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Author(s): Myron B. Slovin and Marie E. Sushka

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The Implications of Equity Issuance Decisions within a Parent-Subsidiary Governance Structure

MYRON B. SLOVIN and MARIE E. SUSHKA*

ABSTRACT

We provide evidence about the motivation for a parent–subsidiary governance structure by analyzing valuation effects of seasoned equity offerings by publicly traded affiliated units. Our results support Nanda's (1991) theoretical model which predicts equity offerings convey differential information about subsidiary and parent value. Subsidiary equity issuance has negative valuation effects on issuing subsidiaries and positive effects on parents, while parent equity issuance reduces issuing parent wealth and increases subsidiary wealth. Our evidence suggests that a parent–subsidiary organizational structure enhances corporate financing flexibility and mitigates underinvestment problems identified by Myers and Majluf (1984). There is no evidence of subsidiary wealth expropriation.

A SMALL PROPORTION OF publicly traded corporations are majority controlled subsidiaries of publicly traded parent firms.¹ In this article, we present evidence about the effects of equity issuance within this distinctive and legally significant corporate governance structure. Our work provides insight about two key issues: one, the economic motivation for parent–subsidiary organizations and two, whether this governance structure engenders expropriation of subsidiary wealth. The reason for establishing a publicly traded subsidiary is an unresolved issue in corporate finance. Concurrently, there is a legal debate about whether parents expropriate minority shareholder wealth. It is well-documented that seasoned equity issuance is a negative signal of issuing firm value. By analyzing patterns of wealth effects within a parent–subsidiary governance structure, we demonstrate that equity issuance announcements convey differential information about affiliated units. Our results support Nanda's (1991) view that parent–subsidiary equity issuance enhances corporate financing flexibility and mitigates underinvestment problems. We find no evidence of expropriation of subsidiary wealth.

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¹ For NYSE/AMEX firms, Mikkelsen and Partch (1989) report that 9 percent are majority controlled by their officers and directors and Holderness and Sheehan (1988) find that 114 firms, from 1978 through 1984, had either an individual or a corporation as majority shareholder.

Public trading of a minority interest in a subsidiary results from an equity carve-out, which is an initial public offering in a wholly-owned subsidiary, or a partial acquisition in which a minority interest in a target company continues to publicly trade after a bidder acquires control. When a parent holds a majority stake, ipso facto, subsidiary actions cannot be regarded as arm's length decisions and minority shareholders are effectively frozen into decisions controlled by parent managers.² This implies a potential for conflicts of interest and litigation over interpretation of fiduciary norms that apply to a governance structure where parent managers have two constituencies. Fama and Jensen (1983) argue that entities characterized by severe agency difficulties are unlikely to survive in competitive equilibrium, but publicly traded parent–subsidiary structures have remained a distinctive element of the corporate sector. Prior studies provide evidence of wealth gains when parents create publicly traded, minority interests in subsidiaries. These wealth gains have been ascribed to efficiency gains from restructuring (Schipper and Smith (1986)), agency considerations (Allen and McConnell (1995)), or avoidance of parent equity issuance (Nanda (1991)). Nevertheless, the distribution of wealth effects that result from managerial decisions made within a parent–subsidiary governance structure has not been addressed. Our work explores this issue by examining decisions to offer subsidiary or parent equity and analyzing the wealth effects on affiliated units. This allows us to assess the validity of differing perspectives about the motivation of a parent–subsidiary governance structure.

We find negative returns of -4.1 percent to subsidiaries announcing seasoned stock offerings while their parents earn significantly positive returns of 1.9 percent, indicating subsidiary stock issuance conveys differential information about the value of subsidiary and nonsubsidiary assets of parent firms. The magnitude and pattern of wealth effects on affiliated units are similar whether the parent sells its holdings of subsidiary stock through a secondary offering or the subsidiary conducts a primary stock offering. Gains in parent value exceed losses sustained by minority shareholders of issuing subsidiaries so, contrary to prior evidence about negative wealth effects of seasoned equity issuance, announcements of subsidiary stock offerings increase the value of the combined enterprise. This net gain in wealth is inconsistent with the view that a parent–subsidiary organization is a mechanism for redistributing wealth between affiliated units. Parents that announce primary seasoned equity offerings sustain returns of -2.7 percent, while their publicly traded subsidiaries earn significantly positive returns of 1.6 percent. Thus, parent equity issuance conveys favorable information about subsidiary value even though the equity is a joint claim on both parent and subsidiary projects. Since parent, not subsidiary, managers control equity issuance decisions, wealth expropriation cannot explain the positive effect on subsidiary value induced by

² Murphy (1956) discusses the principle that the power to vote a subsidiary's stock inheres in the parent firm's board of directors. In addition, officers and directors of the parent typically serve in the same capacity for the subsidiary.

parent equity issuance. For both sets of events, positive returns to nonissuing units are disproportionately associated with events that generate negative returns to affiliated issuing units, a pattern that is not consistent with randomness.

