digit industry code as classified by Compustat.

Panel A: Number of new product introductions by calendar year		
Year	Number of announcements	Percentage of sample
1993	34	7.539%
1994	46	10.200%
1995	77	17.073%
1996	42	9.313%
1997	35	7.761%
1998	38	8.426%
1999	22	4.878%
2000	32	7.095%
2001	0	0.000%
2002	0	0.000%
2003	7	1.552%
2004	10	2.217%
2005	18	3.991%
2006	23	5.100%
2007	14	3.104%
2008	14	3.104%
2009	39	8.647%
Total	451	100.000%

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Table 1-*Continued*

Panel B: Number of new product introductions by industry			
Two-digit SIC	Industry group	Number of announcements	Percentage of sample
20	Food and kindred products	42	9.313%
21	Tobacco products	4	0.887%
23	Apparel and other textile products	2	0.443%
26	Paper and allied products	7	1.552%
27	Printing and publishing	11	2.439%
28	Chemicals and allied products	60	13.304%
29	Petroleum and coal products	1	0.222%
30	Rubber and miscellaneous plastics products	6	1.330%
32	Stone, clay, and glass products	1	0.222%
34	Fabricated metal products	6	1.330%
35	Industrial machinery and equipment	88	19.512%
36	Electronic and other electric equipment	38	8.426%
37	Transportation equipment	17	3.769%
38	Instruments and related products	24	5.322%
39	Miscellaneous manufacturing industries	3	0.665%
45	Transportation by air	10	2.217%
48	Communications	39	8.647%
53	General merchandise stores	2	0.443%
56	Apparel and accessory stores	2	0.443%
57	Furniture and home furnishings stores	1	0.222%
58	Eating and drinking places	6	1.330%
59	Miscellaneous retail	2	0.443%
73	Business services	76	16.851%
78	Motion pictures	1	0.222%
79	Amusement and recreation services	2	0.443%

Table 2

Descriptive statistics. This table reports summary statistics for the variables in this study. Panel A reports the distribution of the various CEO types: high-optimism, moderate-optimism, and low-optimism. The definitions of CEOs are detailed in Section 2.2. Panel B reports the dependent and independent variables used in this paper. We measure short-term stock price responses to announcements of new product introductions using the two-day buy-and-hold abnormal return (BHAR) over the period from day –1 through day 0, where day 0 is defined as the initial announcement date. The two-day BHAR measures the difference in the two-day compound return between product-introducing firms and matching firms. Matching firms are identified according to the procedure described in Section 2.3. We measure post-new-product-introduction long-term abnormal returns using the BHAR method. We measure the abnormal return performance over the five-year period after the new product announcement. We calculate the BHAR relative to the matched control sample. We measure the operating performance of each product-introducing firm using the ratio of earnings before interest and taxes to book value of assets. We estimate abnormal operating performance as a product-introducing firm's operating performance minus its matched firm's operating performance. The procedure to choose matched firms is described in Section 2.4. We then compare the abnormal operating performance variable in year 0 with that in year +5 to measure the change in the firm's operating performance following the new product announcement. *Investment opportunities* are estimated by a simple measure of Tobin's q, where the q variable is the average q ratio for the three fiscal years prior to the announcement of new product introductions. *Free cash flow* is defined as operating income before depreciation minus interest expense, taxes, preferred dividends, and common dividends, divided by book value of total assets, for the fiscal year preceding the announcement of new product introductions. *Debt ratio* is measured by the ratio of the book value of long-term debt to the book value of total assets for the fiscal year prior to the announcement of new product introductions. *Firm size* is measured by the logarithm of the firm's book value of total assets for the fiscal year preceding the announcement. *Relative firm R&D intensity* is defined as the R&D intensity of a firm (measured as R&D per dollar of net sales) divided by its industry's R&D intensity for the fiscal year prior to the announcement, where industry is defined by the four-digit primary SIC code in Compustat. The industry R&D intensity is measured as the aggregate amount of R&D expense in the same four-digit SIC code divided by the aggregate number of net sales in the same four-digit SIC code. *Organizational form* is measured by a revenue-based Herfindahl index and calculated as the sum of the squares of each segment's revenue as a proportion of total revenue. *Industry concentration* is measured by the sum of the squared fraction of industry sales by all firms in the four-digit primary SIC industry for the fiscal year prior to the announcement. *Technological opportunities* are measured by industry R&D intensity and defined as R&D expenditures by all firms in the four-digit primary SIC industry divided by industry net sales. *Strategic interaction* is measured by a competitive strategy measure (CSM) and defined as the coefficient of correlation between: (a) the ratio of change in the announcing firm's quarterly net income to change in its quarterly net sales and (b) the change in the rest-of-industry quarterly net sales, over 28 quarters prior to the announcement quarter. *Multiple* equals one for multiple-product announcements and zero for single-product announcements. *Newness* equals one if the product is an original product and zero if it is an update. *Time* equals one if the announcing firm is the first mover (i.e., the first firm to announce the introduction of a new product in the industry) and zero otherwise. *Announcement frequency* is the number of new product announcements made by an announcing firm within 12 months preceding the announcement date. *Interest rates* are measured by the average of the 90-day Treasury bill rates for the announcement year.

