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The capital structures of venture capital-backed U.S. companies share a remarkable commonality: overwhelmingly, venture capitalists make their investments through convertible preferred stock.[1] Not surprisingly, a large part of the academic literature on venture capital has sought to explain this peculiar pattern.[2] Financial economists have developed models showing, for example, that convertible securities allocate control depending on the portfolio company's success,[3] operate as a signal to overcome various kinds of information asymmetry,[4] and align the incentives of entrepreneurs and venture capital investors.[5] In this Article we extend this literature by examining the influence of a more mundane factor, tax law, on venture capital structure.

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[1] The empirical literature on venture capital structure is surveyed in Part I.A, infra.

[2] See George C. Triantis, Financial Contract Design in the World of Venture Capital, 68 U. Chi. L. Rev. 305, 322 (2001) (describing convertible preferred stock as most unique aspect of venture capital finance).

[3] Erik Berglöf, A Control Theory of Venture Capital Finance, 10 J.L. Econ. & Org. 247, 248 (1994) (noting that the allocation of control achieved by convertible preferred stock "protects the initial contracting parties as much as possible against dilution and extracts from a future buyer of the firm"); Thomas Hellmann, IPOs, Acquisitions and the Use of Convertible Securities in Venture Capital, working paper (Dec. 2000). This paper is available through the Social Science Research Network at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=257608; William W. Bratton, Venture Capital on the Downside: Preferred Stock and Corporate Control, 100 Mich. L. Rev. (forthcoming 2002). But cf., Steven Kaplan and Per Strömberg, Financial Contracting Theory Meets the Real World: An Empirical Analysis of Venture Capital Contracts, National Bureau of Economic Affairs Working Paper No. 7660 (April 2000) (stating that control theories "do not fully explain VC financings"); Gompers & Lerner, at 3 ("The use of convertible financing needs to be understood in the context of the broad range of control mechanisms that are employed by venture capitalists.").

[4] Leslie M. Marx, Contract Renegotiation in Venture Capital Projects at 22, University of Rochester Working Paper (June 2000) (finding that "good entrepreneurs use a combination of debt and the granting of control rights to distinguish themselves from bad entrepreneurs"); Jeremy C. Stein, Convertible Bonds as Backdoor Equity Financing, 32 J. Fin. Econ. 3, 15 (1992) ("A convertible issue reveals a firm to be of medium quality, whereas an equity issue reveals a firm to be of bad quality."); Francesca Cornelli and Oved Yosha, Stage Financing and the Role of Convertible Debt, Working Paper (Feb. 2000) (finding that convertible securities can be used to prevent signal manipulation by the entrepreneur); Gompers, supra note 3, at 27 ("[C]onvertible preferred equity is a potentially effective means of screening out low ability entrepreneurs…").

[5] See, e.g., Richard C. Green, Investment Incentives, Debt, and Warrants, 13 J. Fin. Econ. 115, 129-30 (1984) (finding that convertibles are "particularly well suited to the problem of controlling risk incentives"); Paul A. Gompers, Ownership and Control in Entrepreneurial Firms: An Examination of Convertible Securities in Venture Capital Investments at 1, Working Paper (January 1998) ("[U]se of a convertible security, as opposed to straight equity or straight debt financing, serves to motivate the founder to exert the proper effort and avoid improper risk taking."); Leslie M. Marx, Efficient Venture Capital Financing Combining Debt and Equity, 3 Rev. Econ. Design 371, 372 (1998) (noting that convertible preferred optimizes the incentives for the venture capital to intervene); William A. Sahlman, The Structure

A firm that issues convertible preferred stock to venture capitalists is able to offer more favorable tax treatment for incentive compensation paid to the entrepreneur and other portfolio company employees: Instead of being taxed currently at ordinary income rates, the entrepreneur and employees can defer tax until the incentive compensation is sold (or even longer), at which point a preferential tax rate is available.[6]

No tax rule explicitly connects the employee's tax treatment with the issuance of convertible preferred stock to venture capitalists. Rather, this link is part of tax "practice" – the plumbing of tax law, familiar to practitioners but, predictably, opaque to those, including financial economists, outside the day-to-day tax practice.[7] Despite its obscurity, this tax factor is likely to be of first order importance. Intense incentive compensation for portfolio company founders and employees is a fundamental feature of venture capital contracting. Favorable tax treatment for this compensation is a byproduct and, we believe, a core purpose of the use of convertible preferred stock.[8]

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and Governance of Venture-Capital Organizations, 27 J. Fin. Econ. 473, 510 (1990) (noting that conversion terms alter the risk-and-reward-sharing scheme and encourage the entrepreneurs to build value).

[6] Stock held by an individual for more than one year generally is eligible for the long-term capital gains rate. See Section 1(h). If other conditions are satisfied, including a five-year holding period, the stock of a small business is eligible for a further rate reduction under Section 1202. Likewise, this small business stock may be eligible for the "rollover" rule of Section 1045, under which tax that otherwise would be due from a sale of stock is deferred if the taxpayer reinvests sale proceeds in other qualifying stock.

[7] To be sure, the position is aggressive given the naïve economic assumptions on which it is based. Nonetheless, the position is commonly taken, and the tax authorities have shown no appetite for challenging it.

[8] Of course, tax planning does not always feature prominently in venture capital structure. As Professor Bankman has shown in an important paper, new ventures often are structured as corporations, even though use of the partnership form would enable venture capitalists to make better use of tax losses. Joseph Bankman, The UCLA Tax Policy Conference: The Structure of Silicon Valley Start-Ups, 41 UCLA L. Rev 1737, 1738 (1994). Yet his focus is on the tax treatment of the venture capitalists, not the entrepreneurs and managers. There is empirical evidence that the latter group are, indeed, tax sensitive. See Paul Gompers & Josh Lerner, What Drives Venture Capital Fundraising? NBER Working Paper No. W 6906 (Jan. 1999). In addition, the tax planning discussed here serves to strengthen incentive compensation, which is a central feature of venture capital contracting. Losses from failed ventures are not nearly as important to the parties, and thus are less likely to be the subject of tax planning.

We also highlight an important but low visibility tax subsidy for the venture capital market, and the early stage, usually high technology, firms that are financed there. Although this subsidy arose inadvertently, it has an interesting structure. Funds are not provided directly to companies selected by the government (a familiar technique outside the United States), or to all companies. Instead, venture capital investors are enlisted as the subsidy's gatekeeper. As a practical matter, only companies that can attract venture capital investment receive this subsidy. Our analysis thus adds a different twist on the familiar debate about providing subsidies through the tax system, instead of through direct expenditures or favorable regulatory treatment.[9]

Finally, as a matter of academic craft, our analysis suggests the difficulty of financial modeling for activities where low visibility, "practice" level patterns are of first order significance. Without institutional knowledge deep enough to reveal such patterns, models will miss a significant factor that is influencing behavior.

Part I reviews the two elements of the venture capital landscape on which our analysis builds: pervasive use of convertible preferred stock and the importance of high intensity incentives for employees. Part II surveys the current range of explanations for the ubiquity of convertible preferred stock. Part III develops the favorable effects of a venture capital structure with convertible preferred stock on the tax treatment of a portfolio company's incentive compensation. Part IV considers other ways of pursuing this tax objective, and shows that each bears potentially significant costs. Part V

[9] See, e.g., Stanley S. Surrey, Tax Incentives as a Device for Implementing Government Policy: A Comparison with Direct Government Expenditures, 83 Harv. L. Rev. 705, 734 (1970) (criticizing tax expenditures); Edward A. Zelinsky, Efficiency and Income Taxes: The Rehabilitation of Tax Incentives, 64 Tex. L. Rev. 973, 975-76 (1986) (defending tax incentives); Mark Kelman, Strategy or Principle? The Choice Between Regulation and Taxation 1 (1999) (regulations are not necessarily more opaque, or easier to impose on disorganized groups, than taxation).

develops how the tax effects of using convertible preferred stock function as a subsidy for venture capital, and evaluates the unusual characteristics of the subsidy's structure.

I. Two Elements of the Venture Capital Landscape

Our analysis of the influence of tax on venture capital structure builds on two discrete strands of venture capital contracting. The first is the ubiquity of convertible preferred stock. As an empirical matter, venture capitalists provide funds to early stage companies largely through one form of security. Second, portfolio company employees are offered incentive compensation as a means of addressing the extreme uncertainty, information asymmetry and potential for opportunism inherent in early-stage ventures. These two elements provide the context for our tax analysis: the use of convertible preferred stock as a financing instrument favorably influences the tax treatment of incentive compensation given to portfolio company employees.

A. The Ubiquity of Convertible Preferred Stock

The distinctive role of convertible preferred stock in the venture capital market stands out starkly when compared to its use by publicly traded corporations. Looking at the universe of U.S. publicly traded firms, only some ten percent of public companies in the Compustat database have an outstanding class of convertible preferred stock. In contrast, outside financing for venture capital-backed companies is overwhelmingly by means of convertible preferred stock. Steven Kaplan and Per Strömberg provide the most recent data.[10] They investigated a sample of 200 venture capital-backed financing rounds in 118 portfolio companies led by fourteen venture capital partnerships and involving over 100 different venture capital partnerships as investors, of which 159 of the financing rounds were completed between 1996 and 1999. Of these 200 rounds, 189 or 94.5 percent involved convertible preferred stock.[11] This is consistent with earlier surveys.[12]

Thus, we start our analysis with a clear landmark: a monolith dominates the landscape of venture capital structure. Explaining this phenomenon – the centrality of convertible preferred stock in venture capital financing and its comparative insignificance in public equity financing – has shaped the academic venture capital literature.

B. The Role of Intense Incentives in Venture Capital Contracting

All financial contracting confronts three fundamental problems: uncertainty, information asymmetry and agency costs.[13] The peculiar structure of venture capital financing is dictated by the reality that early stage, usually high technology, investment presents these problems in extreme form. The portfolio company's early stage greatly magnifies uncertainty concerning future performance; the bulk of the important decisions bearing on the company's success remain to be made. The same phenomena exacerbate the information asymmetries between investors and entrepreneurs: "Intentions and abilities are far less observable than actions already taken."[14] Lastly, future managerial decisions in an early stage company whose value consists almost entirely of future

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[10] Kaplan & Strömberg, supra note 3.

[11] While 72 of these rounds used a particular variant of convertible preferred called participating preferred, the difference is not significant for this purpose. Id.

[12] Paul A. Gompers, Ownership and Control in Entrepreneurial Firms: An Examination of Convertible Securities in Venture Capital Investments, Working Paper (Sept. 1997) (noting that in a sample of 28 financing rounds done in the early stage of a venture capital limited partnership, the venture capitalists received convertible preferred stock in all but 5 rounds); Sahlman, supra note 5.

[13] This discussion draws on Theodor Baums & Ronald J. Gilson, Comparative Venture Capital Contracting, Working Paper (Sept. 2001).

[14] Id.

growth options present very large potential agency problems,[15] which are aggravated by the significant variance associated with early stage companies' expected returns.

The structure of the entrepreneur's compensation is a pivotal response to these contracting problems. Because of information asymmetry and uncertainty associated with future management decisions, the contract between venture capital investors and portfolio company managers is necessarily incomplete; ex ante, one cannot specify what actions the managers should take to increase firm value. Perhaps more dramatically than any other element of venture capital contracting, the portfolio company's compensation structure responds to this problem by creating very high-powered performance incentives, aligning the interests of venture capital investors and portfolio company employees. In essence, the overwhelming percentage of management's compensation depends on firm performance. Low salaries are offset by the potential for dramatic appreciation in stock and options. Managers win only when venture investors win.[16]

Additionally, a highly incentivized compensation structure also reduces information asymmetry concerning the skills of entrepreneurs and managers.   Because an entrepreneur/manager has better information about her skills than the venture capital investor, and because a highly incentivized compensation structure is worth more to those

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[15] Gompers, Ownership & Control, supra note 12.

[16] Using intense managerial performance incentives to align management and investor incentives also creates a parallel agency problem resulting from the operation of the performance option as an out of the money option in some states of the world. Other elements of the venture capital contracting structure, especially its governance aspects, provide the opportunity for high powered monitoring necessary to balance the high powered incentives. See Baums & Gilson, supra; Paul Milgrom & John Roberts, Economics, Organization, and Management 240 (1993).

with stronger skills, the entrepreneur/manager's willingness to accept such compensation signals her skill level. In effect, every intense incentive serves also as a signal.[17]

While other elements of venture capital contracting also respond to extreme levels of uncertainty, information asymmetry, and agency costs, management compensation is a central element. Thus, we can expect factors that facilitate intense incentive compensation to be an important influence on venture capital structure. As we will see, this link helps explain the ubiquity of convertible preferred stock; using this security as a vehicle for venture capital investment reduces the tax cost of implementing intensely incentivized management compensation.