This evidence indicates that equity issuance announcements convey unfavorable information about the issuing unit and favorable information about the nonissuing unit. Our results support the predictions of Nanda's (1991) model, which explains a parent–subsidiary governance structure as a mechanism that enhances corporate flexibility in making financing decisions because the parent can raise external funds by issuing securities in either unit. This option permits undervalued parents to invest in projects that otherwise might be foregone due to the underinvestment problem induced by adverse selection difficulties associated with seasoned equity offerings. Moreover, we find that over the year prior to equity offerings, issuing entities in each sample outperform the market, while shares of nonissuing units do not. Thus, our results also extend the Lucas and McDonald (1990) argument that an underpriced firm has an incentive to postpone an equity offering until managers consider its shares no longer underpriced, while an overpriced firm issues equity as investment projects arise. From this perspective, our evidence implies that an undervalued parent carves out a subsidiary to raise external funds without issuing parent equity, so that positive returns to parents at carve-out announcements result from information-based, signaling phenomena as modeled by Nanda, instead of efficiency gains or agency considerations associated with corporate restructuring.

The remainder of the article is organized as follows. In Section I we discuss alternative perspectives about seasoned equity issuance by entities that comprise a parent–subsidiary organizational structure. Data and methodology are explained in Section II. In Section III we review the empirical evidence, and conclusions are presented in Section IV.

I. Perspectives on Subsidiary and Parent Seasoned Equity Offerings

Prior work by Schipper and Smith (1986), Nanda (1991), and Grossman and Hart (1980) provides insight about the costs and benefits of establishing a publicly traded subsidiary, but the implications of managerial decisions made within a parent–subsidiary governance structure are not addressed. We consider four perspectives about the information conveyed by seasoned equity issuance decisions within a parent–subsidiary structure: the expropriation hypothesis, the adverse selection hypothesis, the growth opportunities hypothesis, and the separation hypothesis.

The expropriation hypothesis arises from the legal principle that a parent's status as majority stockholder carries a fiduciary responsibility to deal fairly with minority shareholders of subsidiaries (Hazen (1977)). However, Brudney and Clark (1981) and Bebchuk (1989) argue that there is an inherent conflict of interest between parent and minority shareholders that is not effectively controlled by market forces or legal statutes, and which leads to expropriation

of minority shareholder interests by parents. For example, a parent may buy (sell) items from (to) a subsidiary on terms favorable to the parent, exploit subsidiary assets or investment opportunities, or use the subsidiary to fund parent projects.³ Easterbrook and Fischel (1982) counter that corporate decisions, such as allocating investment opportunities between parent and subsidiary, reflect managers' judgments about maximizing total firm value. They support the traditional rule of judicial deference to managerial decisions with respect to parent–subsidiary activities.

Court decisions on conflicts of interest in parent–subsidiary transactions establish that minority shareholders have the right to require that the subsidiary be operated for their proportionate benefit. However, Eisenberg (1976) concludes that, in practice, legal standards are sufficiently lenient, indefinite, or unenforceable, to allow the parent considerable latitude in its subsidiary dealings.⁴ Moreover, case law establishes that a common stock offering cannot be blocked by shareholders who disagree with the sale or use of proceeds, as long as the transaction occurs at a fair price (34 Delaware Court of Chancery 99 A 2nd at 240–241). Thus, when there is an efficient public market for the stock, minority subsidiary shareholders have no legal grounds to prevent equity issuance. The expropriation hypothesis argues that subsidiary equity issuance within a parent–subsidiary governance structure is a means to increase parent wealth at the expense of minority shareholders of the subsidiary. This hypothesis predicts that subsidiary share prices should fall and parent share prices increase at subsidiary equity issuance announcements and that the increase in parent value should be no greater than the loss in value to minority shareholders. Since parents control decisions at both affiliated units, subsidiary managers do not have the capability to expropriate parent wealth. Thus, this hypothesis does not generate predictions about subsidiary wealth effects in response to parent equity issuance.

The adverse selection hypothesis indicates that an equity offering conveys unfavorable information specific to the issuing unit. From this perspective, there should be a negative valuation effect on an issuing subsidiary, and a negative effect on the parent proportionate to its holdings of subsidiary stock. Similarly, there should be a negative share price effect on an issuing parent that announces an equity offering. If the market views parent equity as a joint claim on subsidiary and parent projects, parent offerings should also reduce subsidiary value. Nevertheless, this framework does not consider the tradeoffs intrinsic to decisions to issue equity in the parent versus the subsidiary.

The growth opportunities hypothesis views a subsidiary equity offering as a means to obtain external financing that is tied to subsidiary investment projects since the equity has a claim only over subsidiary cash flow. The

³ In cases where the parent's shareholding in the subsidiary constitutes less than a majority, exploitation of the subsidiary could lead to a lower price of subsidiary stock, making it worthwhile for an outsider to gain control. If the parent has majority control, this potential check is not effective.

⁴ For a debate on this issue, compare Easterbrook and Fischel (1982) with Cary (1974).

Ambarish, John, and Williams (1987) signaling model predicts a favorable share price reaction to equity issuance by high growth firms with few assets in place. According to Schipper and Smith (1986), carved-out subsidiaries are typically younger, higher growth firms than their parents. This implies that there should be a positive announcement effect on equity issuing subsidiaries, a prediction counter to the expropriation and adverse selection hypotheses, as well as a positive effect on parent value due to its ownership of subsidiary stock. Since parents are typically mature firms relative to their subsidiaries, the model implies negative share price effects for issuing parents, but offers no prediction about valuation effects on subsidiaries.