Panel A: Number of CEOs by CEO optimism			
CEO optimism measure	High-optimism	Moderate-optimism	Low-optimism
Number of CEOs	147	282	22

Panel B: Descriptive statistics				
Variable	N	Mean	Median	Standard deviation
Short-term stock price response	451	0.006	0.002	0.026
Long-term stock price response	451	0.090	-0.086	1.399
Long-term operating performance	451	0.032	0.023	0.115
Investment opportunities	451	2.372	1.990	1.336
Free cash flow	451	0.106	0.106	0.053
Debt ratio	451	0.152	0.127	0.121
Firm size	451	9.568	9.655	1.474
Relative firm R&D intensity	451	1.279	1.021	2.046
Organizational form	451	0.729	0.987	0.309
Industry concentration	451	0.216	0.183	0.167
Technological opportunities	451	0.053	0.038	0.048
Strategic interaction	451	0.022	0.017	0.173
Multiple	451	0.220	0.000	0.414
Newness	451	0.769	1.000	0.422
Time	451	0.461	0.000	0.499
Announcement frequency	451	1.506	0.000	2.640
Interest rates (%)	451	4.101	4.727	1.671

Table 3

Two-day announcement-period abnormal returns based on CEO optimism. This table examines initial stock price reactions to corporate new product introduction announcements, where the whole sample is divided into three subsamples based on CEO optimism: high-optimism, moderate-optimism, and low-optimism. Short-term stock price responses are measured using the two-day buy-and-hold abnormal return (BHAR) over the period from day –1 through day 0, where day 0 is defined as the initial announcement date. The two-day BHAR measures the difference in the two-day compound return between product-introducing firms and matching firms. Matching firms are identified in accordance with the procedure described in Section 2.3. New product introducers with high-, moderate-, and low-optimism CEOs are as defined in Section 2.2. We use *t*-tests and Wilcoxon signed-rank tests to test the hypotheses that the means and medians are equal to zero. Differences in means and medians are assessed using a *t*-test and a Kruskal-Wallis test. The symbol configurations ***, **, and * represent 1%, 5%, and 10% significance levels respectively.

Panel A: High-optimism vs. moderate-optimism			
	High-optimism	Moderate-optimism	Difference
Mean two-day BHAR	1.059%***	0.467%***	0.592%**
Median two-day BHAR	0.459%***	0.178%***	0.281%***
N	147	282	
Panel B: Low-optimism vs. moderate-optimism			
	Low-optimism	Moderate-optimism	Difference
Mean two-day BHAR	-0.065%	0.467%***	-0.532%
Median two-day BHAR	-0.231%	0.178%***	-0.409%
N	22	282	

Table 4

Long-term stock performance based on CEO optimism. This table examines the five-year buy-and-hold abnormal return (BHAR) for corporate new product introducers, where the whole sample is divided into three subsamples according to CEO optimism: high-optimism, moderate-optimism, and low-optimism. We calculate the BHAR relative to the matched control sample. Matching firms are identified in accordance with the procedure described in Section 2.3. New product introducers with high-, moderate-, and low-optimism CEOs are as defined in Section 2.2. We use *t*-tests and Wilcoxon signed-rank tests to test the hypotheses that the means and medians are equal to zero. Differences in means and medians are assessed using a *t*-test and a Kruskal-Wallis test. The symbol configurations ***, **, and * represent 1%, 5%, and 10% significance levels respectively.

