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The Positive Announcement-Period Returns of Equity Carveouts: Asymmetric Information or Divestiture Gains?*

Using a sample of 336 carveouts that occurred in the period 1980–97, this article shows that the announcement-period returns increase with the ratio of subsidiary to nonsubsidiary assets. This finding contradicts the asymmetric information model proposed by Nanda. Additional tests relate the returns to the following divestiture-based explanations proposed by Schipper and Smith and others: refocusing of the parent and subsidiary operations, financing of new and existing projects, reducing the complexity of stock valuation, and enabling an eventual spinoff or third-party acquisition. The combined evidence rejects the asymmetric information hypothesis and supports the divestiture gains hypothesis of carveouts.

I. Introduction

Stock issues are important news. The market reaction depends on whether a firm sells more of its own stock in a seasoned equity offering (SEO) or the stock of a wholly owned subsidiary in an equity carveout. Masulis and Korwar (1986) examine a sample of 690 SEOs by industrial firms during the period 1963–80 and measure an average announcement-period excess return of –3.25%.[1] Schipper and Smith (1986) examine a sample of 76 carveouts during the period 1963–84 and measure an excess return of 1.83%.

The negative market reaction to SEOs is usually explained by asymmetric information. In the Myers and Majluf (1984) model, managers issue stock when they have private information that their stock is overvalued. Rational investors thus lower the stock price on the announcement of an SEO. The reasons behind

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1. Asquith and Mullins (1986), Mikkelson and Partch (1986), and Schipper and Smith (1986) also document similar announcement-period returns for different samples of SEOs.

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the positive market reaction to carveouts are more varied. Schipper and Smith offer one set of reasons based on divestiture gains, such as obtaining separate financing for the subsidiary's investment projects, designing more efficient compensation contracts for the subsidiary's managers, and the creation of pure-play stocks. This list can be expanded to include other reasons associated with divestitures accomplished by spinoffs and asset sales, such as refocusing of the parent and subsidiary operations, and using proceeds to retire debt. Nanda (1991) offers another set of reasons based on asymmetric information. He argues that carveouts should be interpreted as not only issues of subsidiary stock but also as nonissues of parent stock. He extends the Myers and Majluf model to show that, on average, firms will issue subsidiary stock when the parent assets are undervalued and the subsidiary assets are overvalued. Rational investors raise the stock price as the positive information concerning larger parent assets dominates the negative information concerning smaller subsidiary assets.

Empirical verification of whether the positive announcement-period returns of carveouts reflect asymmetric information or divestiture gains, or both, has been scarce. Slovin, Sushka, and Ferraro (1995) provide some indirect evidence of asymmetric information. They show that rival firms in the subsidiary's industry earn an excess return of –1.1%, presumably because they share some of the subsidiary's overvaluation. However, their evidence of industry effects is based on a small sample of 36 carveouts, and it does not hold up for the rival firms in the parent's industry. Allen and McConnell (1998) provide some evidence of divestiture gains. They argue that the positive announcement-period returns arise when financially distressed firms use carveout proceeds to pay down on debt. Two other studies provide further evidence in support of divestiture gains, but they use issue-date returns or long-term returns after issue. Hand and Skantz (1997) find that the parent stocks earn negative returns during a 5-day period starting with the issue date, and they suggest that these returns reverse the earlier announcement-period returns. They question the rationality of positive announcement-period returns, but they also suggest that these may occur as investors confuse carveouts with spinoffs. Vijh (1999) examines 3-year returns of parent and subsidiary stocks after issue. He finds some evidence that the long-term returns are related to the number of business segments before carveout, which he uses as a proxy for divestiture gains arising from the refocusing of parent and subsidiary operations.

This article examines the announcement-period returns of a sample of 336 carveouts completed during the period 1980–97 to explore whether the returns are likely to be caused by asymmetric information or by the previously cited explanations of wealth gains from divestitures. I develop and test a prediction of Nanda's asymmetric information model, which states that the returns should decrease as the ratio of subsidiary assets to nonsubsidiary assets increases and should eventually become negative as this ratio exceeds one. My results

are significant in the opposite direction of this prediction. On average, the announcement-period excess returns equal 4.92% when the precarveout subsidiary assets are greater than the nonsubsidiary assets, and they equal 1.19% when the subsidiary assets are smaller than the nonsubsidiary assets. The difference equals 3.73%, which is significant at the 1% level. The positive correlation between the excess returns and the ratio of subsidiary to nonsubsidiary assets is inconsistent with the asymmetric information hypothesis. It is simultaneously consistent with the divestiture gains hypothesis. Several studies of spinoffs and asset sales show that their wealth gains increase with such ratio.

Given the lack of support for the asymmetric information hypothesis, I turn my attention to a detailed analysis of the divestiture gains hypothesis. In particular, I subdivide the divestiture gains hypothesis into the following more specific components: the refocusing strategy hypothesis; the financing strategy hypothesis; the investment strategy hypothesis; the complexity, undervaluation, and pure play hypothesis; the managerial incentives hypothesis; and other miscellaneous hypotheses.

The refocusing strategy hypothesis is based on previous evidence by Comment and Jarrell (1995), John and Ofek (1995), Daley, Mehrotra, and Sivakumar (1997), and Desai and Jain (1999), who show that improving focus through spinoffs and asset sales leads to higher firm value. In support of this hypothesis, I first show that the parent and subsidiary firms in carveouts belong to different industry sectors just as often as in spinoffs and asset sales and that this difference is associated with higher announcement-period returns. Second, my methodology includes a detailed scrutiny of the *Wall Street Journal* reported motives for carveouts. I find that a majority of the *Wall Street Journal* reports mention lack of fit or focus and a desire to restructure operations by divesting subsidiary assets as a reason for carveout. Third, more than a third of all carveouts are followed by a complete spinoff or a third-party acquisition. The market reacts more positively to this last subset of cases on the announcement of carveout and on the subsequent announcement of spinoff or acquisition.

The financing strategy hypothesis and the investment strategy hypothesis both suggest that raising equity capital is a primary reason for carveouts. However, the financing strategy hypothesis suggests that capital is required to repay the parent's or the subsidiary's debt or for other financial contingencies, whereas the investment strategy hypothesis suggests that capital is required to finance the subsidiary's new projects or upgrade existing projects. The financing strategy hypothesis is based on Lang, Poulsen, and Stulz (1995) and Allen and McConnell (1998), who find that financially distressed parent firms raise capital by asset sales or equity carveouts and that the market reacts positively when this capital is used to repay debt. The investment strategy hypothesis is based on McConnell and Muscarella (1985), who find that the announcement of a capital expenditures plan results in a positive market

reaction, and on Mikkelson and Partch (1986), who find that the announcement of an SEO leads to a less negative market reaction if proceeds are used to finance capital expenditures.

My evidence supports both the financing strategy and investment strategy hypotheses. The *Wall Street Journal* reports mention both reasons frequently, and cases where such reasons are mentioned result in more positive announcement-period returns. Stronger evidence in support of these two hypotheses is provided by the subsequent financing and investment activities of parent and subsidiary firms relative to industry- and size-matched control firms. The parent firms issue a greater number of SEOs than control firms over a 3-year period after carveout. This is surprising because parent firms receive nearly a third of the carveout proceeds represented by the sale of secondary shares and some part of the remaining proceeds that subsidiary firms use to repay debt owed to parent firms. One may imagine that, after raising substantial carveout capital, at least the subsidiary firms would stay away from equity markets for some time. However, the difference between the number of SEOs by subsidiary firms and control firms is even greater than between parent firms and control firms.

Investigation of capital expenditures provides more evidence on the financing strategy hypothesis and the investment strategy hypothesis. The parent firms have significantly lower capital expenditures than the control firms during the following 3 years, which suggests that the capital raised in carveouts and subsequent SEOs may be used to repay debt or meet other financial contingencies, as is suggested by the financing strategy hypothesis. The subsidiary firms have higher capital expenditures than the control firms, which, combined with the evidence on subsequent SEOs, supports the investment strategy hypothesis.

The evidence on subsequent SEOs by subsidiary firms reveals another similarity between spinoffs and carveouts. Aron (1991) has a model in which managers who receive stock-based compensation after spinoffs create firm value by exploiting investment opportunities. Her model predicts that new investment in spinoffs in the period immediately following spinoff will be higher than before spinoff and higher than in firms of similar characteristics that are not spun off. Krishnaswami and Subramaniam (1999) show that this prediction holds for spinoffs, and this article shows that it holds for carveouts. In many cases, it appears that spinoffs and carveouts differ only in whether financing is raised at birth or soon afterward.

The complexity, undervaluation, and pure play hypothesis is based on Schipper and Smith (1986), Vijh (1994), and Krishnaswami and Subramaniam (1999). The separation of unlike parent and subsidiary assets into independently traded units helps markets in understanding their combined value. It also attracts investors interested in only the subsidiary assets. Both factors increase the combined firm value. I find that many *Wall Street Journal* reports mention these reasons for carveouts and that such reasons are associated with higher than average announcement-period returns. The managerial incentives

hypothesis is again based on the theoretical model by Aron (1991), who argues that improved managerial incentives created by stock-based compensation after spinoff lead to higher firm value. Surprisingly, I find that this motive is rarely mentioned in the *Wall Street Journal* reports. But that should not undermine its importance in wealth gains from divestitures. A recent paper by Larraza-Kintana et al. (2000) shows that stock-based compensation is used in nearly all firms after initial public offerings (IPOs). Finally, similar to the case of spinoffs, I find that carveouts are occasionally motivated by miscellaneous reasons, such as takeover defense, tax reduction, and regulatory compliance.

The overall evidence of this article is inconsistent with the asymmetric information hypothesis and consistent with the divestiture gains hypothesis. The positive announcement-period returns of equity carveouts arise because the combined firm value is expected to increase as a result of improved focus, new financing, reduced complexity, and improved managerial incentives. The remainder of the article is organized as follows. In Section II, I discuss the different hypotheses and their specific predictions. In Section III, I describe the data and methods. In Sections IV and V, the empirical predictions are tested, and in Section VI, I conclude.