The separation hypothesis is drawn from Nanda's (1991) theoretical work, which is framed in terms of equity carve-out decisions but does not incorporate the institutional characteristics of the initial public offerings market. Nanda demonstrates that the choice between a parent versus a subsidiary stock offering reveals differential private information about the values of the affiliated units. When parent managers have private information that the consolidated firm is undervalued but a subsidiary is overvalued, they issue subsidiary rather than parent equity. This implies a negative share price effect on the issuing subsidiary, but the negative impact on parent wealth implied by the decline in the value of its shareholdings in the subsidiary is outweighed by a positive information effect about the undervaluation of the parent's nonsubsidiary operations. As a result, a subsidiary equity offering conveys unfavorable news about subsidiary value but good news about parent value. This differential response is a consequence of the informational environment within which equity issuance takes place. Using parallel logic, managers of an overvalued parent with an undervalued subsidiary would issue parent equity, inducing a negative effect on parent value but a positive effect on subsidiary value. The predicted pattern of returns, which cannot be rationalized by expropriation since subsidiaries do not control parent decision making, implies that a carved out or a partially acquired subsidiary provides a parent with a valuable financing option. Nanda demonstrates that the ability to issue seasoned equity in an overvalued subsidiary, and thereby avoid a parent offering, provides financing flexibility that allows a firm to overcome the underinvestment problem associated with external financing (Myers and Majluf (1984)).

We consider two additional aspects of subsidiary equity issuance within a parent-subsidiary structure that may influence valuation effects: the choice between primary versus secondary subsidiary stock offerings and induced changes in ownership structure. A secondary offering reduces a parent's stake in its subsidiary and the proceeds flow to the parent, while total subsidiary shares are unchanged. Alternatively, a parent can direct the subsidiary to sell new shares to outside investors. The proceeds flow to the subsidiary but, in practice, can be redirected to the parent, for example, through repayment of loans. Although secondary and primary offerings are broadly similar, they have different tax implications. A secondary offering is a taxable event, generating a capital gain (or loss) that affects parent tax liabilities. When the outcome is a capital gain (loss), the tax effect reduces (increases) the desirabil-

ity of a secondary relative to a primary offering. In comparison, a primary seasoned stock offering by a subsidiary (or any firm) is not a taxable event for either the subsidiary or the parent, regardless of the use of proceeds. Thus, if capital gains are the typical outcome, tax considerations suggest that secondary offerings should be less common than primary offerings and should elicit a less favorable parent share price response.

A parent-controlled subsidiary cannot be the target of a successful hostile takeover, which limits the market for corporate control as a mechanism for disciplining managers. A stock offering that reduces parent control, however, may open the subsidiary to external bids, improve managerial incentives, and reduce the potential for expropriation of subsidiary wealth. This suggests that when equity offerings reduce parent ownership below 50 percent, there may be a more positive (or less unfavorable) valuation effect on the issuing subsidiary. Since a parent needs 80 percent control to consolidate a subsidiary for tax purposes, if operating losses are expected, consolidation reduces taxes by offsetting taxable income of either the subsidiary or the parent. This implies that a subsidiary equity offering that reduces parent ownership below 80 percent may generate favorable share price effects by conveying positive expectations about future operating income.

II. Sample and Methodology

We construct a sample of publicly traded corporations in which a majority of shares, 50 percent or more, is owned by a publicly traded firm, by examining the ownership structure of each firm included in Standard and Poor's Stock Reports for New York Stock Exchange (NYSE), American Stock Exchange (AMEX), and Nasdaq for each year from 1975 through 1993. Information about seasoned stock offerings is obtained from the Registered Offerings of Securities file of the Securities and Exchange Commission (SEC), the National Stock Summary, and Moody's Industrial Manuals. We retain events in which both the subsidiary and parent have sufficient returns on the Center for Research in Security Prices (CRSP) files to conduct event study analyses. Using public reports, we verify that at the equity offering announcement, the subsidiary is majority controlled by the parent. These procedures generate samples of 38 seasoned stock offerings by subsidiaries and 37 offerings by parents. Announcement dates are obtained from *The Wall Street Journal* and Dow Jones News Wire. The frequency of these offerings, reported in Panel A of Table I, indicates that subsidiary and parent equity offerings have comparable distributions. Given the limitations imposed by the selection criteria and the fact that equity issuance is a relatively uncommon event (Mikkelsen and Partch (1986)), the sample sizes are reasonable.

We examine *The Wall Street Journal* and published sources, including Moody's Industrial Manuals and Standard and Poor's Stock Reports, to obtain descriptive statistics about characteristics of the offerings and the subsidiaries and parents. Firm size is defined as market value (calculated as number of shares outstanding multiplied by share price four weeks before the announce-

Table I
Descriptive Statistics for Firms and Equity Offerings Within a Parent–Subsidiary Governance Structure

Frequency distribution of events and descriptive statistics for firm size (measured as market value calculated as the number of shares outstanding multiplied by share price four weeks prior to the announcement), ownership structure, and offer size (measured as gross proceeds) for seasoned common stock offerings by publicly traded, parent-controlled subsidiaries and by parent firms with a publicly traded, majority-controlled subsidiary.