Panel A: High-optimism vs. moderate-optimism			
	High-optimism	Moderate-optimism	Difference
Mean five-year BHAR	26.875%**	-0.608%	27.483%**
Median five-year BHAR	1.942%*	-17.869%**	19.811%**
N	147	282	
Panel B: Low-optimism vs. moderate-optimism			
	Low-optimism	Moderate-optimism	Difference
Mean five-year BHAR	12.750%	-0.608%	13.358%
Median five-year BHAR	0.273%	-17.869%**	18.142%
N	22	282	

Table 5

Changes in abnormal operating performance for announcing firms based on CEO optimism. This table examines the change in five-year abnormal operating performance subsequent to new product announcements, where the whole sample is divided into three subsamples according to CEO optimism: high-optimism, moderate-optimism, and low-optimism. We measure the operating performance of each product-introducing firm using the ratio of earnings before interest and taxes to book value of assets. We estimate abnormal operating performance as a product-introducing firm's operating performance minus its matched firm's operating performance. The procedure to choose matched firms is described in Section 2.4. We then compare the abnormal operating performance variable in year 0 with that in year +5 to measure the change in the firm's abnormal operating performance following the new product announcement. New product introducers with high-, moderate-, and low-optimism CEOs are as defined in Section 2.2. We use t-tests and Wilcoxon signed-rank tests to test the hypotheses that the means and medians are equal to zero. Differences in means and medians are assessed using a t-test and a Kruskal-Wallis test. The symbol configurations ***, **, and * represent 1%, 5%, and 10% significance levels respectively.

Panel A: High-optimism vs. moderate-optimism			
	High-optimism	Moderate-optimism	Difference
Mean change	5.815%***	1.604%**	4.211%***
Median change	3.865%***	1.990%***	1.875%***
N	147	282	
Panel B: Low-optimism vs. moderate-optimism			
	Low-optimism	Moderate-optimism	Difference
Mean change	5.342%**	1.604%**	3.738%
Median change	0.508%	1.990%***	-1.482%
N	22	282	

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Table 6

Regressions of two-day announcement-period abnormal returns. This table reports cross-sectional regression analyses of initial stock price reactions to corporate new product introduction announcements. Short-term stock price responses are measured using the two-day buy-and-hold abnormal return (BHAR) over the period from day –1 through day 0, where day 0 is defined as the initial announcement date. The two-day BHAR measures the difference in the two-day compound return between product-introducing firms and matching firms. Matching firms are identified in accordance with the procedure described in Section 2.3. New product introducers with high-, moderate-, and low-optimism CEOs are as defined in Section 2.2. Separate indicator variables, *High-optimism* and *Low-optimism*, are used to indicate high-optimism and low-optimism CEOs, respectively. Moderately optimistic CEOs, the omitted group, serve as the baseline. All the other variables are as defined in Table 2. The *t*-values in parentheses are computed with heteroskedasticity-consistent standard errors and clustered at the firm level. The symbol configurations ***, **, and * represent 1%, 5%, and 10% significance levels respectively.

Variable	Model 1	Model 2	Model 3
High-optimism	0.006***		0.006***
	(2.677)		(2.949)
Low-optimism	-0.004		-0.008
	(-1.017)		(-1.347)
Firm size		-0.002**	-0.002**
		(-2.214)	(-2.287)
Investment opportunities		0.002	0.001
		(0.918)	(0.654)
Free cash flow		-0.086*	-0.093**
		(-1.871)	(-2.108)
Debt ratio		-0.003	-0.002
		(-0.234)	(-0.147)
Relative firm R&D intensity		0.001*	0.002**
		(1.701)	(2.031)
Organizational form		0.001	-0.001
		(0.278)	(-0.271)
Strategic interaction		-0.001	-0.001
		(-0.119)	(-0.127)
Industry concentration		0.012	0.009
		(1.347)	(1.134)
Technological opportunities		0.035	0.029
		(1.321)	(1.143)
Multiple		0.001	0.001
		(0.058)	(0.045)
Newness		0.007***	0.007***
		(2.899)	(2.783)
Time		-0.003	-0.004
		(-1.124)	(-1.344)
Interest rates		-0.002	-0.003*
		(-1.564)	(-1.821)
Announcement frequency		0.001	0.001
		(1.531)	(0.538)
Intercept	0.005***	0.028*	0.032*
	(2.747)	(1.725)	(1.821)
N	451	451	451
Adjusted R^2	0.010	0.035	0.056

