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BANKRUPTCY LAW AND ENTREPRENEURSHIP DEVELOPMENT: A REAL OPTIONS PERSPECTIVE

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We develop a real options perspective to explore how an entrepreneur-friendly bankruptcy law can encourage entrepreneurship development at the societal level. If bankrupt entrepreneurs are excessively punished for failure, they may let inherently high-risk but potentially high-return opportunities pass. We suggest that a more entrepreneur-friendly bankruptcy law, informed by a real options logic, can encourage more active and vibrant entrepreneurship development. We also discuss the implications of the role of venture capital and stigma in the effectiveness of an entrepreneur-friendly bankruptcy law.

Interest continues to grow in understanding how entrepreneurship can create value in a society. Much of this interest focuses on the role of risk taking by entrepreneurs and managers in creating economic value and, in particular, how barriers to the *entry* of entrepreneurs into the economy can be lowered (Busenitz, Gomez, & Spencer, 2000; Djankov, La Porta, Lopez-De-Silanes, & Shleifer, 2002). There is, however, relatively little work on how to lower barriers to *exit* business, such as bankruptcy laws.

Corporate bankruptcy is very common. Indeed, hundreds of thousands of firms around the world declare bankruptcy each year. During the 1990s, the annual average number of corporate bankruptcies in Japan was 14,500 (*Industry Week*, 1998), in France 52,000, in Great Britain 47,000, and in Germany 21,000 (Claessens & Klapper, 2005). In 2001, 38,540 businesses in the United States declared bankruptcy (American Bankruptcy Institute, 2003). Many of these bankruptcies are filed by entrepreneurial firms. For example, White (1990) shows that 46 to 60 percent of U.S. firms that filed for bankruptcy from 1950 to 1987 were young firms, five years old or younger. Warren and Westbrook (1999) report that 80 percent of U.S. firms that filed for bankruptcy reported assets under $1 million, and 88 percent reported having fewer than 20 employees.

Despite the frequency of corporate bankruptcies, the legal procedures associated with bankruptcy vary significantly across countries. Some countries define only a few types of bankruptcy and provide limited protection for entrepreneurs and managers of bankrupt firms. Other countries have many more bankruptcy options, which vary in the extent to which they limit the personal liability of entrepreneurs and managers of bankrupt firms.

More generally, bankruptcy law is an important example of the broad institutional context within which firms in a country operate (North, 1990; Peng, 2003, 2005, 2006; Scott, 1995). This institutional context includes all the formal and informal rules in a society that affect organizations as players. Thus, in the case of bankruptcy, a country's institutional context includes not only bankruptcy law but also social norms about bankruptcy, the structure of capital mar-

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kets, and broadly held personal beliefs about responsibility.

Most research on the institutional context within which firms operate focuses on the implications of these institutions on the strategic choices of firms (Meyer & Peng, 2005; Peng, 2003, 2005, 2006; Peng, Lee, & Wang, 2005; Wright, Filatotchev, Hoskisson, & Peng, 2005). While acknowledging the importance of these firm-level effects, our central purpose here is to examine the broader, *societal-level* economic consequences of these institutions, using bankruptcy as a focal point. In particular, we examine the impact of institutions associated with bankruptcy on the willingness of individuals in a society to engage in risk-taking entrepreneurial activity. By adopting these societal effects as a dependent variable, we examine the relationship between the institutions associated with bankruptcy and value-creating activities in a society associated with risk taking by entrepreneurial firms. Here, we define entrepreneurs as individuals who combine resources in new and risky ways (Schumpeter, 1942) and who have the potential to add value to society through these endeavors.

Our key question is "How does an entrepreneur-friendly bankruptcy law affect entrepreneurship development at a societal level?" The theoretical lens we use is real options theory. We argue that real options theory is highly appropriate here because institutions associated with bankruptcy determine the maximum downside risk associated with risky investments of a firm, while the upside potential of these investments is potentially unlimited. This is exactly the setting within which real options logic can be applied (Dixit & Pindyck, 1994; McGrath, 1999). Our central argument is that, at a societal level, an entrepreneur-friendly bankruptcy law, informed by a real options logic, can encourage more risk taking and, thus, more entrepreneurship development by limiting downside risks and increasing upside gains.

REAL OPTIONS AND VALUE CREATION AT THE SOCIETAL LEVEL

Real Options Theory

Originating from financial options theory (Black & Scholes, 1973; Dixit & Pindyck, 1994), real options theory focuses on the real business application of financial options (Bowman & Hurry, 1993). In financial options, as uncertainty increases, upside potential increases while downside risk remains fixed (Fama & Miller, 1972). This logic also applies to real options. The higher the variance in outcome from making a real investment, the higher the option value of the investment (McGrath, 1999).

