Solutions Manual

to accompany

Financial Markets, Institutions & Money 3rd Edition

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Chapter 1 – Overview

Answers to application and analysis exercises

1.1 Explain the key roles of the financial system. Why is it so important to the broader economy to have an efficient and effective financial system?

Financial markets are the markets for buying and selling financial instruments. Financial markets have five primary functions:

1. Facilitating the flow of funds
2. providing the mechanism for the settlement of transactions
3. generating and disseminating information that assists decision making
4. providing means for the transfer and management of risk
5. provide ways of dealing with the incentive problems that arise in financial contracting

Having an efficient and effective financial system is critical as it facilitates commercial, retail and government transactions in a timely, low cost and reliable way. The opposite would be a system where funds take a long time to reach their destination (i.e. direct debits may take weeks), with high cost (significantly greater transactions costs) and with great risk (to either their value or likelihood of arrival). An efficient and effective financial system will also produce actual and timely information to enable effective financial decision making, which is also important in the complex financial world of today.

When one considers what we take for granted in the financial system (EFTPOS, Electronic Transfer, Direct Debit, etc) in terms of its reliability) and consider the time and cost involved in doing this manually, one can see the importance of the financial system.

1.2 Does it make sense that the typical household is an SSU, while the typical business firm is a DSU? Explain your answer.

Households are ultimately SSUs, but have deficit periods when a home or other "big ticket" item is purchased. Businesses usually invest more in real assets than they receive in current operating cash flow.

1.3 Why is denomination divisibility an important intermediation service from the perspective of the typical household?

Typical households do not have enough cash to invest in direct credit markets, where minimum transactions are often $1 million. Financial intermediaries facilitate indirect investment by households by offering financial claims with smaller denominations. Otherwise, households would have to accumulate large sums of money before investing. During the time this would take, the household would earn no interest income—a substantial opportunity cost, and a disincentive to save and invest.

1.4 Explain the economic role of brokers, dealers and investment bankers. How does each make a profit?

Brokers, dealers, and investment bankers make markets at both primary and secondary stages. Funds are raised and claims issued as they bring SSUs and DSUs together in primary markets. In secondary markets they trade claims in volume, providing liquidity and price discovery.

1.5 Compare and contrast debt and equity as a source of funds for financial claims.
Financial claims are sourced from either debt or equity funds. Debt funds are supplied in the form of a loan and are either short-term (referred to as money) or long-term (referred to as capital). Suppliers of loans face credit risk - the risk that the borrower will default on scheduled repayments as specified in the loan agreement. The lender is compensated for this with interest income. Equity funding involves the acquisition of an ownership share of a business, which is usually seen as a longer-term investment and hence referred to as capital investment. Equity investors face investment risk, the possibility that the investors expected return will not be realized, and are compensated with dividend payments and capital growth (where the value of the ownership share increases over time) for bearing this

1.6 What are some problems with direct financing that make indirect financing more attractive?
Direct financing requires a more or less exact match between the characteristics of the financial claims DSUs wish to sell and those the SSUs want to buy. Direct financing can thus involve a costly search and negotiation process, often complicated by information asymmetries concerning ultimate credit risk of the DSU. Intermediaries transform direct claims sold by DSUs and make them more attractive to SSUs, helping DSUs find financing and SSUs find appropriate investments.

1.7 Why are direct financing transactions more costly and/or inconvenient than intermediated transactions?
The parties to direct finance have to find each other and negotiate a more or less exact match of preferences as to amount, maturity, and risk. Intermediaries provide all parties choices about financial activity, and drive costs down through competition, diversification, and economies of scale.

1.8 What is moral hazard? Do you think this is a big issue for financial institutions?
Moral hazard is where a party that is insulated from risk behaves differently to the way they would behave if they were not insulated. This is key concern for financial institutions, particularly insurance operations, as it increases the chance of loss and consequently creates the need (and associated cost) to monitor clients. Essentially, the 'don't worry, it's insured' attitude increases the cost of insurance operations.