Table 7

Regressions of long-term stock performance. This table reports cross-sectional regression analyses of the five-year buy-and-hold abnormal return (BHAR) for corporate new product introducers. We calculate the BHAR relative to the matched control sample. Matching firms are identified in accordance with the procedure described in Section 2.3. New product introducers with high-, moderate-, and low-optimism CEOs are as defined in Section 2.2. Separate indicator variables, *High-optimism* and *Low-optimism*, are used to indicate high-optimism and low-optimism CEOs, respectively. Moderately optimistic CEOs, the omitted group, serve as the baseline. All the other variables are as defined in Table 2. The *t*-values in parentheses are computed with heteroskedasticity-consistent standard errors and clustered at the firm level. The symbol configurations ***, **, and * represent 1%, 5%, and 10% significance levels respectively.

Variable	Model 1	Model 2	Model 3
High-optimism	0.344**		0.271**
	(2.376)		(2.074)
Low-optimism	0.321		0.474
	(1.373)		(1.527)
Firm size		0.001	0.001
		(0.028)	(0.017)
Investment opportunities		-0.017	-0.007
		(-0.254)	(-0.103)
Free cash flow		0.959	0.172
		(0.719)	(0.117)
Debt ratio		-0.312	-0.240
		(-0.464)	(-0.353)
Relative firm R&D intensity		-0.024	-0.045
		(-0.841)	(-1.343)
Organizational form		0.606***	0.554***
		(2.717)	(2.689)
Strategic interaction		0.151	0.185
		(0.364)	(0.458)
Industry concentration		0.195	0.218
		(0.413)	(0.459)
Technological opportunities		1.241*	1.262*
		(1.835)	(1.761)
Multiple		-0.087	-0.074
		(-0.567)	(-0.473)
Newness		-0.131	-0.137
		(-0.823)	(-0.876)
Time		0.247*	0.224*
		(1.788)	(1.705)
Interest rates		-0.029	-0.027
		(-0.416)	(-0.358)
Announcement frequency		0.019	0.010
		(1.063)	(0.454)
Intercept	-0.070	-0.486	-0.480
	(-0.807)	(-0.798)	(-0.775)
N	451	451	451
Adjusted R^2	0.010	0.026	0.046

Table 8

Regressions of changes in abnormal operating performance. This table reports cross-sectional regression analyses of changes in five-year abnormal operating performance subsequent to new product announcements. We measure the operating performance of each product-introducing firm using the ratio of earnings before interest and taxes to book value of assets. We estimate abnormal operating performance as a product-introducing firm's operating performance minus its matched firm's operating performance. The procedure to choose matched firms is described in Section 2.4. We then compare the abnormal operating performance variable in year 0 with that in year +5 to measure the change in the firm's abnormal operating performance following the new product announcement. New product introducers with high-, moderate-, and low-optimism CEOs are as defined in Section 2.2. Separate indicator variables, *High-optimism* and *Low-optimism*, are used to indicate high-optimism and low-optimism CEOs, respectively. Moderately optimistic CEOs, the omitted group, serve as the baseline. All the other variables are as defined in Table 2. The *t*-values in parentheses are computed with heteroskedasticity-consistent standard errors and clustered at the firm level. The symbol configurations ***, **, and * represent 1%, 5%, and 10% significance levels respectively.