Real options are important because they represent a portion of the value of future opportunities that cannot be explained by the present value of future cash flows. To date, real options theory has been applied to different aspects of management research, including multinational flexibility (Reuer & Leiblein, 2000), joint ventures (Kogut, 1991; Tong, Reuer, & Peng, in press), diversification (Kim & Kogut, 1996), governance structure (Folta, 1998), and entrepreneurship development (McGrath, 1999).[1]

A Real Options Perspective on the Societal Level

Although McGrath (2001) observes that real options theory can be applied at a societal level, most past research on real options has focused on the firm level. However, there is a long tradition of entrepreneurship research—probably dating back to Schumpeter (1942)—that focuses on the societal level. Scholars generally agree that entrepreneurship development, by encouraging economic and competitive *variety,* can add value to a society (Birley, 1986; Lumpkin & Dess, 1996). There also exists some entrepreneurship research using societal-level institu-

[1] Recent debates on real options theory (e.g., Adner & Levinthal, 2004; McGrath, Ferrier, & Mendelow, 2004) show that there are many different points of view on real options. In this article we follow McGrath's (1999) argument: real options can be thought of as an analogy, emphasizing two characteristics: (1) options are best valued when each option is considered as part of a bundle, and, thus, a higher variance in a bundle of options increases the value of options; (2) in a real options lens, the key is not avoiding failure but managing the cost of failure by limiting exposure to downside risk while preserving upside gains. Along these lines, Gavetti and Levinthal (2000) also emphasize that

> if low-outcome draws can be costlessly discarded, then greater variance in the sample, holding the mean constant, increases the expected value of those that are adopted. This is the basic intuition behind the recent interest in the idea of "real options" in the business strategy literature (Bowman and Hurry, 1993) (2000: 115).

tions as an independent variable to predict entrepreneurial behavior (Baumol, 1990; Busenitz et al., 2000; Van de Van, 1993).

Focusing on bankruptcy law, we leverage insights from real options theory and integrate them with the tradition of societal-level entrepreneurship research. We argue that when risk taking is encouraged via a more entrepreneur-friendly bankruptcy law, a society will be characterized by the creation of more real options by entrepreneurs. Specifically, such laws may generate variety by increasing the number of firms with high growth opportunities and decreasing the number of failing firms, both of which may be a key to value creation at the societal level.

There are at least two rationales for this perspective. First, options are best valued when each option is considered as part of a *bundle*. When an economy composed of different firms is understood as a bundle of options, each firm no longer stands alone (Bowman & Hurry, 1993). Rather, it is part of a bundle of options in a given society (McGrath, 1999). Therefore, a higher variance in a bundle of options, even though some individual firms within the bundle may fail, may be desirable. We extend this notion by showing how different bankruptcy law arrangements might encourage or discourage the risk-taking tendency of firms within a society.

Second, failure, although painful for bankrupt entrepreneurs and firms, can be *beneficial* for the society as a whole. The decision to take a risk implies embracing all that goes with this decision, especially the risk of possible failure (Miller & Reuer, 1996; Venkataraman, 1997). From a real options lens, "the key issue is not avoiding failure but managing the cost of failure by limiting exposure to the downside while preserving access to attractive opportunities and maximizing gains" (McGrath, 1999: 16). Therefore, in real options reasoning, a high failure rate can even be a good thing for a given society, on the condition that the cost of failure is contained. Past research shows that a high failure rate of firms actually goes hand in hand with economic growth of a society (Birch, 1979).

Overall, "to avoid encouraging passivity, a society or firm would be better off using mechanisms that share the costs of entrepreneurial failure, rather than heaping financial and social sanctions upon those who explore entrepreneurial options" (McGrath, 1999: 25). Since different institutional arrangements can influence the extent of entrepreneurship development (Barro, 1997; Peng & Zhou, 2005), formal institutions such as bankruptcy law can have a significant influence on the decision to create a firm—a decision that can add value in a society.

RISK TAKING, ENTREPRENEURSHIP DEVELOPMENT, AND POSITIVE EXTERNALITIES

Bhide (2000) argues that the really significant risk for a venture occurs not at the start-up stage but at the point when major irreversible investment in growth is required. At this stage, an entrepreneur puts all of his or her financial resources into "one basket." Bhide argues that "growth involves developing formal structures and systems that increase the firm's fixed costs and hence *the risk of bankruptcy*" (2000: 293; emphasis added). Whether entrepreneurs escalate their commitment at this stage—in the face of increasing bankruptcy risk—often determines whether their firms will eventually succeed or not.

In the aggregate, if more entrepreneurs are willing to take such risks, then there will be a wider variety of firms and, in turn, a higher level of competition in a society. Moreover, not only may these entrepreneurial firms take risks but they also may induce risk-averse established firms to take more risks (Arend, 1999) in order to avoid becoming competitively obsolete.

Of course, individuals in a society vary in the extent to which they are risk averse, risk neutral, or risk seeking (Begley & Boyd, 1987; Busenitz & Barney, 1997; Low & MacMillan, 1988). In societies with bankruptcy laws that are not entrepreneur friendly, only those individuals who are the most comfortable with risk will be willing to make these significant firm-specific investments. In societies with more entrepreneur-friendly bankruptcy laws, people who are either risk seeking or risk neutral may be willing to engage in entrepreneurial behavior. As the personal costs of failed entrepreneurial activities are reduced, the number and variety of people pursuing entrepreneurial activities will increase, and society, on average, will benefit.

It has been widely documented that competition leads firms to be more innovative (Mitchell, 1989; Porter, 1990) and that variety, which fosters experimentation, leads a society to reap positive gains through innovation (Diamond, 1997; Feld-

man & Audretsch, 1999; Knott, 2003). Entrepreneurship can generate positive externalities—the positive, value-adding effects that the action of a group of firms has on other firms and society at large (Arrow, 1962; Barro, 1997; Birley, 1986; Rosenberg & Birdzell, 1986). This is why Miles, Snow, and Sharfman argue that "both corporate strategies and government policies should focus on *variety* as a means of achieving both company and industry success" (1993: 164; emphasis added).

