The Market for Smaller Firms

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Abstract

Smaller firms sell for substantially lower multiples than larger firms in similar businesses. These smaller firms – with transaction values below $10 million – typically sell for four times earnings before taxes, depreciation and amortization (EBITDA), multiples that are half to a third as large as those for comparable larger companies. These low multiples seem to provide enormous opportunities for potential buyers. In this paper, we offer some thoughts about the market for smaller firms and the dynamics that result in the low multiples for smaller firms. Our hypothesis is that relatively high acquisition costs limit the appeal of these investments.

Financial Disclosure: While our primary interest in the market for smaller firm is related to our teaching and research, we occasionally make investments in acquisitions of smaller firms.

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1. Introduction

Smaller firms sell for substantially lower multiples than larger firms in similar businesses. These smaller firms – with transaction values below $10 million – typically sell for four times earnings before taxes, depreciation and amortization (EBITDA), multiples that are half to a third as large as those for comparable larger companies. These low multiples seem to provide enormous opportunities for potential buyers – simply purchasing a company at such a low multiple and applying a bit of leverage provides an opportunity to earn returns in excess of those available elsewhere. After all, even without leverage, buying at 4x provides an EBITDA yield of 25%. The magic of small firm investing is surely these low multiples.

Not every smaller firm sells for an EBITDA multiple of 4x. Some are distressed or are more of a job than a business and sell for much lower multiples. Others are small but have enormous growth potential, perhaps backed by venture capitalists, and sell for much larger multiples. But our research indicates that there are numerous profitable smaller firms in traditional industries with established business models and moderate growth prospects that routinely sell for EBITDA multiples of 4x to 5x. These opportunities for investors in smaller firms have attracted a variety of buyers but the added attention has not (yet) led to upward pressure on the multiples.

In this paper, we offer some thoughts about the market for smaller firms and the dynamics that result in the low multiples for smaller firms. Our hypothesis is that relatively high acquisition costs limit the appeal of these investments. Our analysis heavily relies on the dozens of interviews with participants in the marketplace for smaller firms that we completed in connection with our efforts to develop two courses at the Harvard Business School[1]. While some of these interviews have become the basis for cases, others were simply to enhance our own understanding. This kind of research is different from the traditional theory or empirical work common in corporate finance, and its usefulness depends on whether we develop insights and hypotheses that help explain what we find to be an intriguing phenomena.

Our research shows that acquisition costs, measured as a proportion of the value of the acquisition, are much larger for smaller firms. We include as acquisitions costs the costs of finding an appropriate target company, negotiating an acquisition price, conducting business and confirmatory due diligence and completing the legal agreements. For larger firms, especially those that are publicly traded, these costs are a small proportion of the acquisition value – often just a few percent. Our research indicates that these costs are much larger for smaller firms and reasonable estimates are as high as 20% of the cost of the acquisition. These costs are essentially a component of the purchase price of the target but the acquisition costs add no lasting value in the sense that the high acquisition costs of the buyer do not lessen the costs of subsequent buyer. Thus, the higher costs are like a liquidity or transaction tax and thereby reduce the rate of return for an acquirer. Also, because these acquisition costs are not recoverable in a subsequent sale, the costs are generally funded exclusively by equity investors.

[1] The courses are "The Financial Management of Smaller Firms" and "Entrepreneurship through Acquisition".

We discuss the three types of buyers in the market for smaller firms and their associated financial arrangements in Section 3: private purchasers, search funds, and private equity partnerships. Each has an advantage over other types of buyers but each has a factor that limits its scope and size in the market. We also use a financial model for a representative acquisition to demonstrate the strengths and weaknesses of the different buyers.

We define a private purchaser as an individual that self-funds the acquisition costs and the equity portion of the acquisition price and intends to serve as the full-time manager of the acquired company. Private purchasers often have substantially lower acquisition costs than other types of buyers but lack capital. This lack of capital limits the number of private purchasers to only those entrepreneurs with liquid financial resources to fund the acquisition costs and the equity portion of the purchase price. Private purchasers also must be willing to forego diversification and liquidity by investing most of their wealth in a small company. Also, because bank debt tends to be the source of the remainder of the purchase price, the kinds of businesses that private purchasers can acquire are limited to those with tangible assets that can serve as collateral. And, bank lenders typically require a personal guarantee from private purchasers. Private purchasers can, of course, obtain funds from friends and family to use in an acquisition but those network financing options are likely to be limited and many report this is an extremely costly source of capital for non-pecuniary reasons.

Search funds are an alternative for entrepreneurs that lack the capital required to fund acquisition costs and the equity portion of the acquisition. These funds raise money from investors to fund the acquisition costs and, if an attractive acquisition target is found, the entrepreneurs return to the group of investors that funded the search for the equity capital to complete the acquisition. The pool of capital that has been attracted to search funds is quite small –there are, perhaps, only 50 or so active search fund investors – so the impact of these types of buyers is again limited by capital. A study of search fund investor returns also suggests that realized results may not be sufficient to attract capital. Grousbeck and Sweeney (2010) report average returns of about 37% across 79 funds that had either shut down or acquired a company. While this suggests that more capital could be attracted to search funds, those results are driven by a few observations and when the three investments with the highest IRRs are excluded, returns fall to 20%. Also, because the financial arrangements between the entrepreneurs and the investors generally leave the entrepreneurs with a small portion of the upside of the investment, search funds may appeal to only a limited group of entrepreneurs. In fact, since search funds began in 1984, there have only been about 140 funds organized[2].

Some private equity firms also purchase smaller firms as part of their portfolio of private company investments. These buyers would seem to have more opportunity for successful investments in smaller firms because, unlike private purchasers and search funds, private equity firms have access to substantial pools of capital. Also, unlike private purchasers and search funds, private equity firms should be able to realize the economies that come with repetitive searches for acquisition targets. Our research, however, suggests that the additional costs associated with a private equity firms limit their effectiveness in the market for smaller firms. Investments in smaller firms are, of course, smaller so that private equity firms that specialize in smaller firms need to invest in many more companies than like firms that invest in bigger companies. While a typical private equity fund might have a dozen portfolio companies, one specializing in smaller firms will have two or three times as many portfolio companies, thereby substantially raising the costs of managing the portfolio companies and limiting the types of

[2] Grousbeck and Sweeney (2010) reports that there have been 129 search funds raised. We are aware of several funds raised since 2010 so we estimate that a total of 140 search funds have been raised.

companies private equity firms invest in. Furthermore, because of their limited ability to deploy capital, private equity firms that specialize in smaller firms have limited appeal to institutional capital and generally have to rely on family offices and individuals as limited partners.

In the end, we conclude in Section 4 that none of the buyers we examine are likely to significantly expand the demand for acquiring smaller firms. We believe that the opportunity to purchase smaller companies at roughly 4x EBITDA is likely to persist.

2. Acquisition Costs

There are costs to acquiring any firm be it small or large, private or public. These costs, when scaled as a percent of the value of the acquisition, can differ substantially across target firms. There appears to be a fixed component to some of these costs and others seem to vary by size but are proportionally larger for smaller firms. We think the lack of proportionality is related to the visibility and financial structure of larger firms, particularly those that are public. Larger firms have well-developed information systems and standardized management policies and practices. A larger firm, say one worth $10 billion, is not simply a collection of one thousand $10 million firms. Instead, in larger firms, there are bigger product lines, similarities across product lines and systems to make the $10 billion dollar business much easier to understand than a thousand $10 million companies. The relative simplicity will make it easier to complete due diligence and legal work required to close an acquisition. And the higher visibility of a larger target firms reduces search costs.

