7   Chapter 7 – Nontax Costs of Tax Planning: Investors seeking to maximize their after-tax profits often face uncertainty both in the returns they might receive and in the costs that must be incurred. Contracting parties may both face the same uncertainties (i.e., *symmetric uncertainty*) or one party may be better informed than the other party (*information asymmetry*). With respect to information asymmetry, we can further divide the possibilities into those situations when one party can affect the outcome without disclosing her behavior (so-called *moral hazard*)[1] and those situations when one party knows about some relevant factor that the other contracting party cannot discern (so-called *adverse selection*).[2] Contracting parties also must account for hard-to-quantify factors such as adverse financial reporting (including lower reported earnings) that can arise from otherwise-optimal tax minimization.

   7.1   Symmetric Uncertainty, Progressive Tax Rates, and Risk Taking: When a single course of action may yield any one of several possible outcomes, the investor must estimate the return from each possible outcome and the likelihood that each possible outcome will result. If there are *n* possible outcomes, with the ith outcome expected to produce a return of E_i and likely to occur with probability p_i, then the expected return from the investment equals $\sum p_i E_i$ and the after-tax return equals $\sum [p_i E_i (1 - t)]$, where t is dependent on the value of E_i. In particular, if the tax system is progressive, the tax benefit from losing money will be lower than the tax cost of making the same amount of money. So, for example, an investment opportunity that has an expected pre-tax return of zero will have a negative expected after-tax return.

      7.1.1   Consider the case of a taxpayer facing a flat tax rate of 40% on all taxable income but for which there is no tax benefit to net losses (including no possibility of carrying losses forwards or

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[1] Examples of moral hazard include employee shirking, corporate managers selecting overly risky investment opportunities, and insureds engaging in risky conduct. Another name for moral hazard is *post-contractual opportunistic behavior*.

[2] Examples of adverse selection including people buying insurance only after they become ill and sellers who know their goods are inferior.

back). Suppose this taxpayer has $100,000 to invest, and investment #1 offers a certain profit of $20,000 while investment #2 offers a 50% possibility of making $150,000 and a 50% possibility of losing $100,000. While investment #2 has a higher pre-tax expected value (0.50 times $150,000 plus 0.50 times -$100,000, or $75,000 - $50,000, or $25,000), it has a lower after-tax expected value (0.50 times $150,000(1 − 0.40) plus 0.50 times -$100,000, or $45,000 - $50,000, or -$5,000).

    7.1.1.1   If losses can be carried-back, then an investor's otherwise-flat tax rate is flat even as to negative amounts. Note that corporate losses no longer can be carried back.

    7.1.1.2   If losses can be carried forward, then the investor's otherwise-flat tax rate is progressive because the tax benefit of losses is deferred until a year when there is net income.

7.1.2 Consider the case of a start-up company that seeks funding from an established investor. The start-up has a high possibility of losing everything and a low possibility of making a lot. If the start-up is incorporated, then any losses are trapped within the new entity (until the corporation liquidates or the investor sells her shares). But if the start-up is formed as a partnership, losses can be allocated to (and used by) the partners.[3] Note that for the losses to be used by the established investor, that investor must join as a partner and not as a mere creditor. Of course, if the start-up is formed as a corporation and then goes bankrupt, the investor will be entitled to claim a (capital) loss at the end.

7.1.3 R&D and O&G Activities: Research and development expenditures (R&D) generally are deductible when made

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[3] Because of the passive loss limitation in §469, losses from a pass-thru investment allocated to a passive investor in general cannot offset active income of the investor such as salary or portfolio income of the investor such as interest, dividends and capital gain.

despite producing an income stream for many years. Drilling and exploration expenditures in Oil and Gas investments (O&G) also are immediately deductible despite having long-term benefits. (Note, though, that percentage depletion (discussed on page 7-4) largely has been eliminated.)