II. Current Explanations for the Use of Convertible Preferred Stock

A significant literature has sought to explain the ubiquity of convertible preferred stock in venture capital structure. In these accounts, one or more of the formal characteristics of convertible preferred stock, as it is used in the venture capital context,[18] is shown to solve one of the incomplete contracting problems presented by venture capital investment. While these theories no doubt have some explanatory power, there are four reasons why they do not supply a complete explanation.

First and most important, the core preferences that define convertible preferred stock – a preference over common stock in dividend payments and liquidation – typically

[17] Baums & Gilson, supra note 13; Gompers, supra note 12.

[18] The convertible preferred stock typically used in a venture capital context has some features that are peculiar to this application. Most important, the overwhelming majority of convertible preferred stock used in venture capital transactions provide for automatic conversion on the occurrence of an initial public offering of the issuer's stock. Kaplan and Strömberg provide empirical evidence of this characteristic. See Kaplan and Strömberg, supra note 3, at 21 (noting that it is common for venture capital financings to include securities with automatic conversion provisions and that these conditions generally relate to an initial public offering and "require the IPO to exceed a designated common stock price, dollar amount of proceeds, and/or market capitalization for the company"). Black and Gilson first discussed the incentive

are insubstantial in the context of venture capital structure. Early stage, venture capital backed portfolio companies do not pay dividends, and in liquidation are unlikely to have assets in excess of those necessary to pay creditors. Second, the control features of convertible preferred stock easily can be duplicated by other securities. Third, while the conversion feature is said to allocate control between managers and venture capitalists on the question whether the firm is sold to an acquirer or to public investors, this feature, in practice, is unlikely to operate as modeled. Finally, existing explanations also do not explain why convertible securities reportedly are used less frequently in other jurisdictions.

In short, the substantive aspects of convertible preferred securities, emphasized in the existing literature, are not important enough, in practice, to fully explain the near universality of these securities in the United States. Since a complete answer is not supplied by substance, we look to form. In Part III, we emphasize a context in which form can matter enormously: U.S. tax law. Indeed, the strategy through which convertible preferred stock reduces the tax cost of highly incentivized management compensation leans heavily on form, attributing too much significance to the seniority of these securities.

A. The Formal Attributes of Convertible Preferred Stock Typically are Insubstantial in the Context of Venture Capital Structure

For our purposes, the critical attributes of convertible preferred stock are the preferences it provides over common stock in three areas: payment of dividends, priority

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function of this contractual term. See Bernard S. Black & Ronald J. Gilson, Venture Capital and the Structure of Capital Markets: Banks versus Stock Markets, 47, J. Fin. Econ. 243 (1998).

in liquidation, and governance control. None are sufficiently significant, by themselves, to explain the consistency of venture capital structure.

1. Dividend Preference

Put simply, a dividend preference in favor of preferred stock prohibits payment of a common dividend before payment of a preferred dividend. The critical fact in evaluating the importance of this preference is that, according to the legal bible of Silicon Valley venture capital investing, "corporations being financed with venture capital money are rarely in a position to pay dividends to their venture capital investors,"[19] let alone to common stock holders. And if no dividends are paid on common stock, the preferred dividend preference is unimportant.

To be sure, the preferred dividend preference can prove meaningful in some cases. A precondition is that the dividend preference must be cumulative, so dividends will accrue even if not earned or paid. In that event, the barrier to paying a common dividend will grow with time. Making the dividend cumulative, however, is not enough because of the small likelihood that the portfolio company will want to pay a common dividend before the convertible preferred stock is converted either in an acquisition or (automatically) in an initial public offering. Thus, a second step is necessary to give the cumulative dividend preference real teeth: requiring that accumulated preferred dividends must be paid before common stock receives any liquidity on their investment. This condition can be implemented mechanically by (1) incorporating accumulated but unpaid dividends into the liquidation preference and treating an acquisition of the portfolio

[19] Lee F. Benton & Robert V. Gunderson, Hi-Tech Corporation: Amended and Restated Certificate of Incorporation, in 1 Venture Capital & Public Offering Negotiation 8-7 to 8-8 (M Halloran, L. Benton, R. Gunderson, J. del Calvo & T. Kintner eds., 3rd ed.).

company as a liquidation, and (b) by adjusting the conversion ratio to reflect accumulated but unpaid dividends.

But the problem is that a more economically meaningful preference often is not consistent with actual practice: "[M]ost dividend provisions do not make dividends either mandatory or cumulative. … Typically, venture capital financed companies do not reasonably expect to be able to pay dividends to their stockholders prior to going public, at which point the Preferred Stock will have been converted into Common Stock and the entitlement to dividends will have ceased."[20] In short, the dividend preference is unlikely to play a leading role in explaining the pattern of venture capital structure.

2. Liquidation Preference

Analysis of the convertible preferred stock's liquidation preference is similar to, but less hard-edged than, that of the dividend preference. The dominant input in early stage technology companies is human capital, with a production function that transforms human capital into a product through research and development. This process creates little in the way of hard assets, especially if capital-intensive operations like manufacturing are subcontracted out, and the venture-backed portfolio company engages in only the value added – human capital-intensive – activities. The result is to render the liquidation preference hollow. Holders of convertible preferred stock will expect little in the way of payment on liquidation since they will expect little in the way of assets to remain after creditors are paid. Invested cash presumably will have been spent by the

[20] Id. at 8-9; see also Kaplan and Strömberg, supra note 3, at 18 (noting that cumulative preferred dividends were present in 46% of the financings studied). Although some practitioners expressed the view that Benton and Gunderson understate the pervasiveness of cumulative dividends, we expect that the presence of cumulative dividends is a phenomenon similar to that of participating preferred – of recent origin and still affecting only a minority of convertible preferred issuances. See infra note 26.

time the firm liquidates, and in any event venture-backed portfolio companies should not have much cash lying around, since venture capitalists typically finance firms in stages, dribbling out a bit at a time.[21] Thus, in a failed Internet start-up, for instance, there might be a customer list and some computers and furniture, but the defunct firm is also likely to owe back-rent for office space, payroll, and other liabilities.[22]

This is not to say that the liquidation preference has no impact, but rather that its impact is experienced in circumstances other than "real" liquidation following the portfolio company's failure. It is not uncommon for the terms of the preferred stock to treat a merger or sale of substantially all of the assets of the portfolio company as a liquidation that triggers the liquidation preference. Thus, the venture capitalists have a prior claim on acquisition proceeds, giving them the lion's share from sale of a "zombie" venture that essentially breaks even.[23] For instance, assume the venture capitalists invest $1 million dollars for 10,000 shares of convertible preferred, which would represent 50% of the common stock upon being converted, while managers pay $10,000 for 10,000 shares of common. If the firm fails to fulfill its promise and is ultimately sold for $1.3 million, the venture capitalists will not convert; instead, they will collect their $1 million liquidation preference, while the common shareholders will receive $300,000.

[21] See Cornelli and Yosha, supra note 4, at 1 ("Because of the great uncertainty and high failure risk of new ventures, a widely used financing technique by venture capital companies is the infusion of capital over time."); Sahlman, supra note 5, at 506 ("Venture capitalists rarely, if ever, invest all the external capital that a company will require to accomplish its business plan: instead, they invest in companies at distinct stages in their development."). While venture capitalists obviously will not want to share their invested cash with the entrepreneur and managers in a liquidation, there are other ways to protect venture capitalists from such a transfer, aside from a preference. For instance, a supermajority vote can be required for a liquidation, effectively giving the venture capitalists a veto.

[22] One way to test whether Internet start-ups have assets in liquidation is to ask whether failed ventures have filed for bankruptcy – a proceeding that would be worthwhile only if there were assets remaining to divide up among creditors. Based on conversations with practitioners, our understanding is that few such bankruptcies have been filed.

[23] Practitioners sometimes refer to this scenario as "going sideways."

The venture capitalists can claim an even larger share of acquisition proceeds if they receive "participating" preferred securities, which enable venture investors to share in the proceeds of "liquidation" along with the common if the proceeds exceed the amount of the preference. In the above example, venture investors claim their $1 million liquidation preference, and *also* receive half of the remaining $300,000, leaving management with only $150,000.

Admittedly, the preference is having a real effect in this context, protecting the venture capitalists' investment in "zombie" cases.[24] Yet it seems unlikely that the "zombie" scenario looms so large in the parties' minds as to be the sole determinant of capital structure. Moreover, the participation feature is both recent in origin,[25] and is present in only some 36 percent of convertible preferred issuances.[26]

A second effect of the preference – especially if participating preferred securities are used – is for venture capitalists to favor an acquisition, rather than an IPO, as an exit strategy. The reason is that, in an IPO, the venture capitalists lose their preference because their security automatically converts to common stock.[27] As we will discuss below, however, this circumstance is also unlikely to be of sufficient significance to account for the ubiquity of convertible preferred stock. Venture investors and portfolio company management may well have different preferences between an acquisition and an IPO, especially since an acquisition can be expected to dramatically change

[24] Even in this scenario, in which the preferences appear to be meaningful, there is a risk, emphasized by William Bratton, that the preference would not be respected in court. See Bratton, supra note 3 (noting that case law, especially in Delaware, is hostile to preferences). The greater this risk is, the more puzzling the use of preferred securities becomes.
[25] Benton & Gunderson, supra note 19, at 8 – 11 (describing use of participating preferred stock as "[t]he most significant change during recent years in the terms of the preferred stock being issued").
[26] Kaplan & Strömberg, supra note 3. Participating preferred stock also offers tax advantages over traditional convertible preferred stock. For a discussion, see infra notes 89, 98, 99 and accompanying text.

management's positions. A participation feature may exacerbate this divergence. However, management's preference can be expected to be a subject of ex ante bargaining,[28] and as a practical matter allocation of control over the exit vehicle is not fully contractible. While it is straightforward to provide either party with a formal veto, it is much more difficult to provide an exclusive approval right because in a successful portfolio company either party may have the practical capacity to block either track.

3. Allocation of Control

A final characteristic of convertible preferred stock is that it facilitates the separation of control and cash flow rights. In the venture capital context, it is common to allocate greater control rights to venture capital investors than their rights to future cash flow. The point is to enable venture capital investors to monitor the firm and constrain moral hazard on the part of managers, without equivalently reducing the managers' cash flow rights, a step that would undermine management incentives.[29] In this investor-oriented control structure, board seats are allocated to venture capital investors, and detailed covenants protect investors from management opportunism in specified contexts. To be clear, the formal elements of convertible preferred stock *do* play a role in separating control from cash flow rights. The form has real teeth here, to a greater extent than in the case of liquidation and dividend preferences. But our point is that the same function can be accomplished by other securities. As Thomas Hellmann puts is, "there are typically several ways of combining standard securities to implement the same

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[27] See Hellmann, supra note 3
[28] Black & Gilson, supra note 18; Hellmann, supra note 3.
[29] Gompers, supra note 3; Kaplan & Strömberg, supra note 3.

optimal contract. … These are thus different labels for the same solution."[30] Covenants can appear not only in the terms of the preferred stock, but also in a purely contractual investors' rights agreement; in fact, in the typical transactions, restrictions appear in both documents.[31] Likewise, while board representation can be allocated between common and preferred stockholders, it can also be allocated between different classes of common stock.[32]

Thus, again we find that the substantive characteristics of convertible preferred stock are not a likely candidate to explain the ubiquity of convertible preferred stock, this time because they are not a unique solution.[33]

B. Financial Models of Convertible Preferred Stock in Venture Capital Structure

The financial economics literature proffers three general categories of explanations for the ubiquity of convertible preferred stock in venture capital structure: incentive/signaling; separation of cash flow and control; and allocation of control rights

[30] Hellmann, supra note 3; see also Gompers, supra note 3, at 3 ("The use of convertible financing needs to be understood in the context of a broad array of control mechanisms that are employed by venture capitalists."); Kaplan and Strömberg, supra note 3, at 26 ("In the contracts we study, control rights are important and separate from cash flow rights."). They find that the venture capitalist has significant control before the IPO, and that mechanisms awarding this control are separable from cash flow allocation. Id. at 24 ("[VC] financings allow VCs to separately allocate cash flow rights, voting rights, board rights, liquidation rights, and other control rights.").

[31] Halloran, et. al., supra note 19. Kahan and Yermack note that covenants are costly to renegotiate, and thus argue that convertibility is a superior alternative for publicly traded bonds (where renegotiation costs are high). See Marcel Kahan and David Yermack, Investment Opportunities and the Design of Debt Securities, 14 J.L. Econ. & Org. 136, 140 (1998). But Gompers responds that renegotiation is much cheaper in the VC context, and so covenants should be – and are – used. See Gompers, supra note 2, at 9-10.