Our hypothesis is that the relatively high cost of acquiring a smaller company is one of the primary causes of the relatively low EBITDA multiples of smaller companies. The proportionally higher acquisition costs for smaller companies reasonably reduce the interest by buyers because the acquisition costs are – from the buyers' perspective -- effectively part of the purchase price that cannot be recovered in a subsequent sale. These higher costs, if not offset by higher potential gains or other adaptions among buyers, make purchasing a smaller firm an unattractive investment. Even the difference in the EBITDA multiples may not be enough of inducement to potential buyers.

Consider, for example, an investor that wants make an investment of $150 million. Suppose that the investor has an opportunity to acquire a company with an EBITDA of $15 million at a 10x multiple. And, further suppose that the investor believes that there is a potential gain equal to 10% of the value of the acquisition, perhaps because it is undervalued or perhaps because the investor will be able to enhance the value through improved operations. The gain to the investor is $150 million times 10%, or $15 million. The gain is offset by acquisition costs which, for a $150 million investment, can reasonably assumed to be about 4% of the transaction or roughly $6 million. So, the net potential benefit is $9 million.

If the same investor chose instead to purchase a collection of smaller companies – say those with an EBITDA of $1.5 million that sell for 4x – each company would sell for $6 million so that the investor would need to buy 25 different companies. Keeping the potential gain the same at 10% of value, the gain would again be $15 million. But if the acquisition costs are about 20% of the value of each $6 million firm, or $1.2 million, the total would be $1.2 million times 25 for a total acquisition cost of $30 million, an amount that is twice the potential benefit. An investor that had the opportunity to buy the larger firm surely would not be interested in the strategy of buying 25 smaller firms even though the EBITDA multiple for the larger company is 250% larger.

This simple example shows that the proportionally higher acquisition costs are a substantial impediment to attracting investors into the market for smaller firms. The example relies on several assumptions and revising those assumptions would, of course, change the specific numerical results. For example, the expected gain could be twice as large for smaller firms as for larger firms so that the expected gain from acquiring the smaller firms would equal the expected acquisition costs. But as long as the difference between the expected gain from the acquisition and the expected acquisition costs is larger for larger acquisitions, the results will be consistent with our hypothesis that the higher acquisitions costs for smaller firms keeps investors from entering the market and putting upward pressure on acquisition multiples[3].

A key assumption in the example is that acquisition costs as a proportion of the value of the target are substantially higher for smaller firms. In the remainder of this section, we describe the costs of acquiring a company and highlight the reasons why the costs tend to be proportionally larger for smaller firms. These acquisition costs include search costs, due diligence costs, and legal costs.

2.1 Search Costs

Finding an appropriate target is the first step in any acquisition. For a larger public company, there is often a wealth of information that is readily available including public filings, analyst reports, databases, newspaper, magazine and web-based stories along with information provided by financial advisors such as investment banks. Also, there is ample public information on acquisition multiples to assess the reasonableness of the transaction price. None of that

[3] The breakeven potential gain in this example for the investment in smaller firms is 26%; that is, 26% of $150 million is $39 million. Subtracting the $30 million of acquisition costs results in a $9 million expected gain, the same as the expected gain from the larger acquisition.

information is available for smaller, private firms. Instead, would-be acquirers of smaller companies typically find potential targets through brokers, trade shows or direct out-reach.

Most owners of smaller companies would not have previously sold a business and business brokers help these sellers collect information and market their firms. The brokers often circulate a one-page description of the company and work with the seller to assemble a more detailed description that would be available to qualifying buyers.[4] But the match between buyers and seller of these smaller companies is haphazard, at best, because there is no well-functioning organized network among the hundreds of business brokers in the United States. For those readers that have purchased real estate, it is analogous to shopping for property without the Multiple Listing Service so that the only access is through individual listing brokers. But unlike most real estate purchasers who search in a well-defined, limited geographic area, would-be acquirers often are unlimited by geography and pursue widely scattered opportunities, making the broker-by-broker search very time consuming. Despite the costs, many acquirers purchase smaller targets through brokers[5].

Trade shows provide a common venue for potential buyers of smaller firms to find potential targets but these are often organized by a narrow industry and by region. And, many potential sellers do not attend these trade shows, perhaps because the sellers are not actively seeking an immediate sale or because they do not view the shows as an effective approach to marketing their firms. For whatever reason, our research suggests that trade shows are a useful way of building industry relationships but do not appear to directly lead to acquisitions.

[4] The case "Marlin & Associates and the Sale of Riverview Technologies" describes the sales process with a broker. "Businesses for Sale by Briggs Capital, 2010" also examines the role of a broker in marketing a firm.

[5] Some entrepreneurs, particularly those that fund their own search, rely exclusively on brokers.

Many acquirers find potential targets through direct out-reach. This includes direct email or telephone inquiries to business owners to determine if the owners have interest in selling their companies. Of course, most of these "cold calls" are not fruitful in the sense that most owners do not choose to begin a sales process. But some do. And these direct out-reach deals tend to be the most beneficial to the buyers because the approach usually avoids an auction of the target. But it is surely the most costly of the three approaches.[6] Acquirers who conduct large scale "cold calling" campaigns report response rates of in the range of 0.5% to 1%.

Most potential buyers of smaller firms pursue all three approaches – brokers, trade shows and direct out-reach – simultaneously to identify potential acquisition targets. The cost of this identification phase is likely to be roughly independent of the size of the potential acquisition target. The subsequent phases of the search process – evaluation, negotiation and preliminary due diligence – may have some components that are proportional to the complexity of the acquisition target and the acquisition process but this complexity may not be related to the size for acquisitions between $5 million and $10 million. Instead, the quality of the accounting and other systems, the extent to that the seller mixed personal and business expenses, and the professionalism of the management team is likely to determine the costs of the later phases of the search.

Our estimates of representative search costs, the probability of success and the resulting estimate of expected search costs differ across the types of buyers. Private purchasers tend to be extremely frugal; they are, after all, spending their own money. Out-of-pocket expenses are kept to a bare minimum. These searchers often target industries or regions that the potential

[6] The case "Nashton Partners and its Search Fund Process" provides information on the costs of a search fund sponsored search.

purchaser knows well before beginning the search. The largest component of the search cost is the foregone income. We loosely estimate that the average salary for a recently graduated MBA from our School is $140,000. We assume twelve months of prospecting for an acquisition target and $60,000 of other expenses including travel, research and preliminary business due diligence[7]. The total search costs are estimated at $200,000. Because private purchasers are resource constrained and only spend a year on the acquisition process, we assume the chance of successfully acquiring a smaller firm is a relatively low 25%. The expected search cost, therefore, is $800,000.

We estimate that funded searchers incur substantially greater acquisition costs but have a higher probability of completing an acquisition. Search funds which are generally formed by two entrepreneurs that lack the capital to fund the search for a company to buy and so raise money from investors to fund their search. These searchers plan to become the full-time managers of the companies they acquire. The typical amount of money raised to fund the search is $550,000. The would-be entrepreneurs generally spend two years looking for a potential target and receive a wage that is well below the wage they would receive elsewhere by, perhaps $60,000 per person each year, bringing the total search costs to $790,000. These would-be entrepreneurs seek companies valued between $5 million and $10 million but only three-quarters successfully acquire a company, so that the expected search costs equal $1,053,000[8].

