



**Subject Title:** Asset Liability Management

**Date:** Tuesday, 12 March 2024  
at 11am - 1 pm AEDT (Sydney time)

**Time:** 60 minutes

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## QUESTION 1

(10 Marks)

Sarah operates a small business called Chem Fun that produces a hands-on chemistry kit for school children. The kit is sold on-line to schools. Chem Fun has outgrown Sarah's garage and needs to operate from a factory. Chem Fun financial projections indicate that \$1 million will be sufficient to purchase a suitable factory. Chem Fun estimates net revenue (sales less costs) of \$100,000 per annum once the factory is fully operational, but before any financing costs relating to the factory purchase. Sarah has invested \$50,000 and significant time into Chem Fun so far. She wishes to retain control and draw a modest income from the business.

You are a venture capitalist considering investing up to \$1m in Chem Fun.

### Question

- a) Explain the advantages and disadvantages of using venture capital to fund the factory purchase, from Sarah's point of view. (4 marks)
- b) Explain the venture capital deal terms you would offer (dollar amount and percentage ownership) with reasoning linked to your required risk and return. (2 marks)

A suitable factory is for sale for \$800,000. Sarah's father offers to buy the factory and lease it to Chem Fun for 2 years at the market rent. Market rent for the factory is \$60,000 per annum. Ignore any utilities and maintenance costs associated with the factory.

- c) Discuss four investment risks arising for Sarah's father. (4 marks)

(10 marks)

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**Answer is:**

### Part A

Venture capital is a method for financing for companies in their early stage of growth, who have demonstrated to investors known as venture capitalists, their potential for further growth. The venture capitalists exchange cash for a defined share of the company's equity. There are both advantages and disadvantages for using this source of capital for purchasing Sarah's factory.

#### *Advantages*

Advantages of using venture capital from Sarah's point of view include the managerial and technical expertise from the venture capitalists, as well as giving Sarah a financing option where other options may not be available or feasible.



First of all, as Chem-Fun is a relatively small project that started in Sarah's garage, so she might find it very difficult to obtain the \$1 million required for the factory. Banks may refuse to give her a loan due to the high risk of the company failing, and issuing debt securities may be too expensive due to the risk premium demanded by investors. Therefore, venture capital is an appropriate financing option for start-ups like these, where other options may not be possible.

Secondly, venture capitalists are experts in their field and can provide Sarah with additional managerial or technical expertise. They could also know of clients or industry connections, all of which can help advance and grow Sarah's company. This advice would not be available through using other sources of capital like loans and debt and is unique to venture capital funding. Given that Chem-Fun is a small and home-made project, it is likely that Sarah would benefit greatly from this information and guidance.

#### *Disadvantages*

However, there are also disadvantages of using venture capital from Sarah's perspective.

Firstly, she stated that she wishes to retain control of the company. It is highly unlikely that Sarah will retain full control of Chem-Fun if she uses venture capital funding, as the providers will wish to take a defined stake in the equity of the company. However, the amount of stake that they take can potentially be negotiated such that Sarah maintains a majority control over Chem-Fun. They may also specify a portion of the profits in return for their investment into the start-up, which will decrease the income Sarah is receiving as the sole owner of the business at the moment. However, this can still be enough for her to retain the modest income flows that she specified in the question.

Finally, it is possible that the venture capitalists may pressure Sarah to pursue short-term goals. This could result in a business approach that is against Sarah's objectives, with aggressive market expansion and risky decisions. This is because venture capitalists normally want to see a return on their investment as early as possible in order to sell their stake in her company to fund other potential opportunities. Ultimately, this does depend on the specific venture capitalists that Sarah has sought out and may not be true in all cases.

Overall, Sarah will need to weigh these pros and cons before choosing whether to accept venture capital funding.



## Part B

As a venture capitalist, I am considering investing a dollar amount of \$1 million into Sarah's start-up for the purchase of a factory. Given that Sarah's initial investment was only \$50,000, \$1 million is a very large amount comparatively. Thus, I would demand a high percentage ownership for my investment.

### *Required risk and return*

Although Chem Fun is performing well at the moment, it is still a very risky venture as the target customers are school kids who study chemistry, making it quite a specific audience. There is no guarantee that the demand in the market will meet the supply after building the factory, so I require a high equity risk premium of 8%, above normal property, equity, or debt risk premiums. This makes my required return on equity as follows:

### **Required return on equity =**

Required risk-free real return (**0%**, as the market risk-free real rate of return is currently negative)

+ Expected inflation (set as **2.5%**, with inflation target between 2-3%)

+ Equity risk premium (**8%**, selected according to my investment objectives)

**= 10.5%**

### *Ownership stake*

Given that the annual projected net venue is \$100,000 p.a. (assuming minimal financing cost from venture capitalists) after the factory is constructed, I would expect no income in the first year to allow for construction time. I would like to make a profit of \$105,000 on top of my initial investment of \$1 million within 10 years after the construction is complete, which is \$110,500 per year.

Therefore, I want an ownership stake of **45%** (for Sarah to retain majority control), and to take **80%** of the profit in the first 11 years. This will hopefully give me \$80,000 p.a. and around \$30,500 in capital gains per year as the company grows. As the company's capital is currently \$50,000, a 45% stake equates to \$22,500 in the first year, which should grow significantly over the 11 year period.



### Part C

By leasing the factory to Chem Fun for 2 years at the market rent, Sarah's father will take \$120,000 in total. He also retains ownership of the factory after Sarah's lease expires. In this transaction, the following four investment risks arise for Sarah's father.

#### *Inflation/market risk*

Firstly, by charging the current market rent amount for the next two years, Sarah's father has locked in a fixed lease term and lease payments. If market inflation rises significantly in this period, Sarah's father could see his real returns eroded quickly. This could occur as his returns are not indexed or hedged against inflation. There is an additional risk of the market rental rate being lower than normal if the industry is suffering from too much supply and not enough demand.

#### *Default risk*

By purchasing the factory and leasing it to Sarah, her father is also exposed to default risk from his counterparty. If Chem Fun does not perform as well as projected, the company could go into bankruptcy or be under financial stress. In this situation, Sarah could default on some or all of the lease amount of \$60,000. This will mean that Sarah's father incurs a loss on his investment with no recoveries.

#### *Liquidity risk*

As Sarah's father retains ultimate ownership of the factory after the lease term expires, it is uncertain whether he has his own plans for using the factory in mind. If he does not wish to use the factory after 2 years, he may try to sell it to someone else. In this case, there is a chance he makes a capital loss, as the factory is a physical asset that suffers from depreciation and obsolescence, or that he cannot sell the factory at all, as it is an illiquid and indivisible asset. Sarah's father should consider market demand and supply forces to measure the terminal value of his asset.

#### *Physical destruction risk*

Finally, as a physical asset, the factory is exposed to physical losses. This can be in the form of natural disasters that destroy the factory, important machines being stolen by thieves, or mechanical parts being impaired. To mitigate for this, Sarah's father should consider purchasing insurance, which may be costly depending on how much protection he wants to buy.



**END OF ASSESSMENT**