[32] See Jack S. Levin, Structuring Venture Capital, Private Equity, and Entrepreneurial Transactions 2-20 to 2-21 (2001) ("E and VC can agree upon an allocation of directors completely different from the equity split through the use of a voting trust agreement, a voting trust, voting and nonvoting common, voting and nonvoting preferred, election of different classes of directors by different classes of stock.").

[33] Marcel Kahan and Michael Klausner argue that path dependency may dictate the continuation of one contracting form among an array of potential substitutes. Marcel Kahan & Michael Klausner, Standardization and Innovation in Corporate Contracting (or the Economics or Boilerplate), 83 Va. L. Rev. 713 (1997)

in decisions about exit.[34] While we admire the analysis reflected in these models, we question whether they can fully explain, to use Kaplan and Strömberg's phrase, "real world" venture capital structure.[35] As suggested in the previous section, these efforts to derive optimal financial contracts, and then to observe their appearance in the real world, present three problems.

First, they assume that the convertible preferred stock's dividend and liquidation preference are meaningful in the context of early stage venture capital contracting. The assumption is particularly important in incentive/signaling models because these models rely particularly on the liquidation preference to make the deal unattractive to low quality entrepreneurs and managers. While the right to convert mitigates a manager's incentive to increase risk (because the conversion right allows the venture capital investor to share in any upside resulting from managerial risk-taking),[36] the same mitigation results from an all-common capital structure. Convertible preferred stock is used instead, the theory goes, so the venture capitalist will have senior status in bad states of the world, causing managers to profit only from good outcomes. The preference thus creates the incentive for good management performance, and the parallel quality signal sent by accepting the incentive, that drives incentive/signaling models. If the liquidation preference is hollow, the model's power is greatly reduced. In other words, these models incorrectly assume

[34] For citations, see supra notes 3, 4 and 5.
[35] Kaplan and Strömberg, supra note 3, at 2 ("Venture capitalists … are real world entities who most closely approximate the investors of theory.").
[36] See Gompers, supra note 3, at 15 (stating the because entrepreneurs are typically not monitored on a day-to-day basis and have the ability to cut corners in the desire to get to market quickly without observation by the venture capitalists, convertible securities are one mechanism used by the venture capitalists in order to reduce the entrepreneurs desire to take such risks); Green, supra note 5, at 125.

that the preferences associated with convertible preferred are substantive rather than formal.[37]

Second, the models assume, typically implicitly, that decoupling the allocation of control from the allocation of cash flow is a characteristic of convertible preferred stock.[38] However, this decoupling does not require a cash flow preference. Different control rights could just as easily be assigned to different classes of securities having the *same* cash flow rights, for instance, through an all common capital structure coupled with a shareholders' agreement.[39] To be sure, one might respond that this alternative is functionally identical to a capital structure featuring a convertible preferred security, but this response makes the issue far too easy. The models do not limit themselves to deriving the optimal financial contract for venture capital structure, but also claim to explain the security choices actually observed. Thus, the models may explain the substantive characteristics of venture capital structure, itself no small accomplishment, but they will not explain the market's remarkable convergence on a single form of security.

Finally, Hellmann's interesting model highlights the impact of security design on allocation of the power to choose an exit method – either an IPO or an acquisition. Yet this theory necessarily assumes that, in a venture capital context, the choice is

[37] Similarly, if the liquidation preference is hollow, it should not be especially effective in motivating venture capitalists to intervene to save failing ventures. Cf. Marx, Efficient Venture Capital Financing, supra note 2, at 372 ("[W]hile pure debt gives the venture capitalist too great an incentive to intervene, and pure equity too little, a mixed debt-equity sharing rule enables the optimal level of intervention to be achieved.").

[38] Hellmann, supra note 3, is a notable exception.

[39] William Bratton argues that a preference is needed to transfer control automatically to the venture capitalist in bankruptcy. But this transfer is less automatic than it may seem. As Bratton acknowledges, bankruptcy is "a drastic and costly step to have to take," and, he argues, there is a risk that preferences will

contractible through the formal terms of the security.[40] In a venture capital-backed corporation, where human capital is the dominant non-financial input, there is significant doubt whether control over exit can be fully contracted. In an IPO, for example, it may be extremely difficult to secure an underwriter if the venture capitalists oppose the offering. Similarly, negotiating an acquisition may be extremely difficult if management opposes the transaction, and can be expected to be uncooperative in the buyer's due diligence activities and in transition efforts. This is especially true in a human capital dominated company, because transition is the mechanism that helps transfer the company's most important assets. In all events, Hellmann recognizes that the substance of an optimal contract can be implemented formally in a variety of ways. Thus, the model will not be sufficient to explain the form of security actually observed in the market.[41]

C. Convertible Preferred Stock is Not as Pervasive in Other Jurisdictions

Finally, existing accounts also do not explain why convertible securities are used less frequently in other jurisdictions. For instance, in a recent study, Professor Cumming

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not be respected in bankruptcy. Given these costs and risks, venture capitalists may well be unable to use bankruptcy as a means of strengthening their negotiating position.

[40] Hellmann, supra note 3 (mechanisms are needed to ensure the efficient outcome when successful firm is sold, while also mediating between the entrepreneur's desire to retain control and the venture capitalist's suspicion of this motive; preferred stock has been offered as a way of optimizing these goals). Even assuming that exit actually is contractible, it is odd that the venture capitalist claims extra value in an acquisition, instead of in an IPO. After all, venture capitalists can cash out completely in an acquisition, whereas in an IPO they are forced to remain invested through the lock up period, a risk for which they might well demand a premium. The extra value delivered through participating preferred securities seems to be given in precisely the wrong setting. Perhaps the rationale is that exits through acquisitions, and especially acquisitions of "zombies", tend to be less profitable. See Douglas J. Cumming and Jeffrey G. MacIntosh, Venture Capital Exits in Canada and the United States, U. Toronto Law & Econ. Research Paper 01-01 (Nov. 28, 2000), available on SSRN.com. The deal may be that, if the portfolio firm proves disappointing (i.e., so an IPO is not viable), the venture capitalists are allowed to reclaim a portion of the subsidy they have been providing to managers (e.g., salaries for what has proved to be sub-par performance).

[41] For this reason, Black & Gilson, supra note 18, rely on an implicit contract governing the entrepreneur's right to choose an IPO backed up by a reputation market.

asserts that Canadian venture capitalists are less likely to use convertible preferred equity.[42] If these securities truly are the best way to address incomplete contracting problems in the venture capital setting, why wouldn't they be used everywhere? Other variables must be present in the U.S. and absent in other jurisdictions that make this capital structure especially appealing in the United States. In the following Part, we show that U.S. tax law is such a variable.[43]

III. The Impact of Convertible Preferred Stock on the Taxation of Management Incentive Compensation

To this point we have argued that the formal characteristics of convertible preferred stock, and models that build on them, cannot fully explain the ubiquity of this security in venture capital structure. These characteristics either lack adequate substance, as in the dividend and liquidation preference, or are not unique to convertible preferred stock, as in the separation of control rights from cash flow rights. Understanding the role of convertible preferred stock thus calls for an account in which form can matter independent of substance, a type of explanation that prompts one to look to taxation. Our analysis, and the tax practice literature, suggests that the formal characteristics of convertible preferred stock are thought to result in favorable taxation of highly incentivized management compensation. Because such high-powered incentives are

[42] See Douglas J. Cumming, Adverse Selection and Capital Structure: Evidence from Venture Capital (noting that Figure 1 and Tables 1-6 show that convertible securities are not the most commonly used capital structure for venture capital in Canada and explaining variations as response to adverse selection). See also Gordon Smith, Conflict Management in the Entrepreneur-Venture Capitalist Relationship: An International Comparative Study (working paper, June 2000) (finding similar result in Finland). In our conversations with Canadian tax and corporate practitioners, some described convertible preferred stock as a commonly used financing device, as in the United States, while others warned of adverse Canadian tax consequences from using this security, see infra note 51, and indicated that other securities are commonly used, including convertible debt or multiple classes of common.

[43] Our preliminary analysis also suggests that, because of differences in the Canadian tax system, convertible preferred securities can pose special tax problems, and are less necessary to achieve analogous tax goals. See infra note 51.

central to venture capital contracting, a tax subsidy – tied to the convertible preferred stock – can help explain this security's pervasiveness. [44]

Before we develop this point, a caveat is in order: While we believe the use of convertible preferred stock in venture-backed portfolio companies is tax motivated, we do not mean to suggest that this tax strategy is unassailable; indeed, the tax strategy depends on economically naïve assumptions about valuation. Yet these aggressive assumptions are commonly employed and, in the venture-capital context, the tax authorities have not been routinely challenging them.[45]

For our purposes, the critical context is the award of common stock or options to the founding entrepreneur and other portfolio company managers near in time to a venture capital round. New equity incentives for management and new funding for the company typically go hand in hand. A round of venture capital financing will prompt the firm to expand and set new targets, occasions that require the firm to hire new managers and to create further incentives for existing managers.[46]

When a manager receives equity in a venture-capital backed company, U.S. tax law regards the award as a blend of compensation for services ("compensatory return")

[44] Put differently, our analysis puts the use of convertible preferred stock at the intersection of two sets of optimal contracts. There is a set of optimal "economic" contracts that contain a variety of solutions to the contracting problems associated with early stage high technology financing. There is also a set of optimal "tax" contracts that yield acceptable tax solutions. All other economic contracts yield sub optimal tax results, and all other tax contracts yield sub optimal economic results. We are grateful to Thomas Hellmann for suggesting this framing.
[45] In the language of lawyers, we would not necessarily give a legal opinion that the strategy "works," but we understand that aggressive valuations are routinely used, nevertheless.
[46] It is not uncommon, for example, for the funding of a round of venture capital financing to be conditioned on the portfolio company's hiring of an important executive. See Kaplan & Strömberg, supra note 3.

and appreciation in the value of an investment ("investment return").[47] For two reasons, the manager has a strong tax preference for investment return. First, compensatory return is generally taxed earlier than investment return. In an early stage venture, such accelerated timing is a particular hardship because entrepreneurs and managers do not have cash to pay tax since their equity compensation is not yet liquid. Second, compensatory return is taxed at the higher rate for ordinary income, which is approximately double the rate applicable to long-term capital gain. An even lower rate can apply to investment return, moreover, if the manager's equity qualifies as "small business stock" and certain conditions are satisfied.[48] Given these differences, the manager will strongly prefer to be taxed as an investor: otherwise, equity compensation could be taxed on receipt when the manager has no funds to pay the tax, and at a rate nearly twice as high.[49]

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[47] The premise here is that the entrepreneur is contributing services, instead of intellectual property such as an idea. If the parties can characterize the entrepreneur's contribution as property, the rules regarding compensation would not apply. Instead, the entrepreneur would not owe any tax upon contributing the property, would have carry-over basis in the stock equal to her basis in the contributed property, and would have capital gain or loss upon selling the stock. In this case, the tax planning strategies described above, for converting ordinary compensation income to capital gain, obviously would not be necessary. Yet many types of contributions cannot be characterized as property, and new employees, in contrast to founding entrepreneurs, are less likely to be contributing something that can be characterized, even loosely, as property. See Levin, supra note 32, at 2-5 to 2-6.

[48] The maximum stated ordinary income tax rate in 2002 is 38.6%, although the effective tax burden is higher when payroll taxes and the phaseout of various deductions are considered. In contrast, the maximum stated rate for long-term capital gain on stock is 20%. See Levin, supra note 32, at 2-5. Under Section 1202, this rate is reduced to 14%, although the alternative minimum tax may soak up some of this additional savings. See Levin, supra note 32, at 9-26 n.1.