Private equity general partners have an ongoing process for sourcing acquisitions and search costs are part of the expenses for a general partner. Because these expenses are not generally isolated we base our assumption on the fees of unfunded sponsors that find companies

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[7] The case "Greg Mazur and the Purchase of Great Eastern Premium Pet Food" describes a self-funded search. Other also self-funded entrepreneurs report minimal out of pocket costs during their search.
[8] See Grousbeck and Sweeney (2010). Also see Knowledge@ Wharton (August 22, 2007)

to buy, and then work with debt providers and small private equity firms to complete the acquisition. While these unfunded sponsors do more than just search for deals, their fees provide a sense of the costs of the search. Our research indicates that unfunded sponsors generally receive a deal fee of about 10% of the value of the deal, receive an annual "lead director fee" of between $150,000 and $250,000 and 10% of the carry upon an eventual sale. Because unfunded sponsors serve as lead directors, presumably a portion of these fees are related to providing the management advice that would be provided by the entrepreneurs in a private purchaser or search fund setting. If we assume that the lead director fee – which exceeds the salary of a recent MBA graduate -- is related to these management services, the 10% deal fee plus the carry would be associated with the search. Because unfunded sponsors have an ongoing deal sourcing process, we assume that the deal fee and carry on completed deals is set to compensate for unsuccessful searches. In our representative acquisition that we use in section 3, the deal fee is $600,000 and the unfunded sponsor's portion of the carry at the time of the sale is worth a bit more than $1 million with a present value of about $180,000 for a total expected search cost of $780,000.

2.2 Due diligence and closing costs

Understanding the business, performance and prospects of a potential target is accomplished during due diligence. For larger companies, the audited financial statements are the foundation of the due diligence process along with other public filing and disclosures. Smaller companies, however, often do not have audited financial statements and the accounting systems are generally much weaker than those of a public company. Furthermore, the business and the owner's personal expenses are often intermingled in smaller companies so that there is often a set of adjustments required to get an accurate sense of the financial performance of the business. All else equal, the due diligence process is probably more difficult – and more expensive – in a smaller company. Typically, to reduce costs, the quality of the accounting due diligence for smaller companies is simply less complete, leaving more uncertainty in the transaction.

The legal aspects of due diligence are probably less difficult in a smaller company because most owners minimize legal costs by keeping their relationships with suppliers and customers simple. But, like the accounting due diligence, the legal due diligence for a smaller company is not likely to pursue issues that would be studied in a larger acquisition, again leaving more uncertainty in the completed deal.

Like search costs, different types of buyers take different approaches to due diligence and closing costs. Private purchasers often do almost all of the due diligence themselves, perhaps with just a bit of help from a local accounting or law firm. Similarly, legal fees are kept to a minimum by private purchasers both because the absence of outside equity investors implies that there is less complexity in the transaction and because private purchasers seem willing to take more transactional risks. Private purchasers report very low closing costs, on the order of 2% of the value of the deal.

Other buyers use more outside professionals for accounting and legal due diligence and require extensive contracting with outside equity investors in connection with closing the transaction. For search fund and private equity sponsored acquisitions, our case research suggests that total accounting and legal due diligence fees plus closing costs is about 10% of the value of the acquisition.

3. Buyers of smaller firms

There seem to be three types of purchasers of smaller firms: private purchasers, search fund sponsored entrepreneurs, and private equity partnerships. These purchasers differ in a few fundamental ways. The first and second type of purchasers that we discuss – private and search fund sponsored purchasers -- seek to acquire a smaller company that they intend to manage full-time. It is an investment as well as a career. These buyers are infrequently in the market for smaller firms because they tend to own and manage their company for a decade or more. The third type of buyers is private equity partnerships that continually search for attractive investment opportunities. These private equity partnerships tend to have shorter holding periods than purchasers that plan to manage their acquisition directly. Table 1 summarizes the characteristics of each of the types of buyers.

3.1 Private Purchasers

Private Purchasers are unfunded individuals that search for a company to buy and run. They fund their own search and provide the deal equity from personal wealth or perhaps family and friends. There is no institutional equity capital. These buyers generally have no advisory group to offer specific expertise. These private buyers do almost all of their own due diligence.

The advantage of buying a target firm this way is that the entrepreneur owns all of the target firm; the owner doesn't have to "ask" anybody to make a decision. This approach to becoming an entrepreneur through acquisition maximizes independence. The business can be tailored to suit the desires of its owner and the financial aspects of the business blend with the owner's personal finances; the owner can "live in the business" to the extent allowed by its lenders and the tax authorities. The owner bears all of the costs and benefits of the company's organization and strategy. Importantly, the owner does not have to share the profits of the business or the eventual sales proceeds with anybody. Because there are no other equity providers, there is no governance structure and no board to monitor the entrepreneur.

The disadvantage of buying a target firm this way is that the lack of outside equity capital substantially limits the size of the company that can be purchased. Risk bearing is concentrated in the entrepreneur. These purchasers have no diversification across investments and no liquidity because the only asset they own is the company they acquired. The entrepreneur will often use as much debt as is available but usually this debt requires a personal guarantee and pledging of substantially all of the owner's assets – house, car, so on. And, because the owner's assets are generally limited or the willingness of the owner to pledge the assets is limited, the amount of debt that is available is also limited. So, only relatively small companies can be purchased by private buyers without outside equity. The concentrated risk bearing and the personal guarantee also affects the kinds of companies that are purchased in this way – they are almost always low total risk --and decisions once the company is purchased often are directed towards lowering risk instead of maximizing value.

Table 2 summarizes the economics for a typical acquisition of a smaller company by a private purchaser. It assumes that search costs are only $200,000, much lower than the cost estimates from search funds and unfunded sponsors. These entrepreneurs approach their search frugally and plan for a shorter period of time. These searches are adapted to the more restricted time period and budget that comes with self-funding by focusing on a single industry or geography. Because private purchasers are resource constrained and only spend a year on the acquisition process, we assume the chance of successfully acquiring a smaller firm is relatively low at 25%. We also assume closing costs are 2% of the deal size and that the company can be purchased (and eventually sold) for 4x EBITDA[9].

We also assume that private purchasers are able to finance the hypothetical transaction with 30% of bank debt and 30% of seller debt. The debt is structured as a "waterfall" with all available cash flow after interest and tax distributions being first used to repay the senior bank debt and then being used to repay the seller debt before payments beyond tax distributions are available to the purchaser. The size of the investment is limited by the resources of the private purchaser. In this example, we assume the private purchaser can provide $1.2 million to finance the purchase of a company with an EBITDA of $750,000. The purchase price of $3 million financed by $1.2 million of equity and $1.8 million of debt is provided in equal parts from the bank and the seller. There are also expected search and closing costs borne by the private purchaser.

Table 2 also provides three <u>rough</u> measures of the returns to the private purchaser. The first is present value of the manager's cash flows with a 25% discount rate and the second is the annuitized value of those cash flows, again at a 25% discount rate. The third is the internal rate of return on the cash flows. We recognize that these measures are, as we labeled them, rough. The leverage changes through time and we have not focused on other details of the discount rate calculations, particularly the undiversified investment by the purchaser and its impact on the discount rate. Nevertheless, the rate we are using – 25% – is commonly used as a hurdle rate for private investments and should allow comparisons across the types of investors that we examine in this paper.