7.1.3.1   Limited Partnerships were used in the 1970s and early 1980s to shift R&D and O&G deductions to high-bracket individuals. These investments did not promise high pre-tax returns; instead, they offered immediate deductions (usually several times initial investment because the investments were leveraged) with some return of capital. Thus, the investors were purchasing immediate deductions followed by subsequent and offsetting (in pre-tax terms) capital gains. Such investments offered deferral and conversion. When tax rates were high, an immediate deduction equal to three- or four-times initial investment meant that even complete loss of invested capital would not render the investment unprofitable on an after-tax basis.

7.1.3.2   As part of the Tax Reform Act of 1981, the tax laws explicitly allowed low bracket taxpayers to sell excess deductions to high bracket taxpayers. The underlying reasoning was that tax preferences were enacted to encourage certain behaviors and those behaviors (whatever they might be) should be encouraged even for low bracket taxpayers.

7.1.3.3   The Tax Reform Act of 1986 reversed that decision. Now, passive investors in active investments cannot use excess losses against active income or investment income. This limitation is referred to as the Passive Loss Limitation, though note that investment income (such as interest on bonds, dividends on stock, and most rental income) is treated as active rather than

passive. That is, "passive losses" are those of a passive investor in an otherwise active investment activity.

7.1.4 Progressive Tax Rates and Hedging: An investor facing limitations on tax losses should seek to hedge against a risky investment if that can be done without significantly lowering the pre-tax return. Why? Decreasing volatility increases after-tax return in the face of progressive taxes.

7.1.4.1 For example, suppose an investor can make an investment that has a 50% probability of earning $50,000 (taxed at 40%) and a 50% probability of losing $20,000 (with no tax benefit). The after-tax expected return from this investment equals 0.50($50,000)(1-0.40) – 0.50($20,000), or $5,000. But if the investment can be smoothed out to a guaranteed $15,000, the after-tax return will equal $9,000.

7.1.4.2 Consider a US company that desires to enter into a long-term sales contract with a foreign buyer. If the sale price is denominated in a foreign currency, then profit from the agreement will be dependent on the manufacturing activity *and* on currency fluctuations. If the US company hedges its exposure to currency fluctuations, volatility from the contract is reduced. How might such a hedge be constructed? If the foreign buyer will pay one million euros in one year, enter into an immediate agreement to sell one million euros in one year at today's exchange rate.

7.2 Tax-Planning in the Presence of Risk-Sharing and Hidden-Action Considerations

7.2.1 Contracting in Capital Markets: There will be significant non-tax costs to any investment. For the seller of the opportunity, there are costs associated with discovering the opportunity, structuring the opportunity, and informing potential investors about the opportunity. For potential investors, there are costs

associated with investigating the opportunity, the cost of contracting, and the cost of capital. Note that lenders try to limit the flexibility of borrowers, making subsequent investments more expensive as they must be tailored to fit existing loan covenants or such covenants must be modified. Note also that hedge funds and private equity funds limit their clientele to minimize regulatory costs, potentially increasing pre-tax returns. Fees charged by such funds tend to be high, suggesting that much of the savings are captured by the funds.

7.2.1.1   Secured Borrowing: With secured borrowing (usually called secured lending), the lender has rights (good against the borrower and all other creditors) to specifically identified property. Costs incurred in secured lending include valuation costs, drafting provisions that will protect the collateral, and monitoring of the collateral.

7.2.1.2   Unsecured Borrowing: With unsecured lending, the lender must ensure that the borrower will have adequate means to repay the loan. Thus, subsequent behavior by the borrower that might limit the ability to repay (such as additional borrowing) must be precluded by contract and then monitored.

7.2.1.3   Note that the bankruptcy laws place some risk of loss on lenders. As a result, a borrower who takes a great risk will capture all of the gain (after the fixed interest cost) but will bear only a part of the downside risk. To account for this asymmetry, the lender will charge a higher interest rate for riskier anticipated uses of the funds. Thus, to keep the interest rate down, the borrower should pledge to avoid risky behavior.

