Chapter 2
Firms and the financial market

Solutions to Study Questions

2–1 **(Related to *Finance Spotlight:* 'Defined benefit versus defined contribution superannuation' on page 20)** The ***Finance Spotlight*** boxed feature describes two types of superannuation: defined benefit and defined contribution. The 'defined' part of each name means that the benefits are specified, or defined; the difference between the two types is in when those benefits are defined. Defined benefit (DB) superannuation specifies the amount to be paid in retirement—that is, the benefits the retiree will receive are specified. Thus, the superannuation fund promises to make specific payments to the retiree, and then accepts the responsibility for investing a pool of assets now (or at least, before the covered person retires) to ensure that those benefits in fact can be paid in the future. Because people change jobs much more frequently these days, defined contribution superannuation is much more common. Defined contribution superannuation specifies the contributions that will be made to the plan (now), not the benefits that will be paid at retirement. It is a lot easier to specify an amount to be paid today than it is to ensure that one will be made in the future. With defined contribution superannuation, the fund accepts the responsibility of investing the contributions in order to maximise the retirement benefit, which will be determined by the contributions and the earnings of the fund.

2–2 The three players who interact in the financial markets are **borrowers**, **savers** and **financial intermediaries**.

Borrowers need money to help finance some specific purpose—a student loan to help pay for university fees, a car loan, or a mortgage for a house. **Savers** have money that they don't need for consumption today, so they set this money aside to use in the future. **Financial intermediaries** bring the two together, channelling the savers' 'extra' money to the borrowers for their immediate use. If the borrowers and savers could get together themselves somehow, they could 'cut out the middleman' and save the intermediation costs. This might sound good—but is it feasible? Financial intermediaries specialise in evaluating the creditworthiness of borrowers, so they help ensure that savers' money is channelled to borrowers who will repay. They also enable the efficient aggregation of small amounts of individual savings into blocks of loanable funds large enough to be useful to borrowers.

2–3 As outlined in section 2.2 of the text, a financial intermediary is a firm that collects money from savers, bundles it into attractive sizes with attractive terms, and lends it to borrowers. The principal types of financial intermediaries in Australia are commercial banks, non-bank financial intermediaries and investment companies.

<u>Commercial banks</u>

Commercial banks are depository institutions that take deposits and make loans (such as mortgage loans or car loans). Commercial banks are an integral part of our national payment system. Their importance to the functioning of our economy has led to their being heavily regulated and subject to extensive oversight by the Reserve Bank of Australia (RBA) and the Australian Prudential Regulation Authority (APRA).

9781488617218, Titman, *Financial Management 8e*

Non-bank financial intermediaries
In addition to commercial banks, there are a number of highly specialised financial intermediaries that also provide financial services to consumers and businesses.

Building societies and **credit unions** are mutual organisations owned by their members. They provide similar financial services to banks, taking deposits and providing mortgage loans and personal loans. Banks, building societies and credit unions are collectively referred to Authorised Deposit-taking Institutions (ADIs).

Money market corporations tend to operate in wholesale—rather than retail—markets, providing services to businesses and government agencies. They provide a range of financial services, including deposits, loans and advisory services to client firms when they enter into major transactions such as buying or merging with other firms.

Finance companies provide loans to householders and small businesses. Money market corporations and finance companies are collectively referred to as Registered Financial Corporations (RFCs).

Insurance companies (including general insurance and life insurance companies) are by definition in the business of selling insurance to individuals and businesses to protect their investments. This means they collect premiums, hold the premiums in reserves until there is an insured loss, and then pay out claims to the holders of the insurance contracts. Note that in the course of collecting and holding premiums, the insurance companies build up huge pools of reserves to pay these claims. These reserves are then used in various types of investments, including loans to individuals and businesses.

Superannuation is designed to provide funds for retirement. Successive Australian governments have taken steps to encourage Australians to save for their retirement, in order to reduce the threat to the sustainability of the aged pension posed by our ageing population. As a result of these developments, the assets controlled by superannuation funds have grown enormously. There is now almost $2 trillion in superannuation funds, and this money all needs to be invested in debt, equity and property in order to yield a satisfactory return.

Investment companies
Investment companies are financial institutions that pool the savings of individuals and invest the money, purely for investment purposes, in the securities issued by other companies.

A **managed fund** is a special type of intermediary through which individuals can invest in virtually all of the securities offered in the financial markets. Managed funds typically focus on a particular type of investment, such as cash, debt securities, domestic and international shares, and property. When individuals invest in a manage fund, they receive shares (or 'units') in a fund that is professionally managed according to a stated investment objective or goal—for example, investing only in international stocks. Shares in the managed fund grant ownership claim to a proportion of the managed fund's portfolio.