Panel A: Frequency Distribution, 1975–1993																						
	Total	1975	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93		
Subsidiary issues	38	0	0	0	0	0	2	1	2	7	1	6	3	1	0	4	1	2	5	3		
Parent issues	37	3	2	3	0	0	0	1	2	3	1	2	4	2	2	0	3	3	5	1		

	Panel B: Issuing Subsidiaries		Panel C: Issuing Parents	
	Mean	Median	Mean	Median
	(1)	(2)	(3)	(4)
Firm size				
Market value (\$ millions)	813.30	408.20	3295.00	1119.10
Ratio of market value of subsidiary to parent	0.52	0.38	0.33	0.19
Ownership by parent (%)				
Prior to offering	69.40	68.00	69.52	68.50
Post offering	55.20	53.20	69.52	68.50
Ratio of parent stake to parent market value	0.36	0.26	0.22	0.13
Proceeds				
Offer size (\$ millions)	100.60	54.00	233.80	94.80
Ratio of proceeds to market value of issuing unit	0.21	0.12	0.15	0.10
Age of subsidiary as a public company (years)	6.10	3.00	8.00	3.80

ment) and offer size is measured as gross proceeds (offer price multiplied by the number of shares sold). In Panel B, mean (median) firm size of issuing subsidiaries is \$813 million (\$408 million). Parents are large corporations (with a mean market value of \$2,638 million (median value of \$1,805 million)), but the ratio of subsidiary to parent capitalization is also large with a mean value of 52 percent (median value of 38 percent). The preoffer mean (median) parent ownership ratio is 69 percent (68 percent) and the postoffer ownership ratio is 55 percent (53 percent), indicating that parents typically maintain majority interest. Valuing parent shareholdings in the subsidiary at market prices, the subsidiary accounts for an average of 36 percent of parent market value (median value of 26 percent). The mean (median) offer size is \$101 million (\$54 million). The mean (median) ratio of offer size to subsidiary firm size is 21 percent (12 percent). Of the 38 offerings, 10 (26 percent) are offerings of parent-held stock, an indication that secondaries are less common than primary offerings. Typically, subsidiary activities are in a different industry from the parent, sharing the same two-digit Standard Industrial Classification

(SIC) code in only seven (18 percent) events. At the announcement date, subsidiaries are longstanding with a mean age as a public company of 6.1 years (median of 3.0 years).

Stated reasons for the offering are obtained from annual reports, 10Ks, Standard and Poor's Reports, and articles in the financial press. In several cases more than one reason is cited. Repaying debt is the most common motive, occurring in 17 cases (45 percent); general corporate purposes is listed in 14 cases (37 percent); and financing expansion or acquisitions is mentioned 12 times (32 percent). In five cases (13 percent), the parent's purchase of a portion of the offering maintains its proportionate ownership.

Descriptive statistics for parents announcing primary stock offerings are reported in Panel C. Issuing parents are typically large corporations with a mean market value of \$3,295 million (median value of \$1,119 million). Their publicly traded subsidiaries are also large but the mean (median) ratio of subsidiary to parent value, 33 percent (19 percent), is somewhat smaller than in the subsidiary issuance sample. The mean (median) proportion of subsidiary shares owned by these parents is 69.5 percent (68.5 percent), virtually identical to the preoffer parent ownership ratio in the issuing subsidiary sample. Valuing parent shares in the subsidiary at market prices, the subsidiary accounts for an average of 22 percent of the market value of the parent (median of 13 percent). Mean (median) gross proceeds of parent offerings are \$234 million (\$95 million) and the mean (median) ratio of gross proceeds to parent market value is 15 percent (10 percent). Typically, the parent and its subsidiary are in different industries, sharing the same two-digit SIC code in only 11 (30 percent) events. At the announcement of parent offerings, subsidiaries have been publicly trading for a lengthy period, with a mean time span of 8 years (median of 3.8 years). In several cases, parents report more than one reason for the use of proceeds. Repaying debt is the most common motive, occurring in 22 cases (59 percent); general corporate purposes is listed in 16 cases (43 percent); and expansion or acquisition is mentioned eight times (22 percent). Overall, offering data and subsidiary and parent characteristics are similar in both samples.

Stock price reactions are measured by calculating average prediction errors using the market model around the initial report of the intent to issue common stock. We focus on the two-day event window defined as $-1, 0$, where 0 is the date of the *Wall Street Journal* report. Adjusted returns are the difference between the arithmetic return and the conditional expected return derived as the prediction value obtained from a least squares regression estimated over a preevent period, -160 to -40 , where the return on the CRSP market index is the explanatory variable. Adjusted returns are averaged for each day in the relevant subperiod to obtain average prediction errors. In testing for statistical significance, the null hypothesis is that the average prediction error equals zero for each event subperiod. The test statistic is the ratio of the average prediction error to its standard deviation estimated over the preevent period, -160 to -40 .

Table II
Valuation Effects at Subsidiary Seasoned Equity Issuance Announcements

Excess returns in percent for majority controlled, publicly traded subsidiaries announcing seasoned common stock offerings and for their parent firms listed on New York Stock Exchange (NYSE), American Stock Exchange (AMEX), or Nasdaq over the period 1975 through 1993; *t*-statistics are in parentheses, the proportion of negative returns is in brackets, and the sample size is 38. market model parameters are estimated using least squares over the preevent period, *t* = -160 to -40, and *t* = 0 is the initial public report of the seasoned common stock offering.