[49] Of course, the tax disadvantage to the manager of having ordinary income theoretically is offset by a tax advantage to the new firm. It can deduct amounts that managers include as ordinary income, but not amounts included as capital gain. Obviously, in deciding whether an arrangement truly is tax-advantaged, we must consider the tax position of *all* parties to a transaction. See Ronald J. Gilson, Myron S. Scholes, & Mark Wolfson, Taxation and the Dynamics of Corporate Control: The Uncertain Case for Tax-Motivated Acquisitions in Knights, Raiders and Targets: The Impact of the Hostile Takeover (J. Coffee, L. Lowenstein & S. Rose-Ackerman, eds. 1988). It is well understood that if the firm were in the same tax bracket as the manager, the tax strategy described above would not make sense. Cf. Myron S. Scholes and Mark A. Wolfson et al., Taxes and Business Strategy: A Planning Approach 201-202 (2d ed. 2002) (noting tax inefficiency of incentive stock options if employer and employee are subject to same tax rate). Yet in the venture capital context, the firm's effective tax rate is typically much lower. If the firm is taxed as a

Given the conceptual and practical difficulties of separating compensatory and investment returns, the tax law relies on formal conventions to draw these boundaries. Planners, in turn, game these lines to achieve a kind of tax alchemy – transmuting compensatory return into investment return. For instance, when managers receive stock as compensation, they commonly elect to pay tax on the compensatory return right away (at ordinary income rates) – when the stock still has a low value – so subsequent appreciation is taxed as investment return. There is a real tradeoff here: To attain a lower rate and tax deferral for *future* profits, the manager must pay a *current* tax on the profit to date – a tax that would not otherwise be due yet – thereby forgoing the use of these tax dollars. Is this tradeoff favorable? The answer is clearly "yes" if the profit to date – and thus the currently taxed ordinary income – is a low number or, better yet, zero. A low initial tax valuation for the stock is critical to this tax alchemy, then, so the lion's share of the manager's return can be taxed more favorably. An analogous strategy – also depending on a low tax valuation for the common stock – is used when the manager receives an option grant.

Thus, from a tax planning perspective, much depends on the valuation of the portfolio company's common stock at the time the equity compensation is awarded. The problem is that this award typically coincides with a venture capital financing round. Although a manager wants a low valuation for her *own* stock for tax purposes, she still wants venture capitalists to pay a high price for *their* investment. To see the tension

corporation, as is usually the case, it has vastly more deductions than income, and is not likely to pay tax for an extended period of time. Not only is the present value of compensation deductions much reduced, but also these deductions could be lost entirely if the firm experiences certain ownership changes. See Section 382. If instead the firm is a partnership, the partners theoretically could use the deductions, but many of these will be tax exempt in the usual case. Even taxable partners may be unable to use these between these goals, suppose the company sells equity to venture capital investors at $100 per share at the same time it sells equity to managers at $1 per share. Without more, managers who elect to be taxed on the stock's grant date value would have $99 of current ordinary income, reflecting their bargain purchase of the portfolio company's stock.[50] In contrast, if the venture capitalist invests instead in convertible preferred stock, managers are likely to claim a lower valuation for their common stock, thereby avoiding this up-front tax. Of course, a low valuation is economically questionable – since, as discussed above, the liquidation preference has little value and so the common and preferred stock should have approximately the same, largely option, value – but our understanding is that aggressively low valuations are often employed.

This Part explains the tax rules governing awards of equity or options to portfolio company managers, and how the use of convertible preferred stock reduces the tax costs of incentivizing managers, whether the compensation is common stock, incentive stock options, or nonqualified options. To be sure, tax rules alone do not provide a full explanation for the popularity of convertible preferred stock. In the U.S., the tax planning goal, transmuting the manager's compensatory return into investment return, can be accomplished with at least three alternative securities: convertible debt, straight preferred stock, or partnership "profits" interests. However, as Part IV shows, the first two alternatives introduce other tax or business disadvantages. The third has a distinct

deductions, moreover, because of the passive loss rules. See Section 469. Thus, the conventional wisdom in such tax planning is to favor the tax position of the manager, not the firm.

[50] See infra text accompanying note 57.

tax advantage, but is usually considered too complicated. We now turn to an exploration of these issues.[51]

A. The Importance of the Value of Common Stock in the Tax Treatment of Incentive Compensation

The first step in our analysis is to show why the common stock's grant date value affects the manager's tax treatment, when the manager's compensation is either stock or options. Then, we will consider how the common stock's valuation is affected when the venture capitalist receives convertible preferred stock, instead of common stock.

1. <u>The Manager Receives Common Stock</u>

Assume that a portfolio company has secured a commitment from a venture capital firm to invest $1 million in exchange for 10,000 shares (i.e., $100 per share), the founding entrepreneurs holding another 10,000 shares. Further assume that, in anticipation of the company's growth, a new chief executive officer and chief financial

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[51] An exploration of Canadian tax considerations is beyond this Article's scope (and, indeed, beyond the authors' expertise). Our preliminary sense, based on conversations with Canadian corporate and tax practitioners, is that use of convertible preferred stock as a tax planning strategy in Canada is at once more difficult and less necessary than in the United States. This practice is more difficult because firms that issue certain types of preferred stock can be subject to a various adverse tax consequences, including a special tax upon paying dividends. See, e.g., Robert Couzin, BNA Tax Management Foreign Income Portfolio 9995-2nd: Business Operations in Canada A-57 to A-59 (1997).

Moreover, if the goal is to help executives attain deferral and capital gain, there is less need for convertible preferred stock because other strategies can yield these tax benefits.. Specifically, under Section 7 of the Canadian Tax Act, an employee who receives a compensatory option (1) is not taxable until the option is exercised and (2) the tax rate on this gain is reduced by half (or, to be precise, a deduction is allowed for half of the taxable amount). This provision in effect gives the employee deferred capital gain treatment without need for elaborate structuring. On the other hand, there may still be advantages in reducing the initial value of the common, and thus in using convertible preferred securities (or some other senior security). First, the treatment described above, like the ISO regime, is available only if the exercise price on the option is not less than the common's fair market value on the grant date. Second, the analysis changes if the venture qualifies as a Canadian controlled private corporation under Section 125(7). On one hand, the above exercise price requirement is then waived (reducing the need for convertible preferred). On the other hand, a $500,000 exclusion is provided for capital gain. Thus, even though profit earned *before* exercise is still taxed at a reduced rate, capital gain earned *after* exercise is taxed at an *even lower* rate (i.e., 0% for the first $500,000). There would seem to be an advantage, then, in shifting gains to the period after exercise, a role that convertible preferred securities could play. It would be worthwhile to explore whether convertible preferred securities are more commonly used in Canadian officer are recruited at the same time. To align their incentives with those of the venture capitalist, each purchases approximately five percent of the company's equity as part of their employment contracts: 1,100 shares each, out of a post-issuance shares outstanding of 22,200, at $1 per share.[52]

This simple deal saddles the new managers with a prohibitively high tax bill. When service-providers are paid in property, such as the common stock in our example, they generally pay tax, at ordinary income rates, based on the property's fair market value.[53] The rule is simplest if the property is fully vested. Tax is due when the managers receive their stock, based on the difference between the $1,100 each paid and the shares' fair market value. Each manager's shares arguably are worth $110,000 since the venture capitalist paid this much per share.[54] Thus, each manager would have approximately $109,000 of ordinary income, obviously a daunting prospect for a manager who is not receiving a salary sufficient to offset the tax. Thereafter, each manager has a $110,000 basis in the shares, and will have capital gain or loss on any appreciation or depreciation realized when the shares are ultimately sold (or later, if the

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controlled private corporations than in other Canadian ventures. In any event, we encourage others with the requisite expertise to consider the Canadian tax analysis more carefully.

[52] Thus, the venture capitalists and founders each have 45.05% of the firm, while the executives each have 4.95%. This hypothetical seems reasonable in light of the empirical evidence bearing on senior management equity stakes in venture capital backed companies. See, e.g., Malcom Baker & Paul Gompers, Executive Ownership and Control in Newly Public Firms: The Role of Venture Capitalists, Working Paper (Nov. 1999) (CEOs of venture backed firms held 19% of equity prior to IPO).

[53] See Section 83(a); Treas. Reg. § 1.83-1(a).

[54] A more pro-taxpayer conclusion, sometimes advanced by practitioners, is that the manager's stock – which represents 4.95% of the firm – should be valued at 4.95% of the value of the $1 million contributed by the venture capitalist, or $49,500. The premise here is that the firm's value is given by this cash contribution (e.g., assuming that only this cash would remain if the firm liquidated immediately). But this theory fails to explain why the venture capitalist was willing to pay $1 million for less than *half* of the firm – a fact strongly suggesting that the firm's value is more than $2 million. For a discussion of these alternative valuation theories in an all-common capital structure, see Levin, supra note 32, at 202.1.1. For a critique of the liquidation method of valuing a start-up, see infra text accompanying notes 71 to 73.

manager reinvests the sale proceeds in qualifying small business stock).[55] Thus, the (sizable) compensatory return is taxed initially, with the investment return taxed later.

The story is a bit more complicated if the managers' shares are subject to a vesting requirement, as is commonplace, but the undesirable result remains the same as long as the managers make a common tax election. Assume the shares do not vest for three years. Under the default rule, no income is recognized and no tax is due until this vesting date. The amount of income recognized depends on the shares' value on the vesting date, not the value on the grant date.[56] If each manager's shares are worth $5.5 million after three years, this entire value (less the $1,100 each paid for the shares) is taxed as ordinary income on the vesting date, even if the manager doesn't (or can't) sell the shares – for instance, because the company has not yet sold shares to the public, and the valuation is based on the last round of venture capital financing. To avoid this outcome, managers typically make a so-called Section 83(b) election. They pay tax as if the shares were vested from the beginning (*i.e.*, ordinary income based on grant-date fair market value).[57] No other tax is due until the shares are sold, and long-term capital gains rates apply to the sale if the holding period has been satisfied.[58] Under the election, then, subsequent appreciation is taxed more favorably than the stock's initial value (*i.e.*, deferred long-term capital gain instead of immediate ordinary income).

[55] See Section 1045.
[56] See Treas. Reg. § 1.83-1(f) (example 1).
[57] Morton v. Commissioner, T.C. Memo 1997-166 ("Generally, fair market value is 'the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or sell, and both having reasonable knowledge of the relevant facts.'") (quoting United States v. Cartwright, 411 U.S. 546 (1973)). The fair market value of these shares, when received, is not discounted for the fact that these shares have not yet vested. Section 83(b); see also Treas. Reg. § 1.83-2.
[58] See Treas. Reg. § 1.83-2(a) (providing that "no compensation will be includible in gross income when such property becomes substantially vested"); Treas. Reg. § 1.83-4(a) (providing that holding period begins just after property has been transferred). As noted above, a lower rate will apply to qualifying small business stock. See supra note 48.

For the managers' tax treatment, then, the key fact is the value of their shares on the grant date. If this valuation derives from the close-in-time price paid by venture capitalists, the managers confront the worst possible outcome: a large current tax at ordinary income rates, with illiquid stock and no cash.[59]

2. The Manager Receives Stock Options

Valuation also plays a central role when the managers' incentive compensation takes the form of stock options. These options come in two varieties: "incentive" and nonqualified" stock options ("ISOs" and "NQOs," respectively). A low grant date valuation of the common is helpful for two reasons: First, it enables options to qualify as ISOs, which offer the manager significant tax advantages. Second, if the option cannot qualify as an ISO, and must instead be a tax-disadvantaged NQO, well advised managers can use self help to minimize the tax disadvantages of NQO status – in effect, to simulate an ISO – as long as they can claim a low valuation for the underlying common stock at the time of exercise (e.g., on the grant date).

a. Incentive Stock Options

ISOs offer generous tax treatment to managers, and thus are more desirable than NQOs in the venture capital context.[60] As long as statutory preconditions are satisfied, managers generally do not recognize income either when they receive the options, or when they exercise them.[61] Tax is due later – at capital gains rates -- when managers sell

[59] If the property is subsequently forfeited, the taxpayer generally cannot deduct the amount that was previously included. See Section 83(b).

[60] Unlike NQOs, ISOs offer no deduction to the employer. Thus, it is well understood that ISOs are less tax efficient if the manager and employer are subject to the same tax rate. As noted above, however, the employer in the venture capital context is typically subject to a very low effective tax rate. See supra note 49.

[61] See Sections 421(a) and 422; Treas. Reg. § 14a.422A-1 (issued when current § 422 was designated as § 422A). However, the managers may be subject to alternative minimum tax ("AMT"). This regime, a backup for the income tax, is supposed to prevent wealthy taxpayers from making excessive use of so-

the stock they have received by exercising the option. In effect, the managers' entire profit is taxed as investment return, not compensatory return. (On an NQO, in contrast, profit earned before the option is exercised is taxed as ordinary income.)

Yet in order for an option to qualify for an ISO's souped-up tax treatment, the statute imposes a precondition relating to valuation: The option exercise price cannot be less than the value of the underlying stock on the grant date.[62] Using our example, if venture capitalists have just paid $100 for common stock, the exercise price on managers' options must be at least $100, or the options will not qualify as ISOs. But the option obviously would be much more valuable with a lower exercise price. Indeed, the executive would prefer an option with a $1 exercise price that still qualified as an ISO. The manager would like to be able to value the common, for tax purposes, at $1 on the grant date.[63]

b. Nonqualified Stock Options

While a low valuation for the common stock helps an option qualify as an ISO, other preconditions for ISO treatment sometimes cannot be satisfied. IF NQO status is unavoidable, well advised managers sometimes can use self help to mitigate the adverse consequences of this status, as long as a low valuation can be asserted for the common.