7.2.1.4   Note that corporate bondholders have somewhat different interests in corporate behavior than do shareholders: bondholders want the corporation to take

only enough risk to ensure sufficient profit to pay interest and return of capital on the bonds while shareholders capture all of the extraordinary returns from risky investments. How might a debt or equity interest be structured to reduce the tension between bondholders and equity holders? What if the equity holders are also corporate officers?

    7.2.1.5   Potential borrowers can reduce their costs by generating a reputation for prudent behavior. However, that does not limit the last period problem: if a single transaction is large enough that no further market participation will be required, the borrower does not worry about its market reputation. This is called the "last period" problem.

7.2.2 Contracting in Labor Markets

    7.2.2.1   For companies facing a low or zero marginal tax rate, the cost of labor is relatively high because the tax deduction arising from the payment of salary is worthless. If such a company anticipates it will be in a higher tax bracket in the future, then it will do better after-tax if it can defer the payment of compensation (even assuming it pays a greater amount to account for the deferral). Note, though, that the firm is turning an employee into a lender to the business, and so the employee must incur costs (perhaps including contracting and monitoring costs) to ensure she will be paid.

    7.2.2.2   If deferred compensation is incentive-based, then the employee will have a strong incentive to cause the company to incur additional risk because the potential return is asymmetric.

7.2.3 Conflicts Between Risk Sharing and Tax Minimization: Note that employees tend to be more risk averse than their

employers. As a result, employees will demand greater pre-tax returns from deferred compensation. Thus, even if shifting all of the investment risk to the employees were a tax-minimizing strategy if both parties were risk neutral, it usually will be the case that shifting only a small fraction of the investment risk will be shifted to the employee in the form of incentive compensation.

7.2.4 Conflicts Between Incentive Contracting and Tax Minimization: Regardless of tax considerations, employers generally would prefer incentive compensation to fixed compensation to limit an employee's incentive to shirk. Note that because short-term profits often can be inflated at the cost of long-term profit potential, incentive compensation encourages employees to engage in strategic behavior to maximize short-term gains. An alternative to incentive compensation is monitoring, but that is expensive and pushes the problem back one step: how are the monitors to be compensated?

7.3 Tax Planning in the Presence of Hidden-Information Considerations: A seller of an asset will only realize the maximum price if it can inform buyers of the true value of the asset. In the case of a sale of a business, it may be difficult for sellers to provide such information in a convincing fashion. Note that the value of a business is the cash flow that the business is expected to generate in the future. Why might it not be enough to open the books of the business to potential buyers? How might a seller overcome this problem of hidden information? Do "earn-outs" fully solve the problem? What incentives do buyers face in the presence of an earn-out?

7.4 Tax-Planning and Organizational Design: Tax minimization for a large organization usually requires considerable centralized management because all parts of the organization must be coordinated in the tax plan. But non-tax considerations often require decentralized management, especially when regional variation in suppliers or customers is significant. Similarly, a US Corporation seeking to do

business in a foreign jurisdiction can do so by forming a foreign subsidiary corporation or by using a branch of the US Parent, and the choice will be informed by both tax considerations and non-tax considerations. Finally, the choice between forming a corporation and a partnership can have considerable non-tax implications, particularly with regard to agency costs. Shareholders must worry that managers will expropriate excess profits in the form of compensation while limited partners will worry that profits will be skewed toward the general partners (that is, toward the managers) or that costs will be disproportionately skewed toward the limited partners.