Event Period	Issuing Subsidiaries			Parents		
	Excess Returns (1)	Distribution of Returns		Excess Returns (4)	Distribution of Returns	
		Quartile (2)	Return (3)		Quartile (5)	Return (6)
-1 to 0	-4.06%	25%	-7.04%	1.91%	25%	-0.20%
	(-5.78)**	50%	-2.64%	(3.65)**	50%	1.32%
	[0.87]	75%	-0.92%	[0.26]	75%	3.25%
-250 to -2	33.62%	25%	-32.34%	-11.88%	25%	-43.06%
	(5.43)**	50%	27.71%	(-2.23)*	50%	-8.42%
	[0.38]	75%	78.55%	[0.53]	75%	35.66%
-10 to -2	1.20%			1.47%		
	(0.81)			(1.32)		
1 to 10	-0.67%			1.45%		
	(-0.43)			(1.24)		

* Significant at the 5% level; ** significant at the 1% level.

III. Empirical Results

A. Subsidiary Stock Issuance

Share price effects at announcements of subsidiary seasoned equity offerings are reported in Table II for the two-day announcement window, (-1, 0) where 0 is the day of the *Wall Street Journal* report, as well as for preevent and postevent periods. In column (1), the two-day average excess return to issuing subsidiaries is -4.06 percent with a *t*-statistic of -5.78, significant at the 1 percent level; the percentage of negative excess returns is 87 percent. The average return is more negative than figures for industrial firms reported by Asquith and Mullins (1986) (-2.7 percent), Masulis and Korwar (1986) (-3.2 percent), and Mikkelsen and Partch (1986) (-3.5 percent). The negative return indicates that subsidiary stock issuance is a signal of overvaluation and is not a favorable signal about growth opportunities. The median return, -2.64 percent, and the distribution of returns indicate the average return is not the result of outliers. The preevent (-10, -2) and postevent (1, 10) periods have zero excess returns.

The aggregate loss in subsidiary shareholder wealth is \$1.05 billion, calculated as the sum of the two-day return for each subsidiary multiplied by the

market value of its equity. The mean loss is \$27.6 million. Most of the loss in value is incurred by parents since they own an average of 69 percent of subsidiary shares. Nevertheless, as reported in column (4), the two-day average excess return for parents is a positive 1.91 percent, significant at the 1 percent level, given a *t*-statistic of 3.65, and the percentage of returns positive is 74 percent. The median return, 1.32 percent, and the distribution of returns indicate that the average return is not the result of outliers.

Nanda's model predicts a specific sign combination for returns to the issuing subsidiary and its parent or the issuing parent and its subsidiary. Consequently, we examine the matched sets of returns and, by applying the binomial distribution, assess the probability that the observed pattern of returns for the subsidiary and the parent could occur randomly. Of the 38 events, there are 26 cases (68 percent) with a combination of a negative excess return for the issuing subsidiary and a positive excess return for the parent. If adjusted returns for each subsidiary and parent are randomly generated, the probability of observing 26 or more cases (of 38 observations) with this pattern of sign reversal, is less than 0.000001. For the subpopulation of 33 events with negative returns for subsidiaries, there are 26 positive returns (79 percent) to parents. If parent returns are random, the probability of observing 26 or more cases of positive parent returns (out of the relevant 33 observations) is 0.0006. Thus, we reject the null hypothesis of randomness and conclude that there is an inverse association between subsidiary and parent wealth at subsidiary equity offerings, a result predicted by the wealth expropriation hypothesis and Nanda's separation hypothesis.

Parents have large market values so the aggregate gain in parent shareholder wealth is \$1.72 billion (calculated as the sum of the two-day return for each parent multiplied by the market value of its equity). This substantially exceeds the \$0.33 billion aggregate loss in value to minority shareholders of their subsidiaries. The magnitude of the gains to parents cannot be justified solely as the result of expropriation, since the increase in value would be no greater than the decline in value sustained by minority shareholders. The mean subsidiary loss is \$27.6 million (median value of \$11.6 million), most of which is absorbed by parent firms due to their large stakeholdings. Nevertheless, the mean parent gain is \$45.2 million (median value of \$16.1 million). This implies that a subsidiary seasoned equity offering is a favorable signal about the value of the parent's nonsubsidiary operations. As reported in Table III, the implied mean valuation effect on the nonsubsidiary component of parent operations at announcements of subsidiary equity issuance is 3.50 percent (*t*-statistic = 6.69) and the median valuation effect is 2.50 percent. The aggregate gain in the value of nonsubsidiary parent operations is \$2.44 billion, and the mean gain is \$64.4 million.

We document the timing pattern for subsidiary stock offerings by calculating subsidiary and parent share price performance for the year preceding equity issuance, adjusted for performance of the market. As reported in Table II, the one-year cumulative average excess return to issuing subsidiaries is 33.62 percent (*t*-statistic = 5.43) and -11.88 percent (*t*-statistic = -2.23) for their

Table III
Valuation Effects on Nonsubsidiary Operations at Equity Issuance Announcements

Implied returns in percent to nonsubsidiary operations of the parent obtained by valuing the parent ownership stake in the subsidiary at market prices; *t*-statistics are in parentheses and *N* is the sample size. The *t*-statistic is a test of the difference between the observed two-day return to the parent and the calculated return to the parent based on the null hypothesis that the value of the parent's nonsubsidiary operations remained unchanged in response to an equity issuance announcement.