Variable	Model 1	Model 2	Model 3
High-optimism	0.041***		0.047***
	(3.656)		(3.987)
Low-optimism	0.038		0.035
	(1.368)		(1.502)
Firm size		-0.013***	-0.013***
		(-4.407)	(-4.638)
Investment opportunities		0.009*	0.008
		(1.844)	(1.566)
Free cash flow		-0.531***	-0.604***
		(-3.787)	(-4.298)
Debt ratio		-0.043	-0.034
		(-0.834)	(-0.685)
Relative firm R&D intensity		0.006*	0.005
		(1.689)	(1.478)
Organizational form		-0.019	-0.029
		(-1.031)	(-1.576)
Strategic interaction		-0.021	-0.030
		(-0.703)	(-1.049)
Industry concentration		0.028	0.031
		(1.101)	(1.215)
Technological opportunities		0.030	0.031
		(0.225)	(0.242)
Multiple		-0.006	-0.003
		(-0.523)	(-0.264)
Newness		-0.016	-0.017
		(-1.340)	(-1.447)
Time		0.023**	0.018*
		(2.174)	(1.703)
Interest rates		0.003	0.002
		(0.799)	(0.443)
Announcement frequency		-0.001	-0.002
		(-0.167)	(-1.077)
Intercept	0.016**	0.197***	0.205***
	(2.402)	(3.880)	(4.166)
N	451	451	451
Adjusted R^2	0.026	0.071	0.102

Table 9

Regressions of firm performance after controlling for past stock returns. This table reports cross-sectional regression analyses of firm performance associated with new product introductions after controlling for the potential effects of past stock returns. Short-term market reactions, long-term stock performance, and long-term operating performance are as defined in Table 2. New product introducers with high-, moderate-, and low-optimism CEOs are as defined in Section 2.2. Separate indicator variables, *High-optimism* and *Low-optimism*, are used to indicate high-optimism and low-optimism CEOs, respectively. Moderately optimistic CEOs, the omitted group, serve as the baseline. The past stock return is measured by the one-year buy-and-hold stock return before the new product announcement period (*Prior one-year return*) in Panel A and measured by the cumulative stock returns over a CEO's tenure before the announcement period (*Prior return over tenure*) in Panel B. To save space, we do not report coefficient estimates for the intercept and other control variables, which include *Firm size*, *Investment opportunities*, *Free cash flow*, *Debt ratio*, *Relative firm R&D intensity*, *Organizational form*, *Strategic interaction*, *Industry concentration*, *Technological opportunities*, *Multiple*, *Newness*, *Time*, *Interest rates*, and *Announcement frequency*. The *t*-values in parentheses are computed with heteroskedasticity-consistent standard errors and clustered at the firm level. The symbol configurations ***, **, and * represent 1%, 5%, and 10% significance levels respectively.

	Firm performance measure		
Variable	Short-term stock price response	Long-term stock performance	Long-term operating performance
Panel A: One-year lagged stock returns			
High-optimism	0.007***	0.273**	0.050***
	(3.992)	(2.003)	(3.980)
Low-optimism	-0.009	0.423	0.037
	(-1.514)	(1.468)	(1.541)
Prior one-year return	0.008*	0.114	-0.030*
	(1.793)	(0.483)	(-1.739)
Intercept & Controls	Yes	Yes	Yes
N	451	451	451
Adjusted R^2	0.061	0.047	0.105
Panel B: Cumulative stock returns over CEO tenure			
High-optimism	0.006***	0.272**	0.051***
	(2.993)	(2.001)	(3.981)
Low-optimism	-0.008	0.414	0.034
	(-1.395)	(1.376)	(1.522)
Prior return over tenure	0.007*	0.134	-0.032*
	(1.721)	(0.593)	(-1.752)
Intercept & Controls	Yes	Yes	Yes
N	451	451	451
Adjusted R^2	0.060	0.047	0.106

Table 10

Regressions of long-term firm performance using different horizon lengths. This table reports cross-sectional regression analyses of long-term firm performance subsequent to new product announcements using three different horizon lengths: one, two, and three years. Long-term stock performance in Panel A and long-term operating performance in Panel B are as defined in Table 2. New product introducers with high-, moderate-, and low-optimism CEOs are as defined in Section 2.2. Separate indicator variables, *High-optimism* and *Low-optimism*, are used to indicate high-optimism and low-optimism CEOs, respectively. Moderately optimistic CEOs, the omitted group, serve as the baseline. To save space, we do not report coefficient estimates for the intercept and other control variables, which include *Firm size*, *Investment opportunities*, *Free cash flow*, *Debt ratio*, *Relative firm R&D intensity*, *Organizational form*, *Strategic interaction*, *Industry concentration*, *Technological opportunities*, *Multiple*, *Newness*, *Time*, *Interest rates*, and *Announcement frequency*. The *t*-values in parentheses are computed with heteroskedasticity-consistent standard errors and clustered at the firm level. The symbol configurations *** and ** represent 1% and 5% significance levels respectively.