At the same time, firm exit is also a necessary condition for economic growth. Empirical evidence suggests that when innovative activity in an industry increases, firms' overall survival rates often *decrease,* but those that do survive tend to be stronger (Audretsch, 1991; Porter, 1990). "Perhaps competition works not by forcing efficiency on individual firms but by letting many flowers bloom and ensuring only the best survive" (Nickell, 1996: 741). For example, Lim and Han (2003) show that bankruptcy reforms in South Korea after the 1997 economic crisis contributed to productivity growth by allowing inefficient firms to exit, encouraging new entries, and stimulating surviving firms to become more efficient. In other words, higher competition spurred by lower downside risk and lower bankruptcy cost would force inefficient firms to exit (Ahlstrom & Bruton, 2004). If bankruptcy costs were higher, inefficient firms would be reluctant to file bankruptcy and would continue to operate at a financial loss.[2]

Overall, looking at positive externalities beyond individual firm boundaries, many failed first movers (such as de Haviland in jet airliners, EMI in CT scanners, and Webvan in online-based grocery delivery) are the sources of entirely new industries (Aldrich & Fiol, 1994; Lieberman & Montgomery, 1998). The pursuit of opportunities by many entrepreneurs may result in having key uncertainties resolved more rapidly and less expensively (on a per firm basis and a societal basis) than if only a few entrepreneurs are in the game (Diamond, 1997; McGrath, 1999). These dynamics can be affected by bankruptcy law in a society.

[2] Even when it is economically more efficient to exit, surviving and remaining in business are often goals from an individual entrepreneur's perspective (Gimeno, Folta, Cooper, & Woo, 1997). However, at the societal level, it is more desirable that inefficient firms exit.

BANKRUPTCY LAW FROM A REAL OPTIONS PERSPECTIVE

Given that institutions are usually defined as "the rules of the game in a society" (North, 1990: 3; Peng, 2003, 2006; Scott, 1995), bankruptcy law can be regarded as the "rules of the end game." In a society, the purpose of bankruptcy law is to resolve conflicts that may arise among creditors when a firm becomes insolvent (Jackson, 1986). In the absence of bankruptcy law, even when coordinated liquidation would maximize the returns to the creditors as a group, each creditor has an incentive to collect the debt privately before other creditors do. Because the firm's assets are sold in an ad hoc approach, the resulting first-come, first-served ordering of creditors' claims will prompt an inefficient liquidation (Longhofer & Peters, 2004). Jackson argues that the rational decision by numerous individual creditors

> may be the wrong decision for the creditors as a group. Even though the debtor is insolvent, they might be better off if they held the assets together. Bankruptcy provides a way to make these diverse individuals act as one by imposing a collective and compulsory proceedings on them (1986: 12–13).

A real options perspective identifies how different institutional arrangements such as bankruptcy law provide incentives and disincentives for entrepreneurship development. First, a bankruptcy law can generate ex post barriers to *exit.* When these barriers are unfavorable to entrepreneurs (such as not being able to walk away from a heavy debt load), they may try, by all means, to avoid business exit. In any economy, letting some failing firms exit is essential to societal-level economic health (Ahlstrom & Bruton, 2004; Khanna & Poulsen, 1995). To the extent that a market economy can be characterized by a permanent flow of resources from inefficient users to more efficient users, failing firms, if they do not exit, will continue to consume resources that could have been put to more productive use (Hamao, Mei, & Xu, 2002). In Spain, firm exits actually have a positive impact on total industry factor productivity (Callejon & Segarra, 1999). In post 1997 Asia, similar findings have been reported (Ahlstrom & Bruton, 2004; Carney, 2004; White, 2004). Therefore, by lowering exit barriers, an entrepreneur-friendly bank-

ruptcy law can help improve economic efficiency and growth.

Second, an entrepreneur-unfriendly bankruptcy law can, at the same time, create ex ante barriers to *entry* by discouraging entrepreneurs who are afraid of the damaging consequences of a possible bankruptcy to start up their own firms (Surlemont, Leleux, & Denis, 1999). Conversely, a more entrepreneur-friendly bankruptcy law can facilitate more risk taking by encouraging the creation of more new firms (Georgellis & Wall, 2002). For example, approximately 50 percent of American entrepreneurs who had filed Chapter 7 liquidation bankruptcy for their start-ups in 1989–1993 resumed a new venture by 1993 (Landier, 2001). This compares sharply with countries such as Japan, where it is often said there is no second chance for entrepreneurs who have failed once. Therefore, making the bankruptcy law more entrepreneur friendly, such as making it easier to file for bankruptcy, may actually enhance value creation via more active entrepreneurship development at the societal level (Foley, 2000).[3]

In a nutshell, by limiting the downside risk of failure, an entrepreneur-friendly bankruptcy law can limit the exit cost ex post. Therefore, it also indirectly facilitates upside gains by encouraging more risk taking ex ante. In the next section we develop this perspective further.

BANKRUPTCY LAW AND ENTREPRENEURSHIP DEVELOPMENT

How can an entrepreneur-friendly bankruptcy law promote entrepreneurship development? Five aspects are particularly relevant: (1) the availability of a reorganization bankruptcy option, (2) the speed of the bankruptcy procedure, (3) the opportunity to have a fresh start in liquidation bankruptcy, (4) the opportunity to have an automatic stay of assets, and (5) the opportunity for managers to remain on the job after filing for bankruptcy.