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called tax "preferences," such as generous depreciation deductions. The "spread" on an ISO is treated as a tax preference, causing AMT to be levied on the difference between the exercise price and the underlying stock's fair market value when the option is exercised. See Section 56(b)(3). The tax rate generally is 28%. See Section 55(b)(1)(A)(i)(II) (rate for so much of taxable excess as exceeds $175,000). Under some circumstances, taxpayers can claim a tax credit for the amount of the AMT they have paid, reducing their income tax in later years. For a discussion, see Barbara J. Raasch & Judith L. Rowland, Stock Option Planning, 77 Taxes 39.

[62] Section 422(b)(4). The Internal Revenue Code imposes several other preconditions as well, including a holding period and an annual limit on the size of the option grant. See. Section 422(a)(1) (providing that, in order to qualify, shares must not be disposed of within 2 years of the date of grant of the option or within 1 year after the transfer of such share to him); Section 422(d) (providing that aggregate fair market value of the underlying shares, determined when the option is granted, cannot exceed $100,000 per calendar year per employee).

The problem with an NQO is that tax generally is due when the option is exercised[64] – at ordinary income rates – based on the difference between the option's exercise price and the stock's then-fair market value.[65] Later, when the executive sells the stock, gain or loss is capital in character. Compared to an ISO, then, an NQO yields income that is taxed earlier and at a higher rate, but only on profits earned *before* the option is exercised. Any profit earned *after* exercise is taxed like the return on an ISO – that is, at capital gains rates when the stock ultimately is sold.

Thus, as a self help strategy to make the tax treatment of an NQO approximate that of an ISO, the manager can exercise the option early, thereby attaining deferred capital gains treatment for profits arising after exercise. But the self help exacts two potentially significant costs, each of which is mitigated by a low valuation for the underlying common stock. First, to exercise the option the manager must pay the exercise price (or borrow it from the company), thereby losing (or paying for) use of this money. Second, exercise of the option triggers a current tax liability – and thus loss of the use of this money as well – if the stock's value exceeds the exercise price.[66] For example, assume the option's exercise price is $100, and the stock is worth $150 when the option is exercised. The manager must pay $100 to the company, plus tax on the $50 profit. These problems are mitigated if (1) the exercise price is low and (2) the stock's fair market value is also low when the option is exercised. Thus, the cost to the manager

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[63] While ISOs and common stock can provide similar tax benefits to executives, at-the-money ISOs can also provide a financial accounting benefit. For a discussion, see infra note 75.

[64] See 1.83-7. If the option has a "readily ascertainable fair market value" when granted, the option is taxed when it is received, and not when it is exercised. Yet options rarely satisfy this condition. For instance, an option that is not freely transferable does not have "readily ascertainable fair market value" within the meaning of the regulation.

[65] The firm has a corresponding deduction that, as noted above, typically is unimportant in the venture capital context. See supra note 49.

is far lower if the option's exercise price is $1, and the common stock is worth $1 when the option is exercised. This result can be attained if the common stock is valued for tax purposes at only $1 when the option is granted, and the executive exercises the option immediately.[67] Again, the key to this self help is a low tax valuation for the common stock.

B. The Impact of Convertible Preferred Stock on the Valuation of Common Stock

We have seen that the tax treatment of managers' incentive compensation turns on the valuation of common stock on the grant date. When the manager and venture capitalist receive identical stock at approximately the same time, and the venture capitalist pays more, the tax law dictates a common sense result: the price paid by the VC sets the common stock's fair market value, and the discount offered to the employee is taxed as ordinary income, whether the compensation is structured as a direct purchase or an option.[68] To avoid this result, the tax planning goal is to drive a wedge between the tax valuation of the manager's equity compensation, on one hand, and the price paid by

[66] See David Schizer, Executives and Hedging: The Fragile Legal Foundation of Incentive Compatibility, 100 Colum. L. Rev. 440 (2000) (discussing executive lock-in).

[67] To secure this tax benefit, entrepreneurs and managers sometimes negotiate for the right to exercise an option immediately, even if the option is not yet vested. In a "pre-exercise," as this step is sometimes called, the executive exercises the option, but the underlying stock is subject to vesting. In effect, option-holders are trying to duplicate the result of a Section 83(b) election – a step that, for technical reasons, is not available for nonqualified options. See Treas. Reg. § 1.83-2(a) (requiring transfer of property within the meaning of Treas. Reg. § 1.83-3(a) as condition of election); Treas. Reg. § 1.83-3(a)(2) ("The grant of an option to purchase certain property does not constitute a transfer of such property."); see also Schizer, supra note 66.

[68] See Morton v. Commissioner, T.C. Memo 1997-166 ("Determining fair market value is often difficult where, as here, the subject property is the capital stock of a closely held corporation for which no public market exists. In these circumstances, an actual arm's length sale of the stock in the normal course of business within a reasonable time before or after the valuation date is the best evidence of fair market value."); Culp v. Commissioner, T.C. Memo 1989-517 (stock was valued at price at which taxpayer had submitted bids for stock in over-the-counter market near the time he received the stock as compensation).

the venture capitalist for its investment, on the other. This is the tax reason for giving venture capitalists convertible preferred stock, instead of common stock.[69]

For example, suppose the venture capitalist receives a convertible preferred stock with a liquidation preference equal to the full $100 price paid, while the manager receives common stock in return for a one dollar investment. What is the value of this common stock if the company is immediately liquidated? Plainly, the managers will receive only one dollar a share. Unless the government successfully challenges this low valuation, the manager's *entire* return will be treated as low-taxed investment return, enjoying deferral and reduced rates. This strategy is common, and tax practitioners describe it as an important reason for granting venture capitalists convertible preferred stock, instead of common stock.[70]

Of course, determining the common stock's fair market value on a liquidation basis is economically naïve, to say the least. Indeed, if priority in liquidation is not worth very much in early-stage-high-technology ventures, as argued above, preferred stock should not be much more valuable than common stock.[71] Rather, the value of the common stock in a capital structure with preferred stock (or any senior security) is

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[69] In a thoughtful early work, William Sahlman alludes to this tax planning goal, although he does not develop the point. See Sahlman, supra note 5, at 510.
[70] A practitioner treatise calls this the "eat 'em up preferred" strategy. The argument "is enhanced to the extent the preferred shareholder owns additional superior rights, that is, senior as to dividends (of which there usually are none), special voting rights, registration rights, and the like." 1 Joseph W. Bartlett, Equity Finance: Venture Capital, Buyouts, Restructurings, and Reorganizations 84 (2d ed. 1995). See also Richard J. Testa and Joseph A. Hugg, Tax Implications of Equity-Based Compensation Programs of Portfolio Companies, in Venture Capital and Public Offering Negotiation, supra note 17 at 15-7 (Supp. 2001) (stating "Common stock of start-up or early-stage companies often is valued with reference to, and at a significant discount from, the price at which convertible preferred stock or other senior securities are sold to venture capital investors.").
[71] To some extent, difference in the valuation might be justified by the "zombie" scenario, as well as by the greater control rights associated with the preferred stock.

determined by its option value.[72] In a venture capital portfolio company, the common stock effectively is a long-term option with a high variance, so the value will be substantial – approaching the price paid by the venture capitalist in an arm's length bargain for preferred stock that also is, in essence, an option.[73]

Despite the aggressiveness of using liquidation value as a basis for valuation, many practitioners are willing to use this strategy.[74] IRS auditors are thought not to be sophisticated enough to recognize the option value inherent in the common stock. Their more sophisticated bosses may be reluctant to compel taxpayers to undertake the potentially complex and subjective task of computing the option value. In any event, Joseph Bartlett has written that "[t]he Internal Revenue Service has never challenged

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[72] See Fisher Black & Myron Scholes; The Pricing of Options and Corporate Liabilities, 81 J. Pol. Econ. 637 (1973). Theoretically, another way for the government to challenge these valuations is to value the services provided in exchange for the stock. Cf. Larson v. Commissioner, T.C. Memo 1988-387 ("[W]here property received by a taxpayer does not have a readily ascertainable fair market value, its value may be determined by reference to the fair market value of the consideration given for the property."). We are not aware of any effort by the government to use this valuation-of-services approach in the context of venture capital startups.

[73] When in practice (roughly in the venture capital market's Pleistocene period), the older of the two authors simply could not believe the IRS would accept such a fundamentally bizarre valuation approach. As an alternative, he used a direct stock grant with a non-lapse restriction that gave the company a right of first refusal at fair market value at the time of grant less 95 percent. Under Section 83, the stock recipient could elect to pay tax on the difference between the price paid and 5 percent of its fair market value, which assured that all future gain above the option price was capital. When the company waived its right of first refusal in the future, the 95 percent of fair market value would be taxable as compensatory return, but at a time when the manager would be receiving the liquidity necessary to pay the tax, and in all events the present value of the future tax would be negligible. The senior author's inability to accurately assess the IRS's approach may have been one of the flaws that drove him into the academy.

[74] There is some authority for using liquidation value, but much of this authority involves partnerships, as opposed to corporations. See, e.g., St. John v. Commissioner, 84-1 USTC 9158 (D.C. Ill.) (using liquidation value to value partnership profits interest); see also infra text accompanying notes 102 to 104 (discussing treatment of partnership profits interests). Other cases involve corporations that are reasonably likely to liquidate. See, e.g., Berckmans v. Commissioner, 20 TCM 458 (1961) (in measuring whether taxpayer received compensation for services through bargain purchase of stock, court approved use of liquidation value because corporation was inactive and unproven; court emphasized that, although the firm might become an vehicle for acquiring active businesses, it might also remain an empty shell); Learner v. Commissioner, 45 TCM 92 (1983) (in measuring value of charitable deduction, court approved use of liquidation method for taxpayer's minority interest, since there were reasonable prospects that the corporation would be liquidated, including out-of-date nature of firm's steel-manufacturing equipment, and pending derivative suit in which shareholders were seeking liquidation); Estate of Garrett v. Commissioner, 12 TCM 1142 (1953) (using liquidation value as fair market value, for purposes of estate tax, where a

successfully the view that the issuance of shares with a liquidation preference – ordinarily labeled preferred stock – can "eat up" value in an amount equal to the preference, thereby reducing the common stock (the 'cheap stock') to marginal value."[75] Similarly, Benton and Gunderson describe this tax strategy as the primary reason for the use of convertible preferred stock in venture capital structure.[76] To be sure, this strategy is aggressive, and practitioners vary in how far they are willing to push it. A low valuation probably is easier for an ISO than for other structures, since the statute expressly permits "good faith" valuations in determining whether an option qualifies as an ISO.[77] Likewise, it is helpful for time to pass between the issuance of common stock to executives and the investment by venture capitalists, so executives can argue that their common stock was worth less at this earlier time (i.e., before important progress was made).[78] Beyond that, a low value is probably safest for seed and early round financings, when the firm does not

logging company had long ceased to be active, its equipment was antiquated and its supply of timber nearly exhausted).

[75] Bartlett, supra note 70, at 82. While the IRS has challenged such valuations in the estate tax area, see, e.g., Rev. Rul. 83-119, Bartlett takes comfort in this fact because he asserts that, ultimately, the IRS needed a statutory change, Section 2701, to shut down the practice there. See Bartlett, at 82 n. 24. Notably, another regulatory agency has begun challenging these low valuations in a different context. For financial accounting purposes, companies have assigned low valuations to equity interests awarded to managers in order to minimize the compensation expense on their income statements, and therefore to increase their reported income when they go public. The SEC has begun raising this issue when reviewing IPO prospectuses. See Michael J. Halloran and David R. Lamarre, Identifying and Avoiding "Cheap Stock" Problems, in Venture Capital and Public Offering Negotiation, supra note 19, at 29A-2 (Supp. 2001) ("In reviewing registration statements for initial public offerings, the SEC's staff routinely analyzes whether the registrant should have recorded compensation expense with respect to stock options. . . . This issue has received increasing attention from the SEC's staff in recent years.").

[76] According to Lee Benton and Robert Gunderson, "Once the decision has been made to go forward with the investment, choice of security and determination of price represent the venture capitalist's most fundamental decisions. Critical to the choice of security decision is usually the fact that founders and key employees of the Company have bought, are buying, or will buy Common Stock from the Company at a cheap price … If Common Stock were to be sold to the investors at a price [equal to full investment value], the tax consequences to the key employees contemporaneously buying Common Stock could be devastating... As a result, it may be very much in the interest of the founders and key employees that the investors purchase senior securities that can be valued at a price higher than the Company's Common Stock.". Lee F. Benton and Robert V. Gunderson, Jr., Portfolio Company Investments: Hi-Tech Corporation – Getting to the Term Sheet, in Venture Capital and Public Offering Negotiation, supra note 19 at 6-7 (Supp. 2001).

