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# FRBSF WEEKLY LETTER

August 24, 1990

## Is Tax Policy Hurting Venture Capital?

New firms are a major source of new jobs in our economy. Consequently, it is a matter of some importance whether the current financial intermediation system adequately meets the financing needs of such firms. By definition, start-up firms lack sufficient cash flow to be self-financed, and yet also have insufficient net worth to be attractive to traditional sources of external finance.

An earlier *Letter* (June 1, 1990) pointed out that the economy would tend to "underinvest" in such ventures unless financial instruments other than pure external debt are available, since controlling risk in this type of lending may require that the lender assume equity and control positions as well. That *Letter* suggested that restrictions on banks' powers tend to limit their ability to participate in the venture finance process, and may diminish the supply of venture finance as a result.

This *Letter* focuses on the effects of tax policy on venture financing. We conclude that here, too, recent public policy has tended to encourage the financing of "old" over "new" firms and "safe" over "risky" projects. An examination of trends in venture capital financing illustrates the potency of the tax policy effects.

### Tax effects

The argument advanced in this *Letter* is that tax policy depresses venture financing to the extent that it encourages debt over equity financing. In new venture financing, in particular, equity positions are crucial to providing external investors (that is, investors who do not own and manage the firm) with sufficient power over the firm to control risk.

There seems to be little disagreement with the first part of this argument, namely, that tax policy has tended to discourage equity financing. This effect arises partly because debt payments are deductible at the corporate level, while dividend payments are not. As Pozdena showed in the *Letter* of April 10, 1987, moreover, this "tax-

shield" effect likely has become more pronounced in recent years, as corporate tax rates have come to exceed individual income tax rates. At the same time, tax reforms in 1986 raised the tax on realized capital gains significantly, further tipping the balance in favor of debt finance. Historically, favored treatment of capital gains tended partly to offset the tax-shield benefits of debt finance.

### Financing and control

The second part of the argument, that equity is a key ingredient in controlling risk, has been the subject of recent debate. Financial economist Michael Jensen has argued that this traditional view of equity does not fit the modern world in which ownership and management are separated. He argues that, in such a setting, high levels of debt may be necessary to stimulate a firm's management to perform well since compensation is tied to the value remaining after interest payments have been met. Large interest payments thus give management a strong incentive to spur the performance of the firm.

Coupon debt in this context also provides a mechanism for outsiders to gauge management's performance, because it allows investors to determine readily whether a firm is performing well enough to meet interest obligations or not.

Although this new view may be relevant to some corporations, the traditional view seems better suited to the case of venture firms. For one thing, new, small firms can be closely held, giving equity holders true control. In addition, the cash flow characteristics of new firms are such that large fixed interest payments are not possible. Of course, external debt can be structured as original-issue-discount or zero-coupon debt to lower the cash flow burden on young companies, but this reduces the monitoring value of the debt payment activity. Equity positions and direct management authority thus are the most effective means of exercising risk control in the context of a new venture.

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## The supply of venture finance

In the U.S., intermediaries known as venture capital funds specialize in performing these external funding and control functions. Venture capital funds are primarily private, independent partnerships that identify venture projects and attract investor financing for firms at the earliest stages of development. They are the largest source of venture funding in the U.S.

Venture funds receive business plans from entrepreneurs seeking financing, and provide financing "commitments" for selected proposals on the "deal list" (typically, only one to three percent of the proposals submitted are selected for commitment). These commitments are not advanced to the entrepreneur immediately, but rather are "taken down" over an agreed-upon period.

Venture fund managers must produce an internal rate of return to the fund that is sufficient to attract investor financing of these commitments. If tax policy has the effect of raising the pre-tax return required by investors, the result may be a smaller set of qualifying deals, and a decline in commitments.

Venture returns typically are in the form of appreciation in the value of equity positions. Hence, the feature of U.S. tax policy that is most likely to have an influence on the effective rate of return on venture finance and, therefore, on the supply of commitments, is the treatment of capital gains. Policy relating to the "tax shield" effect of debt (that is, the relative treatment of dividends and interest payments) is unlikely to be as important; new ventures, particularly in their early stages, tend not to have significant income-tax exposure, and the advantage of debt as a tax shield thus is diminished.