7.5   [Omitted]

7.6   Exercises (p. 50):

    7.6.1   Exercise 16: Note that the pre-tax expected return in each case equals $50,000.

        7.6.1.1   Part (a): $15,000; $15,000/$50,000 = 30%.

        7.6.1.2   Part (b): Expected tax is 0.50 times 30% times $100,000 plus 0.50 times $0, or $15,000; $15,000/$50,000 = 30%.

        7.6.1.3   Part (c): Expected tax is 0.50 times 30% times $200,000 plus 0.50 times $0, or $30,000; $30,000/$50,000 = 60%.

        7.6.1.4   Part (d): Expected tax is 0.50 times 30% times $500,000 plus 0.50 times $0, or $75,000; $75,000/$50,000 = 150%.

    7.6.2   Exercise 17:

        7.6.2.1   Part (a): 1.00 times 10% = 10%; 1.00 times 10% times (1 – 0.30) = 7%.

        7.6.2.2   Part (b): 0.50 times 30% plus 0.50 times (-10%) equals 10%. The expected tax equals 0.50 times 30% times 30% plus 0.50 times $0, or 4.5%, so the expected after-tax rate equals 10% - 4.5% = 5.5%.

7.6.2.3   Part (c): 0.10 times 300% plus 0.90 times (-20%) = 12%. The expected tax equals 0.10 times 300% times 30% plus 0.90 times $0, or 9%, so the expected after-tax rate equals 12% - 9%, or 3%.

7.6.2.4   Part (d): The expected tax rate *increases* with the variability of returns due to the progressive feature of the tax schedule.

7.6.2.5   Part (e): This tax structure *discourages* high technology start-up ventures that cannot immediately utilize losses.

7.7   Problems (p. 51):

7.7.1 Problem 20:

7.7.1.1   What is the tax status of the biotechnology start-up? Presumably no prior profits so it will have to carry-forward losses, thus the company faces a progressive tax rate schedule (it will have to hope for payoffs on the project and future taxable income against which it can deduct the current losses it will incur on its R&D activities). Another way to think about this issue is that the firm is currently low tax, and thus should not be investing in tax-favored assets, which R&D is because one can write it off for tax purposes at a rate quicker than economic depreciation. Thus, clientele arguments suggest that the start-up is not the appropriate tax clientele for this activity.

7.7.1.2   Form a joint venture with another biotech company. (Prior to 1986, could have formed a limited partnership with wealthy investors to fund the project – as discussed in the text). Only makes tax sense now if the other biotech is a high tax firm which can take advantage of the tax deductibility of the R&D expenditures.

7.7.1.3   Nontax benefits and costs. Benefits –possible risk sharing and facility sharing, and other resource sharing. Costs: how to share the payoffs if successful and having to share information about the base technology.

7.7.2   Problem 21:

7.7.2.1   Part (a): The only rational price is $500 million. Why not $600 million, the expected value of the company? Because only the seller knows whether the company is worth $500 or $700 million. If the company is in fact worth $700 million the seller will not sell at a price of $600 million and will retain the firm even though it is worth $50 million less to it than to a buyer. Any bid between $500 million and $700 million will result in the seller not selling the $700 million firm, so if the $600 million offer is accepted, it is for a firm worth only $500 million. Why not $450 million, the value of the lower-valued company to the seller? By assumption, there are many prospective buyers competing to acquire the firm. Competition will force the winning bid to $500 million.

7.7.2.2   Part (b): No. The seller will rationally walk away from all bids if the firm is in fact known by the seller to be a higher-valued firm. The tax benefits will rationally be left lying on the table.

7.7.2.3   Part (c): Although the high-value firm is now only worth $540 million rather than $700 million, the rational bid actually increases from $500 million to $520 million. Why? Because at a price of $520 million, the seller will find it desirable to sell the firm whether the firm is worth $500 million or $540 million to the buyer (remember the firm is worth $50 million less to the seller than the buyer because of the NOLs). This means that buyers have a 50-50 chance of buying a more

valuable firm than in the previous case, and they will find it in their best interest to increase their bid for this opportunity. Note that the tax benefits are never wasted in this circumstance, whereas there was a 50-50 chance of it being wasted (or at least of the NOLs not being sold directly in the manner we considered) in part (a).