	Subsidiary Equity Issuance <i>N</i> = 38	Parent Equity Issuance <i>N</i> = 37
Mean	3.50% (6.69)**	-3.00% (-5.60)**
By quartile:		
25%	0.84%	-5.50%
50%	2.50%	-2.60%
75%	5.23%	-1.11%

* Significant at the 5% level; ** significant at the 1% level.

parents. Thus, subsidiary issuance follows periods in which subsidiary shares outperform the market and parent shares underperform the market. This pattern of preoffer stock price performance is consistent with the hypothesis that a parent-subsidiary structure allows managers to conduct seasoned equity issuance in the overvalued unit and avoid issuing equity in the undervalued unit.

Our evidence provides insight about the controversy over the reason for equity carve-outs. Schipper and Smith (1986) document a positive 1.83 percent return to parents at announcements of equity carve-outs of subsidiaries, which is similar to the 1.91 percent increase in parent wealth we observe at subsidiary seasoned equity offerings. Schipper and Smith argue that gains at announcements of carve-outs emanate from the shift to a market forum for valuing a subsidiary that allows for improved public understanding, enhanced incentives for outside agents to collect information, market-based compensation plans for subsidiary managers, and provision of externally audited financial statements. However, their argument for the gains from carve-outs cannot explain the wealth effects on parents at subsidiary seasoned stock issuance since the subsidiary is already publicly traded. Instead, evidence that equity carve-outs and subsidiary stock issuance have equivalent positive effects on parent firm value supports Nanda's hypothesis that the choice between parent versus subsidiary equity issuance reflects differential private information about the affiliated units. In particular, parent managers issue equity in the unit they perceive as overvalued and avoid issuing equity in the unit they perceive as undervalued.

In Panel A of Table IV, we report results disaggregated on the basis of secondary versus primary offerings of subsidiary equity. The evidence indicates that the market views these decisions as economically similar. For

Table IV
Valuation Effects of Primary Versus Secondary Subsidiary Equity Issuance and of Changes in Parent Ownership Stake in Issuing Subsidiaries

Excess returns in percent for majority controlled, publicly traded subsidiaries announcing seasoned common stock offerings and for their parent firms listed on New York Stock Exchange (NYSE), American Stock Exchange (AMEX), or Nasdaq over the period 1975 through 1993; *t*-statistics are in parentheses, the proportion of negative returns is in brackets, and *n* is the sample size. market model parameters are estimated using least squares over the pre-event period, $t = -160$ to -40 , and $t = 0$ is the initial public report of the seasoned common stock offering.

	Issuing Subsidiaries			Parents		
	Two-day Excess Returns	Distribution of Excess Returns		Two-day Excess Returns	Distribution of Excess Returns	
	(1)	Quartile (2)	Return (3)	(4)	Quartile (5)	Return (6)
Panel A: Type of Subsidiary Issuance						
Secondary offering by parent <i>N</i> = 10	-5.67% (-5.55)** [1.00]	25% 50% 75%	-7.71% -5.60% -1.03%	2.23% (2.58)** [0.20]	25% 50% 75%	-1.38% 0.88% 2.02%
Primary offering by subsidiary <i>N</i> = 28	-3.48% (-4.10)** [0.82]	25% 50% 75%	-6.49% -2.06% -0.89%	1.80% (2.75)** [0.29]	25% 50% 75%	-0.34% 1.18% 3.52%
Panel B: Parent Ownership Stake Changes in the Issuing Subsidiary						
Stake falls below 80% <i>N</i> = 5	-3.07% (-2.74)** [0.80]	25% 50% 75%	-9.50% -2.28% 2.23%	2.14% (2.12)* [0.00]	25% 50% 75%	0.63% 1.83% 3.97%
Stake remains above 80% or is unchanged <i>N</i> = 33	-4.21% (-5.29)** [0.88]	25% 50% 75%	-7.38% -2.70% -0.90%	1.88% (3.26)** [0.30]	25% 50% 75%	0.32% 0.67% 3.45%
Stake falls below 50% <i>N</i> = 9	-6.22% (-6.44)** [1.00]	25% 50% 75%	-7.80% -7.04% -1.56%	1.56% (1.63) [0.22]	25% 50% 75%	-2.25% 1.09% 2.51%
Stake remains above 50% <i>N</i> = 29	-3.39% (-4.10)** [0.83]	25% 50% 75%	-5.04% -2.09% -0.89%	2.02% (3.16)** [0.28]	25% 50% 75%	-0.31% 1.32% 4.15%
Stake unchanged <i>N</i> = 5	-3.72% (-2.91)** [0.80]	25% 50% 75%	-8.08% -1.67% -0.15%	0.91% (0.68) [0.60]	25% 50% 75%	-1.20% -0.34% 4.75%
Stake reduced <i>N</i> = 33	-4.11% (-5.33)** [0.79]	25% 50% 75%	-6.88% -2.53% -0.94%	2.07% (3.63)** [0.21]	25% 50% 75%	0.20% 1.09% 3.43%