[77] See Section 422(c)(1)).

have a record of increased prices paid in additional financing rounds. A government challenge is more likely if managers buy common stock or receive options at a steeply discounted price shortly before a higher priced IPO, though practitioners report that the IRS seldom challenges valuations even in this setting.[79]

C. Summary

In this section we have shown that use of convertible preferred stock is a tax strategy, through which managers report a lower tax valuation for their common stock, and thus transform what otherwise would be current ordinary income into deferred capital gain. Ironically, even though the venture capitalist's preference is in ways more formal than substantive, this form turns out to confer a real substantive benefit: very favorable tax treatment for the highly intense management incentives that are central to venture capital contracting.[80] While we claim that convertible preferred stock is used to attain this tax advantage, our argument is less persuasive if there are better ways to achieve this tax goal. In the next part, we consider the likely alternatives.

IV. Alternative Tax Strategies to Convertible Preferred Stock

Once we recognize that use of convertible preferred stock has tax advantages, we must also consider alternative ways of achieving the same result. How else can managers

[78] Levin, supra note 32, at 2-6.
[79] According to several N.Y. practitioners, the convention in Silicon Valley once was the so-called "ten to one rule," in which the executive's common stock was valued at one tenth of the price paid by the venture capitalist for convertible preferred. This rule of thumb, which reportedly was based more on market practice than on a particular authority, is now considered conservative. One N.Y. practitioner reported that 1000 to 1 valuation ratios are sometimes used.
[80] Because incentive compensation is so important in venture capital startups, the tax strategy described here is more likely to be used in this context than in others. There are also three other reasons why this tax strategy is not readily transplanted to more mature ventures. First, for the strategy to work, the firm must not be currently profitable (i.e., so loss of compensation deductions will not be a problem). Second, the firm must have significant potential for profit (i.e., so employees will be enthusiastic about equity compensation). Third, the compensation must be hard to value currently (i.e., so an aggressive tax valuation will be plausible), but not hard to value in the future (i.e., so executives can eventually become

transmute their ordinary income into deferred capital gain? This Part explores why convertible preferred is used instead of three potential alternatives. The first two – convertible debt, or a unit composed of straight preferred stock and common stock – would modify the business deal, and also could impose significant tax costs on the venture capitalist. The third alternative – use of a partnership profits interest to incentivize management – is arguably more effective than convertible preferred stock at attaining the desired tax treatment, but presents other tax costs and is sometimes regarded as too complex and unfamiliar.

Moreover, while there are reasons to prefer convertible preferred stock ab initio, the reality is that, once enough firms have used this capital structure, there are significant costs in departing from market practice.[81] Legal fees are higher. Likewise, more time and resources must be devoted to explaining the unique terms to all relevant parties, and to allaying suspicions that these terms would disadvantage someone. Indeed, entrepreneurs and managers may find it reassuring for their venture to follow market practice, since they otherwise could fear that the venture capitalists, who are more sophisticated, are using an unconventional term to extract a hard-to-identify concession.[82]

A. VC Receives Convertible Debt

In evaluating alternatives, we must remember that the key to enhancing the manager's tax treatment is a low grant date valuation for the common stock. Under the aggressive liquidation method of valuation, described above, convertible preferred stock accomplishes this end, but so too would convertible debt.

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liquid). High-tech startups obviously satisfy all of these conditions, but more mature ventures typically do not.

[81] Ronald J. Gilson & Reinier Kraakman, The Mechanisms of Market Efficiency, 70 Va. L. Rev. 863 (1984) (discussing information cost barriers to introducing new capital market instruments).

Empirical evidence suggests that convertible debt is sometimes used,[83] and some of the economics literature does not distinguish one type of convertible security from the other.[84] Even so, use of debt instead of preferred stock changes the deal. Creditors have more powerful remedies in the event of default than preferred stockholders, including the ability to force the firm into bankruptcy.[85] Likewise, debt is higher in priority than preferred equity, although, as noted above, the value of this preference depends on expectations about available assets in liquidation.[86]

In addition, use of convertible debt, instead of convertible preferred stock, can increase the venture capital's tax bill by generating so-called "phantom income" – that is, taxable income before any cash is received.[87] For instance, assume the security promises the venture capitalist a periodic payment every year, but allows the firm to defer this payment. If the security is a debt instrument, this payment is currently taxable as ordinary income, even if deferred.[88] In contrast, if the security is documented as

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[82] In other words, standardization and precedent are a response to information asymmetry.

[83] Kaplan & Strömberg, supra note 3; Gompers, supra note 12.

[84] See, e.g. Gompers, supra note 5, at 1-2 n.1 ("The payoff to convertible debt and redeemable convertible preferred are essentially equivalent…"); Hellmann, supra note 3, at 4 n.2 ("[Participating convertible preferred equity] is essentially the same as convertible debt, except that the firm is not required to make regular dividend/coupon payments."); Cf. Cornelli and Yosha, supra note 4, at 3 n.3 ("Since our model abstracts from taxes and control rights, it would make little difference if we used convertible preferred equity rather than convertible debt.").

[85] Practitioners thus report that firms are reluctant to give the venture capitalist creditor status, if only because this step could make it more difficult to secure bank financing at a later stage. Banks prefer not to share with others the ability to force a firm into bankruptcy, because the bank's bargaining power would be reduced.

[86] Moreover, this preference arises only if the convertible debt actually is respected as debt by the parties, a matter of some concern if interest is not paid on the debt because the portfolio company, like most start-ups, experiences a significant period of negative cash flow.

[87] As Peter Furci and David Schnabel observe, "[i]nvestors in private funds tend to be very unhappy" when they receive phantom income. Peter A. Furci & David H. Schnabel, Convertible Preferred Stock Investments by Private Funds: A Practical Guide to Tax Structuring, 513 PLI/Tax 919, 927 (2001).

[88] This result is provided by the original issue discount ("OID") rules, which generally require investors to accrue interest income before any cash is paid. See generally I.R.C. 1271 to 1275. This regime generally apply to bonds that are issued for less than they will pay at maturity, as well as to bonds on which periodic payments may be deferred at the issuer's discretion. See Treas. Reg. § 1.1273-1 (defining original issue discount as excess of stated redemption price at maturity over issue price); Treas. Reg. § 1.1273-1(b)

preferred stock, and the transaction is structured with care, no tax should be due unless and until the payment actually is made.[89] A second tax advantage of convertible preferred over debt is that it is easier to claim the special reduced rate for small business

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(stated redemption price at maturity includes all payments other than "qualified stated interest"); 1.1273-1(c)(1) (noting that interest is not qualified stated interest unless it is "unconditionally payable").

Phantom income arguably can be avoided if the debt security is structured so that it (1) *never* makes a periodic payment under any circumstances and (2) is not issued at a discount. In other words, the venture capitalist's only compensation would come from the right to convert the bond into common stock. Technically, the bond would no longer be a discount bond (i.e., since the redemption price is equal to the issue price, assuming the bond is not converted). Yet there is some risk of phantom inclusions under the "contingent debt" regulations of Treas. Reg. § 1.1275-4. While this regime generally does not apply to traditional convertible bonds, see 1.1275-4(a)(4), some practitioners worry that *nontraditional* convertible bonds, such as those with no coupon or discount, could still be covered by the contingent debt regime or, alternatively, could be bifurcated into a warrant and a discount bond. See 1.1275-2(g) (example 3) (anti-abuse rule declines to recharacterize convertible debt, but notes that convertible debt provides for annual payments of interest). Other practitioners do not view this concern as formidable. In any event, there may also be business problems with not providing for any periodic payments. For instance, periodic payments to the venture capitalist serve as a constraint on common dividends: If the firm defers or cancels the venture capitalist's periodic payment, the firm cannot pay dividends on the common stock.

[89] In fact, an important planning goal in these transactions is to keep the convertible preferred stock from throwing off phantom income. The key is to avoid triggering Section 305, which imputes phantom income on preferred stock in certain circumstances. For discussion of this issue, and the various strategies used to avoid phantom income, see Furci & Schnabel, supra note 87; Glen Kohl et al, Selected Issues Involving Preferred Stock and Section 305, 513 PLI/Tax 757 (2001). Although the nuances of this planning are beyond this Article's scope, three points should be mentioned briefly. First, Section 305 is avoided if the stock "participate[s] in corporate growth to any significant extent." 1.305-5(a). Oddly, for this purpose, the fact that a security is convertible does not help. Id. ("The determination of whether stock is preferred for purposes of section 305 shall be made without regard to any right to convert such stock."). Some practitioners are comfortable, though, with similar economic terms that are thought, technically, not to qualify as a "conversion" right (e.g., giving the investor a claim in liquidation equal to the greater of (1) the liquidation preference or (2) the amounted claimed by a common shareholder). Another fix, which is more conservative, is to use so-called "participating" preferred stock, which, as discussed above, allows a holder to share in dividends and liquidations as *both* a preferred and a common shareholder. Furci & Schnabel, supra note 87, at 935; see also Martin D.Ginsburg & Jack S. Levin, 2 Mergers, Acquisitions, and Buyouts ¶ 1302.3.1 (2001) (discussing use of participating preferred securities to avoid phantom income under Section 305).

Second, assuming that participating preferred is not used, a standard source of phantom income is a redemption premium. See 1.305-5(b) (providing for accrual of income if price paid by the issuer in redeeming the preferred stock exceeds, by a sufficiently large margin, the price initially paid by investors to buy this stock). To avoid this result, preferred stock often is structured with a periodic dividend payment, instead of a redemption premium. With this tweak, there generally should be no phantom income even if periodic payments are deferred, an economic result very similar to a redemption premium. See Furci & Schnabel, supra note 87 (describing this technique as a common strategy for avoiding phantom income, but cautioning that legislative history confers regulatory authority to find phantom income if there is no intention for dividends to be paid currently).

Finally, phantom income is less of a concern if the firm has no earnings and profits ("E&P) – as is initially the case with most startups – since dividends (whether phantom or actual) are taxable as ordinary income only to the extent of E&P. Yet "many investors are understandably reluctant to rely" on the absence of E&P, Furci and Schnabel note, because of quirks in the computation of E&P. Furci &

stock under Section1202.[90] Still another tax advantage of convertible preferred stock over convertible debt is that, if periodic payments actually are made, venture capitalists that are corporations can claim the dividends-received-deduction – a tax benefit that would not be available if the security were structured as debt.[91] An offsetting tax consideration is that convertible debt affords the portfolio company an interest deduction, while convertible preferred stock does not.[92] Yet deductions are of limited value to a portfolio company that is likely to accumulate net operating losses over its early years of operation.[93]

B. VC Receives a Unit Composed of Straight Preferred Stock and Common Stock

A second alternative to convertible preferred stock is to give the venture capitalist two securities: straight preferred stock (which is thought to reduce the common stock's tax valuation) and common stock (which offers the venture capitalist a share of gains).[94] For instance, assume the venture capitalist pays $990,000 for 9,900 shares of preferred stock with a corresponding liquidation preference (100% of the outstanding preferred), and $10,000 for 10,000 shares of common stock (50% of the outstanding common). At

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Schnabel, supra note 87, at 930-31 (noting that company can have E&P in any year that it is profitable, even though this current E&P is dwarfed by losses from prior years).

[90] Specifically, the taxpayer must satisfy a five-year holding period. With convertible debt, the time before the bond is converted does not count. But with convertible preferred stock, the holding period includes the time before conversion. For a discussion, see Levin, supra note 32, at 9-21.

[91] See Section 243 (permitting corporate recipient of dividend to deduct either 70%, 80%, or 100% of dividend, depending upon extent of taxpayer's ownership in the firm). While venture capital firms generally are structured as partnerships, any partners that are corporations could claim the dividends-received-deduction ("DRD") for their share of the dividend.

[92] See Section 163 (allowing deduction for interest expense).

[93] See Joseph Bankman & Ronald J. Gilson, Why Start-ups?, 51 Stan. L. Rev. 289 (1999); see also supra note 49. Another advantage of debt, noted by Jack Levin, is that redemption of the debt should be treated as tax-free return of capital. Redemption of preferred stock, in contrast, is taxed as a dividend in some circumstances. For a discussion of this risk, see infra note 97; see also Levin, supra note 32.