Availability of a Reorganization Bankruptcy Option

For firms in financial distress, there are three possible ways to approach bankruptcy: (1) out-of-court settlement, (2) reorganization bankruptcy (such as Chapter 11 in the United States), and (3) liquidation bankruptcy (such as Chapter 7 in the United States)—see Table 1. Firms usually resort to out-of-court settlement first, since it is considerably less expensive than in-court reorganization (Franks & Torous, 1994). Between the latter two, U.S. firms often prefer Chapter 11, since filing Chapter 11 offers one more chance to revive from financial distress (Lynn & Neyland, 1992). From the real options lens, the chance to file reorganization bankruptcy provides firms with more options. This can increase the variance of different firms in a society. During this term of bankruptcy protection, restructuring may enable some firms, in temporary financial distress, to eventually become successful. This is why filing reorganization bankruptcy is considered one of the strategic options for many firms in financial distress (Flynn & Farid, 1991: 64).

Not all countries have all three ways of resolving financial distress. For instance, some countries (e.g., Poland) do not have the option of reorganization bankruptcy. In some cases, even though the reorganization option exists, because of heavy requirements for filing reorganization bankruptcy, its value is questionable. For example, in Germany, reorganization bankruptcy is available, but only 0.3 percent of all financially troubled firms actually use it (Franks, Nyborg, & Torous, 1996). The vast majority of financially troubled German firms are liquidated without going through reorganization bankruptcy (Skeel, 1998).

In an environment where reorganization bankruptcy is unavailable, firms' options are reduced to out-of-court settlement or liquidation bankruptcy. When firms in financial distress are forced to liquidate without having an opportunity to restructure, the possible future variety

[3] Some might argue that an entrepreneur-friendly bankruptcy law would increase the cost of financing for failed firms. This, however, is not necessarily true. When the cost of capital for failed entrepreneurs is high, entrepreneurs only abandon projects with very poor prospects. This makes it less probable that capable entrepreneurs fail, and decreases the quality of the pool of failed entrepreneurs, which, in turn, justifies the high cost of capital for failed firms. When the cost of capital for failed entrepreneurs is low, however, entrepreneurs tend to continue only those projects with high prospects. Consequently, at the societal level, the pool of failed entrepreneurs is of high quality, which justifies the low cost of capital for failed entrepreneurs (Landier, 2001). In a most extreme example, Harvard Industries filed bankruptcy *four* times (called Chapter 44) in the United States, a country where financing cost is low (*Economist,* 2002).

TABLE 1
Three Types of Bankruptcy

Out-of-Court Settlement	Reorganization Bankruptcy	Liquidation Bankruptcy
Bankrupt entrepreneurs and creditors settle out of court. Firm operations may or may not cease, depending on the outcome of such negotiations.	Through court intervention, bankrupt entrepreneurs and creditors negotiate to reduce debt obligations and restructure operations. Firm operations do not cease.	Through court intervention, bankrupt entrepreneurs exit the firm and creditors claim assets of the firm. Firm operations cease.

might be reduced at the societal level. From a real options perspective, providing an opportunity for bankrupt firms to reorganize leaves options open for a society at large. This is why Miller (1977) argues that the reorganization bankruptcy option can be considered a "call option." Since it is uncertain whether a firm has a positive future, providing an opportunity to prove if it has future value is an invaluable instrument for creating options value at the societal level. Shareholders will benefit if reorganization succeeds and can walk away should reorganization fail.

These arguments explain why there is a recent global trend to add U.S. Chapter 11–type reorganization bankruptcy as one of the choices for bankrupt firms in many countries, such as Argentina, Australia, Great Britain, Indonesia, and Thailand (Stiglitz, 2001). The driving motivation seems to be to make bankruptcy law less painful for entrepreneurs.

> *Proposition 1: The availability of reorganization bankruptcy as a choice for bankrupt firms (in addition to out-of-court settlement and liquidation bankruptcy) will encourage entrepreneurship development by curtailing the downside risk of entrepreneurs.*

Speed of Bankruptcy Procedure

The cost of bankruptcy is positively correlated with the length of time spent on the bankruptcy procedure (Bebchuk, 2000). In a liquidation bankruptcy, a fast procedure leads to quick reallocation of assets of failed firms to better users. At the same time, a fast procedure can free an entrepreneur from a failing business and provide an opportunity to start a new one. By eliminating failing firms and reallocating resources to better users, a fast bankruptcy procedure increases variance in a bundle of firms at a societal level.

If a firm filed reorganization bankruptcy, a fast procedure would protect the asset value of the firm and improve its odds for a successful turnaround (Bebchuk, 2000). A lengthy process characterized by an uncertain outcome might make business partners (such as buyers and sellers) reluctant to maintain their business relationship. This, in turn, would reduce earnings and the value of firm assets (LoPucki & Doherty, 2002). Managers would likely become frustrated with the long procedure, distracting them from focusing on operations. In addition, a longer period of bankruptcy procedure would send a negative signal to shareholders, who might believe that the firm has no hope of survival. All these increase the odds for an unrecoverable failure with liquidation as the only viable outcome. In other words, an inefficient, time-consuming procedure might end up forcing a firm to liquidate by increasing financial distress, whereas a fast procedure might save the firm.