* Significant at the 5% level; ** significant at the 1% level.

subsidiaries, the average excess return at secondary offerings is -5.67 percent (t -statistic = -5.55) while the return at primary offerings is -3.48 percent (t -statistic = -4.10), but the difference in means is not significant, given a calculated t -value of 1.15 . For parents, returns at secondary offerings, 2.23 percent (t -statistic = 2.58), and primary subsidiary offerings, 1.80 percent (t -statistic = 2.75), are also statistically equivalent. The similarity of share price effects for primary and secondary offerings suggests that tax provisions do not influence the pattern of returns, although the subsample sizes are admittedly small.

We disaggregate the sample on the basis of induced changes in ownership structure, and the results are reported in Panel B. We find that for subsidiary equity offerings in which parent ownership falls below 80 percent so tax consolidation is lost, the average excess return to subsidiaries is -3.07 percent (t -statistic = -2.74) while the remaining events have an average excess return of -4.21 percent (t -statistic = -5.29). The calculated t -value for the difference between these returns is not significant. Moreover, the average excess return to subsidiaries for events in which parent ownership falls below 50 percent, -6.22 percent (t -statistic = -6.44), is more unfavorable than for events in which parents retain majority control, -3.39 percent (t -statistic = -4.10), although the difference is not significant (t -value = 1.40). Thus, reducing parent control below 50 percent does not mitigate the negative information effect on issuing subsidiaries. The returns to parents are similar in each of these subsamples. For events where the parent maintains its ownership stake by purchasing an appropriate amount of the subsidiary offering, the average excess return to subsidiaries, -3.72 percent (t -statistic = -2.91), is not statistically different from the remainder of the sample, -4.11 percent (t -statistic = -5.33). Hence, we find no evidence that the pattern of returns at subsidiary stock offerings is related to the induced change in subsidiary ownership structure. However, this evidence must be viewed with caution since the small subsample sizes that are the basis for these difference in means tests make rejection of equality unlikely.

B. Parent Primary Stock Issuance

Share price effects at announcements of parent stock offerings are reported in Table V. The two-day average excess return to parents is -2.68 percent with a t -statistic of -5.05 , significant at the 1 percent level, and 81 percent of the returns are negative. The median return is -2.09 percent. These results are similar to negative share price effects reported in previous studies of equity issuance. However, the two-day excess return for subsidiaries is positive, 1.55 percent, with a t -statistic of 2.28 , significant at the 5 percent level, and 73 percent of the returns are positive. The median return is 1.00 percent. Although parent equity is a joint claim on parent and subsidiary projects, announcements of parent equity offerings convey favorable information about subsidiary value. This is consistent with Nanda's model, which predicts that managers who view the parent as overvalued and the subsidiary as underval-

Table V
Valuation Effects at Parent Seasoned Equity Issuance Announcements

Excess returns in percent for parent firms announcing primary seasoned stock offerings and for their majority controlled, publicly traded subsidiaries listed on New York Stock Exchange (NYSE), American Stock Exchange (AMEX), or Nasdaq over the period 1975 through 1993; *t*-statistics are in parentheses, the proportion of negative returns is in brackets, and the sample size is 37. market model parameters are estimated using least squares over the preevent period, $t = -160$ to -40 , and $t = 0$ is the initial public report of the seasoned common stock offering.

Event Period	Issuing Parents			Subsidiaries		
	Excess Returns (1)	Distribution of Returns		Excess Returns (4)	Distribution of Returns	
		Quartile (2)	Return (3)		Quartile (5)	Return (6)
-1 to 0	-2.68%	25%	-5.34%	1.55%	25%	-0.25%
	(-5.05)**	50%	-2.09%	(2.28)*	50%	1.00%
	[0.81]	75%	-0.33%	[0.27]	75%	2.17%
-250 to -2	17.37%	25%	-1.55%	-6.72%	25%	-29.88%
	(2.89)**	50%	25.66%	(-1.04)	50%	0.81%
	[0.27]	75%	44.02%	[0.49]	75%	32.53%
-10 to -2	-1.19%			-1.25%		
	(-1.00)			(-0.91)		
1 to 10	-1.30%			0.14%		
	(-1.03)			(0.10)		

* Significant at the 5% level; ** significant at the 1% level.

ued, issue parent rather than subsidiary stock. The results are not consistent with the negative valuation effects on subsidiaries predicted by the adverse selection hypothesis; the growth opportunities and expropriation hypotheses make no prediction about the effects on subsidiaries at parent offerings.

The binomial distribution is used to assess the probability that the observed sign combinations of returns are random. There are 21 cases of the 37 sample events (57 percent) with a combination of a negative excess return for the issuing parent and a positive excess return for the subsidiary. If adjusted returns for each subsidiary and each parent are randomly generated, the probability of observing 21 or more cases (out of 37 observations) with this pattern of sign reversal is less than 0.00004. For the subpopulation of 30 events with negative returns for the issuing parent, there are 21 positive subsidiary excess returns (70 percent). If subsidiary returns are random, the probability of observing 21 or more cases of positive subsidiary returns (out of the relevant 30 observations) is 0.02. Thus, we reject the null hypothesis of randomness and conclude that there is an inverse association between parent and subsidiary wealth effects at parent equity offerings.