	Horizon length		
Variable	One year	Two years	Three years
Panel A: Long-term stock performance			
High-optimism	0.127**	0.221**	0.243**
	(2.089)	(2.091)	(2.110)
Low-optimism	0.047	0.058	0.186
	(0.247)	(0.212)	(0.721)
Intercept & Controls	Yes	Yes	Yes
N	451	451	451
Adjusted R^2	0.047	0.044	0.051
Panel B: Long-term operating performance			
High-optimism	0.021**	0.038***	0.040**
	(2.052)	(3.792)	(2.129)
Low-optimism	0.014	0.015	0.024
	(1.041)	(0.740)	(1.040)
Intercept & Controls	Yes	Yes	Yes
N	451	451	451
Adjusted R^2	0.204	0.170	0.121

Table 11

Regressions of firm performance after accounting for the significance of new product launch.

This table reports cross-sectional regression analyses of firm performance associated with new product introductions after taking into account the significance of new product launch. Short-term market reactions, long-term stock performance, and long-term operating performance are as defined in Table 2. New product introducers with high-, moderate-, and low-optimism CEOs are as defined in Section 2.2. Separate indicator variables, *High-optimism* and *Low-optimism*, are used to indicate high-optimism and low-optimism CEOs, respectively. Moderately optimistic CEOs, the omitted group, serve as the baseline. In Panel A, we create a dummy variable, *Significant product,* that equals one if the new product launched by a firm is on *BusinessWeek*'s list of the best or most important products of the year from 1998 through 2007, and zero otherwise. In Panel B, we define *Significant product* by adding the list of the best products of the year from *Time* magazine from 1993 through 1995. To save space, we do not report coefficient estimates for the intercept and other control variables, which include *Firm size*, *Investment opportunities*, *Free cash flow*, *Debt ratio*, *Relative firm R&D intensity*, *Organizational form*, *Strategic interaction*, *Industry concentration*, *Technological opportunities*, *Multiple*, *Newness*, *Time*, *Interest rates*, and *Announcement frequency*. The *t*-values in parentheses are computed with heteroskedasticity-consistent standard errors and clustered at the firm level. There are fewer observations because of data availability. The symbol configurations ***, **, and * represent 1%, 5%, and 10% significance levels respectively.

Variable	Firm performance measure		
	Short-term stock price response	Long-term stock performance	Long-term operating performance
Panel A: *BusinessWeek*			
High-optimism	0.005**	0.202*	0.030*
	(2.001)	(1.877)	(1.932)
Low-optimism	-0.005	0.189	0.015
	(-1.384)	(1.431)	(1.236)
High-optimism	0.027**	0.579**	0.062**
$\times$ *Significant product*	(2.151)	(2.054)	(2.070)
Low-optimism	0.001	0.002	0.001
$\times$ *Significant product*	(0.751)	(0.234)	(0.146)
Significant product	0.010*	0.082*	0.039
	(1.727)	(1.806)	(1.571)
Intercept & Controls	Yes	Yes	Yes
N	164	164	164
Adjusted R^2	0.138	0.109	0.131
Panel B: *BusinessWeek* and *Time*			
High-optimism	0.004**	0.211*	0.025*
	(2.085)	(1.926)	(1.731)
Low-optimism	-0.006	0.218	0.018
	(-1.514)	(1.141)	(1.113)
High-optimism	0.019**	0.455**	0.063**
$\times$ *Significant product*	(2.143)	(2.146)	(2.074)
Low-optimism	0.001	0.001	0.001
$\times$ *Significant product*	(0.013)	(0.117)	(0.051)
Significant product	0.008*	0.076*	0.035
	(1.731)	(1.806)	(1.331)
Intercept & Controls	Yes	Yes	Yes
N	321	321	321
Adjusted R^2	0.140	0.096	0.112

