**Online Appendix – BUSINESS VALUATIONS**

**SOLUTIONS TO REVIEW QUESTIONS**

1. The key factor that influences the value of a going concern business is its income earning potential. The essence of a business operation is that it consists of a number of assets (both physical and intangible) that work together for the purpose of generating a long‑term stream of profits.

2. The earnings approach attempts to value a business by examining the expected profits that can be generated from the entity's total assets working together. In other words the combined value of all of its assets is a function of their income generating potential. Valuing a business by the earnings approach makes the assumption that assets are acquired to be used in a going concern business as opposed to being acquired for the purpose of resale at a profit. Therefore, it is appropriate to use this method of valuation when it is anticipated that the business sold will continue to operate as a going concern.

In comparison, the asset approach to valuations involves the separate valuation of each individual asset within the entity. It makes the assumption that the asset's primary value is its expected selling price rather than its contribution to generating business income. It, therefore, has limited application. Normally, it applies to the valuation of passive investments or a corporation holding a group of passive investments. It may also be relevant for the valuation of a business entity that will not be sold as a going concern due to inadequate profitability.

Keep in mind that an entity may have more than one type of activity within it. In valuing that entity it may be necessary to apply the earnings approach and the asset approach separately to each activity.

3. The capitalization of earnings method establishes the total value of a business by estimating the expected annual profits and capitalizing that amount based upon an appropriate rate of return. For example, if anticipated profits are $50,000 annually and a normal rate of return from investing in that type of business is 20%, the capitalized value of the business is $250,000 ($50,000/.20). In other words, a price of $250,000 would yield a 20% return on investment. Both the determination of the expected future profits and the appropriate rate of return required for the investment are extremely subjective. Consequently, the value of a business as perceived by the vendor may vary considerably from the value perceived by the purchaser.

4. The ability to generate a specific amount of future profits varies with each business. Therefore, the risk of investing in different businesses also varies. The capitalization of earnings method attempts to account for this risk through the capitalization rate or expected rate of return. The acceptable rate of return that is required to compensate for the risk of achieving the potential profits is referred to as the capitalization rate. A high-risk business requires a greater rate of return than a low risk business. For example, a high-risk business with expected profits of $50,000 annually may dictate a rate of return of 30% to justify the risk, resulting in a value of $167,000 ($50,000/.30). On the other hand, a low risk business with the same expected profits may require only an 18% rate of return to justify the investment, resulting in a value of $278,000 ($50,000/.18).

5. The capitalization rate, which reflects the relative risk of the investment, can also be expressed in terms of an earnings multiple. For example, a business with potential profits of $50,000 and a capitalization rate of 20% is valued at $250,000 ($50,000/.20). Notice that the value of $250,000 is equivalent to five times the annual earnings of $50,000. Similarly, a capitalization rate of 25% ($50,000/.25 = $200,000) is equivalent to four times annual profits ($50,000 x 4 = $200,000). It is common to express the value of a business as an earnings multiple rather than as a capitalization rate although both have the same effect. In effect, the earnings multiple is simply an expression of the capitalization rate which is tied to the relative risk of the business.

6. The capitalization rate reflects the degree of certainty of achieving future profits. As future events cannot be anticipated with certainty, the process of establishing risk is extremely subjective. In most cases, a decision-maker will not be comfortable with a specific rate, but rather will attempt to establish the range of rates that most closely reflects the economic realities of the business being evaluated. In establishing this range, the following types of factors may be relevant:

* past history of profits achieved.
* market potential for products sold or services provided.
* the production capabilities and potential impact of technological changes on production efficiency.
* availability of material supplies and skilled labour.
* the state of the competition.
* strength and depth of management.
* domestic and international economic trends, life cycle of primary products manufactured and research and development capabilities.

7. The statement is not true. As a purchaser is acquiring a stream of future profits, it is necessary to project the entity's earning capacity. Obviously, this process is speculative and subject to inaccuracies. A review of past profits can be a relevant factor in estimating the future. A mature business with a track record of proven profitability can project its profits with greater confidence than a business in its early stages of growth. Therefore, in an established business, the immediate past profits can be used for estimating future profits.