II. The Asymmetric Information Hypothesis versus the Divestiture Gains Hypothesis

A. The Asymmetric Information Hypothesis (*and the Contrast with the Divestiture Gains Hypothesis*)

Nanda (1991) presents an asymmetric information model to explain when all-equity firms will forgo a positive net present value (NPV) project and when they will finance it with an SEO or an equity carveout. His model is briefly described as follows. Before the announcement of equity issue, the parent firm consists of nonsubsidiary and subsidiary assets in place. The value of nonsubsidiary assets is known to be either V_H^1 or V_L^1 with equal probability. The value of subsidiary assets is similarly known to be either V_H^2 or V_L^2 with equal probability. There is no correlation between the nonsubsidiary and subsidiary asset values. Thus, states HH, HL, LH, and LL are equally likely. State HL denotes that the nonsubsidiary assets are of high value and the subsidiary assets are of low value, and so on. The manager knows the true state, but the market knows only the probabilities. Thus, the nonsubsidiary assets have a market value of $(V_H^1 + V_L^1)/2$, and the subsidiary assets have a market value of $(V_H^2 + V_L^2)/2$.

In addition to the assets in place, the firm has a project under consideration. The project has a positive NPV, which is common knowledge. For simplicity, Nanda assumes that $V_H^1/V_L^1 = V_H^2/V_L^2 = \mu$, which means that there is equivalent information asymmetry concerning the nonsubsidiary and subsidiary asset values. He denotes $V_H^1/V_H^2 = V_L^1/V_L^2 = \gamma$, where γ is the ratio of the market

value of the nonsubsidiary assets to subsidiary assets in both the high and low value states.

The manager has the choice of three actions: O, do not issue equity and forgo the project; S, sell subsidiary stock (i.e., do an equity carveout); and C, sell stock in the consolidated firm (i.e., do an SEO). Debt issues are not allowed. The manager's actions are guided by whether the equity issue will increase the value of existing equity. The possible equilibria are denoted by WXYZ, where W, X, Y, and Z are the actions taken by firms of type HH, HL, LH, and LL. At first, since W, X, Y, and Z may each take the values *O*, *S*, and *C*, a total of $3^4 = 81$ different equilibria appear possible. However, by using other criteria, Nanda shows that only the equilibria CSCC, SSCS, OSCC, OSOC, and OSOS are possible. In the first two cases, all firm types finance the project. This occurs when the project has a large NPV relative to the value of the assets in place. In the last three cases, the firm types HH, and possibly LH, forgo the project. This occurs when the project has a small NPV relative to the value of the assets in place.

Table 1 shows the revision in market values after the announcement of a carveout. Consider equilibrium SSCS to appreciate the calculations. After the announcement, the market knows that the firm type is HH, HL, or LL with equal probability. Thus, the ex post value of nonsubsidiary assets equals $(2V_H^1 + V_L^1)/3$. This exceeds their ex ante value by $[(2V_H^1 + V_L^1)/3] - [(V_H^1 + V_L^1)/2] = (V_H^1 - V_L^1)/6$. Similarly, the ex post value of subsidiary assets equals $(V_H^2 + 2V_L^2)/3$, which exceeds their ex ante value by $[(V_H^2 + 2V_L^2)/3] - [(V_H^2 + V_L^2)/2] = -(V_H^2 - V_L^2)/6$. Using the size ratio γ, the total revision in firm value equals $[(V_H^1 - V_L^1)/6] - [(V_H^2 - V_L^2)/6] = [(\gamma - 1)(V_H^2 - V_L^2)]/6$. The revision in firm value under each of equilibria CSCC, OSCC, and OSOC is similarly shown to be $[(\gamma - 1)(V_H^2 - V_L^2)]/2$. Under equilibrium OSOS the revision in firm value equals $-(V_H^2 - V_L^2)/2$, which is negative and unrelated to γ, because the announcement leads to downward revision in the value of subsidiary assets but no revision in the value of nonsubsidiary assets.

Nanda assumes that the nonsubsidiary assets are of greater value than the subsidiary assets, that is, that $\gamma > 1$. He does not offer any justification for this assumption, except that "we believe this is in line with the Schipper and Smith (1986) sample" (Nanda 1991, p. 1720, n. 9). Under this assumption, four of the five equilibria imply a positive return following the announcement of a carveout. In the fifth case, the return is negative. Nanda argues that this case is infrequent, occurring for very low NPV projects, as both firm types HH and LH forgo the project. Overall, announcing a carveout reveals negative information about the subsidiary assets and zero or positive information about the nonsubsidiary assets. If the nonsubsidiary assets are greater, then the net market reaction will be positive.

Within the range of γ values considered by Nanda, table 1 shows that the market reaction should be decreasing with decreasing γ. When $\gamma = 1$, the market reaction should equal zero. When $\gamma < 1$, the market reaction should be negative and decreasing, as the negative information concerning the sub-

TABLE 1 Carveout Announcement-Period Revision in Market Value Predicted by the Asymmetric Information Model of Nanda (1991)

	Nonsubsidiary Assets in Place		Subsidiary Assets in Place		
Equilibrium	Ex Post Market Value*	Revision in Market Value†	Ex Post Market Value‡	Revision in Market Value§	Total Firm Revision in Market Value
CSCC	V_H^1	$(V_H^1 - V_L^1)/2$	V_L^2	$-(V_H^2 - V_L^2)/2$	$(\gamma - 1)(V_H^2 - V_L^2)/2$
SSCS	$(2V_H^1 + V_L^1)/3$	$(V_H^1 - V_L^1)/6$	$(V_H^2 + 2V_L^2)/3$	$-(V_H^2 - V_L^2)/6$	$(\gamma - 1)(V_H^2 - V_L^2)/6$
OSCC	V_H^1	$(V_H^1 - V_L^1)/2$	V_L^2	$-(V_H^2 - V_L^2)/2$	$(\gamma - 1)(V_H^2 - V_L^2)/2$
OSOC	V_H^1	$(V_H^1 - V_L^1)/2$	V_L^2	$-(V_H^2 - V_L^2)/2$	$(\gamma - 1)(V_H^2 - V_L^2)/2$
OSOS	$(V_H^1 + V_L^1)/2$	0	V_L^2	$-(V_H^2 - V_L^2)/2$	$-(V_H^2 - V_L^2)/2$

NOTE.—The table summarizes the announcement-period returns predicted by Nanda's model. His model is described in Sec. II.A. In each equilibrium, the table shows the revision in the market value of the nonsubsidiary and subsidiary assets, and the total revision in the combined firm value following the announcement of carveout.

* The ex post market value is obtained by averaging the ex post value of nonsubsidiary assets in each of the states in which carveout occurs. This value equals V_H^1 in states HH and HL and V_L^1 in states LH and LL.

† The revision in market value is obtained by subtracting the ex ante market value of the nonsubsidiary assets, which equals $(V_H^1 + V_L^1)/2$.

‡ The ex post market value is obtained by averaging the ex post value of subsidiary assets in each of the states in which carveout occurs. This value equals V_H^2 in states HH and LH, and V_L^2 in states HL and LL.

§ The revision in market value is obtained by subtracting the ex ante market value of the subsidiary assets, which equals $(V_H^2 + V_L^2)/2$.

sidiary assets dominates the positive information concerning the nonsubsidiary assets.

The specific predictions of the divestiture gains hypothesis are described in the following section. But here I present a prediction common to all forms of the divestiture gains hypothesis that is the opposite of the main prediction of the asymmetric information hypothesis. It is reasonable to argue that the benefits of increased focus, new financing and investment opportunities, improved managerial incentives, and reduced complexity should increase with increasing size of the subsidiary assets relative to the combined assets. Hite and Owers (1983) and Krishnaswami and Subramaniam (1999) show that the market reaction to spinoffs is increasing with this relative size variable. Klein (1986) and Lang, Poulsen, and Stulz (1995) show that the market reaction to asset sales is also increasing with this variable. In the case of spinoffs, where no new shares are issued, this relative size variable equals $1/(1 + \gamma)$. It increases monotonically with decreasing value of γ, which shows the contrast with the asymmetric information hypothesis.

B. The Divestiture Gains Hypothesis

The *Oxford English Dictionary* defines a divestiture as the deprivation of a possession or a right. A carveout results in the partial loss of ownership and control of a subsidiary that was previously wholly owned and controlled by the parent. Strictly speaking, a carveout is only a partial divestiture whereas a spinoff or an asset sale are complete divestitures. In practical terms, all three forms of divestiture involve restructuring of operations and management. Carveouts invariably involve financing, asset sales usually involve financing (when the sale is for cash), but spinoffs do not involve financing. New investments often follow in each case, but this is not a requirement in any case. Below, I discuss several hypotheses related to the operations, management, ownership, financing, and investment aspects of carveouts.

The refocusing strategy hypothesis. An equity carveout replaces one legal firm with two firms of distinct boundaries. It is remarkable that the increase in carveout activity has coincided with a trend toward focus and specialization in recent years. Comment and Jarrell (1995) argue that the economies of scope have been reversed during the 1980s (and 1990s). They show that the average number of business segments and different standard industrial classification (SIC) codes used by firms included in the Compustat segment file decreased substantially from 1978 to 1989. They also show that focus-increasing firms earned superior long-term returns during this period, which may be partly the undoing of a 13%–15% diversification discount documented by Berger and Ofek (1995). The two separated firms after carveout are subject to the scrutiny of capital markets, which eliminates inefficient cross-subsidies and other wealth-decreasing activities invisible to shareholders of the combined firm. It also reduces any negative synergy between parent and subsidiary firms arising from the incompatibility of their businesses.

Previous research has shown the benefits of improving focus by spinoffs and asset sales. John and Ofek (1995) show that, in three-fourths of asset sales, the sold division has a different SIC code from the remaining divisions of the seller. They show that the announcement-period returns of asset sales are higher when the SIC code of the sold division is different from that of the seller and still higher when it is the same as that of the buyer. Daley, Mehrotra, and Sivakumar (1997) show that the announcement-period returns and the post-issue operating performance of spinoffs are higher when the parent and subsidiary have different SIC codes. Desai and Jain (1999) show that their long-term returns are also higher.