1.9 Why are economies of scale important to the viability and profitability of financial intermediaries?
Economies of scale give financial intermediaries a cost advantage. If their average cost decreases as the size of the transaction increases, financial intermediaries can profitably engage in denomination intermediation while remaining adequately diversified.

1.10 Explain how you believe economic activity would be affected if there were no financial markets and institutions.
Financing relationships would arise only when preferences of SSUs and DSUs match. DSUs would not always obtain timely financing for attractive projects and SSUs would under-utilize their savings. The "production possibilities frontier" of the society would be smaller.

1.11 What impact did the GFC have on the global financial system? What will the long-term implications be for the members of the sector?
The GFC bought the global financial system to the brink of collapse with significant impacts on:

- asset values (share markets declined dramatically, bond values collapsed as interest rates were moved, international finance declined as international trade declined, mortgage finance stopped as asset value and available capital declined for example)
- Financial institutions around the world collapsed and many were either merged or required significant government bailouts to keep them afloat. This also meant a great deal of job losses in the financial sector

- confidence in the financial system declined and capital flows between institutions, into capital markets and across borders changed significantly.
- The required government intervention and extension of sovereign debt (to significant levels in some areas – particularly Europe), had a long term effect that will also drive government reregulation of the financial sector.
- A significant repricing of risk in all asset classes

The long term effects were at the time of writing still being established, however several things are clear:

- Reregulation globally is likely to lead to more strigent control of risk, mix and type of operations and level of oversight of financial institutions.
- The medium to long term impact of government debt and ownership/intervention in the financial sector may subdue markets and economic activity (and therefore financial activity) for some time.
- The repricing of risk in all asset classes will change market behaviour for sometime and subdue both retail and wholesale market activity
- The negativity surrounding the financial institutions has exacerbated consumer distaste and mistrust in financial institutions which will continue to be a public relations battle for some time.

1.12 What are the three sources of comparative advantage that financial institutions have over others in producing financial products?
(1) Economies of scale —large volumes of similar transactions; (2) transaction cost control—finding and negotiating direct investments less expensively; and (3) risk management expertise—bridging the "information gap" about DSUs' creditworthiness.

1.13 Discuss the spread of banking assets across Australian financial institutions. Examine the data in table 1.2 and discuss the impact that the GFC has had on the different types of financial institutions.
Banking assets in Australia are spread across a variety of different types of institutions including banks, credit unions, building societies and other financial institutions. While there are more credit unions than any other type of institution, the banks dominate the percentage of assets held and within this the four big banks hold the clear majority and dominate the entire sector. Indeed, these four institutions dominate much of our region with significant control over New Zealand and the Pacific Island countries.

Table 1.2 shows that over the crisis period (2007-2009), the banks came out on top with an increase in growth in assets over the period of 19%. Conversely, securitisers' assets decline by 14%, public unit trusts 8% and superannuation funds 6%, reflecting the impact of stock market declines on the superannuation and unit trusts. In the case of securitisers, there performance relates to the lack of appetite for mortgage backed securities as well as a decline in the value of the underlying assets held in existing portfolios (the decrease in property values and increasing numbers of loan defaults). Despite this, the Australian financial system has been comparatively very robust and had no direct cash bailouts such as those that occurred in most other developed countries. The reasons for this are discussed in the In Focus below.

Overall, the financial intermediaries' assets grew at an annual average rate of 8.0 per cent. This rate of growth was faster than the economy as a whole, which grew at approximately 4% per cent annually, and reflects the growth in indirect securities issued, the increase in the proportion of funds being channeled through the intermediation market and the tremendous wealth created by the Australian economy in recent years. What will be interesting to see is how the sector emerges from the financial crisis and the impacts that a more highly regulated environment and stricter credit standards will have.