Table 12

Regressions of firm performance: two-stage least squares. This table reports two-stage least squares (2SLS) regression analyses of firm performance associated with new product introductions. Short-term market reactions, long-term stock performance, and long-term operating performance are as defined in Table 2. New product introducers with high-, moderate-, and low-optimism CEOs are as defined in Section 2.2. Separate indicator variables, *High-optimism* and *Low-optimism*, are used to indicate high-optimism and low-optimism CEOs, respectively. Moderately optimistic CEOs, the omitted group, serve as the baseline. In the first stage, we perform a logistic regression and use *CEO age* to instrument the endogenous *High-optimism* variable. In the second stage, we use the fitted value of *High-optimism* derived from the first stage to perform the regression analyses of the valuation impact of corporate new product strategies. All the other variables are as defined in Table 2. The *t*-values in parentheses are computed with heteroskedasticity-consistent standard errors and clustered at the firm level. The symbol configurations ***, **, and * represent 1%, 5%, and 10% significance levels respectively.

Variable	First stage *High-optimism*	Second stage Short-term stock price response	Second stage Long-term stock performance	Second stage Long-term operating performance
High-optimism fitted		0.016***	0.354***	0.156***
		(4.086)	(3.332)	(3.278)
Low-optimism		-0.011	0.269	0.027
		(-1.343)	(1.291)	(1.130)
CEO age	0.089***			
	(3.384)			
Firm size	-0.144	-0.002**	0.152	-0.011***
	(-1.407)	(-2.015)	(1.472)	(-3.644)
Investment opportunities	0.188*	0.002	-0.167	0.002
	(1.718)	(0.701)	(-1.002)	(0.175)
Free cash flow	7.603**	-0.081*	0.341	-0.686***
	(2.344)	(-1.871)	(1.348)	(-3.711)
Debt ratio	0.601	-0.006	-0.246	-0.063
	(0.427)	(-0.340)	(-0.264)	(-1.112)
Relative firm R&D intensity	-0.068	0.002*	-0.092	0.005
	(-1.183)	(1.783)	(-1.244)	(1.470)
Organizational form	1.096**	-0.001	0.721**	-0.025
	(2.381)	(-0.130)	(2.054)	(-1.477)
Strategic interaction	-0.470	-0.002	0.240	-0.043
	(-0.615)	(-0.261)	(0.447)	(-1.165)
Industry concentration	1.466**	0.010	0.404	0.007
	(2.037)	(1.359)	(0.754)	(0.201)
Technological opportunities	4.659	0.023	1.235*	0.038
	(1.456)	(0.743)	(1.728)	(0.218)
Multiple	-0.487*	0.001	-0.483	-0.005
	(-1.699)	(0.503)	(-1.468)	(-0.231)
Newness	0.223	0.005***	-0.067	-0.016
	(0.788)	(3.298)	(-0.351)	(-1.267)
Time	-0.001	-0.002	0.226*	0.018*
	(-0.005)	(-1.059)	(1.703)	(1.707)
Interest rates	0.253***	-0.002	-0.172	0.003
	(2.614)	(-0.903)	(-0.954)	(0.413)
Announcement frequency	0.238***	0.001	0.245	-0.006
	(5.152)	(0.218)	(1.454)	(-1.308)
Intercept	-5.354**	0.029	-0.520	0.211***
	(-2.451)	(1.414)	(-0.754)	(3.071)
N	451	451	451	451
Pseudo R^2/Adjusted R^2	0.155	0.057	0.049	0.105
Log-likelihood	-235.689	—	—	—

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Highlights

- We examine how CEO optimism affects the performance of firms announcing new product introductions.
- Introducers with high-optimism CEOs experience better announcement effects than those with moderate-optimism or low-optimism CEOs.
- Introducers with high-optimism CEOs experience better long-term stock performance than those with moderate-optimism or low-optimism CEOs.
- Introducers with high-optimism CEOs experience greater improvements in operating performance than those with moderate-optimism or low-optimism CEOs.
- The results hold after controlling for other potential explanatory factors and accounting for endogeneity.