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[9] The resource and time constraints may also result in the acquisition of a less attractive target. That possibility is not included in our analysis although we do assume that the acquisition by the private the purchaser is half the size of the others we consider because of the limited equity of the buyer.

With a \$750,000 EBITDA investment, the private purchaser earns a 24% IRR when the acquisition costs are included which is a bit below the assumed 25% cost of capital so that the present value of the investment is slightly negative. In this representative example, the expected acquisition costs more than offset the expected benefits of the investment. This result, of course, depends on the magnitude of the expected acquisition costs and the size of the investment. To illustrate the impact of acquisition costs, without acquisition costs, the investment would have an annualized value of \$170,000 and an IRR of 40%. To illustrate the impact of transaction size, when the size of the acquisition is doubled holding the expected acquisition cost fixed at the level in Table 2, the IRR with acquisition costs included is 29%. When it is tripled, the IRR is 32% and the manager's annualized payout is \$300,000. So, the challenge for the private purchase is the confluence of the relatively high expected acquisition costs together with the small size of the acquisition target.

Some private purchasers employ outside equity from private individuals, including friends and family, classmates, mentors, former employers, and the like as a way to purchase a larger target firm. The economics of such an acquisition is illustrated in Table 3. Because acquisition cost until the deal is in hand would still be funded by the private purchaser, the search costs are the same in Tables 2 and 3. We assume higher closing costs of 5% because of the added complexity of outsider equity investors. Based on our understanding of representative deal terms, the friend and family investors are assumed to provide 30% of the funding to purchase the target in exchange for debt with a 12% coupon rate and 25% of the equity of the company. The remainder of the acquisition is funded by 30% bank debt, 30% seller debt and 10% equity by the purchaser.

With an EBITDA of $1.5 million and a purchase price of $6 million, the economics of the transaction for the purchaser are favorable with a 30% IRR for the entrepreneur and an annualized payment of $100,000. The deal also works well for the friends and family investors with an IRR of 27%.

This form of acquisition – a private purchaser with the acquisition funded by friends and family – seems to solve most of the problems in the market for smaller firms. Acquisitions costs remain at the minimalist level from the private purchaser but the capital constraint at the time of the acquisition is relaxed. Two aspects of these transactions, however, limit their impact. First, the purchasers still fund the search for an acquisition target from their own resources so the scope of the search is resource constrained and the approach is limited to those entrepreneurs with sufficient capital to fund their search. Second, the extent of the purchaser's friends and family network limits the scope of this solution. The more distant the relationship between the buyer and the equity providers, the more restrictions will be placed on the owner, limiting the flexibility that comes with being a private purchaser. Still, a private purchaser that uses outside equity is generally able to structure the acquisition so that the owner retains control and enjoys most of benefits of owning the company.

3.2 Funded Searchers

These buyers fund their search for an acquisition target by raising capital from a group of investors. Often the investors are individuals, but sometimes the investors are small institutions, family offices, or private equity firms. Searches are generally funded by 10 to 20 investors with investments of $25k to $35k each, although sometimes the search is funded by a single sponsor. The search is usually funded for two years with a total investment of about $350,000 to

$550,000, depending on whether there are one or two searchers. The same small group of investors frequently funds multiple searches.[10]

Often the funded searchers are recent graduates of top MBA programs with most of these searchers graduating either Stanford or Harvard. The searchers typically commit in the winter of their second year of their MBA programs, raise their search capital during their spring term, and begin searching in earnest upon graduation. Each group of funded searchers, much like the private purchasers described above, begins the process of finding an appropriate target firm afresh and generally follows a similar process of contacting brokers, networking and cold call solicitations to develop a set of potential targets. These targets appear sequentially, and one of the most difficult tasks for a private purchaser or a search-fund purchaser is to decide when to devote resources to particular target and when to continue a broad search. For both the private purchasers and the search-fund purchasers, their goals are to find a single company to purchase so they are constantly trying to assess whether the potential target meets a minimum threshold and is the best acquisition opportunity that is likely to occur during the search period. For some search fund sponsored entrepreneurs, this unknown contributes to a prolonged search process.[11]

The typical search fund is organized by two potential entrepreneurs who search for a company to buy together and will both participate in the management of the acquired company. These searches are much broader than those of private purchasers, often considering acquisitions in a variety of different industries and locations. These searches are budgeted to consume two full years. The search funding, therefore, needs to cover the costs for two searchers over two years. Based on recent experience, these funds raise about $550,000, covering the out-of-pocket

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[10] Our courses contain three cases on acquisitions sponsored by search funds: "Nashton Partners and the Search Fund Process", "Brennan Warranty (A) and (B)" and "Lind Equipment."

[11] In "Nashton Partners and the Search Fund Process" the searchers took about 30 months to complete a transaction.

costs as well as about $80,000 in salary for each searcher. Because we assume an opportunity cost of an MBA of $140,000 per year, each searcher also invests $60,000 per year for a total of $240,000 over the life of the search. A reasonable estimate of the total search costs is about $790,000. Historically, about three-quarters of these funded searches resulted in acquisitions[12]. These costs are about four times higher than those of private purchasers but the probability of success is three times greater.

Once a potential target is decided upon, the funded searchers return to the search sponsors to fund the acquisition. For a typical acquisition of about $5 million to $10 million, the sponsors will be asked to fund the equity portion of acquisition with an investment that is about ten times greater than search funding and the remainder is financed with debt. The search sponsors make the investment decisions individually. Some investors may choose not to invest and those that invest may commit to greater or lesser amounts of investment. Sometimes too much equity is committed and the searchers pro-rate the investments; other times, there is insufficient equity committed and the searchers seek additional investments from either the search sponsors or from other investors.

Once the acquisition is completed, the searchers become the managers of the acquired company. While the managers have autonomy, the investors form a board of directors, usually consisting of a small sub-set of the investors with one active investor serving as an informal lead director. The directors have the right to replace the managers but we believe that is a rare occurrence. Still, the search fund sponsored entrepreneurs owns less of the company and enjoy less autonomy that the private purchaser. The amount of involvement by the directors varies depending on the circumstances and fortunes of the acquisition. If things go well, there is little

[12] Grousbeck and Sweeney (2010)

involvement; if things go poorly, the directors may get deeply involved in debt re-negotiations and other aspects of the turnaround[13]. The investors typically have a very small amount of their wealth in any particular acquisition so that they have little financial incentive to put a significant amount and time and effort into overcoming the hurdles faced by the company. Instead, the incentive for the directors to become actively involved in the company is probably driven more by reputational considerations than financial gains or losses.

The managers receive a salary that is below the market rate for similarly skilled people who work in larger companies. And because there are outside investors, the entrepreneurs cannot "live inside" the business as the private purchasers do. The managers do however receive rights to a percentage of the capital gains or carry from a subsequent sale of the company. The entrepreneurs' interest in the capital gains is often up to 30%, with 10% vesting upon closing, 10% vesting over time, and 10% vesting upon meeting rate of return objectives for the investors. The initial search funding is treated as an investment in the company often with a 50% step-up in value. And all of the outside investments accumulate according to a preference, usually at 7% or 8% annually, and there is no catch-up. So, if the company is held for a 10-year period, the equity proceeds would need to be more than twice as large as the original equity investment before the managers would realize any proceeds from a sale.