Vijh (1999) shows that the long-term returns of carveouts increase with the number of distinct business segments of the precarveout firm, which he uses as a proxy for the benefits of increased focus. I argue that some of the positive announcement-period returns of carveouts should also be attributed to the increased focus and the synergy gains from the separation of distinct businesses. The refocusing strategy hypothesis thus predicts the following. First, a careful analysis of the *Wall Street Journal* reports on carveouts will show frequent mention of refocusing and divestiture type of reasons given by the firm managers, the analysts, and the reporters. Second, firms proposing carveouts will be more diversified than the average firm. Third, the announcement-period returns will be higher in cases where the carveout leads to a greater increase in firm focus. Fourth, many carveouts will be followed by spinoffs or asset sales. This prediction follows from the observation that carveouts are only partial divestitures, as the parent firms often maintain a controlling stake in the subsidiary firms. A complete divestiture would require a spinoff or an asset sale. Fifth, if the market can rationally anticipate the second events, then the announcement-period returns will also be higher in cases where the carveout is followed by a spinoff or an asset sale.

The financing strategy hypothesis and the investment strategy hypothesis. Financing is an integral part of carveouts. This dimension distinguishes carveouts from spinoffs, which involve no immediate financing, and it relates them to asset sales, which are usually for cash and do involve immediate financing. The proceeds of carveout may belong to the subsidiary or the parent, depending on whether the issue involves primary or secondary shares, and it may be used to repay debt, meet other contingencies, or pay for the subsidiary's investment projects. Based on these considerations, I propose two separate hypotheses. The first hypothesis is termed the financing strategy hypothesis and is related to Lang, Poulsen, and Stulz (1995) and Allen and McConnell (1998). These studies view asset sales and carveouts as beneficial when the proceeds are used to repay debt. Allen and McConnell propose a managerial discretion hypothesis in which managers derive tangible or intangible compensation based on the size of assets under their control. They document that the carveout announcement-period returns are higher in cases where the proceeds are used to repay debt and are no longer subject to managerial discretion. They emphasize that their evidence does not explain why

carveouts create value (i.e., why the average return is positive), only that due to agency costs the returns are higher if cash is removed from the firm. The financing strategy hypothesis proposed in this study is a little broader than Allen and McConnell's hypothesis. It includes the use of proceeds to repay debt and to meet other financial contingencies, such as build working capital or support cash flow needs of existing operations.

The second hypothesis is termed the investment strategy hypothesis. It emphasizes positive use of proceeds by retaining funds within the subsidiary firm to finance new projects or upgrade existing projects. Schipper and Smith (1986) suggest that this is an important motive for carveouts. Carveout announcements are often simultaneous announcements of the subsidiary's investment opportunities. Many studies have shown that the market reacts positively to the second set of announcements. For example, McConnell and Muscarella (1985) show that announcements of increases in planned capital expenditures are associated with significantly positive excess returns. Mikkelson and Partch (1986) show that the otherwise very negative excess returns of SEOs are only slightly negative and insignificantly different from zero when the stated purpose of the offering is to finance capital expenditures.

Both the financing strategy and the investment strategy hypotheses predict that the *Wall Street Journal* reports will mention the corresponding use of proceeds and that such reports will lead to more positive announcement-period returns. The financing strategy hypothesis also predicts that the issue will involve secondary shares and that such issue will result in a more positive reaction. In comparison, the investment strategy hypothesis predicts that the issue will involve primary shares and that such issue will result in a more positive reaction. The last prediction of the financing strategy and investment strategy hypotheses is as follows. The financing strategy hypothesis predicts that the financially constrained parent firms will raise more equity during the following years but that this equity may not result in greater capital expenditures. In comparison, the investment strategy hypothesis predicts that subsidiary firms will raise more equity and that this equity will result in greater capital expenditures.

The complexity, undervaluation, and pure play hypothesis. Schipper and Smith (1986) suggest that the initiation of public trading of subsidiary stock is an important reason for the market's enthusiasm. They argue that a carveout precommits the subsidiary to supply audited periodic financial reports, and they cite examples in which a resulting improvement in investor understanding of the subsidiary business is a major reason for carveout. In the case of spinoffs, Krishnaswami and Subramaniam (1999) use analyst forecast data to show that the earnings forecasts of the combined firm are less accurate than the earnings forecasts of the separated firms. Vijh (1994) shows that there are substantial ex date price and volume effects for spinoffs, which he relates to different investor clienteles for the two separated stocks. The attractiveness of pure-play stocks to such investors can also lead to positive announcement-

period returns for carveouts, although the effect should be smaller (since only the subsidiary stock after carveout can be considered to be a pure-play stock).

The complexity, undervaluation, and pure play hypothesis predicts that the *Wall Street Journal* reports will mention this reason and that such reports will be associated with higher announcement-period returns. A second prediction follows from the observation that the complexity, undervaluation, and pure play effects all increase with the dissimilarity of parent and subsidiary assets. Empirically, this prediction coincides with a prediction of the refocusing strategy hypothesis, which says that the announcement-period returns will be higher when the parent and subsidiary firms belong to different industries.

The managerial incentives hypothesis and other miscellaneous hypotheses. Schipper and Smith (1986) argue that carveouts are associated with a restructuring of managers' responsibilities and incentives. Aron (1991) builds a model in which even the possibility of a future spinoff can create strong incentives for divisional managers. She argues that, after spinoff, the stock value of the subsidiary firm is a cleaner measure of managerial productivity than the stock value of the parent firm when the subsidiary was one of its many divisions. A stock-based compensation plan thus motivates the managers to work harder and exploit valuable investment opportunities. Since the value creation comes from exploiting investment opportunities, an important prediction of Aron's model is identical to a prediction of the investment strategy hypothesis. Both hypotheses predict that new financing and investment in subsidiary firms will be higher than in firms of similar characteristics that were not recently spun off. Finally, following Hite and Owers (1983) and Schipper and Smith (1983), I will also examine whether carveouts facilitate mergers, reduce taxes, or help with regulatory compliance.

C. Summary of Different Hypotheses and Possible Overlap

Table 2 summarizes the testable implications of the different hypotheses. Note that the hypotheses are neither independent nor mutually exclusive. The refocusing strategy and complexity, undervaluation, and pure play hypotheses both predict higher returns when the parent and subsidiary firms are in different industries; the investment strategy and managerial incentives hypotheses both predict that the subsidiary capital expenditures will be higher than matching firms; and the asymmetric information and complexity, undervaluation, and pure play hypotheses both assume that investors have incomplete information. Yet, every hypothesis has a distinct motivation and at least one distinct testable implication.

III. The Data and Methods

A. The Sample of Carveouts

The sample of carveouts used in this study starts with the sample used in Vijh (1999). My 1999 sample includes 300 cases during the period 1980–95

TABLE 2 Summary of the Asymmetric Information and Divestiture Gains Hypotheses of Carveouts

Hypothesis	Motivation	Testable implications
Asymmetric information	Carveouts occur when subsidiary assets are overvalued and nonsubsidiary assets are undervalued. Nonsubsidiary assets are usually bigger, so more positive information is released.	1. Excess returns will decrease with decreasing γ, the ratio of nonsubsidiary to subsidiary assets values.* 2. Excess returns will be positive when $\gamma > 1$, zero when $\gamma = 0$, and negative when $\gamma < 1$. 3. *Wall Street Journal* reports will mention asymmetric information types of reasons. Excess returns will be higher in such cases.
Divestiture gains:		
Refocusing strategy	Carveouts are a form of restructuring. Improved focus from separation of parent and subsidiary business increases the combined firm value.	1. *Wall Street Journal* reports will mention refocusing and divestiture types of reasons. Excess returns will be higher in such cases. 2. Parent firms before carveout will be more diversified than average. 3. Excess returns will be higher when parent and subsidiary are in different industries.† 4. Many carveouts will be followed by complete divestiture (spinoff or asset sale). 5. Excess returns will be higher when there is a subsequent complete divestiture.
Financing strategy	Carveouts are a financing mechanism. Proceeds are used to repay debt and meet other financial contingencies of parent (and possibly subsidiary).	1. *Wall Street Journal* reports will mention financing strategy types of reasons. Excess returns will be higher in such cases. 2. Issue will involve secondary shares. Excess returns will be higher for such issues.‡ 3. Parents will raise additional capital from SEOs during surrounding years. But parent capital expenditures will not be higher than matching firms.

Investment strategy	Carveouts are a financing mechanism. Proceeds are used to finance new projects or upgrade existing operations of subsidiary.	1. *Wall Street Journal* reports will mention investment strategy types of reasons. Excess returns will be higher in such cases. 2. Issue will involve primary shares. Excess returns will be higher for such issues.‡ 3. Subsidiaries will raise additional capital from SEOs during surrounding years. Subsidiary capital expenditures will be higher than matching firms.§
Complexity, undervaluation, and pure play	Carveouts result in greater information for a subsidiary that starts trading separately. Investors are attracted to such pure plays.	1. *Wall Street Journal* reports will mention complexity, undervaluation, and pure play types of reasons. Excess returns will be higher in such cases. 2. Excess returns will be higher when parent and subsidiary are in different industries.†
Managerial incentives	Carveouts enable firms to offer stock-based compensation to subsidiary's managers. This motivates them to work harder and exploit investment opportunities.	1. *Wall Street Journal* reports will mention managerial incentives types of reasons. Excess returns will be higher in such cases. 2. Subsidiary capital expenditures will be higher than matching firms.§

* "Excess return" is an abbreviation for carveout announcement-period excess return.
† Common to the refocusing strategy hypothesis and the complexity, undervaluation, and pure play hypothesis.
‡ Contrasts the financing strategy hypothesis and the investment strategy hypothesis.
§ Common to the investment strategy hypothesis and the managerial incentives hypothesis.

for which I could find information on both the parent and the subsidiary firms on the Center for Research in Security Prices (CRSP) tapes.[2] I here expand this sample to include carveouts completed during 1996 and 1997 from the Securities Data Company (SDC) database. I exclude cases where an announcement date cannot be found by using the procedure described below. I also exclude utility issues and penny stocks (i.e., cases where the parent stock price is less than one dollar on the announcement date). The net result is a sample of 336 carveouts completed during the period 1980-97.

I searched the *Wall Street Journal Index* during the period 1980–94 and its electronic *ProQuest* version during the period 1995–97 for the first publication date of a carveout announcement during the 2 years before the issue date. In cases when there is no *Wall Street Journal* report, I use the Securities and Exchange Commission (SEC) filing date in place of the publication date. A total of 311 carveouts in my sample are included in the SDC database. I can find the filing date in 300 of these 311 cases. In the remaining 25 cases that I collected from the *Mergers and Acquisitions* magazine, I can find the filing date in 24 cases by searching the Lexis/Nexis and the Compact Disclosure databases. Overall, I have the publication date in 185 cases, the filing date in 324 cases, both dates in 173 cases, and at least one date in all 336 cases.