Over the full period of the data set in the table, the fastest growing groups of financial institutions are the securitisers at 21% growth. They are followed by public unit trusts (14%) and superannuation funds (13%). Interestingly, these groups made significant gains in the period leading up to the crisis (2000-2006) with 22%, 14% and 16% growth respectively. However, when one examines the crisis period many of these trends reverse with the Banks by far the best performers and credit unions and finance companies the only other classes of institution increasing its assets (and at significantly less a rate than the banks). The star performers – the securitisers fell 25% from 2007-2009 as mortgage backed securities fell out of favour.

1.14 Explain the concept of financial intermediation. How does the possibility of financial intermediation increase the efficiency of the financial system?
Financial intermediation is the process by which financial institutions mediate unmatched preferences of ultimate borrowers (DSUs) and ultimate lenders (SSUs). Financial intermediaries buy financial claims with one set of characteristics from DSUs, and then issue their own liabilities with different characteristics to SSUs. Thus, financial intermediaries "transform" claims to make them more attractive to both DSUs and SSUs. This increases the amount and regularity of participation in the financial system, thus promoting the 3 forms of efficiency—allocational, informational, and operational.

1.15 How do financial intermediaries generate profits?
Intermediaries pay SSUs less than they earn from DSUs. Operating costs absorb part of this margin. Risks taken by the intermediary are rewarded by any remaining profit. Intermediaries enjoy 3 sources of comparative advantage: Economies of scale —large volumes of similar transactions; transaction cost control—finding and negotiating direct investments less expensively; and risk management expertise—bridging the "information gap" about DSUs' creditworthiness.

1.16 What is the difference between primary and secondary markets?
Primary markets are those in which financial claims are initially sold by DSUs. All financial claims have primary markets. **Secondary financial markets** are like used-car markets; they let people exchange 'used' or previously issued financial claims for cash at will, and hence they provide liquidity for investors who own primary claims. Securities can only be sold once in a primary market; all subsequent transactions take place in secondary markets. The Australian Stock Exchange (ASX) is an example of a well-known secondary market.

1.17 Explain the differences between the money markets and the capital markets. Which market would Holden use to finance a new vehicle assembly plant? Why?
Money markets are markets for liquidity, whether borrowed to finance current operations or lent to avoid holding idle cash in the short term. Money markets tend to be wholesale OTC markets made by dealers. Capital markets are where real assets or "capital goods" are permanently financed, and involve a variety of wholesale and retail arrangements, both on organized exchanges and in OTC markets. GM would finance its new plant by issuing bonds or stock in the capital market. Investors would purchase those securities to build wealth over the long term, not to store liquidity. GMAC, the finance company subsidiary of GM, would finance its loan receivables both in the money market (commercial paper) and in the capital market (notes and bonds). GM would use the money market to "store" cash in money market securities, which are generally, safe, liquid, and short-term.

1.18 Assume that Austereo Group Ltd (AG) needs $1 million for two months. Explain how AG might obtain the money through a transaction in the direct credit market and in the intermediation market.

Direct Credit

AG *SSU*

Cash $1,000,000 from SSU	60-day commercial paper $1,000,000 to SSU

60-day commercial paper $1,000,000 from AG	Cash $1,000,000 to AG

Intermediation

AG

Cash $1,000,000 from MMMF	60-day commercial paper $1,000,000 to MMMF

SSU

MMMF shares $1,000,000	Cash $1,000,000 to MMMF

Money Market Mutual Fund

60-day commercial paper $1,000,000 from AG	MMMF shares $1,000,000 to SSU
Cash $1,000,000 from SSU	Cash $1,000,000 to AG

1.19 Assume that the Queensland government has decided to issue $25 million in state government bonds to finance a stadium for the new Gold Coast AFL team. The bonds have a face value of $10 000 each, are somewhat risky and have a maturity of 20 years. ANZ Bank purchases one of the bonds using the $10 000 received from Sam Mitchel and Bill Lovett, who each purchased a six-month certificate of deposit from the bank. Explain the intermediation services provided by ANZ in this transaction.