However, it is important to recognize that the use of historical profits in the valuation process is only useful to the extent that they reflect future expectations. Historical

profits often represent only a starting point from which realistic projections can be made.

8. The stated historical profits may not reflect the actual profits from the business operation and may include a number of items (revenues and expenses) which are unusual or non‑recurring. In addition, closely held private corporations often include a number of discretionary expenses, such as owner’s compensation, which may not be related to economic reality. Therefore, past profits, when used in a valuation process, must be examined and adjusted to eliminate those items which distort the true profits earned exclusively from the operation of the business. In other words, where it is known that certain past items will not occur in the future, they must be eliminated or revised in order that the past profits can be used for predictive purposes.

9. It is important to recognize that the valuation process may be affected when the entity being valued includes both a business operation and a portfolio of investments.

In this situation, it would not be appropriate to use the capitalization of earnings method for the entire entity because the risks associated with business operation are different from the investment activity. Instead, it would be appropriate to value each activity independently. For example, the business would be valued using a capitalization of earnings approach but the investment portfolio would be valued using an asset approach for each investment. Therefore, the value of the total entity may be the sum of the separate valuations which reflects the unique structure of its operations and asset composition.

10. The anticipated future profits that affect the value of a business under the capitalization of earnings method are, of course, subject to taxation. Therefore, it is the after‑tax profits that are relevant. While each of two prospective purchasers may assess the same degree of certainty with respect to the earning potential, the amount of tax paid by each purchaser on the anticipated profits may be different and consequently the value of the business for each may be different.

For example, a purchaser who has no other business activities may be entitled to use the small business deduction and therefore may have a tax rate of about 15% on the first $500,000 of annual income. However, another purchaser which has its own business profits in excess of the SBD limit may be subject to a 27% tax rate. Therefore, the after‑tax profits for each of them is considerably different and so too is the value of the business being acquired.

11. If certain assets used in a business have the potential for an alternate use by the owner, it may render the capitalization of earnings method inappropriate for valuing the entire entity. This is particularly so with respect to real estate. Real estate, in addition to its ability to help the business operations, may also be used as a rental property or for development purposes. Similarly, it is not always necessary for a business to own the real estate in order to operate the business (it can lease the property and/or perhaps relocate).

If the real estate has significantly appreciated in value because of alternate uses, the reported earnings of the business may not reflect the true cost of using the property for business purposes. Consequently, the capitalization of earnings may reflect a lower value. In such circumstances, a valuation should be made separately for the business and for the real estate. This may result in an adjustment to the selling price, or in the present owner retaining ownership of the real estate for its alternate use.

12. A contingent business value or "earn out" method is a method of valuation that establishes a price based upon the actual occurrence of events subsequent to the takeover date. In order to relieve the uncertainty regarding expected future profits, an initial price is set based on expectations. The initial price is subsequently adjusted if those expectations are not achieved.

13. The contingent business value method provides advantages to both the vendor and the purchaser. For the vendor, it provides an opportunity to prove the assertions made regarding the potential earnings of the business which may result in obtaining the maximum selling price. For the purchaser, a contingent price represents an insurance contract in that a price reduction will occur if the acquired business does not perform as expected or as predicted by the vendor.

While this method reduces the uncertainty in business valuations, it can create additional problems. In particular, it is often difficult to design and define a process for determining future profits for purposes of the sale agreement. It is evident that accounting profits can be manipulated even within the realm of generally accepted accounting principles. In many cases the problems associated with policing the agreement are overpowering, resulting in a rejection of the contingent price approach.

**CASE ONE SOLUTION**

**Little Boy Ltd.**

Based on the trading multiple of the shares (10 times after-tax earnings), the shares of Little Boy Ltd. have a total value of $20,000,000 ($2,000,000 x 10). However, a large portion of the profits results from preferential occupancy costs associated with the ownership of land and buildings. It is not certain whether or not the market has taken this into account in establishing the share trading values. This is, however, unlikely because the value based on 10 times earnings is consistent with the industry whose occupancy costs may vary widely.