For example, in Japan, even when financially insolvent firms decide to file for bankruptcy, courts will examine each case and decide whether to allow certain firms to declare themselves bankrupt. In other words, some insolvent firms are *not* allowed to declare themselves bankrupt. This procedure alone takes more than three months (Alexander, 1999). Therefore, it is not surprising that half of all liquidations in Japan take more than three years and that more than 75 percent of reorganizations exceed five years from application to conclusion (Alexander, 1999). In comparison, the bankruptcy procedure in the United States is more efficient: U.S. courts *automatically* accept bankruptcy petitions, and the average number of days spent on Chapter 11 reorganization bankruptcies during 2000 to 2002 was 296 (WebBRD, 2003). Overall, if the bank-

ruptcy procedure is too long and painful, many entrepreneurs, who otherwise would have filed bankruptcy for their failing firms, may decide to procrastinate, at a greater cost to themselves (erosion of firm value and high opportunity cost of not being able to pursue other endeavors) and to society (hindering quick reallocation of resources to more efficient users). Therefore, a more efficient bankruptcy procedure may encourage failing firms to file bankruptcy and, in turn, stimulate entrepreneurship development.

Proposition 2: Less time spent on the bankruptcy procedure will encourage entrepreneurship development by curtailing the downside risk of entrepreneurs.

Fresh Start in Liquidation Bankruptcy

From a real options perspective, while increasing the variance in a society is important, hopeless options should be terminated (McGrath, 1999). However, since it is impossible to know a priori which firms should be terminated, it may be better to give all entrepreneurs an incentive to file bankruptcy if their firms are failing (Ayotte, in press).

Bankruptcy law can be either discharging the bankrupt individuals from debt or allowing the pursuit of bankrupt entrepreneurs for several years (Organization for Economic Co-operation and Development, 1998). By simply discharging bankrupt entrepreneurs, creditors can claim residual assets but cannot pursue any remaining claims that have not been met (e.g., as in the United States). Since future earnings are exempt from the obligations to repay debt, this is called a "fresh start" (White, 2001). In the absence of a legally protected fresh start, creditors can pursue any remaining claims. For instance, in Germany, creditors can go beyond claiming residual assets, and the debtor remains liable for unpaid debt for up to 30 *years* (Ziechmann, 1997: 12–25). German managers at bankrupt firms can also be personally liable for *criminal* penalties (Fialski, 1994). Not surprisingly, such different rules of the game lead to a huge difference in risk-taking propensity between American and German entrepreneurs.

In addition, the recent Asian economic crisis revealed that little protection against creditors actually kept many firms from filing bankruptcy, even when they were heavily losing money (Ahlstrom & Bruton, 2004; Carney, 2004; *New York Times,* 1998; White, 2004). For executives of failing firms who know that the consequences will hurt them personally, such as ruining their reputation and inviting possible criminal law suit, filing bankruptcy is likely to be the last thing they have in mind. This probably is a key reason why Chang and Hong (2000), when studying Korean firms, had to delete 4,141 firms that were practically bankrupt (with negative equity values) but did not file for bankruptcy from their sample of 43,874 firms (close to 10 percent of the sample). This means that many loss-making firms continued to survive at a huge cost to the overall value of the bundle of firms in Korea.

Proposition 3: Discharging bankrupt entrepreneurs to allow them to have a "fresh start" specified by a bankruptcy law, rather than allowing the pursuit of remaining claims, will encourage entrepreneurship development by curtailing the downside risk of entrepreneurs.

Automatic Stay of Assets in Reorganization Bankruptcy

Bankruptcy law may entail an automatic stay of assets and discharge some portion of debt. An automatic stay upon commencement of bankruptcy proceedings means that creditors must cease debt collection efforts and direct their claims to the court (Alexopoulos & Domowitz, 1998). The firm will be in operation while the creditors and managers negotiate (Kaiser, 1996). An automatic stay allows time for managers to communicate with creditors before deciding whether the firm should be liquidated (Franks et al., 1996). For example, in the United States, bankruptcy law stipulates automatic stay in the case of reorganization bankruptcy. Countries such as Germany, Great Britain, and Japan, however, do not guarantee automatic stay of assets (Alexander, 1999; Hashi, 1997). La Porta, Lopez-De-Silanes, Shleifer, and Vishny (1998) have found that nearly half of the forty-nine countries they studied do not have an automatic stay on assets.

In an economy where secured creditors can repossess their assets when a firm files for reorganization bankruptcy, premature liquidations

can result. Given uncertainty over the future performance of the firm, creditors may have a greater interest in liquidating the firm, even when the value of the ongoing concern is higher than the liquidation value (Wruck, 1990). For example, in Germany, automatic stay does not extend to secured creditors, and these secured creditors have incentives to opt for liquidation bankruptcy (Kaiser, 1996). Therefore, many firms do not have the opportunity to file for reorganization bankruptcy (even when this option is legally allowed) because of the absence of automatic stay of assets.

> *Proposition 4: An automatic stay of assets specified by a bankruptcy law will encourage entrepreneurship development by curtailing the downside risk of entrepreneurs.*

The Fate of Managers

Managers make firm-specific investments during their tenure with firms. This firm-specific knowledge may especially be required when a firm is in distress. The opportunity to stay with the firm after filing for reorganization bankruptcy provides incentives for managers to make firm-specific investments. If managers are going to be driven out when a firm files for reorganization bankruptcy, not only will they be reluctant to file bankruptcy but they also may lack incentives to make firm-specific investments in the first place (Shleifer & Summers, 1988). If managers know ex ante that they will not be replaced automatically in the case of bankruptcy filing, the opportunity to stay with the firm works as a "bonding device" (Gaston, 1997). Therefore, when a firm files for bankruptcy, providing an opportunity for managers to stay may provide those managers with firm-specific investments a better chance to revive the firm.