B. Sample Distribution and Summary Statistics

Panel A of table 3 gives the sample distribution by the calendar year of announcement during the period 1980–97. The 336 carveouts issued new equity in the amount of $44.9 billion in the domestic market. The sample is more concentrated during the 1990s, with 204 of the 336 announcements occurring during the period 1990–97. The average offering value has also gone up, from $84 million during the period 1980–89 to $165 million during the period 1990–97.

Panel B of table 3 presents the summary statistics. Given the extreme skewness in variables, the medians and the first and third quartiles of distribution are reported. The median parent firm is valued at $720 million, and the median subsidiary firm is valued at $166 million. The median offering is worth 7.9% of the parent value and 27.5% of the subsidiary value on the listing date. The median dilution ratio, defined by the new primary shares offered to the total shares outstanding after issue, equals 0.203. The median book-to-market value equals 0.538 for parent firms and 0.431 for subsidiary firms. The subsidiary firms are more likely to be growth firms. Finally, in the

2. I (1999) collected my sample from two sources. First, I purchased a list of carveouts that occurred in the period 1980–95 from the Securities Data Company (SDC). Second, I collected from the *Mergers and Acquisitions* magazine a few carveouts for the period 1991–95 that were not included in the SDC data. My 1999 sample includes 328 cases for which I could find information on only the subsidiary firms. These cases are excluded in this study of the announcement-date returns of parent stocks.

TABLE 3 **Sample Distribution over Time and Descriptive Statistics for Carveout Announcements, 1980–97**

A. The Sample Distribution by the Year of Announcement

Year	Number of Announcements	Average Offering Value	Total Offering Value
1980	1	11	11
1981	11	13	143
1982	6	16	96
1983	15	47	705
1984	5	56	280
1985	20	69	1,380
1986	33	99	3,267
1987	19	128	2,432
1988	10	188	1,880
1989	12	78	936
1990	8	185	1,480
1991	28	63	1,764
1992	35	175	6,125
1993	40	173	6,920
1994	28	140	3,920
1995	26	196	5,096
1996	28	248	6,944
1997	11	137	1,507
1980–97	336	133	44,886

B. Other Descriptive Statistics

	Parent Firms			Subsidiary Firms		
Item Description	Q1	Median	Q3	Q1	Median	Q3
Firm value (million $)	138	720	2,793	58	166	457
Ratio of offering value to parent or subsidiary value	.035	.079	.186	.158	.275	.546
Dilution ratio				.116	.203	.357
Book-to-market value	.326	.538	.793	.254	.431	.646
Parent's fractional ownership of subsidiary after carveout	.500	.719	.828			

NOTE.—The sample of 336 carveout announcements during the period 1980–97 is obtained from the SDC and from the *Mergers and Acquisitions* magazine. It satisfies the following additional requirements: (1) The parent and subsidiary returns data are available on CRSP tapes, (2) the publication date can be found in the *Wall Street Journal Index* and/or the filing date can be found in the SDC, Lexis/Nexis, or Compact Disclosure databases (the earlier of the publication date and the filing date is chosen as the announcement date), (3) utility issues are excluded, (4) penny stocks (i.e., cases where the parent stock price is less than one dollar on announcement date) are excluded. The offering value is based on the offering price multiplied by the number of shares offered in the domestic market and is expressed in millions of dollars. The median offering value is 49. The firm value is measured by the market value of equity on the first trading day after carveout. The dilution ratio is measured by the number of primary shares offered, divided by the total outstanding shares after issue. The book-to-market value for parent firms is as of the last fiscal year ending before the carveout, and for subsidiary firms as of the first fiscal year ending after the carveout. Given the extreme skewness in all measures, only the first quartile, the median, and the third quartile values are reported.

median case, the parent firm continues to own 71.9% of the subsidiary's outstanding shares after carveout.

C. The Measurement of Announcement-Period Excess Returns

The measurement of announcement-period excess returns requires addressing questions related to the measure of excess returns and the length of the announcement period. I use two different measures of excess returns. First, for each day of the event period, I calculate the difference between the stock returns and the market returns. The mean market-adjusted excess returns and the *t*-statistics are calculated from the distribution of these return differences for all stocks included in the sample. Second, for each day of the event period, I also calculate the difference between the stock returns and the expected stock returns based on a market model. The mean market-model adjusted excess returns and the *t*-statistics are calculated from this latter distribution of return differences. The market returns used in both calculations are measured by the returns on the CRSP value-weighted portfolio of all stocks. To avoid biases arising from possible price runup before announcement, the market-model parameters are estimated over a 250-day period ending 250 days before the event period (which is shown to begin one day before the first announcement date).

Table 4 reports the market reaction on each day from AD − 5 to AD + 5, where AD denotes the first announcement date of the carveout and represents the last business day preceding the *Wall Street Journal* publication date in 79 cases, the SEC filing date in 202 cases, and a simultaneous day-before-publication date and filing date in 55 cases. Since the news may arrive before or after the end of trading on AD, one must include AD and AD + 1 in the announcement period. In addition, one should include AD − 1 if there is a significant market reaction on that day because of partial anticipation of news, leakage of news, or reporting delays.

Table 4 shows that the market reaction on each of AD − 1, AD, and AD + 1 is significantly positive, with *t*-statistics ranging between 2.30 and 3.56. I, therefore, measure the carveout announcement-period returns over a 3-day period spanning AD − 1 to AD + 1 in all subsequent tests. Table 4 also shows that, for all 336 carveouts, the 3-day mean market-adjusted excess return equals 1.94%, whereas the mean market-model adjusted excess return equals 1.93% (*t*-statistics = 5.68 and 5.64). The two alternate measures give nearly identical results. I use the market-adjusted excess returns in all subsequent calculations, but the inferences are unchanged by using the market-model excess returns. Finally, table 4 shows that parent stocks earn market-adjusted returns of 14.88% (*t*-statistic = 3.21) during a 250-day period ending on AD − 2, which could not have contributed to the undervaluation of parent stocks.

TABLE 4 Carveout Announcement-Period Excess Returns of Parent Stocks, 1980–97

Event Date	Market-Adjusted Excess Returns	Market-Model Adjusted Excess Returns
AD − 5	.03 (.24)	.05 (.31)
AD − 4	.14 (1.02)	.10 (.70)
AD − 3	.29 (1.72)*	.31 (1.83)*
AD − 2	.03 (.20)	.01 (.07)
AD − 1	.42 (2.30)**	.47 (2.48)**
AD	.67 (3.30)***	.63 (3.05)***
AD + 1	.87 (3.56)***	.84 (3.40)***
AD + 2	.19 (1.12)	.15 (.86)
AD + 3	.04 (.23)	.04 (.23)
AD + 4	−.19 (−1.29)	−.22 (−1.44)
AD + 5	−.23 (−1.58)	−.25 (−1.71)*
AD − 1 to AD + 1	1.94 (5.68)***	1.93 (5.64)***
AD − 251 to AD − 2	14.88 (3.21)***	
AD − 501 to AD − 252	4.59 (1.32)	

NOTE.—The sample of 336 carveout announcements during 1980–97 is obtained from the SDC and from the *Mergers and Acquisitions* magazine. It satisfies certain other restrictions discussed in table 3. AD denotes the first announcement date. It represents the day before the *Wall Street Journal* publication date in 79 cases, the SEC filing date in 202 cases, and a simultaneous day-before-publication date and filing date in 55 cases. Each day, the market-adjusted excess returns are computed by subtracting the value-weighted market returns from the stock returns, and the market-model adjusted excess returns are computed by using a market-model whose parameters are estimated over AD − 501 to AD − 252. The cumulative excess returns over the announcement period of AD − 1 to AD + 1 are obtained by the sum of daily returns for the market model, but not for the market-adjusted returns. In the latter case, the cumulative excess returns are obtained by subtracting the cumulative market returns from the cumulative stock returns over the 3-day period. The preannouncement excess returns, over AD − 501 to AD − 252 and AD − 251 to AD − 2, are similarly computed by subtracting the cumulative market returns from the cumulative stock returns. In six cases out of the total 336 cases, the returns data over AD − 501 to AD − 252 are inadequate to compute the market-model parameters. The reported market-model adjusted excess returns are calculated by averaging over the remaining observations. The *t*-statistics are reported in parentheses.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

IV. Cross-Sectional Tests of the Asymmetric Information Hypothesis

A. The Calculation of γ

The calculation of γ in Nanda's model requires the market values of the subsidiary and nonsubsidiary assets of a parent firm before the announcement date. The first problem concerns the definition of assets. Nanda assumes an all-equity firm, but real firms have varying amounts of debt. I, therefore, use two definitions of assets, one based on total assets, which gives the measure γ_1, and another based on net assets, which gives the measure γ_2.[3] The second problem concerns the inability to observe separate market values of subsidiary and nonsubsidiary assets on the announcement date. I overcome this limitation by using the market values on the listing date. This procedure will give the exact γ_1 and γ_2 if the unobserved changes in the market values of the subsidiary and nonsubsidiary assets between the announcement and the listing date are proportional. If the change in nonsubsidiary value is greater, perhaps because of the positive information conveyed by carveout, then the calculated values of γ_1 and γ_2 will be higher than the true values, but it will be so for all firms. The third problem arises because the market values of liabilities and preferred stock are almost never available. I overcome this problem by assuming that the market values of liabilities and preferred stock are equal to their book values.

I calculate the number of outstanding shares of the subsidiary before carveout (old shares) by subtracting the newly issued primary shares from all outstanding shares on the listing date. I have the data on total shares issued and the primary versus secondary shares issued in the large majority of carveouts that are included in the SDC database. However, in the 25 carveouts that originated from the *Mergers and Acquisitions* magazine, I do not have the data on primary versus secondary shares. In such cases, I assume that all new shares are primary shares. This approximation is justified by the observation that only primary shares are issued in 64% of all cases and that nearly 70% of the total issue volume consists of primary shares. I multiply the number of old shares of subsidiary firm by the stock price on the listing date to calculate the market value of the subsidiary stock in the combined firm. I then add the book value of assets other than common stock (Compustat item 6 minus item 60) in the year ending before carveout, if available, or the year of carveout, if not, to obtain the subsidiary total assets. I subtract the subsidiary total assets from the parent total assets calculated in a similar manner to obtain the nonsubsidiary total assets. The ratio of nonsubsidiary to subsidiary total assets equals γ_1. I obtain γ_2 by a similar procedure but by assuming that the debt, other liabilities, and preferred stock are absent.