## Preferential Occupancy Costs

The company occupies 150,000 square feet of space of which only 10,000 square feet is leased at current rental rates. The occupancy costs associated with the 140,000 square feet of owned property is $520,000 as follows:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Amortization on buildings |  | $320,000 |
|  | Interest on Mortgage bonds |  |  |
|  | 10% of $2,000,000 = |  | 200,000 |
|  |  |  | $520,000 |
|  |  |  |  |

If the 140,000 square feet was rented at current rental values of $10 per square foot, the occupancy costs would amount to $1,400,000. Therefore after‑tax business profits from operating the grocery stores are overstated by $660,000 as follows:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Proper occupancy costs |  | $1,400,000 |  |
|  | Actual |  | (520,000 | ) |
|  |  |  | 880,000 |  |
|  | Less potential tax savings 27% |  | (238,000 | ) |
|  | After‑tax overstatement |  | $ 642.000 |  |

Maximum Value of Shares

Taking the extreme case that the market has not considered the preferential occupancy costs, the value of the company consists of two separate values: the value of the business operations and the value of the real estate.

Business Value:

The revised business profit is:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Current profit (after‑tax) |  | $2,000,000 |  |
|  | Less adjustment eliminating |  |  |  |
|  | amortization and interest and |  |  |  |
|  | substituted by rent (above) |  | (642,000 | ) |
|  |  |  | $1,358,000 |  |
|  |  |  |  |  |
|  | Value ‑ $1,340,000 x 10 |  | $13,580,000 |  |

Real Estate Value:

From the information in the case it is apparent that real estate values for commercially rented property are 10 times the net rentals received before interest on related debt, depreciation and taxes (the space of 10,000 square feet is rented for $100,000 and the property is worth $1,000,000). On the assumption that all existing space is of equal quality, the rental value of the owned real estate is $1,400,000 (140,000 square feet x $10) and the value of the property is:

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | 1,400,000 | = $14,000,000 |
|  | .10 |  |

However, if the property were sold, a tax cost would result from the following:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Recapture of CCA (equal to accumulated | |  |  |  |
|  | amortization on the building) |  |  | $2,000,000 |  |
|  | Capital gain: |  |  |  |  |
|  | Value | $14,000,000 |  |  |  |
|  | Less: Cost of land | (1,000,000 | ) |  |  |
|  | Cost of building | (10,000,000 | ) |  |  |
|  | (1/2) | $ 3,000,000 |  | 1,500,000 |  |
|  |  |  |  | $3,500,000 |  |

Therefore the net value of the real estate is:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
|  | Fair market value |  |  | $14,000,000 |  |
|  | Less potential tax: |  |  |  |  |
|  | 27% x $3,500,000 |  |  | 945,000 |  |
|  |  |  |  | $13055,000 |  |
|  | Less repayment of mortgage |  |  |  |  |
|  | bonds |  |  | (2,000,000 | ) |
|  |  |  |  |  |  |
|  | Net value of real estate |  |  | $11,055,000 |  |

The maximum value of the shares is:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
|  | Business value |  |  | $13,580,000 |  |
|  | Real estate value |  |  | 11,055,000 |  |
|  |  |  |  | $24,635,000 |  |

Consequently, the corporate raider is interested in obtaining control of the company as there is the potential for a $4635,000 gain ($24,635,000 ‑ $20,000,000).

For example, after acquiring Little Boy, the corporate raider (a holding corporation) could do the following:

* sell the real estate as investment properties to investors which would include a long‑term lease arrangement providing Little Boy with the use of the properties.
* The after‑tax proceeds from the sale of real estate ($11,055,000) would then be distributed as a tax‑free dividend to the holding corporation. (As Little Boy is a public corporation there is no refundable tax generated and no part IV tax to the holding corporation).
* After the above, the holding corporation could sell the shares of Little Boy for its revised value of $13,580,000.