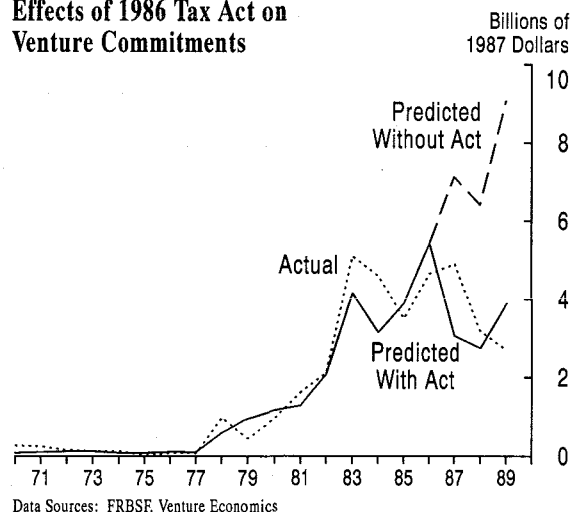
## Evidence of tax effects

To determine whether U.S. tax policy has had a significant effect on the availability of venture financing, we explored the relationship between taxes and venture activity in an econometric model of venture commitments. That model related commitment flows to economic activity, stock market activity, and tax policy.

As hypothesized, changes in the magnitude of the "tax shield" do not appear to have an effect

on commitment flows; however, private venture funding and total venture commitment flows appear to be extremely sensitive to capital gains tax policy. Our model suggests that a 10 percent increase in the capital gains tax rate causes a 16 percent decrease in real commitment flows. As shown in the chart, this relationship means that the most recent increase in the capital gains tax rate (associated with the 1986 tax reforms) depressed real commitment flows by \$5 billion, or about 60 percent.

Effects of 1986 Tax Act on Venture Commitments



In addition to depressing venture finance generally, tax policy that discourages equity is likely to have a disproportionately larger impact on the financing of the riskiest ventures. This is because equity stakes are particularly important in managing risk in these cases. Startups are the riskiest class of venture investment (with an average of 16 percent of all projects written off as a total loss, according to a recent survey), and thus likely to be the most affected by policy that discourages equity positions. In contrast, expansion financing and venture management buyouts have write-off rates of only five percent and one percent, respectively, making them relatively more attractive.

Consistent with this argument, reports in venture capital trade publications suggest that an increasing number of venture investors have focused on post-startup activity in the past several years; almost 20 percent of venture funding

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went to venture firm buyouts in 1988, compared to only nine percent in 1985, for example. Venture attorneys Testa and King also report that recent venture partnership agreements and the attitudes of venture fund investors reflect an increased desire for safe and short-term returns. Finally, it is interesting to note that in Britain, which has a more burdensome capital gains tax policy than the U.S., early-stage financing as a percent of total venture funding is less than 25% of that in the U.S. All of these observations suggest that recent tax policy may be favoring "safe" over "risky" ventures.

### **Pension funds**

Another indication that U.S. tax policy significantly affects the availability of venture financing is that pension funds, which are exempt from income taxation, have become increasingly important investors in venture capital funds. Until 1978, U.S. Department of Labor regulations restricted pension fund involvement in venture financing. Since then, pension funds' share of the financing provided by venture capital funds has increased sharply, reaching a level of about 50 percent of the total investment in venture funds today.

The increase in pension funds' involvement in venture finance is not surprising, given their favored tax status, which permits them to tolerate a lower pre-tax rate of return. In fact, the growing involvement of pension funds may help to explain why internal rates of return at venture funds have gone down more rapidly in the last decade than returns elsewhere in the economy. (The rapid growth of the venture funding industry, from approximately 250 funds in the late 1970s

to 650 funds in 1988, likely also enhanced competition and depressed internal rates of return.)

Pension funds' lower "hurdle" rate of return permits more deals to be placed on the commitment list, and thus should increase total venture funding. Indeed, our model suggests that even after controlling for other conditions, the 1978 relaxation of pension investment restrictions increased venture commitment flows severalfold. This evidence confirms that tax policy has potent effects on venture finance.

As the share of pension funding increases, it has the potential to partly insulate venture activity from the effects of capital gains tax policy, since the investment decisions of pension funds are less likely to be sensitive to tax policy. We find that the level of pension involvement itself is, indeed, statistically unrelated to tax policy. Despite increasing reliance on tax-exempt investors, however, we also find that the tax sensitivity of the non-pension investors remains high, so that the reaction to capital gains tax policy still is strong, as our model revealed.

### **Reconsider tax policy?**

The findings in this *Letter* suggest a rationale for favored tax treatment of capital gains relative to that of ordinary income. Current tax policy fails to recognize the important role played by equity stakes in controlling risk, particularly in new ventures. If new ventures are especially crucial to maintaining an economy's vitality, tax policy may have far-reaching effects.

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