QLD State Government

Cash $10,000 from ANZ	Bond $10,000 to ANZ

Mitchell

CD $5,000 at ANZ	Cash $5,000 to ANZ

Lovett

CD $5,000 at SM	Cash $5,000 to SM

ANZ

Bond $10,000 from Qld State Gov	CD Mitchell $5,000
Cash $5,000 from Mitchell	CD Lovett $5,000
Cash $5,000 from Lovett	Cash $10,000 to QLD State Gov

If Sam or Bill had $10,000 and wanted to take the risks presented by the bonds, either of them could buy a bond in the direct market from a broker or dealer. Each likely prefers the government guarantee of the CD, the more easily affordable denomination of $5,000, and the ready liquidity (net of some known "penalty for early withdrawal"). ANZ now has an interest income source of income from the semi-government bond, has made its expert evaluation of credit risk, is diversified with other securities, and can buy the bonds with low transaction costs. A number of banks are underwriters of State Government Securities and carry inventories as dealers. The Qld State Government has financed a capital project (the stadium) by issuing financial claims (the bonds). The bank bought a bond with deposit funds it raised by issuing Sam and Bill CDs, which are assets to them and liabilities to the Bank. The bond and the CDs are separate claims varying in denomination, maturity, risk, and liquidity. The bank takes a position of risk, keeps part of the interest income from the bonds as a reward for that risk, and distributes part of it to Sam and Bill to reward them for postponing current consumption. The QLD State Government, the ultimate borrower or DSU, has no direct relationship with Sam and Bill, the ultimate lenders or SSUs.

1.20 What is a financial claim? How can a financial claim be both an asset and a liability at the same time?

A financial claim (or "security" or "financial instrument") is one's claim against another's wealth. To its holder, it is a financial asset; to its issuer, a liability or obligation. It may be debt (contractually promising repayment with interest on a certain schedule) or equity (part ownership rewarded by participation in profits). DSUs issue claims in return for funds; SSUs exchange funds for claims.

1.21 Discuss three forms of financial market efficiency. Why is it important that financial markets be efficient?

There are three forms of market efficiency: allocational efficiency, informational efficiency, and operational efficiency. Allocational efficiency is a form of economic efficiency that implies that funds will be allocated to (i.e., invested in) their highest valued use (the funds could not have been allocated in any other way that would have made society better off). This is important as it promotes investment in the projects offering the highest risk-adjusted rates of return and that households invest in direct or indirect financial claims offering the highest yields for given levels of risk.

Informational efficiency relates to the ability of investors to obtain accurate information about the relative values of different financial claims (or securities). In an informationally efficient market, securities' prices are the best indicators of relative value because market prices reflect all relevant information about the securities. This is important as it allows investors to determine which investments are the most valuable and ensures that the financial markets are allocationally efficient because households or business firms can get the information they need to make intelligent investment decisions.

A market is operationally efficient if the costs of conducting transactions are as low as possible. This is important because if transaction costs are high, fewer financial transactions will take place, and a greater number of otherwise valuable investment projects will be passed up. Thus, high transaction costs can prevent firms from investing in all desirable projects. The forgone investment opportunities mean that fewer people are employed and economic growth slows or declines. Society becomes worse off.

1.22 What are the major risks faced by financial institutions and why is it important that each is carefully managed?

<u>Credit Risk</u> (or default risk) is the possibility that a borrower may not pay as agreed. Management of credit risk is important as excessive credit risk will lead to higher regulatory costs (credit based capital adequacy requirements to be discussed later in the text) and may lead to the failure of the firm through cash flow and non-performing loans problems.

<u>Interest Rate Risk</u> is the likelihood that interest rate fluctuations will change a security's price and reinvestment income. As a significant part of financial institutions investments and sources of funds are interest-bearing and profits are generated on the margin between these, managing both the investment and funding portfolio's for interest rate risk is important for profits, cash flows and the stability of the institution.