Table 3 presents the economics of a representative search fund deal. The target is assumed to have EBITDA of $1.5 million and is acquired for 4x EBITDA, or $6 million. The closing costs are assumed to be 10%, twice the amount for a private purchaser with friends and family financing, because of the added complexity of dealing with 20 or so individual investors. The acquisition is assumed to be financed by 30% bank debt. Unlike the private purchaser, a

[13] See Brennan Warranty (B) for an example of a search fund acquisition that experienced financial distress.

personal guarantee rarely is required. There appear to be several reasons why lenders waive this requirement. The majority ownership by outside investors creates financial controls that do not exist in similarly-sized manager-owned companies. Lenders also take additional comfort in the presence of “deep pocket” investors who can potentially contribute additional equity, if needed. Finally, as a practical matter, it is more difficult to obtain guarantees from a large number of individual small shareowners, or from a manager who only owns a small fraction of a company. The transaction is also assumed to be 30% funded by seller debt.

The returns for the search fund investors are 21%, well below our hypothetical 25% hurdle rate. The entrepreneurs also do not have impressive earnings. The present value at the 25% hurdle rate of the entrepreneurs’ carry is only $390,000 or about $110,000 when annualized or $55,000 for each entrepreneur.

The expected search costs are more than $1 million, which has a substantial impact on these results. Without search costs, for example, the internal rate of return for the search fund limited partners becomes 29% and the annualized increases to $70,000 for each entrepreneur. In this model, expected search costs would have to be about one-half of our estimate, or $500,000, for the search fund limited partners to earn 25%. The size of the acquisition also has a substantial impact on the results. Holding expected acquisition costs fixed at the Table 2 level, doubling the size of the acquisition increases the internal rate of return for the search fund investors to 25% and raises the entrepreneurs’ carry to an annualized value of $250,000 each.

According to our analysis, the returns to search fund limited partners are insufficient to overcome the high search costs. This would limit the amount of capital attracted to search funds. Furthermore, the search fund model offers modest payoffs to the entrepreneurs. Most acquisitions limit the salary to its managers to a level below the $140,000 for recently graduated MBAs and it isn't clear that the annualized carry of $55,000 in our example would be sufficient to compensate the entrepreneurs for the foregone compensation they would expect to receive in an alternative career. In fact, the number of entrepreneurs that raise a search fund is currently only about a dozen or so per year, suggesting that the model provides limited appeal to graduating MBA students.

3.3 Private Equity Partnerships

Some private equity partnerships specialize in investments in smaller firms. The managers of the fund are its general partners who raise capital from investors that become limited partners in the fund, select the investments, serve on the Board of Directors of the acquired firm, usually as the controlling shareholder, and eventually manage the sale of acquired company.

The private equity partnerships that specialize in smaller firms are much smaller than typical private equity funds. The pools of capital for most private equity firms are usually measured in the billions of dollars but the funds that specialize in smaller firms are often less than $100 million. The challenge for these partnerships is that the amount of capital that can be deployed in each small company is small. That means that the private equity partnerships that specialize in smaller firms need to make many more investments than partnerships with similarly sized funds that invest in larger companies. A typical private equity fund might invest in about ten companies whereas a fund specializing in smaller firms might invest in two to three <u>dozen</u> different companies. Because of their limited ability to deploy capital, private equity firms that specialize in smaller firms have limited appeal to institutional capital and generally have family offices and individuals as limited partners.[14]

Most general partners of private equity funds charge their limited partners a management fee for investing their funds, usually 2% per year on committed capital during the first five years while the funds are being invested, and 2% on invested capital for the remaining life of the fund, which is typically five years. In those private equity partnerships that specialize in portfolios of smaller firms, committed capital includes the equity from the limited partners plus portfolio level debt from the US Small Business Administration with $1 of equity being matched with a maximum $2 of debt. So, the 2% fee on invested capital corresponds to a 6% fee to the limited partners. The general partners also receive a portion of the capital gain on the investment, which is called the "carry". Also, a 20% carry is typical meaning that 80% of the capital gains go to the limited partners and 20% are retained by the partnership for distribution to the general partners. The management fee and the carry are the revenue of the partnership.

The costs of the partnership include those associated with raising the pool of investment capital from limited partners, finding suitable companies to invest in, guiding those companies while they are owned by the private equity partnership, and organizing the eventual sale of the company. The smaller the company that the fund invests in, the more searching the private equity firm needs to do to deploy its capital, the more companies it invests in and has to guide, and the more companies it has to eventually sell. In short, relative to partnerships that invest in larger companies, private equity firms that specialize in smaller firms have to do much more of the same things.

[14] The case "Gemini Investor" describes the operations of a private equity firm that specializes in a portfolio of smaller firms.

The economics of the funds that specialize in smaller firms could still be favorable if it was much easier to find, evaluate, manage and sell smaller companies. But when scaled by the amount of dollars invested, small companies are likely to be more difficult and therefore more expensive than larger companies because there is simply less reliable information available for these companies. That makes these companies more difficult to find and evaluate, adding to the expense of the search. Guiding these smaller companies once purchased is also likely to be more involved because their management tends to be less professional and their systems less developed. And, selling smaller companies is more difficult than selling an equivalent larger company because these higher costs means that there are simply fewer buyers and thus less liquidity.

Table 4 illustrates the cash flows for the acquisition of our representative smaller firm by a private equity partnership. As before, we assume an EBITDA of $1.5 million, a multiple of 4x and an acquisition price of $6 million. Search costs are assumed to be less than those of either a private purchaser or a search fund because the private equity firm is continuously sourcing deal flow and thus should be able to find deals more efficiently. We assume expected search costs of $500,000, more than the resource constrained private purchaser but less than the search fund entrepreneur. The example also assumes that the management of the company receives 5% of the carry before the private equity partnership splits the remaining carry with limited partners receiving 80% and the general partner receiving 20%. Finally, this example assumes that 60% of the transaction is financed by bank debt, which is typical for acquisitions of small firms sponsored by private equity firms. Like the debt obtained by search fund sponsored acquisitions, the debt in the private equity sponsored acquisitions does not require personal guarantees. Also, the seller financing that plays such a key role in acquisitions by both private purchasers and search funds is usually absent from private equity sponsored transactions.

The private equity limited partners that provide the equity financing realize an internal rate of return of 25%, which equals our assumed hurdle rate and should provide sufficient returns to attract capital. The present value of the cash flows for the private equity general partner equals about $450,000 from the transaction. That amount is likely to be insufficient to cover the costs that the general partner incurs in providing high-level management of the acquired company. In an acquisition by a private purchaser or a search fund, those high-level management skills are provided by the entrepreneur. When performance is satisfactory, private equity general partners report spending at least a day a quarter with each company in their portfolio. When the acquired company becomes troubled, the general partner spends much more time. It is unlikely that the $130,000 annualized amount is sufficient to cover these expenses and provides little incentive for private equity firms to take a more active role in the market for smaller firms.