The above procedure gives values of γ_1 and γ_2 in 279 and 292 cases,

3. "Total assets" refers to the bottom line on the assets or the liabilities side of the balance sheet. "Net assets" refers to the common stock; it equals the total assets minus debt, other liabilities, and preferred stock.

respectively. In the remaining cases, I cannot obtain a value because of data limitations, such as the Compustat data for the subsidiary or the parent firm is not available, the number of shares issued is not available, the calculated old shares of the subsidiary firm are negative, or the calculated market value of the nonsubsidiary assets is negative. To overcome the problem posed by the missing values of γ_1 and γ_2, I construct a third relative size measure. This measure equals the ratio of the market value of all outstanding equity of the subsidiary firm to the equity of the parent firm on the listing date. As a practical matter, the correlation between the decile ranks based on the three relative size measures is very high, ranging between 0.867 and 0.925. However, there is no obvious separation based on the third measure similar to $\gamma \leq 1$ versus $\gamma > 1$ for the first two measures.

B. The Relationship between the Excess Returns and γ

Panel A of table 5 shows the announcement-period returns across subsets formed by γ_1, the ratio of the market values of the nonsubsidiary and subsidiary total assets. The mean market-adjusted excess return equals 1.19% (*t*-statistic = 3.60) for the 232 cases for which the nonsubsidiary assets are greater than the subsidiary assets, or $\gamma_1 > 1$. The corresponding value equals 4.92% (*t*-statistic = 3.77) for the 47 cases for which the nonsubsidiary assets are smaller than the subsidiary assets, or $\gamma_1 \leq 1$. Recall that the asymmetric information model predicts a negative return for these cases. The difference between average returns for the $\gamma_1 > 1$ and the $\gamma_1 \leq 1$ cases equals 3.73% (*t*-statistic = 2.77), which is significant at the 1% level. The difference between median returns and the percent positive provides nonparametric confirmation of the results. Panel B of table 5 shows that the evidence with γ_2 is even stronger. All pieces of evidence in panels A and B are highly significant, but they are so in the opposite direction of the prediction of Nanda's asymmetric information model.

Panel C of table 5 shows the excess returns across 10 subsets formed by the decile ranks of $1/\gamma_1$, $1/\gamma_2$, and the third relative size measure. I prefer to use $1/\gamma$ instead of γ, as it is conventional in the divestitures literature to use the size of subsidiary assets divided by the total assets. The rank correlation between the decile ranks and the mean excess returns equals 0.84, 0.64, and 0.77 with the three measures (significant at the 1%, 10%, and 5% levels). These tests provide further evidence that the excess returns are increasing with the size of subsidiary assets relative to the nonsubsidiary assets.

My evidence is consistent with Allen and McConnell (1998), who find that the announcement-period returns are positively related to another relative size measure, formed by the ratio of the book value of assets of the carveout subsidiary to the book value of assets of the precarveout firm. However, they use this variable as one of the control variables in their paper and do not discuss its role in distinguishing between the asymmetric information and the divestiture gains hypothesis. I interpret my evidence as inconsistent with the

TABLE 5 **Tests of the Asymmetric Information Hypothesis Based on the Announcement-Period Excess Returns of Parent Stock Related to the Size of Subsidiary versus Nonsubsidiary Asset Value, 1980–97**

A. Announcement-Period Returns Related to Whether Subsidiary or Nonsubsidiary Total Assets Are Greater

Description	Sample	Median $1/\gamma_1$	Market-Adjusted Excess Returns		
			Mean (*t*-Statistic)	Median	Percent Positive
Nonsubsidiary total assets greater than subsidiary total assets ($\gamma_1 > 1$)	232	.127	1.19 (3.60)***	.70	57
Nonsubsidiary total assets smaller than subsidiary total assets ($\gamma_1 \leq 1$)	47	2.029	4.92 (3.77)***	2.35	72
Difference			3.73 (2.77)***	1.65	15
Ungrouped cases (γ_1 not available)	57		2.58 (2.61)***	.52	56
All cases	336	.184	1.94 (5.68)***	.95	59

B. Announcement-Period Returns Related to Whether Subsidiary or Nonsubsidiary Net Assets Are Greater

Description	Sample	Median $1/\gamma_2$	Market-Adjusted Excess Returns		
			Mean (*t*-Statistic)	Median	Percent Positive
Nonsubsidiary net assets greater than subsidiary net assets ($\gamma_2 > 1$)	230	.146	.63 (2.03)**	.51	53
Nonsubsidiary net assets smaller than subsidiary net assets ($\gamma_2 \leq 1$)	62	2.982	6.59 (6.63)***	5.45	84
Difference			5.96 (5.72)***	4.94	31
Ungrouped cases (γ_2 not available)	44		2.25 (1.93)*	.32	52
All cases	336	.234	1.94 (5.68)***	.95	59

C. Parent Announcement-Period Returns Related to Decile Ranks Formed by Different Relative Size Measures

	Ratio of Subsidiary Total Assets to Nonsubsidiary Total Assets ($1/\gamma_1$)			Ratio of Subsidiary Net Assets to Nonsubsidiary Net Assets $1/\gamma_2$)			Ratio of Subsidiary Stock Value to Parent Stock Value		
Decile Rank	Sample	Median $1/\gamma_1$	Excess Return[a]	Sample	Median $1/\gamma_2$	Excess Return[a]	Sample	Median Ratio	Excess Return[a]
Lowest	27	.012	.33	29	.011	.41	33	.022	.05
2	28	.033	1.10	29	.032	.47	34	.070	−.19
3	28	.063	−.17	29	.072	.37	33	.109	.83
4	28	.092	.71	30	.114	.22	34	.180	.83
5	28	.146	.40	29	.187	1.22	33	.254	1.58
6	28	.242	2.12	29	.300	1.76	34	.369	−.02
7	28	.359	1.83	30	.565	−.70	34	.543	.89
8	28	.664	1.79	29	.833	2.53	33	.763	5.86
9	28	1.100	3.85	29	1.807	5.32	34	1.087	5.49
Highest	28	2.607	6.13	29	6.403	7.54	33	1.724	4.30
Unranked	57		2.58	44		2.25	1		−1.08
Total	336	.184	1.94	336	.234	1.94	336	.313	1.94
Rank correlation			.84***			.64*			.77**

NOTE.—The sample of 336 carveout announcements during the period 1980–97 is obtained from the SDC and from the *Mergers and Acquisitions* magazine. It satisfies certain other restrictions discussed in table 3. The grouping procedure in panel A uses γ_1, the ratio of the market value of nonsubsidiary to subsidiary total assets. The grouping procedure in panel B uses γ_2, the ratio of the market value of nonsubsidiary to subsidiary net assets. The calculation of both γ_1 and γ_2 is discussed in Section IV.A. The three ranking procedures in panel C use $1/\gamma_1$, $1/\gamma_2$, and the ratio of subsidiary market value to parent market value on the listing date. Some observations in both panels cannot be grouped or ranked because of data limitations. Excess returns during the announcement period are calculated by subtracting the cumulative value-weighted market returns over AD − 1 to AD + 1 from the cumulative parent stock returns. The *t*-statistics in panels A and B are calculated by using the cross-sectional distribution of market-adjusted returns and are reported in parentheses. The Spearman rank correlations in panel C are calculated by the simple correlation between the decile ranking and the ranking of mean market-adjusted returns.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

[a] Mean market-adjusted excess return.

asymmetric information hypothesis, which suggests that a higher value of subsidiary assets relative to nonsubsidiary assets conveys more of the negative news and less of the positive news concerning asset values. My evidence is consistent with the divestiture gains hypothesis, which suggests that the divestiture of a larger subsidiary is associated with a higher increase in the market value of the parent firm.

V. Cross-Sectional Tests of the Divestiture Gains Hypothesis

A. Evidence Based on the Wall Street Journal *Reports*

I begin my investigation by analyzing statements made by the firm managers, the analysts, and the reporters to assess the motives behind carveouts. I examine every relevant statement from the first *Wall Street Journal* report that carries a story of the proposed carveout to calculate a zero-one (no-yes) code related to the components of the asymmetric information and divestiture gains hypotheses as shown in table 6. Multiple statements related to the same subset hypothesis for the same firm are counted only once.

The *Wall Street Journal* reports exist in 185 cases, but one or more relevant statements are available in 134 cases. These are the bigger carveouts, with an average offering value of $235 million, accounting for 70% of the total offering value of my sample. Their average announcement-period excess return equals 2.44% (t-statistic = 4.69), which is somewhat higher than the 1.62% (t-statistic = 3.57) return for the remaining carveouts. The difference equals 0.82% (t-statistic = 1.19) and can be attributed to statements related to divestiture gains that constitute the bulk of all statements.

Table 6 shows that only 11 out of 134 reports, or 8% of the sample, contain statements suggesting that the issuers may be offering overpriced subsidiary stock. Eight reports suggest that the subsidiary's industry may be overvalued, and three suggest that the subsidiary itself may be overvalued. Allstate Corporation, carved out by Sears, Roebuck & Company, provides an example of the former: "The offering comes at what seems an ideal time, given the soaring values of property and casualty stocks since last August's Hurricane Andrew" (*Wall Street Journal,* March 19, 1993). Sabre Group Holdings, Incorporated, carved out by AMR Corporation, provides an example of the latter: "But some airline industry experts aren't climbing on board. They note that AMR Chairman Robert Crandall is a take-no-prisoners competitor who rarely hands out gifts. 'Bob Crandall has always known when to sell off at the top,' says Ernest Arvai, a consultant to the reservation business based in Windham, N.H." (*Wall Street Journal,* October 7, 1996).