Liquidity Risk is the possibility that a financial institution may be unable to pay required cash outflows. If a financial institution is unable to meet its short-term obligations because of inadequate liquidity, the firm will fail even though over the long run the firm may be profitable.

Foreign Exchange Risk is the possibility of loss on fluctuations in exchange rates. These fluctuations can cause gains or losses in the currency positions of financial institutions, and they cause the Australian dollar values of non-Australian financial investments to change.

Political Risk is the possibility that government action will harm an institution's interests. This includes changes in regulation, appropriation of assets, changes to foreign investment and currency transfer and trading rules, all of which can influence the earnings and value of a financial institution.

Reputational Risk is the potential for negative publicity to cause loss through decline in customer base, increased litigation and revenue reductions.

Environmental Risk is the actual and/or potential threat of adverse impact on asset values due to changes in the environment and/or organisational impacts on the environment.

1.23 Why is globalisation of the international markets important to the Australian financial system?

This is important due to the small size of the Australian system in global terms. Hence internationalisation offers both additional sources of funds (from international investors), opportunities for Australian investors and institutions to diversify into offshore investments, and also a source of competition for domestic institutions which leads to improved efficiency of the domestic system. The impact of these was seen in the GFC where international concerns heavily impacted the Australian financial system. These impacts continued to a number of years as the higher cost of capital in the international markets (which the Australian banks rely upon for funding) put pressure on margins.

Research and advanced exercises

1.24 In recent years, the level of personal debt held by the average Australian has risen dramatically. This is largely the result of extremely low interest rates, low inflation and relatively easy access to debt. In addition, the rapid increase in house prices in recent years has led to larger than average mortgages and has also provided those already in the market with access to a relatively cheap source of finance in mortgage equity loans. These have been used for a variety of purposes, including to invest, to purchase consumer assets such as boats and cars and even to fund holidays. A further issue is the continued love affair with credit cards and personal debt, such as those well-marketed 'interest-free' deals, which have attracted many consumers. This has been causing a deal of concern within government and other organisations. The RBA has suggested that this may even be influencing monetary policy.
(a) Review recent publications to determine the extent of this problem.
(b) Assess what the government is doing to curb this 'spending spree'. Is there anything else that could be done?
(c) Do you think this is a critical issue for the continued stability and growth of the Australian financial sector and general economic growth?
(d) Does the GFC help or hinder this? What has happened to personal debt and savings levels since the start of the GFC?
A. The low level of national savings and the increased level of personal indebtedness is a concern for the stability of the Australian financial system. This, when coupled with the historically low interest rates experienced in the late 1990's/early 2000's and relaxed credit standards has led to many consumers and some small/medium enterprises over burdening themselves with debt with little in reserve to support this.

B. The Government's main activities in this regard relate to compulsory superannuation and the related inducements (co-contributions scheme and favorable taxation arrangements for example) to entice greater contributions. There is also talk for increasing the rate of contributions. Other than this there is little direct activity. Other steps include attempts to address financial literacy concerns.

C. This is a key issue for the economy as should the market decline, interest rates increase, or other negative event occur, the financial system could face a dramatic increase in the number of non-performing loans and the stresses (both economic and social) that this brings. At the time of writing signs of this were beginning to emerge with the number of mortgagee in possession sales of residential properties growing dramatically.

D. The GFC has heightened this concern as while the initial decrease in interest rates help borrowers, the decline in economic activity and loss/reduction in employment has started to impact. Indeed, many increased/entered debt with the historically low interest rates and government incentives (such as the expanded first home owners grant and other economic stimuli) and as rates began to rise and employment maintained under strain the personal debt crisis was beginning to emerge at the time of writing. Additionally it appears that the cost of business finance maintained a relatively high price despite the economic environment and official rate decreases, putting pressure of small to medium enterprises which are critical to the Australian economy.