Private equity partnerships that specialize in smaller companies adapt to increase their effectiveness and reduce their costs. One adaptation is to limit the types of smaller companies purchased by private equity partnerships to simpler and faster growing companies with more professional managers than other smaller firms. Simpler helps with the due diligence and information costs. Faster growing helps in three ways. First, there are more opportunities for expansion and value enhancement. Second, as the companies grow and become larger, there are more benefits from adopting that more professional management, accounting and information systems that private equity firms often recommend. And, third, as the firms grow and become more valuable, the set of other private equity partnerships that would be potential buyers expands, which in turn adds liquidity, enhances competition among potential buyers, makes the sales process easier, and increases the eventual sales price. More professional managers in an acquired company will reduce the ongoing management participation by the general partners.

Another adaptation is to originate some investments through unfunded sponsors. Unfunded sponsors are professional searchers. That is, their business is to find attractive acquisition targets. Once an unfunded sponsor finds an attractive acquisition target, it proposes an LOI, completes due diligence, and structures a transaction to buy the target firm. Sometimes the unfunded sponsor matches a target with a new management team. Other times the existing management team intends to continue after the transaction, perhaps after the equity of the retired owner is sold. The unfunded sponsor approaches potential funding sources such as a private equity fund after it has a target under agreement, the management team is in place and the deal is structured. The private equity firm would, in turn, makes its own evaluation of the target, including its own due diligence.

The unfunded sponsors generally are compensated upon completion of the deal. The compensation typically includes a 10% transaction fee, 10% of the capital gain on an eventual sale, and an annual fee for being the "lead director" of between $100k and $250k, depending on the size of the deal. The unfunded sponsors are often organized in small firms that describe themselves as (regional) investment banks or as private equity firms. Indeed, but for funding the acquisition, the unfunded sponsor takes on the deal sourcing, identification, and day-to-day oversight that would typically be done by a private equity firm.

From the viewpoint of a private equity firm, unfunded sponsors are a source of high quality deal flow. Unlike other the other sources of potential deals for a private equity firm, unfunded sponsors have invested time and resources to evaluate the acquisition and its suitability for the private equity firm's portfolio of companies. While it has to confirm that the proposed acquisition meets its investment criteria, the unfunded sponsor has completed much of the work that would normally be done by the private equity firm. When the acquisition targets are small firms, and a private equity fund includes dozens of portfolio companies, using unfunded sponsors can be an efficient approach to building a portfolio. Through time, the unfunded sponsor builds a reputation and a working relationship with private equity firms so that the acceptance rate on deals from a particular unfunded sponsor can be quite high. Some private equity firms mix their own proprietary solicitation of deals with co-investment deals from other private equity firms and deals from unfunded sponsors.

Table 5 uses our representative acquisition of a smaller company by private equity firm that is sourced through an unfunded sponsor. Keeping all the assumptions of transaction unchanged from Table 4, the unfunded sponsor changes the cash flows in three ways. First, the acquisition costs are paid by the unfunded sponsor, not the private equity general partners, and there is a deal fee that goes to the unfunded sponsor. Like closing costs, this deal fee is included in the equity portion provided by the limited partners. Second, the unfunded sponsor receives a fee for being a "lead director" of $150,000 per year which is paid by the company so it reduces the EBITDA that is available for distribution. Third, the unfunded sponsor receives a 10% carry which is paid after the manager's carry but before the private equity partners carry.

The unfunded sponsor in Table 6 earns about $320,000. The private equity general partners earn substantially more than in Table 4 without the unfunded sponsor, and the limited partners earn substantially less. These differences are largely due to the treatment of the search costs which are paid by unfunded sponsor but effectively reimbursed by the limited partners.

This increases the return to the general partner who no longer has to pay the search costs and reduces the return to the limited partners who pay both the deal fee to the unfunded sponsor and the management fee to the general partner. Importantly, comparing Table 5 and 6 probably does not reveal the full impact of unfunded sponsors. Unfunded sponsors serve as lead directors. To the extent that the unfunded sponsors substitute for managerial resources that would have otherwise been provided by the private equity general partner, an unfunded sponsors make an acquisition even more attractive to the general partner by reducing the time it devotes to portfolio companies. This allows the general partners to focus their efforts on other aspects of the fund such as raising capital and managing relationships with limited partners. But the return to the limited partners is well below the 25% hurdle rate and unlikely to attract capital.

4. Conclusion

The magic of smaller companies is that they can often be purchased for an EBITDA multiple of 4x when the multiple for larger companies in similar businesses are two or three time larger. These low multiples suggest that there is an opportunity in investing in smaller firms, and it is puzzling that capital has not flowed into the market for smaller firms, putting upward pressure on the acquisition multiples.

Our hypothesis is that the expected acquisition costs are much larger as a proportion of value for smaller firms. These diseconomies of scale in acquisition costs are a hurdle to potential purchasers and the types of purchasers of smaller firms are, as a result, generally different from the purchasers of larger, public firms. Each type of purchaser has distinctive advantages but also has limitations that prevent it from dominating the market and putting pressure on acquisition multiples.

Private purchasers have the low expected acquisition costs and enjoy substantial returns and independence but the search and the equity portion of the acquisition are funded by the entrepreneur. That limits the number of purchasers and the size of the purchase. Private purchases can relax the limit on acquisition size by using outside equity capital from friends and family but, again, there are a limited number of entrepreneurs that have a personal network of investors that can fund a transaction and have the personal capital to fund the search. However, for those with such a network and the capital to fund a search, this form of acquisition seems to be the most favorable to both the entrepreneurs and the investors.

Search funds provide an alternative for entrepreneurs that are unable to privately finance a search. The search and the subsequent acquisition are funded, eliminating the constraints that bedevil the private purchasers. But because of the nature and cost of the search, there is a substantial decrease in the economic return for the entrepreneur, to a level that makes it an unattractive career path on a financial basis for an MBA graduate. And, the search fund sponsored entrepreneurs own less of the company and enjoy less autonomy that the private purchaser. Also, there seems to be limited search fund capital, perhaps because of mixed historical financial results for these investments. Our conclusion is that are simply too few search funds to substantially impact the market for smaller firms.

Private equity partnerships seem to have access to capital and an ongoing deal sourcing process that overcomes the hurdles that limit private purchasers and search funds. But our analysis suggests that the costs of providing high-level management to the smaller companies offset any benefits from the acquisition. Also, because the private equity firms that invest in smaller companies cannot deploy a large amount of capital, these funds have limited appeal to institutions. Our conclusion is that private equity partnerships cannot effectively exploit the economic opportunities in the market for smaller firms.

Our overall conclusion is that the market for smaller firms is efficient in the sense defined by Grossman and Stiglitz (1980): the prices seem about right in light of the high acquisition costs. But that also means that there are pockets of opportunity, especially for buyers that can efficiently search for potential acquisitions and can obtain outside equity capital at a relatively low cost.