Unlisted managed funds can be 'open' or 'closed'. Additional units in an open fund can be created and issued based on demand, whereas the number of units in a closed fund is fixed. Managed funds that are listed on the stock exchange are referred to as **exchange-traded products** (ETPs), and are generally closed funds. A significant component of these ETPs are referred to as **exchange-traded funds** (ETFs), which seek to track an index, such as the S&P/ASX 200, and generally have relatively low expenses.

A **hedge fund** is very much like a managed fund, but hedge funds are less regulated and tend to take more risk. They also tend to more actively influence the managers of the corporations that they invest in.

A **private equity** firm is a financial intermediary that invests in equities that are not traded on the public capital markets. Two types of private equity firms dominate this group: venture capital (VC) firms and leveraged buyout (LBO) firms. **Venture capital firms** raise money from investors (wealthy people and other financial institutions), which they then use to provide financing for private start-up companies when they are first founded.

The second major category of private equity firms is the **leveraged buyout fund**. These funds acquire established firms that typically have not been performing very well, with the objective of making them profitable again and then selling them. LBO funds have been the subject of a number of films, including *Barbarians at the Gate*, *Other People's Money* and *Wall Street*.

2–4 Money market corporations provide services to businesses and government agencies. They provide a range of financial services, including deposits, loans and advisory services to client firms when they enter into major transactions such as buying or merging with other firms.

2–5 The primary market is the market for newly issued securities. In this market, the issuer (e.g. a corporation) creates a new financial asset and sells it to an investor. It does this to raise money to finance a new project. The asset it creates can be either a debt security (like a bond), or an equity security (like a new share). Every asset must trade in the primary market once (and only once), because every asset must be 'born'. The primary market transaction is the only point at which the issuer receives cash for the security. Note that this is step 1 in Figure 2.2 from the text.

(The money market corporations we considered in Problem 2–4, above, may play a role in this primary market transaction. They often underwrite a firm's securities, meaning that they are the ones who actually buy the securities from the issuer—so that the issuer receives cash from the investment bankers, not the investors—then sell those securities to the initial public investors. The underwriters therefore bear the risk of inventory, and will be on the hook if they cannot sell the securities. Investment bankers typically charge about 7% of the value of the issue for performing the underwriting function.)

The secondary market is the market for investor-to-investor trading (step 4 from Figure 2.2). The markets that we hear about every day—the Australian Securities Exchange (ASX) and New York Stock Exchange (NYSE or 'Wall Street')—are secondary markets. Secondary markets allow investors to trade out of securities that they have purchased (or to buy new ones); that is, they provide liquidity. Investors are more willing to buy securities in the first place if they know they can sell them easily. Thus, securities are more attractive to investors—and therefore are less costly to issuers—if they are backed by a large, liquid secondary market.
Assets may trade many times in the secondary market (think of the number of times

a BHP share could change hands on the ASX), or they may never trade there at all (for example, a bond may be held to maturity by its initial investor).

2–6 A managed fund provides intermediated investing. Investors pool their investments together, then hire a manager to deploy those funds into an approved asset class or classes. For example, investors might pool their funds to buy equity, to buy debt, or to buy some combination of the two. Pooling their investments allows investors to achieve diversification simply, and with a minimum investment. (For example, it would be virtually impossible to create a meaningfully diversified portfolio of equity with the $3,000 it might take to open a mutual fund account, and the fees associated with any such attempt would be prohibitive.)

Some of the benefits of mutual fund investing include:

- ease of diversification (as just discussed)
- access to asset classes (some are more easily, or only, accessible to institutional investors, requiring retail investors to use an intermediary like a mutual fund)
- ability to establish ongoing, automated investment programs (taking money from each month's pay, for example, and having it automatically invested in your funds).

(Many people believe that access to professional management is another benefit to intermediated investing. However, there is disagreement about the efficacy of paying higher fees for active management, as noted in the text's ***Finance Spotlight:*** **'Your money'** boxed feature.)

An exchange-traded fund (ETF) also allows investors access to a basket of assets. However, ETF shares trade on an exchange. Therefore, they can be traded multiple times per day, while units in unlisted managed funds can be traded only once. (Investors who wish to trade units in unlisted managed funds place orders with the fund directly, which then performs the trades once, at the end of the day.) Since ETFs trade like shares, they can be sold short and bought on margin. There may also be certain tax advantages to ETFs over mutual funds. However, each transaction incurs a brokerage commission, so that investors desiring to set up an automatic investment program would be better off using an unlisted managed fund for those programs.