Firms can be heterogeneous, so firm-specific investments by managers will increase variety and value in a bundle of firms (Barney, 1991). However, in a manager replacement system, such as a trustee appointment system, appointing outsiders without firm-specific knowledge for reorganization is not likely to lead to proper reorganization (Alexander, 1999; Hashi, 1997; Franks et al., 1996). For example, Chapter 11 in the United States allows managers to retain control of the firm and provides them the exclusive right to propose reorganization plans. In contrast, in Great Britain and Germany, control rights are rendered to secured creditors (Franks et al., 1996). Thus, the practice of allowing secured creditors to take over (such as a trustee appointment system) has been criticized for leading to premature liquidation (Kaiser, 1996).

> *Proposition 5: At the time of filing for bankruptcy, allowing incumbent managers to stay on the job, rather than having trustee-appointed outsiders, will encourage entrepreneurship development by curtailing the downside risk of entrepreneurs.*

Some might argue that, for a small firm, the firm's debt is the owner's personal debt and the owner can just walk out and start a new business. However, Surelemont and colleagues (1999) show that, among the fifteen countries they studied, only personal bankruptcy laws in Finland and the United States do not go after the entrepreneurs for the unpaid debt when a business fails. When an entrepreneur has to personally repay the debt for the past failure of business, there is less incentive to take the risk of starting up a new firm (Ziechmann, 1997). This is why White (2001) argues that moving toward a more debtor-friendly personal bankruptcy law would discourage risk taking for entrepreneurs.

Overall, it is possible that an entrepreneur-friendly bankruptcy law, informed by a real options perspective, may facilitate entrepreneurship development at the societal level by encouraging more risk taking through curtailing downside risks for failed entrepreneurs and their firms and through more enthusiastic creation of new firms (Efrat, 2002).

> *Proposition 6: When entrepreneurs are not held personally liable for their firms' debts, there will be more entrepreneurship development because downside risk will be curtailed.*

VENTURE CAPITAL AND STIGMA AS MODERATORS

While the provisions of bankruptcy law represent important *formal* regulatory institutions governing entrepreneurship, *informal* aspects of the institutional environment, such as the avail-

ability of venture capital and the level of social stigma concerning entrepreneurial failure, may moderate the impact of bankrupt law on entrepreneurship development. This is important, because the same entrepreneur-friendly bankruptcy law may have different implications for firms in different environments (Claessens, Djankov, & Klapper, 2002).

The Role of Venture Capital

Relative to capital provided by banks or raised in financial markets, venture capital is often regarded as "informal capital." It is well known that venture capital is one of the important engines for entrepreneurship development. In risky industries there is more uncertainty and, thus, a higher variance among firm survival and performance (Landier, 2002). This combination of high uncertainty and high variance entails significant information asymmetries between lenders—banks or venture capitalists—and borrowers—firms (Le, Venkatesh, & Nguyen, 2006). Under these circumstances, more hands-on monitoring and advising is needed, a task venture capitalists perform better than banks. This explains why venture capital funding is disproportionately more prominent in industries where information asymmetries are high—for example, biotechnology—than in "routine" industries—for example, restaurants (Amit, Brander, & Zott, 1998).

Close monitoring and valuable advice by venture capitalists would probably reduce the risk of bankruptcy and the impact of an entrepreneur-friendly bankruptcy law on entrepreneurship development. Since the risk of bankruptcy is shared between entrepreneurs and venture capitalists, entrepreneurs can take on more risky projects than they would have been able to otherwise. In addition, when a firm falls into financial difficulty, venture capitalists may initiate restructuring before the need to file for bankruptcy emerges. Therefore, in real options terms, the existence of venture capital may partially substitute for the role of a lenient bankruptcy law on entrepreneurship development.

> *Proposition 7: In a society with a well-developed venture capital infrastructure (characterized by the abundance of venture capital and the availability of strategic value added, such as monitoring and advising provided by venture capitalists), there will be less impact of an entrepreneur-friendly bankruptcy law on entrepreneurship development.*

However, not all countries enjoy both the abundance of venture capital and the deep involvement of venture capitalists in start-up firms (MacMillan, Kulow, & Khoylian, 1989). For example, in Europe, venture capital only supports approximately 13 percent of start-ups, whereas in the United States, the rate is more than 30 percent.[4] Moreover, many venture capitalists are not deeply involved in the start-ups they fund. For example, in France, venture capitalists do not spend as much time monitoring and mentoring the ventures they finance as their U.S. counterparts do (Sapienza, Manigart, & Vermeir, 1996). In China, venture capitalists often hesitate to provide direct advice to entrepreneurs (Bruton & Ahlstrom, 2002). In Japan, since many venture capital firms are subsidiaries of banks and securities companies, they tend to focus on relatively established firms (Yoshikawa, 2002). Therefore, in these countries with relatively underdeveloped venture capital infrastructure, an entrepreneur-friendly bankruptcy law may be especially helpful in facilitating entrepreneurship development.