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Table 1: Types of Buyers Active in the Market for Smaller Firms and their characteristics

Type of Purchaser	Search Funding	Debt	Debt Terms	Outside Equity	Entrepreneurial Ownership	Limits on Entrepreneur
Private Purchasers	Entrepreneur	Bank and non-bank lenders Friends and Family	Personal guarantee Asset-backed Frequent inspections	None	100%	None
Private Purchasers with outside equity	Entrepreneur	Bank and non-bank lenders Friends and Family	Personal guarantee Asset-backed Frequent inspections	Friends and Family Mentors, Former Employers, others	75%	Salary No living in the company
Search Fund Backed Entrepreneurs	Investor group	Bank and non-bank lenders	Asset-backed Cash Flow	Investor Group that funded the search	Up to 30% Carry depending on performance	Salary No living in the company Board of Directors with ability to replace managers
Private Equity Partnership	Management Fee from limited partners	Bank and non-bank lenders	Asset-backed Cash Flow	Private Equity Limited Partners	10% Carry for Unfunded Sponsors Managers may receive an equity interest up to 15%	Salary No living in the company Board of Directors with ability to replace managers
Unfunded Sponsors with Private Equity Funding	Unfunded Sponsor	Bank and non-bank lenders	Asset-backed Cash Flow	Private Equity Limited Partners	10% Carry for Unfunded Sponsors Managers may receive an equity interest up to 15%	Salary No living in the company Board of Directors with ability to replace managers

Table 2: Representative Investment Analysis for the Acquisition of a Smaller Firm by a Private Purchaser

(millions of dollars)

EBITDA	0.75	Search Costs	0.20	Manager's Carry	100%
EBITDA growth rate	5%	Percentage success	25%		
Purchase Multiple	4.00	Expected Search Cost	0.80		
Purchase Price	3.00	Closing Costs	2%		
Leverage ratio -- Bank	30%				
Debt rate -- Bank	8%				
Leverage ratio -- Seller	30%				
Debt rate -- Seller	12%	Minimum distribution	35%	Exit Multiple	4.00

	-1	0	1	2	3	4	5	6	7
Search Costs	0.80								
Closing costs		0.06							
Manager's investment		1.20							
EBITDA			0.75	0.79	0.83	0.87	0.91	0.96	1.01
Exit									4.02
Minimum distribution			0.20	0.22	0.25	0.28	0.32	0.34	0.35
Bank Debt									
Beginning debt			0.90	0.53	0.12				
Interest on debt			0.07	0.04	0.01				
Debt repayment			0.37	0.41	0.12				
Ending Debt		0.90	0.53	0.12	0.00				
Seller Debt									
Beginning debt			0.90	0.90	0.90	0.55	0.03		
Interest on debt			0.11	0.11	0.11	0.07	0.00		
Debt repayment			0.00	0.00	0.35	0.52	0.03		
Ending Debt		0.90	0.90	0.90	0.55	0.03	0.00		
Available Equity after Debt			0.20	0.22	0.25	0.28	0.87	0.96	5.03
Manager's CFs	-0.80	-1.26	0.20	0.22	0.25	0.28	0.87	0.96	5.03
PV @ 25%	-0.08								
Annualized	-0.02								
IRR	24%								

Table 3: Representative Investment Analysis for the Acquisition of a Smaller Firm by Private Purchaser with Friends and Family

(millions of dollars)

EBITDA	1.50	Search Costs	0.20	Manager's Ownership	75%
EBITDA growth rate	5%	Percentage success	25%	Friends and Family	25%
Purchase Multiple	4.00	Expected Search Cost	0.80		
Purchase Price	6.00	Closing Costs	5%		
Leverage ratio -- Bank	30%	F&F Interest rate	12%		
Debt rate -- Bank	8%	Leverage ratio -- F&F	30%		
Leverage ratio -- Seller	30%				
Debt rate -- Seller	12%	Minimum distribution	35%	Exit Multiple	4.00

	-1	0	1	2	3	4	5	6	7
Mgr Search Funding	0.80								
Closing costs		0.30							
Manager's investment		0.60							
EBITDA			1.50	1.58	1.65	1.74	1.82	1.91	2.01
Exit									8.04
Minimum distribution			0.32	0.37	0.41	0.47	0.53	0.61	0.69
Bank Debt									
Beginning debt			1.80	1.20	0.52	0.00			
Interest on debt			0.14	0.10	0.04	0.00			
Debt repayment			0.60	0.68	0.52	0.00			
Ending Debt		1.80	1.20	0.52	0.00	0.00			
Seller Debt									
Beginning debt			1.80	1.80	1.80	1.55	0.68		
Interest on debt			0.22	0.22	0.22	0.19	0.08		
Debt repayment			0.00	0.00	0.25	0.87	0.68		
Ending Debt		1.80	1.80	1.80	1.55	0.68	0.00		
Friends & Family Debt									
Beginning F&F			1.80	1.80	1.80	1.80	1.80	1.49	0.37
Interest			0.22	0.22	0.22	0.22	0.22	0.18	0.04
Capital repayment			0.00	0.00	0.00	0.00	0.31	1.13	0.37
Ending F&F		1.80	1.80	1.80	1.80	1.80	1.49	0.37	0.00
Available Equity after Debt			0.32	0.37	0.41	0.47	0.53	0.61	9.64
Manager's share			0.24	0.27	0.31	0.35	0.40	0.46	7.23
F&F's share			0.08	0.09	0.10	0.12	0.13	0.15	2.41
F&F's CFs	0	-1.80	0.30	0.31	0.32	0.33	0.66	1.46	2.82
IRR	27%								
Manager's CFs	-0.80	-0.90	0.24	0.27	0.31	0.35	0.40	0.46	7.23
IRR	30%								
PV @ 25%	0.35								
Annualized	0.10								

Table 4: Representative Investment Analysis for the Acquisition of a Smaller Firm by a Search Fund

(millions of dollars)

EBITDA	1.50	Search Costs	0.79	Manager's Carry	30%
EBITDA growth rate	5%	Percentage success	75%	LPs' Carry	70%
Purchase Multiple	4.00	Expected Search Cost	1.05	LP Preference rate	8%
Purchase Price	6.00	Closing Costs	10%		
Leverage ratio -- Bank	30%				
Debt rate -- Bank	8%				
Leverage ratio -- Seller	30%				
Debt rate -- Seller	12%	Minimum distribution	35%	Exit Multiple	4.00

	-1	0	1	2	3	4	5	6	7
Search Costs	1.05								
Closing costs		0.60							
Manager's investment		0.00							
EBITDA			1.50	1.58	1.65	1.74	1.82	1.91	2.01
Minimum distribution			0.40	0.52	0.57	0.61	0.64	0.67	0.70
Bank Debt									
Beginning debt			1.80	1.06	0.31				
Interest on debt			0.14	0.08	0.02				
Debt repayment			0.74	0.75	0.31				
Ending Debt		1.80	1.06	0.31	0.00				
Seller Debt									
Beginning debt			1.80	1.80	1.80	1.26	0.29		
Interest on debt			0.22	0.22	0.22	0.15	0.03		
Debt repayment			0.00	0.00	0.54	0.98	0.29		
Ending Debt		1.80	1.80	1.80	1.26	0.29	0.00		
Exit									8.04
Available Equity after Debt			0.40	0.52	0.57	0.61	1.50	1.91	2.01
Beginning LP (with 150% step-up of search costs)			4.19	4.12	3.93	3.67	3.36	2.13	0.38
Preference			0.33	0.33	0.31	0.29	0.27	0.17	0.03
			4.52	4.45	4.24	3.97	3.63	2.30	0.41
Capital Distribution to LPs			0.40	0.52	0.57	0.61	1.50	1.91	0.41
Ending LP Equity		2.40	4.12	3.93	3.67	3.36	2.13	0.38	0.00
Available Equity after Debt and Capital Distributions			0.00	0.00	0.00	0.00	0.00	0.00	9.64
Manager's share			0.00	0.00	0.00	0.00	0.00	0.00	2.89
LP's share			0.00	0.00	0.00	0.00	0.00	0.00	6.75
LP CFs	-1.05	-3.00	0.40	0.52	0.57	0.61	1.50	1.91	7.16
	21%								
Manager's CFs	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.89
PV @ 25%	0.39								
Annualized	0.11								