There is only one report suggesting that the nonsubsidiary assets may be overvalued. Surprisingly, there are 38 reports suggesting that the subsidiary, and possibly the parent, may be undervalued. These reports are not in the nature of overvalued-subsidiary–undervalued-parent, as suggested by Nanda's asymmetric information hypothesis, but rather in the nature of ignored and

TABLE 6 **Analysis of the *Wall Street Journal* Reports for Evidence on the Asymmetric Information Hypothesis versus the Divestiture Gains Hypothesis, 1980–97**

Description	Code	Number of Firms
Firms for which there is at least one statement suggesting asymmetric information:		12
Overvalued subsidiary assets	AA	11
Overvalued nonsubsidiary assets	AB	1
Undervalued subsidiary or nonsubsidiary assets (same as DU below)	DU	See below
Firms for which there is at least one statement suggesting divestiture gains:		133
Refocusing strategy hypothesis:		82
Direct statement of spinoff, split-off, asset sale, or other forms of divestiture	DS1	64
Lack of fit or focus, improve corporate strategy, restructure operations	DS2	42
Financing strategy hypothesis: repay debt, build working capital, finance existing operations, proceeds will be used for general corporate purposes	DF	76
Investment strategy hypothesis: invest in new projects or upgrade existing operations	DI	34
Complexity, undervaluation, and pure play hypothesis: unlock hidden values, create pure play stocks	DU	38
Managerial incentives hypothesis: creating incentive pay for managers, giving stock to managers	DM	3
Miscellaneous hypotheses:		16
Takeover defense	DT	8
Tax reduction	DX	4
Regulatory compliance	DR	6

NOTE.—This table includes 134 firms during the period 1980–97 for which the first *Wall Street Journal* report on carveout gives one or more reasons related to the asymmetric information hypothesis or the divestiture gains hypothesis. The table shows the frequency distribution of firms for which the firm managers, the analysts, or the reporters made one or more statements relating to the following broad categories.

unlocked values, as suggested by the complexity, undervaluation, and pure play hypothesis. Nabisco Holdings Corporation, carved out by RJR Nabisco Holdings Corporation, provides an example: "The planned Nabisco share offering is the culmination of a frustrating, two-year struggle by RJR management to increase the value of its tobacco-tainted stock by getting Wall Street to focus on the performance of red-hot Nabisco" (*Wall Street Journal*, October 31, 1994).

I find that 133 reports contain one or more statements related to the broad category of divestiture gains. Alternately, only one report does not mention such reasons. Statements related to the refocusing strategy hypothesis are the most numerous. There are 64 reports with statements of intended spinoff, split-off, asset sale, or other forms of divestiture, and 42 reports with statements that the carveout is part of a broader strategy to improve fit or focus, improve corporate strategy, or restructure operations. Lucent Technology, Incorporated,

carved out by AT&T Corporation, provides an example of the former: "AT&T has set initial plans to spin off 15% to 20% of its equipment business in an initial public offering in March or April. The remaining 80% to 85% of the stock is expected to be distributed to AT&T shareholders as part of a planned three-way breakup of AT&T into separate, publicly held long-distance, computer, and equipment companies" (*Wall Street Journal,* February 6, 1996). ITT Educational Services, Incorporated, carved out by ITT Corporation, provides an example of the latter: "The announcement underscored ITT's recent efforts to revamp its collection of businesses" (*Wall Street Journal,* March 15, 1994).

Statements related to the financing strategy hypothesis are the second most numerous. Younkers, Incorporated, carved out by Equitable of Iowa Company, provides an example: "Equitable said it will use proceeds from the planned sale of its 4,703,555 Younkers shares for its life insurance and annuity business. Younkers itself plans to sell 1,466,445 new shares and use the proceeds to reduce debt" (*Wall Street Journal,* February 26, 1992).

Statements related to investment strategy are less numerous. Switchco, Incorporated, carved out by Graphics Scanning Corporation, provides an example: "Graphic Scanning, a data services communications concern, said the proceeds would help fund research and development and other operations. Switchco is starting up production of interactive packet switching products" (*Wall Street Journal,* August 11, 1981).

Surprisingly, there are only three statements related to the managerial incentives hypothesis. Also uncommon are statements related to takeover defense, tax reduction, and regulatory compliance. Still, reports containing these four types of reasons are twice as numerous as reports raising concerns about overvalued subsidiary or subsidiary's industry. The relative frequencies of different statements convey an unambiguous impression that carveouts are motivated by divestiture types of reasons.

B. Evidence on the Refocusing Strategy Hypothesis

Before carveout, the parent firms tend to be unfocused in their operations. The 184 firms for which I can find the Compustat segment data have an average of 2.94 business segments and 5.16 different SIC codes in the year before carveout. This compares with 1.53 business segments and 2.59 different SIC codes for all firms included in the segment file during the period 1983–97 (a total of 90,816 firm years). Desai and Jain (1999) document that even the 155 parent firms that spun off subsidiaries during the period 1975–91 have an average of 3.14 business segments. It is, therefore, not surprising that refocusing strategy types of reasons are more common than any other type of reasons in table 6.

Panel A of table 7 examines whether carveouts that mention refocusing strategy types of reasons earn higher announcement-period excess returns than the others. The difference equals 0.40% (t-statistic $= 0.54$), which is positive

TABLE 7 Tests of the Refocusing Strategy Hypothesis of Carveouts Based on the Announcement-Period Excess Returns of Parent Stocks, 1980–97

Description	Market-Adjusted Excess Returns			
	Number	Mean (*t*-Statistic)	Median	Percent Positive
Panel A. Based on the *Wall Street Journal* reports of refocusing strategy:				
Reports suggesting that carveout is a result of refocusing strategy, codes DS1 or DS2 from table 6	82	2.25 (3.65)***	1.30	65
No such reports	254	1.85 (4.53)***	.79	57
Difference of means—reports of refocusing strategy vs. no reports		.40 (.54)		
Panel B. Based on the relatedness of parent and subsidiary businesses:				
Different two-digit SIC code of parent and subsidiary	221	2.34 (5.27)***	1.14	63
Same two-digit SIC code of parent and subsidiary	100	.80 (1.44)	−.14	47
Incomplete SIC code data	15	3.84 (2.72)**	3.20	73
Difference of means—different vs. same two-digit SIC code		1.54 (2.17)**		
Panel C. Based on the second event after carveout:				
Spun off	43	3.86 (4.02)***	2.31	74
Acquired by third party	74	2.60 (3.39)***	.53	57
Acquired back by parent	28	2.01 (1.73)*	1.90	71
No second event	191	1.25 (2.83)***	.53	54
Difference of means—spun off vs. no second event		2.61 (2.47)**		
Acquired by third party vs. no second event		1.35 (1.53)		
Acquired back by parent vs. no second event		.76 (0.61)		

NOTE.—The sample of 336 carveout announcements during the period 1980–97 is obtained from the SDC and from the *Mergers and Acquisitions* magazine. It satisfies certain other restrictions discussed in table 3. Section II.B and table 6 provide a description of the refocusing strategy hypothesis. Excess returns during the announcement period are calculated by subtracting the cumulative value-weighted market returns over AD − 1 to AD + 1 from the cumulative parent stock returns. The *t*-statistics of sample means are calculated by using the cross-sectional distribution of market-adjusted returns and are reported in parentheses. The *t*-statistics in difference-of-means tests are calculated by assuming that the two samples may have unequal variances.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

but statistically insignificant.[4] Perhaps refocusing is such an essential part of carveouts that explicit statements do not result in a greater market reaction.

Panel B of table 7 examines whether the excess returns are higher when the refocusing benefits are greater, which occurs when the parent and subsidiary businesses are unrelated. I classify the parent and subsidiary businesses as unrelated if their two-digit SIC codes are different. The SIC codes are obtained from Compustat when available, and from CRSP otherwise.[5] Panel B shows that the SIC codes are different in 221 cases and the same in 100 cases. The excess returns average 2.34% in the first case and 0.80% in the second case (t-statistics = 5.27 and 1.44). The difference equals 1.54% (t-statistic = 2.17), which is significant at the 5% level.[6]

The final tests of the refocusing strategy hypothesis are based on the second event after carveout. Following Klein, Rosenfeld, and Beranek (1991), for every carveout, I examine whether there is a later complete spinoff, an acquisition by a third party, or an acquisition by the parent firm before the end of 1998. The first two actions result in a complete divestiture of the subsidiary firm. The third action can be interpreted as an admission that a spinoff or a third-party acquisition was intended but given up.

Panel C of table 7 shows that a second event occurs in 145 cases, or 43% of all cases. Third-party acquisitions are the most frequent second events (74 cases), followed by spinoffs (43 cases) and parent acquisitions (28 cases). If the market can rationally anticipate the second event on the announcement of the first event, then these cases should result in higher announcement-period excess returns. There is some evidence to support this conjecture. The carveouts that are followed by a complete spinoff earn announcement-period excess returns that are 2.61% higher than carveouts that are followed by no second event before the end of 1998 (t-statistic = 2.47). Corresponding differences for carveouts that are followed by a third-party acquisition are substantial but not statistically significant, while the differences for carveouts that are followed by a parent acquisition are small and insignificant.[7]

4. Relating announcement-period excess returns to the type of statements in the *Wall Street Journal* reports raises a potential concern. In 10 cases, the publication date is at least 2 days after the first announcement date, which is defined as the earlier of the day before publication date and the SEC filing date. The market may not have known the reasons given for these carveouts on the first announcement date. To correct for this problem, I repeated my tests after adding the 3-day excess returns around the publication date to the original announcement-period excess returns in these 10 cases. The results were nearly unchanged. I prefer to report results in this article with the original returns, because the cross-sectional variables other than the statement type are known on the first announcement date.

5. Kahle and Walkling (1996) show that the SIC codes from Compustat are generally more accurate.

6. As in my 1999 research, I also examined whether the announcement-period excess returns are higher when the precarveout firm has four or more segments. The results were insignificant and are not reported.

7. I also examined the second announcement-period excess returns. The subsidiary stocks that are spun off earn –0.60%, the stocks acquired by third parties earn 14.31%, and the stocks acquired back by parents earn 8.26% (t-statistics = 0.52, 5.95, and 1.96). The corresponding parent stocks earn 4.80%, 1.12%, and 2.50% (t-statistics = 3.60, 1.76, and 2.13).