The Role of Stigma

In addition to reputational and financial losses, entrepreneurs and managers incur huge psychological costs—often referred to as *stigma*—when filing bankruptcy (Shepherd, 2003). Individuals from different countries are likely to differ in their level of stigma associated with bankruptcy. In a study of eight countries, high uncertainty avoidance (Hofstede, 1980) was found to be associated with a low level of business ownership, presumably because of fear of failure (McGrath, MacMillan, & Scheinberg, 1992). In a country with relatively low uncertainty avoidance, such as the United States, peo-

[4] Even in the United States, start-ups backed by substantial venture capital are exceptional. For example, highly successful entrepreneurs such as Bill Gates (Microsoft) and Sam Walton (Wal-Mart) initially had to pursue small, uncertain opportunities without much venture capital support (Bhide, 2000).

ple are more likely to take risks and be more tolerant of failures. No longer a dirty word, "bankruptcy" probably does not carry the same level of stigma as it did in the past in the United States (Barr, 1992). For example, when American West Airlines filed for Chapter 11 reorganization bankruptcy, top managers spent a lot of time boosting employee morale by explaining that there was *nothing* to be ashamed of (!).

In contrast, in a high uncertainty avoidance (risk-averse) culture, entrepreneurs filing for bankruptcy may experience a higher level of stigma, which is likely to deter would-be entrepreneurs from pursuing their visions (Begley & Tan, 2001; Sekiguchi, 2006). In Japan, not only can business failure be considered a very shameful deed (Tezuka, 1997) but filing bankruptcy can even be considered a crime, and, as a result, in extreme cases, some top managers have reportedly committed suicide (*Time,* 1999). In this regard, an entrepreneur-friendly bankruptcy law may be less effective in a cultural environment characterized by a high level of stigma associated with bankruptcy. Countries with a risk-averse culture, such as Japan, may have difficulty enacting and implementing an entrepreneur-friendly bankruptcy law, because a law that is lenient on bankrupt individuals and firms may violate informal but powerful cultural norms. In other words, in real options reasoning, high stigma in a society limits the role of lenient bankruptcy law in increasing the variance in a society.

> *Proposition 8: In a society with a high level of stigma associated with bankruptcy, there will be less impact of an entrepreneur-friendly bankruptcy law on entrepreneurship development.*

THE COSTS OF AN ENTREPRENEUR-FRIENDLY BANKRUPTCY LAW

Although we have focused on the benefits of an entrepreneur-friendly bankruptcy law, it is important to address the costs. The costs may be manifested in at least three dimensions. First, to the extent that a lenient bankrupt law encourages risk taking, there is a possibility that entrepreneurs will take on a level of risk beyond that which is socially optimal. However, many individuals in a given society are risk averse. In this context, the problem for society is not that too many people are making risky investments but that not enough people are making these investments.

A second likely cost of an entrepreneur-friendly bankruptcy law, especially the provision of allowing for the option of reorganization bankruptcy (along the U.S. Chapter 11 model), is the possibility of preserving a number of "permanently failing firms" (Meyer & Zucker, 1989). These firms may be technically bankrupt, but they do not exit competition. In an ever-changing uncertain environment, however, the chances of survival of these kinds of firms are not high in the long run. For example, while it is possible for permanently failing firms to survive in a highly regulated environment, it is not as common as in the past, because when deregulation takes place, the wind of change can be fierce (Meyer & Peng, 2005; Peng, 2003, 2005, 2006; Silverman, Nickerson, & Freeman, 1997; Wright et al., 2005). In other words, we argue that leaving options open (providing options to file for reorganization bankruptcy) should be the focus of the bankruptcy law. At the same time, we argue that it is important to make it easier to file for a *liquidation* bankruptcy. The reason is that since making reorganization bankruptcy easier increases the level of competition in a society, market discipline would take care of the termination of firms with little future through liquidation bankruptcy. However, when there is high cost in exit, those firms that should exit (liquidate) might not exit. In this sense, it is also important to make it easier to exit through liquidation bankruptcy.

Finally, there may be important social costs associated with opportunistic entrepreneurs who take advantage of an entrepreneur-friendly bankruptcy law. For sure, if there are too many such entrepreneurs, the social costs may outweigh the social gains. This can happen when there is nothing for entrepreneurs to lose when they file for bankruptcy. However, this condition may not hold when we consider the negative impact on an individual's reputation of intentionally starting a business to take advantage of a lenient bankruptcy law (Gilson, 1989, 1990). Many entrepreneurs cannot start a business only with outside debt, without investing their own financial resources. In addition to losing opportunistic entrepreneurs' own financial investments, future access to credit would become much harder (Berkowitz & White, 2004).

Overall, an entrepreneur-friendly bankruptcy law is not a *painless* bankruptcy law. It is simply less painful for bankrupt entrepreneurs, who will still have to endure a significant amount of reputational and financial losses, as well as a high degree of stigma. Given the choices of (1) being lenient on a small number of opportunistic entrepreneurs and (2) being harsh on a large number of honest but failed entrepreneurs, it seems reasonable that the social benefits of an entrepreneur-friendly bankruptcy law outweigh its costs.

DISCUSSION

Contributions

In our view, three contributions distinguish this article. First, we extend real options thinking (McGrath, 1999) from a firm level to a societal level by exploring how an entrepreneur-friendly bankruptcy law can promote entrepreneurship development. From a societal perspective, thinking of options as a bundle of firms, instead of single firms, is important. A bankruptcy law that curtails the downside losses of entrepreneurial failures is likely to facilitate upside gains, enhance the variance and value of the bundle of productive assets within an economy, and lead to stronger and more sustained economic growth.