The positive effect on subsidiary value implies that parent stock issuance has a more negative effect on the value of the nonsubsidiary component of the

parent than the -2.68 percent figure generated by the event study. Valued at market prices, the aggregate gain in subsidiary wealth is \$0.68 billion, of which \$0.47 billion accrues to parents as a result of their controlling interest. The mean gain is \$18.4 million (median value of \$12.7 million). Since aggregate parent value declines by \$3.26 billion (the mean decline is \$88.1 million) at the offering announcement, the implied aggregate decline in the value of nonsubsidiary operations is \$3.74 billion (the mean decline is \$101.1 million). As reported in Table III, the implied mean valuation effect on nonsubsidiary operations as a result of parent equity issuance is -3.00 percent (t -statistic -5.60) and the median valuation effect is -2.60 percent.

Although the parent controls subsidiary equity issuance decisions, raising the potential for conflicts of interest, there is no subsidiary control over parent equity issuance. Nevertheless, each source of seasoned stock issuance within a parent–subsidiary governance structure generates a negative share price effect on the issuing unit and a positive effect on the nonissuing unit. Moreover, for parent equity offerings the one year preannouncement cumulative excess returns are 17.37 percent (t -statistic = 2.89) for parents and -6.72 percent (t -statistic = -1.04) for their subsidiaries, indicating that managers issue parent equity following a period in which parent stock outperforms the market and subsidiary stock does not. The similar pattern of behavior for the two samples of equity issuance strengthens the conclusion that the differential effects on subsidiaries and parents reflect the informational environment within which equity issuance occurs and does not represent exploitation of minority shareholders.

C. Regression Analysis

We estimate cross-sectional regressions to test whether the patterns of subsidiary and parent returns are explained by the characteristics of subsidiaries, parents, and the equity offerings. The dependent variable is the two-day excess returns to either issuing subsidiaries or their parents. The regressions are estimated using weighted least squares, where the weights are the standard deviations of the error terms in the estimation period. Prior regression analyses of the share price reaction to securities issuance (Mikkelsen and Partch (1986), Asquith and Mullins (1986), and Masulis and Korwar (1986)) report little success in specifying independent variables that explain these returns. We specify both quantitative and qualitative independent variables. Quantitative variables include gross proceeds relative to the market value of the subsidiary, and the size of the subsidiary relative to the parent. Qualitative variables, which take the value of one when the relevant characteristic applies and zero otherwise, reflect secondary equity offerings; the presence of growth, acquisitions, capital investment, or general corporate purposes among the stated use of proceeds; repayment of loans owed to the parent; maintenance of the parent's proportionate ownership; and reduction of parent ownership below 80 percent or 50 percent. The regression results (not reported in the tables) indicate that there is no relationship between the share price effects and the

characteristics of the offering or affiliated units. This evidence supports the view that it is the decision to issue equity in the parent versus the subsidiary, not the characteristics of the offering, that is an important signal of value.

We estimate a LOGIT regression to determine whether cumulative excess returns over the prior year for the subsidiary, SUBRETURN, and the parent, PARETURN, affect the choice of the unit for the equity offering. The dependent variable is a qualitative variable for the type of offering, SUBOFFER, that takes on the value of one for a subsidiary offering and zero for a parent offering. If managers tend to issue equity in the overvalued unit, there should be an association between the unit chosen for the offering and prior cumulative excess returns. This logit regression also tests the Lucas and McDonald (1990) view that underpriced firms, in this context firms that underperform the market, delay or are less likely to raise external funds for investment projects, compared to overpriced firms, or those firms that do not outperform the market. The results of the LOGIT regression with the asymptotic *p*-values in parentheses are:

$$\text{SUBOFFER} = 1.2785 \text{ SUBRETURN} - 1.3689 \text{ PARETURN} - 0.0395$$

$$(0.0093) \qquad (0.0158) \qquad (0.8791)$$

Both variables have significant *p*-values, with a *p*-value for the regression of 0.001, indicating that the choice of the unit for the equity offering is correlated with the pattern of the prior returns for the subsidiary and parent.

IV. Conclusions

We examine share price effects of seasoned equity issuance by parent-controlled subsidiaries and find a negative effect on subsidiary wealth and a positive effect on parent wealth. The size of the positive wealth effect on parents substantially exceeds the loss in value sustained by minority shareholders of subsidiaries, so equity issuance announcements by subsidiaries increase the overall value of the combined entity. There is no evidence of expropriation of subsidiary wealth. We find that parent primary stock offerings reduce parent wealth and increase subsidiary wealth. For the year prior to announcement, shares of issuing units outperform the market while shares of non-issuing units do not. Our evidence supports Nanda's (1991) theoretical model which predicts that parent managers issue equity in the unit they perceive as overvalued and avoid issuing equity in the unit they perceive as undervalued. Thus, the option of conducting a seasoned stock offering through a subsidiary enhances corporate financing flexibility and allows an undervalued parent to undertake investment projects that otherwise might be foregone. This represents an economic benefit intrinsic to the parent-subsidiary form of corporate governance structure.

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