TABLE 8 Tests of the Financing Strategy Hypothesis and the Investment Strategy Hypothesis of Carveouts Based on the Announcement-Period Excess Returns of Parent Stocks, 1980–97

		Market-Adjusted Excess Returns		
Description	*N*	Mean (*t*-Statistic)	Median	Percent Positive
Panel A. Based on the *Wall Street Journal* reports of financing strategy:				
Reports suggesting that carveout is a result of financing strategy, code DF from table 6	76	3.04 (4.06)***	1.42	70
No such reports	260	1.63 (4.24)***	.77	56
Difference of means—reports of financing strategy vs. no reports		1.41 (1.68)*		
Panel B. Based on the *Wall Street Journal* reports of investment strategy:				
Reports suggesting that carveout is a result of investment strategy, code DI from table 6	34	4.04 (2.83)***	1.70	74
No such reports	302	1.71 (4.97)***	.79	57
Difference of means—reports of investment strategy vs. no reports		2.33 (1.59)		
Panel C. Based on primary versus secondary stock issue:				
Only primary shares issued	186	1.62 (3.64)***	.86	59
Only secondary shares issued	47	1.02 (1.47)	1.01	57
Both primary and secondary shares issued	58	4.20 (4.49)***	1.66	66
Data on primary vs. secondary not available	45	1.33 (1.31)	.75	51
Difference of means—both primary and secondary vs. only primary		2.58 (2.49)**		
Difference of means—both primary and secondary vs. only secondary		3.18 (2.76)***		
Difference of means—only primary vs. only secondary		.58 (.72)		

NOTE.—The sample of 336 carveout announcements during the period 1980–97 is obtained from the SDC and from the *Mergers and Acquisitions* magazine. It satisfies certain other restrictions discussed in table 3. Section II.B and table 6 provide a description of the financing strategy hypothesis and the investment strategy hypothesis. Excess returns during the announcement period are calculated by subtracting the cumulative value-weighted market returns over AD − 1 to AD + 1 from the cumulative parent stock returns. The *t*-statistics of sample means are calculated by using the cross-sectional distribution of market-adjusted returns and are reported in parentheses. The t-statistics in difference-of-means tests are calculated by assuming that the two samples have possibly unequal variances.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

The combined evidence of tables 6 and 7 supports the refocusing strategy hypothesis. I point to the large frequency of related statements in the *Wall Street Journal* reports, the higher returns when the parent and subsidiary businesses are unrelated, the large frequency of subsequent complete divestitures, and the higher first announcement-period returns when there is a subsequent complete divestiture.

C. Evidence on the Financing Strategy and Investment Strategy Hypotheses

Panel A of table 8 shows that the 76 carveouts for which the *Wall Street Journal* reports mention financing strategy type of reasons (repay debt, build working capital, finance existing operations, general corporate purposes) earn

TABLE 9 **Additional Equity Offerings by Parent and Subsidiary Firms versus Industry and Size Matching Firms during 3 Years before to 3 Years after the Carveout Issue Date, 1980–97**

	Number of Equity Offerings				Capital Raised (Million $)		
Period	Parent or Subsidiary Firms	Matching Firms	Difference	χ^2-Statistic	Parent or Subsidiary Firms	Matching Firms	Difference
Panel A: Parent firms versus matching firms:							
Year −3	22	19	3	.23	2,024	1,049	975
Year −2	19	27	−8	1.49	5,550	3,140	2,410
Year −1	21	29	−8	1.38	6,353	4,376	1,977
Years −3, −2, and −1	62	75	−13	1.55	13,926	8,565	5,361
Carveout issue date							
Year +1	22	9	13	5.72**	4,776	1,265	3,511
Year +2	12	14	−2	.16	3,182	904	2,278
Year +3	18	9	9	3.13	5,090	2,093	2,997
Years +1, +2, and +3	52	32	20	5.44**	13,049	4,261	8,788
Years −3 to +3	114	107	7	.33	26,975	12,826	14,149

Panel B. Subsidiary firms vs. matching firms:							
Year −3		21				680	
Year −2		26				1,056	
Year −1		33				1,766	
Years −3, −2, and −1		80				3,502	
Carveout issue date	336				44,688		
Year +1	36	21	15	4.31*	5,785	1,571	4,214
Year +2	25	19	6	.88	2,813	1,433	1,380
Year +3	30	11	19	9.38***	3,369	1,735	1,634
Year +1, +2, and +3	91	51	40	14.29***	11,967	4,738	7,229
Years −3 to +3	427	131	296		56,655	8,240	48,415

NOTE.—The sample of 336 carveout announcements during the period 1980–97 is obtained from the Securities Data Company (SDC) and from the *Mergers and Acquisitions* magazine. It satisfies certain other restrictions discussed in table 3. For each parent and subsidiary firm, a matching firm is chosen, which is the closest in market value of all firms with the same 2-digit SIC code. The SIC code is obtained from Compustat when available, and from CRSP otherwise. If the SIC code is not available (as for a few subsidiary firms), then matching is done by market value alone. For each sample and matching firm, information on additional equity offerings is obtained by scanning the seasoned equity offerings data from SDC. A χ^2-statistic with one degree of freedom tests whether the difference between number of equity offerings by the sample and matching firms is statistically significant (Sachs 1982, pp. 467–72).

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

TABLE 10 Capital Expenditures by Parent and Subsidiary Firms versus Industry and Size Matching Firms during 1 Year before to 3 Years after the Carveout Issue Date, 1980–97

	Capital Expenditures for Sample Firms		Capital Expenditures for Matching Firms		
Fiscal Year	Number	Median	Number	Median	Difference in Medians
Panel A. Parent firms vs. matching firms:					
Year −1	240	.0431	251	.0549	−.0118*
Year 0	238	.0528	243	.0557	−.0029
Year +1	222	.0528	222	.0529	−.0001
Year +2	198	.0507	200	.0527	−.0020*
Year +3	169	.0443	172	.0549	−.0106***
Panel B. Subsidiary firms vs. matching firms:					
Year −1	260	.0373	263	.0432	−.0059**
Year 0	288	.0443	244	.0416	.0027
Year +1	280	.0506	231	.0416	.0090
Year +2	238	.0513	203	.0396	.0117*
Year +3	200	.0446	181	.0443	.0003

NOTE.—The sample of 336 carveout announcements during 1980–97 is obtained from the SDC and from the *Mergers and Acquisitions* magazine. It satisfies certain other restrictions discussed in table 3. For each parent and subsidiary firm, a matching firm is chosen, which is the closest in market value of all firms with the same two-digit SIC code. The SIC code is obtained from Compustat, when available, and from CRSP otherwise. If the SIC code is not available (as for a few subsidiary firms), then matching is done by market value alone. Annual data on capital expenditures and sales are obtained from Compustat for a 5-year period beginning one fiscal year before the carveout year. Capital expenditures are normalized by sales and then compared across sample and matching firms. Due to extreme skewness in capital expenditures, the mean values are practically meaningless and are not reported. The Wilcoxon rank sum test is used to measure the statistical significance of the difference in capital expenditures for sample and matching firms (Sachs 1982, pp. 293–303).

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

1.41% more than the remaining cases (*t*-statistic = 1.68). Panel B of table 8 shows that the 34 carveouts for which the *Wall Street Journal* reports mention investment strategy type of reasons (invest in new projects, upgrade existing operations) earn 2.33% more than the remaining cases (*t*-statistic = 1.59). The difference in excess returns is greater in the second case but, perhaps due to the smaller sample size and the assumption of unequal subsample variances in all difference of means tests reported in this article, the *t*-statistic is not significant at the 10% confidence level. I later show that the regression tests that implicitly assume equal subsample variances give significant *t*-statistics. I, therefore, interpret these results as an endorsement of the financing strategy and investment strategy hypotheses.

Panel C of table 8 relates the excess returns to whether the issue includes primary or secondary shares. I have the required data in 291 cases. Only

primary shares are issued in 186 cases, only secondary shares are issued in 47 cases, and both primary and secondary shares are issued in the remaining 58 cases. The excess returns are substantially higher when both primary and secondary shares are issued than when only primary or only secondary shares are issued. The difference between only primary or only secondary issues is insignificant. I have no satisfactory explanation for these results.

Table 9 compares the equity financing activity of the parent and subsidiary firms with their matching firms. For each sample firm, I choose a matching firm that has the closest market value of all firms with the same two-digit SIC code. I then scan the SDC files for data on SEOs. Panel A shows that the parent firms raise $26,975 million from 114 SEOs over a period starting 3 years before the carveout issue date and ending 3 years after the carveout. In comparison, the matching firms raise $12,826 million from 107 SEOs. The parent firms raise 2.10 times as much equity as their size and industry matching firms. This ratio increases to 3.16 if I include the proceeds of secondary shares sold in carveout (which equal 30.15% of the total proceeds of $44,886 million in table 3).

Panel B of table 9 shows that even the subsidiary firms are heavy equity issuers despite the carveout. The subsidiary firms raise an additional $11,967 million from 91 SEOs over a 3-year period starting after the carveout issue date. In comparison, the matching firms raise $3,502 million from 80 SEOs before the issue date and $4,738 million from 51 SEOs after the issue date. Over the combined period, the subsidiary firms raise 1.45 times as much equity as their size and industry matching firms, a ratio that increases to 5.26 if I include the proceeds of primary shares sold in carveout.

The evidence of table 9 supports both the financing strategy and investment strategy hypotheses. To distinguish between them, I examine the capital expenditures data. Panel A of table 10 shows that the median capital expenditures normalized by sales for parent firms are less than for matching firms during each year of a 5-year period beginning one fiscal year before the carveout year. The difference is statistically significant during 3 of these 5 years. Panel B of table 10 shows that the median capital expenditures normalized by sales for subsidiary firms are less than for matching firms in the fiscal year before the carveout year but then increase to more than for matching firms during the following 4 years. The difference is statistically significant in years -1 and $+2$.

The combined evidence of tables 9 and 10 shows that the parent firms raise substantial amounts of equity, yet their capital expenditures are lower than for matching firms. This evidence is consistent with the financing strategy hypothesis. The parent firms may be using the proceeds to retire debt or meet other financial contingencies, as suggested by Allen and McConnell (1998). The subsidiary firms raise more equity than their matching firms, but they also spend more on capital expenditures. This evidence is consistent with the investment strategy hypothesis.