Second, while bankruptcy traditionally has often been viewed negatively, we advocate that an entrepreneur-friendly bankruptcy law, informed by a real options logic, may encourage entrepreneurship development. Similar to the saying "No pain, no gain," we believe that an economy unwilling to shoulder the costs of certain entrepreneurial failures is not likely to reap the benefits of a vibrant entrepreneurial sector and the growth it may bring. Consequently, we advocate a bankruptcy law designed to embrace the "pain" of failure of firms and, hopefully, "gain" from more sustained entrepreneurship development.

Finally, this article opens a new avenue of research on how institutional frameworks such as bankruptcy law affect strategic choices (Meyer & Peng, 2005; Peng, 2003, 2005; Peng et al., 2005; Wright et al., 2005). This can potentially lead to an *institution-based* view of strategy (Peng, 2006). While bankruptcy law has been studied rather widely in finance and economics, it has not been of keen interest among management and strategy scholars (Daily & Dalton, 1994). Past research on bankruptcy in finance and economics generally has focused on the efficiency of bankruptcy law at the firm level (e.g., Bebchuk, 2000; Gilson, 1989; White, 1994). We take a different approach by examining the role of bankruptcy law in terms of facilitating entrepreneurship development at the societal level. In particular, increasing variance via an entrepreneur-friendly bankruptcy law is a novel idea that has rarely been visited in past bankruptcy research, as well as in entrepreneurship research.

Future Research and Policy Implications

Of course, an entrepreneur-friendly bankruptcy law is but one of many mechanisms that can facilitate entrepreneurship development at a societal level. Other mechanisms, such as patent protection, bank financing, and tax reduction, all play a complementary role. Given that these areas have been studied at length, we have chosen to focus on the relatively uncharted waters (in management research at least) of bankruptcy law. This admittedly is a limitation of this article. It is true that many entrepreneurs rush to start up new firms with little planning and that many of them probably do not check out the nuances of the bankruptcy law before taking the plunge.

However, what we do not know is how many would-be entrepreneurs are deterred by the daunting and highly likely possibility of ending up in bankruptcy and thus decide not to pursue their entrepreneurial visions.[5] This could stem from exposure to information on the high percentages of start-up failures, to media reports of the stigma of bankrupt individuals, and/or to word-of-mouth regarding the difficulty experienced by friends and family members who file for bankruptcy. Given that starting up new firms is inherently a high-risk endeavor and that an unknown but presumably large number of entrepreneurial ideas are given up, it stands to reason that anything that can lower these risks would help promote entrepreneurship develop-

[5] Fan and White (2003) found that U.S. states with a higher level of debt exemption are associated with a higher level of entrepreneurship development.

ment. Of course, an entrepreneur-friendly bankruptcy law is not a panacea and does not work in a vacuum. In future work, we envision that research on bankruptcy law can be integrated with some of the existing topics above to create a more coherent understanding in terms of how these components come together as a *package* to lower both entry and exit barriers to entrepreneurship development.

We have examined the stigma of failure at the societal level. However, even within a society, stigma of failure is not uniform across industries. In high-tech industries characterized by high uncertainty and high variance, a lower level of stigma of failure may exist—compared to relatively low-tech, low-risk industries (Landier, 2002). Anecdotal evidence from Silicon Valley suggests a motto of "fail fast, fail cheap, move on" (Saxenian, 1994). More systematic cross-industry research in this area appears to be promising. Further, while we have focused on the impact of bankruptcy law on smaller firms, how large corporate bankruptcies, with huge financial impacts on society, are affected by a more liberal bankruptcy law remains to be seen in future research.

For policy makers, it seems that enacting and implementing an entrepreneur-friendly bankruptcy may, paradoxically, *increase* the number of corporate bankruptcies. For example, in the United States, under the old, pre-1979 bankruptcy law, firms were not legally permitted to file for reorganization bankruptcy, even when they needed bankruptcy relief (LoPucki, 1992). After the passage of the Bankruptcy Reform Act in 1979, the number of firms filing bankruptcy doubled, and many took advantage of the availability of Chapter 11 reorganization bankruptcy (Weiss, 1990; Wruck, 1990). The real options perspective developed here suggests that such an increase in the number of corporate bankruptcies may be beneficial for the option value of the bundle of assets within one country. Likewise, in Thailand, legal reforms of the bankruptcy law to make bankruptcy filing easier after the 1997 economic crisis actually increased the country's total equity values by 25 percent (Foley, 2000; White, 2004). Overall, while curtailing downside losses may inevitably cause more failing entrepreneurs and managers to file bankruptcy for their firms, the risk of not taking such a risk, in the long run, may be higher for any society aspiring to have a high level of entrepreneurship development.

CONCLUSIONS

While it has long been known that the rules of the game that specify the relative payoffs play a key role in determining the scale and scope of entrepreneurial activities within a society, we have just set out on the long road to achieving an understanding of how an entrepreneur-friendly bankruptcy law, informed by a real options perspective, can stimulate more entrepreneurship development. Given the pervasiveness of entrepreneurial failures and bankruptcies in the economic landscape around the globe, it seems imperative that a higher portion of the entrepreneurship research agenda on wealth creation be directed toward this important but understudied area.

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