2–7 The primary difference between debt and equity is that debt has a contract: the amounts and the timing of its cash flows are contractually specified. For example, with a bond, you know that you will receive coupon payments on specific dates, plus the face value at maturity (another specified date). Failure to make a promised payment on time and in full constitutes default, for which there are ramifications for the issuer (of varying severity, depending on the severity of the default). However, cash flows to equity may not be specified at all (for example, a company makes no assertions about the dividends it may or may not pay to ordinary shareholders, and certainly cannot specify the price an investor will receive when they sell the share), or, if they are specified, do not trigger default when not made (for example, preference dividends may be skipped if the firm so chooses).[1] Equity funding provides

[1] Of course, skipping a dividend may not be the end of the story, since the skipped dividends may accrue if the preference shares are cumulative, as noted in the text. And, of course, no dividends may be paid to ordinary shareholders if there are preferred dividends in arrears.

much more flexibility for the issuer, and is therefore less risky for it. However, this comes at the cost of higher required returns to investors. Debt investors are willing to accept a lower return in exchange for contractual cash flows. However, less risk for investors means more risk for the issuer, which introduces leverage risk into its capital structure when issuing debt.

2–8 Preference shares are 'preferred' over ordinary shares, because:

- they have priority in liquidation—preference shareholders must be paid in full before ordinary shareholders can receive any of the proceeds from the liquidated assets of the firm
- they have priority in dividend payment—ordinary dividends cannot be paid before preference dividends are paid; if the preference shares are cumulative, then there can be no ordinary dividends before all accrued preference dividends are paid.

Thus, the preferences relate to priority of payment. However, preference shares do not dominate ordinary shares. For example, ordinary shares come with voting rights, while preference shares usually do not. In addition, preference shares are not residual claims, and will not enjoy the unlimited upside that ordinary shareholders prize. (Some preference shares have a feature that lets them participate in any upside potential, but they still are not residual claimants.)

2–9 **(Related to *Finance Spotlight:* 'Where's the money around the world?' on page 33)** According to the data presented in the ***Finance Spotlight:*** **'Where's the money around the world?'** boxed feature, in 2013 the United States financial markets dominated with almost three times as much in the way of financial assets than its nearest rivals (Japan and China) and about one-third of the world's equities. Of the major European countries—the United Kingdom, France and Germany—the United Kingdom has the most in the way of financial assets. Australia ranks tenth.

2–10 A hedge fund is a pool of assets, like a managed fund. However, hedge funds are much less regulated than are managed funds, which allows hedge fund managers to use many strategies forbidden to managed fund managers. For example, hedge fund managers often employ significant leverage, invest in illiquid assets (and restrict investors' ability to access their funds, sometimes for years), and utilise short strategies and derivatives. Hedge funds are not open to all investors; they are targeted at wealthy, sophisticated, 'accredited' investors (whom the regulators deem able to take care of themselves).

2–11 The two types of private equity funds discussed in the text are venture capital (VC) funds and leveraged buyout (LBO) funds. VC funds collect money from investors, then use it to finance start-up businesses. Thus, these funds invest very early in a business's life, perhaps funding research and/or product development. (For example, VCs are very important in the funding of drug R&D.) LBO firms target underperforming businesses, using leverage (debt) to finance the buyout of the firm's public shareholders—taking the firm private. The idea is to restructure the business without the distraction of public oversight, then take the firm public again. Investors in private equity make money when their incubated firms are bought out or have their initial public offering (VC funds), or when the firms are taken public again (LBO funds).

2–12 According to Yahoo! Finance (http://finance.yahoo.com, accessed 19/7/18), we have the following results for BHP:

Price of last trade:	$33.57
Last trade time:	This was the price at the close of the market – 4.10pm 18 July 2018. Because BHP is an Australian stock, Yahoo Finance shows the time of the last trade (or the close of the market) according to Australian Eastern Standard Time.
Day's price range:	$33.20-$33.75
Closing change in dollars:	up $1.07
Closing change in percent:	up 3.29%
52-week price range:	$23.65–$34.63

2–13 BHP's market capitalisation on 19 July 2018 was $178.714 billion. Based on the current share price of $33.57, the number of BHP shares on issue is given by:

$$\begin{aligned}\text{Number of shares} &= \frac{\text{Market capitalisation}}{\text{Share price}}\\ &= \frac{\$178.714\text{ billion}}{\$33.57}\\ &= 5.324\text{ billion shares}\end{aligned}$$

2–14 The solution to this question is dependent on the student's interests.