TABLE 11 **Tests of the Complexity, Undervaluation, and Pure Play Hypothesis, Managerial Incentives Hypothesis, and Miscellaneous Hypotheses of Carveouts Based on the Announcement-Period Excess Returns of Parent Stocks, 1980–97**

		Market-Adjusted Excess Returns		
Description	Number	Mean (*t*-Statistic)	Median	Percent Positive
Panel A. Based on the *Wall Street Journal* reports of complexity, undervaluation, and pure play stocks:				
Reports suggesting that carveout is a result of complexity and undervaluation of combined assets or creation of pure play stocks, code DU from table 6	38	4.02 (4.31)***	2.72	74
No such reports	298	1.68 (4.60)***	.81	57
Difference of means—reports of complexity, undervaluation, and pure play vs. no reports		2.34 (2.34)**		
Panel B. Based on the *Wall Street Journal* reports of managerial incentives:				
Reports suggesting that carveout is a result of managerial incentives, code DM from table 6	3	7.71 (1.64)	10.74	67
No such reports	333	1.89 (5.53)***	.93	59
Difference of means—reports of investment strategy vs. no reports		5.82 (1.23)		

Panel C: Based on the *Wall Street Journal* reports of miscellaneous reasons:				
Reports suggesting that carveout is part of a takeover defense, code DT from table 6	8	3.08 (1.26)	3.95	63
Reports suggesting that carveout is part of a tax reduction strategy, code DX from table 6	4	1.17 (.19)	−3.17	50
Reports suggesting that carveout is a result of regulatory reasons, code DR from table 6	6	.10 (.11)	1.05	66
No such reports	320	1.93 (5.53)***	.95	59
Since none of the miscellaneous factors are significant, the difference of means tests are not reported				

NOTE.—The sample of 336 carveout announcements during 1980–97 is obtained from the SDC and from the *Mergers and Acquisitions* magazine. It satisfies certain other restrictions discussed in table 3. Section II.B and table 6 provide a description of the complexity, undervaluation, and pure play hypothesis, managerial incentives hypothesis, and miscellaneous hypotheses. Excess returns during the announcement period are calculated by subtracting the cumulative value-weighted market returns over AD − 1 to AD + 1 from the cumulative parent stock returns. The *t*-statistics of sample means are calculated by using the cross-sectional distribution of market-adjusted returns and are reported in parentheses. The *t*-statistics in difference-of-means tests are calculated by assuming that the two samples may have unequal variances.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

TABLE 12 Multivariate Tests of the Carveout Announcement-Period Excess Returns, 1980–97

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Intercept	−.82	2.34	1.63	1.71	1.68	1.50	1.66	−1.64	1.19	.90
	(−1.34)	(5.54)***	(4.19)***	(4.76)***	(4.65)***	(3.75)***	(4.56)***	(−2.32)**	(2.26)**	(1.66)*
REL_ SIZE_ RANK	.62							.69		
	(5.36)***							(5.64)***		
SAME_INDUSTRY		−1.54						−1.66	−1.30	−1.30
		(−2.04)**						(−2.20)**	(−1.64)*	(−1.65)*
DF			1.41					.33	.35	.36
			(1.73)*					(.38)	(.38)	(.39)
DI				2.33				1.68	2.29	2.26
				(2.06)**				(1.46)	(1.90)**	(1.89)*
DU					2.34			2.69	2.24	1.88
					(2.17)**			(2.43)**	(1.92)*	(1.61)
PS						2.69		2.42	2.84	2.93
						(3.00)***		(2.80)***	(3.13)***	(3.25)***
SPINOFF							2.20			2.25
							(2.16)**			(2.14)**
Sample	335	321	336	336	336	291	336	277	277	277
Adjusted R^2	.077	.010	.006	.010	.011	.027	.011	.155	.059	.071

NOTE.—The sample of 336 carveout announcements during 1980–97 is obtained from the SDC and from the *Mergers and Acquisitions* magazine. It satisfies certain other restrictions discussed in table 3. The dependent variable is the excess return calculated by subtracting the cumulative value-weighted market return over AD − 1 to AD + 1 from the cumulative parent stock returns. The independent variables are as follows: REL_SIZE_RANK: decile rank of the ratio of subsidiary market value to parent market value on listing date; SAME_INDUSTRY: A dummy that takes the value 1 if the parent and subsidiary have the same 2-digit SIC code, 0 otherwise; DF: a dummy that takes the value 1 if there is a *Wall Street Journal* report that mentions financing motives, 0 otherwise; DI: a dummy that takes the value 1 if there is a *Wall Street Journal* report that mentions investment motives, 0 otherwise; DU: a dummy that takes the value 1 if there is a *Wall Street Journal* report that mentions complexity, undervaluation, and pure play reasons, 0 otherwise; PS: a dummy that takes the value 1 if both primary and secondary shares are issued, 0 otherwise; SPINOFF: a dummy that takes the value 1 if the carveout is followed by spinoff of the subsidiary before 1998, 0 otherwise. Section V.A and table 6 provide a further description of the DF, DI, and DU variables. The *t*-statistics are reported in parentheses.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

D. Evidence on the Remaining Divestiture Gains Hypotheses

Panel A of table 11 shows that the 38 carveouts for which the *Wall Street Journal* reports mention complexity, undervaluation, and pure play type of reasons earn 2.34% more than the remaining cases (t-statistic = 2.34). This evidence simultaneously supports the divestiture gains hypothesis and contradicts Nanda's asymmetric information hypothesis. In many cases, the reports suggest that the subsidiary is hidden inside a complex organization and therefore undervalued by the market (recall the report on Nabisco Holdings Corporation, which refers to the subsidiary as "red-hot"). Although not shown in tables, the 11 firms for which the reports raise concerns of overvalued subsidiary or subsidiary's industry earn excess returns of 2.37%, insignificantly different from 1.93% for the remaining 325 firms. Further evidence on the complexity, undervaluation, and pure play hypothesis is provided by an earlier result from table 7, which shows that the excess returns are higher when the parent and subsidiary firms are in different industries.

Panels B and C of table 11 show the excess returns of firms that mention managerial incentives, takeover defense, tax reduction, and regulatory compliance type of reasons. The small sample sizes make these cases indistinguishable from the remaining cases. However, an earlier result from table 10 that shows that subsidiary firms undertake greater capital expenditures than matching firms provides some support for the managerial incentives hypothesis.

E. Regressions

Table 12 shows univariate and multivariate regressions of the carveout announcement-period excess returns. The regressions serve two purposes. First, the univariate regressions provide an alternative to the difference of means tests in tables 5, 7, 8, and 11 by assuming that the subsample variances are equal. Second, the multivariate regressions test whether the many cross-sectional determinants of excess returns remain significant in the presence of each other.

The cross-sectional determinants are as follows: REL_SIZE_RANK = decile rank of the ratio of subsidiary market value to parent market value on listing date; SAME_INDUSTRY = a dummy that takes the value 1 if the parent and subsidiary have the same two-digit SIC code, 0 otherwise; DF = a dummy that takes the value 1 if a *Wall Street Journal* report mentions financing motives, 0 otherwise; DI = a dummy that takes the value 1 if a *Wall Street Journal* report mentions investment motives, 0 otherwise; DU = a dummy that takes the value 1 if a *Wall Street Journal* report mentions complexity, undervaluation, and pure play reasons, 0 otherwise; PS = a dummy that takes the value 1 if both primary and secondary shares are issued, 0 otherwise; SPINOFF = a dummy that takes the value 1 if the carveout is followed by spinoff of the subsidiary before 1998, 0 otherwise.

Univariate regressions (1)–(7) show that each of the above seven variables

is significant at the 10% confidence level, or better. The variable REL_SIZE_RANK is the dominant one, and it remains highly significant in the opposite direction of the asymmetric information hypothesis.

Multivariate regressions follow next. Regression (8) includes all variables except SPINOFF, which uses information available after the carveout. Regression (9) excludes both SPINOFF and REL_SIZE_RANK. The second variable is excluded because it is a proxy for wealth gains on account of all of the divestiture gains hypotheses, which are separately captured by SAME_INDUSTRY, DF, DI, and DU. Regression (10) includes SPINOFF, but it excludes REL_SIZE_RANK. Together, these regressions show the following results. First, DF becomes insignificant in the presence of other variables. Second, the remaining variables are quite stable. Their coefficients are statistically significant in at least two of the three multivariate regressions. Overall, the regression results uphold and even strengthen the evidence in favor of the different divestiture gains hypotheses.

VI. Conclusions

Using a sample of 336 carveouts that were done during the period 1980–97, this article examines whether the positive announcement-period returns of equity carveouts reflect the resolution of asymmetric information concerning the parent and subsidiary stock values, or the likely wealth gains from divestitures. The asymmetric information hypothesis is based on Nanda (1991), and it extends the Myers and Majluf (1984) framework to the case of parent and subsidiary stock issues. This framework has been used to explain the negative announcement-period returns of SEOs and the negative long-term excess returns of IPOs and SEOs. The divestiture gains hypothesis is based on Schipper and Smith (1986). It has long been used to explain the positive market reaction to spinoffs and asset sales.

The first part of this article shows that, unlike other security issues, asymmetric information does not explain the carveout decision. I reach this conclusion by deriving and testing a key prediction of the asymmetric information model, which states that the announcement-period returns should decrease with an increase in the ratio of overvalued subsidiary assets to the undervalued nonsubsidiary assets and eventually become negative as this ratio exceeds one. My results are significant in the opposite direction of this prediction.

The remainder of this article shows many results that support the divestiture gains hypothesis. First, I analyze the *Wall Street Journal* reports accompanying the carveout, and I find extensive evidence that the firm managers, the analysts, and the reporters treat carveouts like divestitures. Second, the parent firms before carveout are as diversified as the parent firms before spinoffs, and the market reaction is higher when they divest subsidiary business unrelated to the parent business. Third, many carveouts are followed by a complete spinoff or a third-party acquisition. I find some evidence that the market anticipates this second event on the announcement of carveout and reacts more enthu-

siastically in such cases. Fourth, the market also reacts positively when the *Wall Street Journal* reports mention that the carveout proceeds will be used to repay debt or meet other financial contingencies and to invest in new projects. I show that the parent and subsidiary firms issue more equity than size and industry matching firms despite the carveout. The additional equity appears to be used to meet the financial contingencies of parent firms and the investment needs of subsidiary firms. Fifth, I show that the market reacts more enthusiastically when the *Wall Street Journal* reports mention that carveout is intended to create pure plays and thereby unlock hidden values inside a complex firm structure. The combined evidence of this article thus shows that the market reacts positively to the announcement of carveouts because it thinks that carveouts create value by divesting unrelated businesses, enabling a complete spinoff or a third-party acquisition, providing new financing, undertaking new investments, and reducing stock complexity.

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