[94] After showing that an entrepreneur would have significant ordinary income if she and the venture capitalists all receive common, Jack Levin offers the above structure – a grant of both straight preferred stock and common stock to the venture capitalist – as a solution. He also discusses convertible preferred stock in connection with this issue. Levin, supra note 32, at 2-9, 2-19.

the same time, the managers pay $10,000 for 10,000 shares of common (50% of the outstanding common). As with convertible preferred, the managers can argue that the common's value is reduced because of the preferred stock's priority.

Two factors suggest why the preferred-common unit is less popular.[95] First the unit has different economic terms. With typical convertible preferred stock, the venture capitalist must choose between having preferred or having common, but cannot make claims on both simultaneously. In the above example, for instance, if the firm is being acquired for $4 million, the venture capitalist can either: (1) convert to common and claim $2 million (i.e., half the sale proceeds, as owner of 50% of the common); or (2) keep their preferred status and collect only $1 million (the liquidation preference). But with a unit, in contrast, the venture capitalist can lodge both claims at the same time – as both a preferred and a common shareholder – without having to choose. Thus, the venture capitalist can claim $990,000 of the acquisition proceeds through their preferred stock, while claiming half of what remains – 50% of $3,010,000, or $1,505,000 – through their common. With a total of approximately $2.5 million, the unit yields $500,000 more than the convertible preferred stock.[96]

Second, even if the venture capitalist is able to negotiate this more generous deal – a plausible outcome as market conditions have dramatically enhanced their bargaining power – the unit raises tax issues for venture capitalists. For instance, when they sell their preferred stock, the entire sale proceeds could be treated as a dividend in some

[95] Kaplan & Strömberg report that 36 percent of their sample was made up of preferred-common units, compared to 85 percent convertible preferred.
[96] Obviously, this economic difference is relatively insignificant if the firm fails. As discussed above, the firm is unlikely to have sufficient assets in liquidation to pay the preferred liquidation preference, let alone to pay anything to common stockholders. See supra Part II.A.2.

cases.[97] In our example, if the venture capitalist sells the preferred stock for $990,000, this entire amount could be taxed as ordinary income (to the extent of the portfolio company's earnings and profits), with no reduction for the venture capitalist's basis.[98] One way to avoid this tax problem is to use a "participating preferred" security that mimics the business terms of a preferred-common unit, but is a convertible in form. Although documented as a single security, participating preferred entitles the venture capitalist in a liquidation or acquisition to recover the security's face value, and then to share in any profits as if the venture capitalist also held a share of common stock. While the security is economically comparable to a unit, it is formally different and, for technical reasons, is less likely to saddle the venture capitalist with ordinary income.[99]

In sum, although a preferred-common unit offers managers as strong a tax argument as traditional convertible securities, this structure changes the business deal and introduces a potential tax cost for the venture capitalist. If the parties actually prefer this

[97] If the venture capitalist sells the preferred stock back to the firm (e.g., pursuant to a mandatory redemption provision), this sale could be treated as a dividend under Section 302 if the venture capitalist keeps the common stock (i.e., so the venture capitalist's percentage ownership does not decline sufficiently through the redemption). This issue is more significant if the venture capitalist has a majority stake. For discussion, see Levin, supra note 32, at 247-49. One "fix" is to require the common to be redeemed whenever the preferred is redeemed. In any event, as noted above, dividends are taxed as ordinary income only to the extent that the firm has earnings and profits – something that, in a new venture, typically will not be true for a number of years (although there may be earnings and profits by the time the venture capitalists sell their stock). See supra note 89.

[98] Another problem is that, theoretically, the venture capitalist could have phantom income under this structure. The concern is that the IRS might challenge the allocation of purchase price, asserting that the issue price of the preferred stock was less than its $990,000 redemption price (i.e., because the common stock was worth more than $100,000). If the valuation is challenged in this way, the preferred stock would have a redemption premium, and thus could have phantom income. For a discussion, see Ginsburg & Levin, supra note 32, at ¶ 1302.3.1. Obviously, this issue can arise only if the government challenges the parties' low valuation of the common stock – a scenario that many consider unlikely, as discussed above. In any event, this risk of phantom income is avoided entirely if participating preferred stock is used, since no allocation of purchase price would be needed (i.e., between common and preferred stock). Id.

[99] The simplest way to make the point is that, since the "preferred" component of this security is inseparable from the "common" component, the venture capitalist is never in the position of selling the preferred stock by itself. Hence, the venture capitalist can never be subject to Section 302, which, as noted above, can impose adverse consequences on this step. See supra note 97.

revised business deal, they will use an alternative – participating preferred – that is less likely to saddle the venture capitalist with a new tax cost.[100]

C. Use of Partnership Structure/Grant of "Profits" Interest to the Managers

The alternatives to convertible preferred stock canvassed so far depend, like convertible preferred stock, on an aggressive position on valuation. To establish that the common stock is *not* valuable, the managers claim that the venture capitalist's preferences are *very* valuable. In this respect, taxpayers are relying on the IRS's willingness to ignore the common stock's option value. In contrast, a final alternative avoids aggressive and uneconomic valuations, relying instead on a favorable principle of partnership tax law.

Under straightforward rules of partnership tax, a partner is not taxed currently upon receiving a "profits interest" in the partnership in return for performing or promising to perform services. These interests provide a share only of income earned *after* the taxpayer becomes a partner. Unlike a "capital" interest, a profits interest yields nothing if the partnership liquidates, and distributes prior earnings, on the day the taxpayer becomes a partner. As a result, the tax law treats her, in effect, as receiving nothing when she acquires the partnership interest. This is an economically questionable conclusion, since the profits interest may have considerable value.[101] Even so, the partner is not taxed until she begins sharing in the partnership's earnings.[102]

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[100] In a recent empirical study, Professors Kaplan and Strömberg document the growing popularity of participating preferred. They describe this trend as a puzzle. See Kaplan & Strömberg, supra note 3. We believe tax is part of the answer, making this structure more appealing than either traditional convertible preferred stock or an otherwise comparable unit. See supra notes 89, 98, and 99.

[101] Just ask a new partner at Cravath Swaine and Moore whether making partner – gaining the continued right to use the firm's reputation and assets -- affects her net worth.

[102] The details and history of this rule are beyond this Article's scope. In general, a widely followed judicial decision seemed to suggest that profits interests would have to be valued and taxed when received. See Diamond v. Commissioner, 56 T.C. 530 (1971), aff'd, 492 F.2d 286 (7th Cir. 1974). But cf. Campbell

Armed with this deferral rule for profits interests, managers can ensure that their compensation is taxed on a deferred basis at long-term capital gains rates, with no risk of a valuation challenge by the I.R.S.[103] For instance, assume that the portfolio company is organized as a partnership, instead of as a corporation. The managers receive a profits interest when they begin employment, while the venture capitalist holds a "capital interest" in return for cash contributions. Voting and governance rights can be allocated any way the parties desire, thereby allowing the separation of control rights and cash flow rights central to venture capital contracting. The critical feature, of course, is a "preference" for the venture capitalist's capital interest: if the partnership were to liquidate immediately, the venture capitalist would have to receive all the assets.[104] As long as the formalities in Rev. Proc. 93-27 are satisfied,[105] managers do not have any ordinary income upon receiving the partnership interest. Sale of the partnership interest generally yields capital gain. (Profits earned before the interest is sold are taxed as ordinary income, but such income is unlikely to arise in early stage start-ups.)[106]

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v. Commissioner, TCM 1990-236, rev'd 943 F.2d 815 (8th Cir. 1991) (suggesting that receipt of a profits interest in return for services is not taxable). The tax bar responded with a wave of criticism, focusing on difficulties in administering this rule. In response, the government issued Rev Proc. 93-27, which exempts profits interests from current tax as long as specified requirements are satisfied.

[103] For a discussion, see Michael J. Halloran et al., Agreement of Limited Partnership, in Venture Capital and Public Offering Negotiation, supra note 19, at 1-48 to 1-49 (Supp. 1999).

[104] See Rev. Proc. 2001-43 (finding that the testing date of a partnership interest is the grant date, even if the interest is substantially nonvested at the time of grant).

[105] For instance, the revenue procedure indicates that its favorable holding does not apply (1) if the profits interest relates to a substantially certain stream of income; (2) if the partner sells the profits interest within two years; or (3) if the partnership is publicly traded within the meaning of Section 7704(b).

[106] To shelter the manager from this ordinary income, the parties can organize the venture as a corporation, while "wrapping" this corporation in a partnership. In other words, the manager and venture capitalist own a partnership (with profits and capital interests, respectively) and the partnership owns stock in a corporation that holds the venture's assets. With this structure, the manager's profit interest yields only capital gain (i.e., when the partnership sells the portfolio company's stock in an IPO). One vulnerability of this arrangement, though, is that the partnership seems to serve no purpose – other than allowing managers access to the tax rule for profits interests – and thus might be disregarded for tax purposes. A further vulnerability is that the manager may be deemed to receive the profits interest in a capacity other than as partner. Assuming the structure is respected, moreover, it does not *avoid* the tax on ordinary income, but merely shifts this burden from the manager to the corporation, which is still taxed on this ordinary income.

In short, the partnership alternative offers the same tax benefit as the convertible preferred stock strategy, replacing current ordinary income with deferred capital gain. Indeed, the partnership strategy is especially effective because it is based on a formal IRS position, rather than an unstated practice.

This immunity from a valuation-based challenge is a reason to organize start-ups as partnerships (or, specifically, as limited liabilities companies that are taxed as partnerships). Professor Bankman has emphasized another tax reason – the potential for partners to deduct startups losses.[107] Yet although this form is sometimes used, it is not the "standard" structure for start-ups, for reasons described by Professor Bankman. For instance, use of the partnership form can complicate the tax positions of foreign and tax exempt investors.[108] Nor are partnerships eligible for certain tax benefits that otherwise could be available to startups.[109] Partnerships also involve complicated tax reporting on K-1's, which are unfamiliar and potentially confusing to entrepreneurs. Relatedly, for reasons that suggest path dependency,[110] the convertible preferred approach is accepted and understood: It would be costly for the venture capitalist to investigate an alternative structure, and to explain it to entrepreneurs and portfolio company employees.

As noted above, strategies that generate capital gain for the manager typically impose an offsetting tax cost on the employer, and are most sensible when the employer is in a low tax bracket. See supra note 49.

[107] See Bankman, supra note 8. Still another advantage of partnerships is that it is easier to sell part of the business without triggering entity level gain. If the start-up is organized as a corporation, it is very difficult to sell part of the business without triggering corporate level gain. See Section 311(d). For instance, a spinoff followed by a tax-free acquisition triggers an entity level tax. See Section 355(e). We are indebted to Andrew Berg for this point.

[108] If the start-up generates "unrelated business taxable income" and "effectively connected income," this income will flow through directly to tax-exempt and foreign investors in the venture capital fund, causing them to owe tax and to file returns.

[109] For instance, Section 1202 offers a 50% exclusion for gain from certain "qualified small business stock," while confining this benefit to stock in a C corporation. See Section 1202(c). Likewise, under Section 1045, an investment in one startup sometimes can be replaced, tax-free, with an investment in another startup, but this "rollover" is available only for stock in a C corporation.

[110] See Kahan & Klausner, supra note 30.

V. Valuation Rules as a Subsidy

Our primary purpose here is positive rather than normative: to explain the tax influence on the ubiquity of convertible preferred stock in U.S. venture capital structure. Of course, we have criticized the liquidation method of valuation, the practice at the core of the tax planning here, as inaccurate and economically naïve. If the policy goal is to conform the treatment of high-tech start-up employees (who are now receiving deferred capital gain) with the tax treatment of other employees (who receive immediately-taxable ordinary income), the tax authorities should crack down on these aggressive valuations.[111]

But what if, instead, the government's goal is to promote high-tech startups? Assuming the government wishes to commit government resources to this goal, economically inaccurate valuations may serve a useful function.[112] Specifically, the government's tolerance of aggressively low valuations might be understood as a form of tax subsidy for venture capital, targeted at a critical feature of the venture capital contracting process: the high intensity performance incentives provided to managers of early stage companies. The IRS allows a substantial portion of a high-tech start-up manager's compensation – in effect, wages for services – to be taxed as capital gain, instead of ordinary income.[113]

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[111] Conventional reasons to pursue such parity include horizontal equity (so that executives who earn the same amount pay the same tax) and efficiency (so that executives who otherwise prefer to work for established firms are not lured, by tax considerations, to work at high-tech start-ups).

[112] Cf. David M. Schizer, Realization as Subsidy, 73 N.Y.U. Law Review 1549 (1998) (noting that another economically inaccurate regime, the realization rule, can be viewed as a subsidy with the appealing attribute of credibility).