1.25 Movements in the growth of the assets of financial intermediaries are important to the development and stability of the financial markets. Furthermore, this provides an insight into important market trends. Using the data in table 1.2, create a spreadsheet and do the following:
(a) Insert additional columns after each financial institution group and calculate annual percentage changes in assets.

(b) Update the data with any new information available (check the *Reserve Bank of Australia Bulletin* statistics on the RBA website at www.rba.gov.au).
(c) Add rows at the bottom to calculate the average annual percentage change in assets for each financial institution group over the past 2, 5 and 10 years and the full sample period.
(d) Comment on the movements in assets within and across the different types of financial institutions. Are there any reasons for these movements?

No solution provided

1.26 In January 2009 Storm Financial collapsed taking up to $3 billion in investors' funds with it. This left many investors who had entered into high-risk gearing strategies significantly in debt and at risk of losing their homes. Dig a little deeper however, and this case raises some significant questions of the financial advice sector in Australia. For example, how does a retired pensioner receive advice to 'double gear' their home into high-risk margin loans on equity investments without the advisers, principles of the firm, the bankers who funded the loans and the regulators being concerned? These and other such important questions have been brought to the attention of regulators and the public and have raised significant concerns about the roles of key players involved in this organisation as well as the financial planning sector more broadly.
(a) Provide a review of the collapse of Storm Financial.
(b) Investigate the role of Macquarie Bank and the Commonwealth Bank in Storm Financial.
(c) Investigate the implications of the case, including any legal and regulatory response.

A. No answer provided
B. Macquarie and CBA were two of the main financiers that Storm clients used (Storm assisted its clients to set up these loans). The concern here is the extent to which these institutions were aware of the high risk their clients were being placed in and whether they acted more as Storm was there client (to maintain credit growth and the relationship with Storm) rather than in the interests of their borrowers. At the time of writing CBA had admitted some wrong doing in this regard has was working with clients to repay some of their losses and costs. Macquarie however had not.
C. The implications of Storm (together with several other investment/advisory collapses) have to lead to a number of government reviews of the advice (investment and credit) industry with significant outcomes. These include the proposed ban on commissions, the creation of the client's best interests requirement and changes to the superannuation system. There is also discussion of strengthening the training requirements of financial advisers.

1.27 On 11 December 2008 Bernard Madoff, former nonexecutive chairman of the NASDAQ, was arrested and charged with a variety of criminal offences including securities fraud, wire fraud, money laundering and perjury. On 12 March 2009 he pleaded guilty to the charges brought against him, resulting in a 150-year sentence being handed down on 29 June 2009. He was guilty of the largest investor fraud in history with an estimated $65 billion lost from financial institutions and individuals around the globe. The type of scam was what is called a Ponzi scheme.
(a) Define a Ponzi scheme.
(b) Write a detailed background on the case.
(c) Discuss the outcome of the case in terms of recommendations and implications for the future.
(d) Discuss whether you think enough has been done to reduce the chance of this happening again.

A. A Ponzi scheme, which draws its name from Charles Ponzi, a career criminal in the early 20th century, is the name given to a pyramid scheme where payments to investors are made from the proceeds of later and subsequent investments rather than the profits of the underlying business. If new investments are continued to be made then this cycle can continue for some time, however if they stop the returns cannot be paid. All the time there is no/little actual capital going into any underlying assets such that the scheme is of little value in relation to the invested capital.

B. No answer provided

C. At the time of writing the legislators in the USA were considering a range of actions that would have implications in the future including increased regulation in relation to reporting, oversight and penalties. However with the case against those involved ongoing and the broader GFC providing a distraction it may be some time before this is dealt with.

D. At the time of writing most would say no, however the key issue is perhaps the balance between efficiency and regulation as it is virtually impossible to legislate against all forms of fraud, particularly when you have a small group of people who are determined to do the wrong thing and collude to do so. In this case the real concern is the length of time that this occurred over and the large and sophisticated investors that were tricked. This leads ones attentions to the monitoring and reporting systems and disclosure requirements placed on such organisations.