Table 5: Representative Investment Analysis for the Acquisition of a Smaller Firm by a Private Equity Partnership

(millions of dollars)

EBITDA	1.5	Search Costs	0.50	Manager's Carry	5%
EBITDA growth rate	5%	Percentage success	100%		
Purchase Multiple	4	Expected Search Cost	0.50	LPs' Carry	80%
Purchase Price	6	Closing Costs	10%	GP's Carry	20%
				Preference rate	8%
Leverage ratio -- Bank	60%				
Debt rate -- Bank	8%				
		Minimum distribution	35%	Exit Multiple	4

	-1	0	1	2	3	4	5	6	7
Search Costs	0.50								
Closing costs		0.60							
Manager's investment		0.00							
Management fee on committed capital @ 6%		0.36							
EBITDA			1.50	1.58	1.65	1.74	1.82	1.91	2.01
Minimum distribution			0.42	0.47	0.52	0.58	0.64	0.67	0.70
Beginning debt			3.60	2.81	1.93	0.96			
Interest on debt			0.29	0.22	0.15	0.08			
Debt repayment			0.79	0.88	0.97	0.96			
Ending Debt		3.60	2.81	1.93	0.96	0.00			
Exit									8.04
Available Equity after Debt			0.42	0.47	0.52	0.70	1.82	1.91	2.01
Beginning LP			3.36	3.20	2.99	2.70	2.22	0.57	0.00
Preference			0.27	0.26	0.24	0.22	0.18	0.05	0.00
			3.63	3.46	3.23	2.92	2.40	0.62	0.00
Capital Distribution to LPs			0.42	0.47	0.52	0.70	1.82	0.62	0.00
Ending LP Equity		3.36	3.20	2.99	2.70	2.22	0.57	0.00	0.00
Available Equity after Debt and Capital Distributions			0.00	0.00	0.00	0.00	0.00	1.29	10.05
GP's preference			0.07	0.13	0.19	0.25	0.29	0.30	
GP preference payments			0.00	0.00	0.00	0.00	0.00	0.30	
GP's accrued preference			0.07	0.13	0.19	0.25	0.29	0.00	
Manager's share			0.00	0.00	0.00	0.00	0.00	0.06	0.50
GP's share			0.00	0.00	0.00	0.00	0.00	0.55	1.91
LP's share			0.00	0.00	0.00	0.00	0.00	0.68	7.64
Manager's CFs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.50
PV @ 25%	0.08								
Annualized	0.02								
LP CFs		-3.36	0.42	0.47	0.52	0.70	1.82	1.30	7.64
Management Fees @ 6% of Invested Capital			0.20	0.18	0.15	0.12	0.07	0.00	0.00
		-3.36	0.22	0.30	0.38	0.58	1.75	1.30	7.64
IRR	25%								
GP's CFs	-0.50	0.36	0.00	0.00	0.00	0.00	0.00	0.55	1.91
Management Fees @ 6% of Invested Capital			0.20	0.18	0.15	0.12	0.07	0.00	0.00
	-0.50	0.36	0.20	0.18	0.15	0.12	0.07	0.55	1.91
PV @ 25%	0.45								
Annualized	0.13								

Table 6: Representative Investment Analysis for the Acquisition of a Smaller Firm by Private Equtiy Partnership with an Unfunded Sponsor

(millions of dollars)

EBITDA	1.5	Search Costs	0.6	Manager's Carry	5%
Purchase Multiple	4	Percentage success	100%		
Purchase Price	6	Expected Search Cost	0.60	GP's Carry	20%
EBITDA growth rate	5%	Closing Costs	10%	LPs' Carry	80%
				LP Preference rate	8%
Leverage ratio -- Bank	60%	Unfunded Sponsor's Fee	10%		
Debt rate -- Bank	8%	Unfunded Sponsor's Carry	10%		
		Minimum distribution	35%	Exit Multiple	4

	-1	0	1	2	3	4	5	6	7
Search Costs	0.60								
Closing costs		0.60							
Manager's investment		0.00							
Management fee on committed capital @ 6%		0.36							
Unfunded Sponsor's Deal Fee		0.60							
EBITDA			1.50	1.58	1.65	1.74	1.82	1.91	2.01
Lead Director Fee			0.15	0.15	0.15	0.15	0.15	0.15	0.15
EBITDA after Director Fee			1.35	1.43	1.50	1.59	1.67	1.76	1.86
Minimum distribution			0.37	0.42	0.47	0.52	0.58	0.62	0.65
Beginning debt			3.60	2.91	2.13	1.27	0.30		
Interest on debt			0.29	0.23	0.17	0.10	0.02		
Debt repayment			0.69	0.77	0.87	0.97	0.30		
Ending Debt		3.60	2.91	2.13	1.27	0.30	0.00		
Exit									8.04
Available Equity after Debt			0.37	0.42	0.47	0.52	1.35	1.76	1.86
Beginning LP			3.96	3.91	3.80	3.64	3.41	2.34	0.76
Preference			0.32	0.31	0.30	0.29	0.27	0.19	0.06
			4.28	4.22	4.10	3.93	3.68	2.52	0.82
Capital Distribution to LPs			0.37	0.42	0.47	0.52	1.35	1.76	0.82
Ending LP Equity		3.96	3.91	3.80	3.64	3.41	2.34	0.76	0.00
Available Equity after Debt and Capital Distributions			0.00	0.00	0.00	0.00	0.00	0.00	9.08
GP's preference			0.08	0.16	0.23	0.31	0.37	0.42	0.44
GP preference payments			0.00	0.00	0.00	0.00	0.00	0.00	0.44
GP's accrued preference			0.08	0.16	0.23	0.31	0.37	0.42	0.00
Manager's share			0.00	0.00	0.00	0.00	0.00	0.00	0.45
Unfunded Sponsor's Share			0.00	0.00	0.00	0.00	0.00	0.00	0.86
GP's share			0.00	0.00	0.00	0.00	0.00	0.00	1.99
LP's share			0.00	0.00	0.00	0.00	0.00	0.00	5.78
Manager's CFs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45
PV @ 25%	0.06								
Annualized	0.02								
Unfunded Sponsor CFs	-0.60	0.60	0.15	0.15	0.15	0.15	0.15	0.15	1.01
PV @ 25%	0.32								
Annualized	0.09								
IRR	53%								
LP CFs		-3.96	0.37	0.42	0.47	0.52	1.35	1.76	6.59
Management Fees @ 6% of Invested Capital			0.24	0.22	0.19	0.16	0.13	0.05	0.00
		-3.96	0.13	0.20	0.28	0.36	1.21	1.71	6.59
IRR	17%								
GP's CFs	0	0.36	0.00	0.00	0.00	0.00	0.00	0.00	1.99
Management Fees @ 6% of Invested Capital			0.24	0.22	0.19	0.16	0.13	0.05	0.00
		0.36	0.24	0.22	0.19	0.16	0.13	0.05	1.99
PV @ 25%	1.06								
Annualized	0.31								