[113] While wages generally are taxed as ordinary income, the exception we describe is one of at least three available to entrepreneurs. Capital gain treatment also is available to entrepreneurs who can characterize their contribution as property, instead of services, although this should be a relatively small group in the high-tech context. See supra note 47. Likewise, capital gains are available to entrepreneurs who do not seek outside equity financing. In return for a modest cash contribution, they can purchase 100% of the

We doubt the IRS *intends* to subsidize venture capital in this way.[114] We suspect that unsophisticated auditing and administrability concerns have spawned the government's tolerance of aggressive valuations. Yet the venture capital community has become accustomed to this tax benefit – recall Joseph Bartlett's colorful reference to "eat-em-up" convertible preferred stock[115] -- and can be expected to deploy its substantial political muscle to protect the implicit subsidy if the IRS begins challenging liquidation-based valuations.[116] However it began, the practice now functions as a tax subsidy.[117]

Despite its unintentional origins, the practice has an appealing characteristic when evaluated as a subsidy: In order for a manager to claim this tax benefit, private investors must first determine that the project warrants their participation. Specifically, a private

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firm's stock. Thereafter, they can pay themselves a modest salary, while earning most of their return through stock appreciation. Again, though, this simple strategy is hard to use in high-tech start-ups, since substantial outside financing will be needed to grow a business given the negative cash flows associated with early stage high technology companies. In a sense, the planning strategy described in this paper levels the playing field for high-tech start-ups, allowing them a tax benefit that already is available to the more limited set of firms using the property- contribution and internal-financing strategies.

[114]Of course, other related venture capital tax subsidies are intentional. See, e.g., Section 1202 (special reduced tax rate for small business stock); Section 1045 (rollover for small business stock); see also David A. Guenther & Michael Willenborg, 53 J. Fin. Econ. 385 (1999) (finding empirical evidence that section 1202 reduced the cost of capital of qualifying small businesses).

[115] See Bartlett, supra note 70.

[116] In an analogous circumstance, for instance, Silicon Valley mobilized to prevent the Financial Accounting Standards Board from adopting a more sophisticated approach to financial accounting for stock options, in which option value of grants would have been expensed. See, e.g., Stock Options Charade: High Cost Gets Buried in the Footnotes, Bloomberg News, March 14, 2000 (noting that FASB was willing to compromise, fearing congressional intervention, after "Silicon Valley workers staged a protest. FASB was bombarded with almost 1,800 letters denouncing the idea -- one of the biggest responses it had ever received for a proposed accounting change. Congress called for hearings."); Mark Schwanhausser, Accounting-Rule Debate Has Shifted to Overseas Change in Options Would Trim Profits, The Seattle Times, November 5, 2001, at C5 ("Flexing its political muscle like never before, the high-tech community turned the U.S. board into a four-letter word on the streets of Silicon Valley. When the board held hearings in the valley in 1994, 3,000 workers rallied in "Stop FASB" T-shirts.").

[117] In describing this tax reduction as a "subsidy," our baseline is current law's treatment of wage income: Thus, the tax burden on services provided to high-tech startups (deferred tax at capital gains rates) is a departure from the tax burden generally imposed on wages (current tax at ordinary rates). Of course, it is possible to redefine the baseline so the tax rule discussed here no longer seems like a subsidy (in the sense that the rule would no longer constitute a divergence from the general rule). If the baseline is the treatment of entrepreneurship, the departure is less clear since, as noted above, capital gain is available in other contexts as well. See supra note 113. If we move away from current law, tax deferral would be the norm under certain types of consumption taxes as long as wages have not yet been spent. Yet such inquiries are

investor must purchase a senior security in order for a low valuation of the common stock to be offered. Thus, the government commits resources (in the form of a tax reduction for the managers) only if private investors are also willing to do so. In the paradigm case, these private investors are sophisticated venture capitalists, who have the expertise to identify and nurture promising projects, who prove their commitment to the venture by investing their own funds, and who are motivated by performance-based pay and reputational concerns associated with the success of venture capital funds they operate.[118] Thus, the government can "piggyback" on the judgments of sophisticated private parties.[119] In effect, the government becomes a passive investor in the positive externalities thrown off by a vigorous venture capital market.

This subsidy thus walks a fine line between the government itself selecting which companies are sufficiently promising to subsidize directly and blindly providing the subsidy to all projects without the benefit of any quality screening. In choosing the projects itself, the government undertakes the role of venture capitalist, but without the skills or incentive structure that have been developed in the private sector.[120] Government decisionmakers might also be subject to lobbying and other political

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beyond this Article's scope, since we do not undertake here to determine the normatively correct tax treatment of entrepreneurship in a world with a perfect tax base.

[118] Baums & Gilson, supra note 13.

[119] The venture capitalist's relationship to the government here is like the "branding" role that venture capitalist's are known to play with suppliers, customers, and institutional investors. If the venture capitalist takes a venture seriously enough to back it financially, others will take the venture seriously too. See Black & Gilson, supra note 18, at 254 (1998) (noting that involvement of VC reassures suppliers and customers); Anat R. Admati and Paul Pfleiderer, Robust Financial Contracting and the Role of Venture Capitalists, 49 J. Fin. 371, 387 (1994). (noting that involvement of VC reassures other VCs and institutional investors who invest along with VC in later private financing rounds).

[120] Rolf Becker and Thomas Hellmann have provided an instructive account of the failure of a German government effort to provide a direct subsidy to early stage technology. Ralph Becker & Thomas Hellmann, The Genesis of Venture Capital: Lessons from the German Experience, Stanford Business School Working Paper No. 1705 (2000); cf. James M. Poterba, Capital Gains Tax Policy Toward Entrepreneurship, 42 Nat'l Tax J. 375, 383-84 (1989) (finding that Small Business Innovation Research

influences.[121] Nor is the government's competitive disadvantage limited to agents who are less knowledgeable, less experienced and improperly incentivized. As has been stressed elsewhere, a venture capitalist provides more to the portfolio company than just money; the venture capitalist also acts as reputational intermediary, management consultant and performance monitor.[122] The government cannot provide these critical complementary services with a direct subsidy. With the subsidy described in this Article, however, provision of these services by a venture capitalist is a functional precondition to favorable tax treatment.[123]

A further advantage is that this subsidy's scope is somewhat narrow. While it applies to risky start-ups, it generally does not apply to mature firms. To claim this tax benefit, a firm must have two characteristics: It must be risky and not yet profitable. The benefit, after all, is for managers to avoid ordinary income tax on the "option" value of the common stock. The riskier the firm, the greater this option value will be. Moreover, because there is a corresponding tax cost to the firm – loss of deductions for compensation expense – this strategy is suitable only for firms in low tax brackets. The paradigm of a firm with no current profit, but great potential for appreciation, is a risky startup.[124]

Program, a direct-grant program implemented in the United States, served useful certification function, but met with inconsistent results across regions and industries).

[121] See Lerner, supra note 120, at 292.

[122] Black & Gilson, supra note 18; Hellmann, supra note 3.

[123] As noted above, there are other ways of attaining capital gains treatment that do not involve venture capitalists and senior securities, such as characterizing the entrepreneur's contribution as property or not seeking outside equity financing, but these strategies are generally unsuitable for high-tech start-ups. See supra note 113.

[124] The narrowness of this measure's scope is not easy to duplicate. For instance, as Professor Poterba notes, it would be hard to draft a statutory test for determining whether a firm is risky. See James M. Poterba, Capital Gains Tax Policy Toward Entrepreneurship, 42 Nat'l Tax J. 375, 383-84 (1989).

A final advantage of this self executing tax subsidy is its ease of administration. In particular, this sort of subsidy avoids two common costs of tax expenditures: adding complexity to the tax system and distorting taxpayer behavior. The relevant tax rules here are easy to administer. The subsidy depends on the IRS's reluctance to challenge low valuations of common stock. Ironically, it could prove more administratively costly to *reverse* the subsidy by constantly litigating about valuation. Indeed, as discussed above, the tax authorities, in tolerating the current practice, presumably have been more interested in administrability than in subsidizing venture capital. By analogy, administrability was certainly the reason for the favorable tax treatment of the grant of partnership profits interests, rather than an intention to subsidize activity carried out in the partnership form. Nor is it especially onerous, from the taxpayer's perspective, to claim the tax benefit in the venture capital context. The key is to use both common and convertible preferred securities. While a tiered capital structure may not suit everyone, there obviously are nontax reasons to use it, including the incentive, signaling, and control rationales discussed above.

Of course, this self-execution advantage must be balanced against disadvantages of relying on tax rules, instead of on direct expenditures.[125] As with any tax expenditure, this subsidy may be hard for the political process to monitor. In addition, the subsidy is open-ended; its size depends on the level of venture capital funding, not the federal budgetary process. To keep the subsidy from becoming too expensive, the government might want to limit the size of each entrepreneur/manager's subsidy. It is easy to cap a direct grant. In contrast, the tax benefit under current law grows, without limit, as more portfolio companies are funded. On equity grounds, the government might want to favor first-time or low-income entrepreneurs and managers. But the subsidy here has the opposite effect. High-bracket taxpayers benefit the most from transforming ordinary income to capital gain, and social policy concerns are hardly likely to influence venture capitalist project selection.

A further problem with current law is that, although the government can rely on the judgments of private parties, it has no opportunity to evaluate the soundness of these judgments. Unlike an investor in a venture capital limited partnership, the government cannot decline to reinvest if the partnership performs poorly. In theory, moreover, the tax subsidy is available as long as *someone* buys convertible preferred – not just a venture capitalist, as assumed above, but also the entrepreneur's unsophisticated father-in-law (although, in fact, "angel" investors generally do not invest through convertible preferred stock). In effect, the government invests in an index fund composed of all start-ups that can secure external financing. In a direct expenditure program, in contrast, the bureaucracy could decide which co-investors to trust. Of course, the absence of a screening process is simply the flip side of the advantage of the subsidy discussed above: the government does *not* make project selection choices.

Our point here is not to advocate particular forms of venture capital subsidies; indeed, we have not addressed the substantive case for a subsidy at all.[126] Rather, we

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[125] See, e.g., sources cited supra note 9.

[126] There is a growing literature on the desirability of government efforts to promote high technology start-ups, and on various tax and other measures that might achieve this goal, including changes in the rate structure and in the treatment of net operating losses. These interesting issues are beyond this Article's scope. See, e.g., Roger H. Gordon, Can High Personal Tax Rates Encourage Entrepreneurial Activity?, 45 IMF Staff Papers 49 (1998) (noting positive externalities associated with innovative entrepreneurship and arguing that disparities between corporate and individual income taxes encourage entrepreneurship); William M. Gentry & R. Glenn Hubbard, Tax Policy and Entrepreneurial Entry, 90 Amer. Econ. Rev. 283 (2000) (finding that flatter rate structure encourages entrepreneurship); James Poterba, Venture Capital and Capital Gains Taxation, in 3 Tax Policy and the Economy (Lawrence Summers ed. (47 1989) (arguing that reductions in capital gains rate can increase level of venture capital activity by encouraging entrepreneurs

want only to highlight the unusual characteristics of the indirect subsidy that has developed. Direct subsidies to foster a venture capital industry are commonplace in other countries, typically with quite limited success.[127] The self-executing subsidy we have highlighted here has characteristics – especially use of properly incentivized intermediaries as the subsidy's gatekeeper – that may prove useful in these efforts.

VI. Conclusion

In this Article, we have extended the financial economics literature on the ubiquity of convertible preferred stock in venture capital structure. We have explained how use of this security triggers a tax subsidy for the intensely incentivized management compensation structures that are central to venture capital contracting. We have also emphasized the advantages of this form of self-executing subsidy: the government substitutes properly trained and incentivized private parties for a bureaucracy as a gatekeeper for the subsidy. More generally, we have illustrated the vital link between tax and capital structures, and emphasized the need for deep institutional detail to illuminate the complexities of capital structure and security design.

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to join start-ups); Robert Carol et al, Entrepreneurs, Income Taxes, and Investment *in* Does Atlas Shrug? 427 (Joel B. Slemrod ed. 2000) (finding that high marginal tax rates discourage entrepreneurs from making new investments in their businesses); Douglas Holtz-Eakin & Harvey S. Rosen, Sticking It Out: Entrepreneurial Decisions and Liquidity Constraints, 102 J. Pol. Econ. 53 (1994) (finding that increases in marginal tax rates cause entrepreneurs to grow their business more slowly and to hire fewer workers); (Alan J. Auerbach & Rosanne Altshuler, Significance of Tax Law Asymmetries: An Empirical Investigation, 105 Q. J. Econ 61 (1990) (discussing effect of loss limitations on risky activity).

[127] See Ronald J. Gilson, Engineering Venture Capital Markets, working paper.