

9. Common Loan Types

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9.1 Introduction

There are many different type of loans and lenders. Loans may be for a fixed term with regular repayments of principal and interest (P&I), or interest only (IO) with principal due at maturity. Security (collateral) may be required or the loan may be unsecured, with higher interest rates for unsecured loans. Various fees and charges (upfront application fees, regular recurring fees) may apply. Interest rates may be fixed, linked to some market indicator rate, or variable at the lender's discretion. Various options (eg to extend the term, to adjust the interest rate or collateral required, or call the loan, if the borrower's conditions change) may be included in the loan contract, and penalties specified for late payments.

Since all lenders will market their loan products emphasising different features thought attractive to potential customers, there is a plethora of loan types – many of which are variations on a common theme. In the sections below some of the major generic loan types are examined.

9.2 Lines of Credit, Loan Commitments, Overdrafts

Overdrafts

Historically, overdraft facilities, attached to a chequing account were a common way for banks to provide customers with access to credit on an “as needs” basis. Overdrafts, where used, are now attached to transaction accounts, for both business and retail customers. Customers arrange an overdraft limit with the bank, which enables them to overdraw their account up to that specified limit. An overdraft is one example of a “revolving” facility in which credit, up to the approved limit, can be drawn upon, paid down, and then drawn upon again. A credit card is another example. For a business customer with timing differences between cash inflows and outflows this would facilitate cash management – going into overdraft to meet payment demands and paying down the overdraft as cash inflows occurred.

Establishing an overdraft facility generally involves an upfront (application) fee and an ongoing regular fee. That latter fee might be based on the size of the overdraft limit or on the size of unused facility (more generally the former). Application fees vary but a figure of 1 per cent of the limit are common, with annual fees of perhaps 0.1 per cent of the limit. ([Canstar](#) provides current information). Amounts borrowed (ie the overdraft balance) attract the specified interest rate which will depend upon whether the overdraft is secured (using, for example, the borrower's residence as collateral) or unsecured. The fees mean that the effective annual rate can be quite high relative to the quoted rate – particularly if the average usage of the facility is relatively low. Generally banks expect that the overdraft balance would fluctuate, rather than being continuously at, or near, the limit – in which case a term loan with scheduled repayments would be seen as a preferable

alternative. Typically an overdraft facility will have no fixed term, and the bank would be able to cancel it if it wished.

Lines of Credit

A line of credit operates much like an overdraft but with two main differences. First, there is usually a fixed term specified. Second it is not necessarily attached to a transactions account, but will be set up as a separate loan account. It may be secured (such as a home equity line of credit) or unsecured. In many respects, an unsecured line of credit is similar to a credit card (and may incorporate a debit card enabling transactions to be made directly from it). The line of credit may be revocable – where the bank has freedom to terminate the line of credit.

From the customer's perspective, lines of credit (and overdrafts) operate as substitutes for operating with higher average cash balances.

Loan Commitments

The term "loan commitments" can be used differently by different commentators. To some it is synonymous with lines of credit. But to others it includes all loans agreed to but not yet drawn down by the borrower. Housing loans are an obvious example with several months often passing between loan approval and actual loan funding when settlement on the property is due. The ABS ([Cat. No 5601.0](#)) defines new loan commitments in this latter way as new housing loan and business term loan commitments (and also includes new or increased limits for credit cards).

Two important questions relating to commitments are as follows.

1. What is the size of undrawn loan commitments in the economy? This has macroeconomic relevance.
2. How large and how variable are undrawn commitments for each bank relative to loans outstanding? This is relevant for bank risk management.

Unfortunately, there is little public information to help answer these two questions. However, some information can be obtained regarding the second question from the major banks' Basel Pillar 3 disclosures. For example, ANZ disclosed in its September 2019 report that of its IRB-determined corporate Exposure at Default (EaD) figure of \$277 billion, undrawn commitments accounted for \$72 billion (approximately 25 per cent).¹ For NAB, the corresponding figure was 24 per cent. For Westpac, the corresponding figures were 33 per cent for corporates and 20 per cent for business lending.

¹ A year later the corresponding figures were \$274 billion and \$83 billion.

9.3 Mortgage Lending

A mortgage is a charge over property given by the borrower (mortgagor) to the lender. (Precise details depend upon the legal system of land ownership and other legal factors. In some other countries, the term “lien” is often used).² The borrower is prevented from disposing of the property or using it as security for another loan of equal or higher priority. When the debt is discharged, the title to the property is returned to the borrower.

The most common property mortgaged is residential and commercial dwellings, but “goods mortgages” over items such as motor vehicles are also common.³ Residential mortgages are very long term (generally 25-30 years) while goods mortgages are much shorter term (a few years). Through the provision of property as collateral, default risk is reduced relative to unsecured lending.

The possible loss associated with a mortgage loan depends on:

- initial loan / valuation ratio (LVR), and 80 per cent is a common maximum without lender’s mortgage insurance (LMI)
- bankruptcy/liquidation risk (ie inability to make required repayments) of the individual/company borrower;
- volatility of the market value of the mortgaged property which will be relevant for possible recovery amount if the borrower defaults;
- repayment rate of loan – a high rate means the amount owed relative to property value declines more rapidly, but may contribute to deficient cash flows of the borrower. (Typically for residential loans a maximum repayment/income ratio is set at 25 -30 % of the borrower’s disposable income. The most common repayment arrangements are P& I loans where regular repayments of principal and interest (P&I) are made until the loan is repaid. For interest only (IO) loans (often attractive to investors or developers) only interest is paid until maturity when all principal is due.

Note that default loss for the lender depends upon both the borrower being unable or unwilling to repay (the probability of default (PD)) and the property value falling below the amount owed (the loss given default (LGD)). In *non-recourse* loans (found in parts of the USA) the lender is unable to recover any amounts owed from the defaulting borrower over the amount realised from sale of the property.

² The issue of a mortgage will generally involve valuation (of the property) fees, stamp duty, registration fees etc.

³ The Personal Property Securities Register ([PPSR](#)) is where lenders register claims over assets.

One of the attractions of a standard “credit foncier” loan is that the regular repayments of a constant amount comprising principal plus interest (P&I) components lead to the outstanding balance declining over time, reducing possible loss given default since the underlying collateral (the property) is likely to have increased in value. Thus, *cet par*, the risk of losses on the loan “back book” (older loans) is likely to be smaller than that of the “front book” (new loans) since loan to valuation ratios are likely to have declined over the life of the loan. Nevertheless, Australian banks have typically applied a “standard” loan rate to both the front and back book, indeed increasingly offering “specials” to attract new borrowers where the rate is discounted. There has been much recent commentary about this, with suggestions of a “loyalty tax” being applied by banks to long-standing borrowers.

In July 2011, the government removed the ability of lenders to charge loan exit fees, which should have increased the likelihood of existing borrowers taking advantage of cheaper loan rates elsewhere. However, the relative lack of switching observed suggests borrower inertia or the existence of other inconvenience costs involved in switching. The introduction in 2020 of Open Banking has been suggested as likely to further facilitate switching and reduce the ability of banks to impose such a “loyalty tax”.

An alternative to a “credit foncier” (P&I) loan is an Interest Only (IO) loan, which involves regular payments only of interest and a principal repayment obligation at the end of the loan term (such as five years). The regular payments are somewhat lower (since no principal is involved), making these attractive to property investors looking to (partially) cover repayments with property rental income and planning to either roll-over the loan at the end of its term or make repayment by sale of the property at (hopefully) a capital gain. (Such a strategy can involve “negative gearing” which exploits differential tax treatment of interest costs and capital gains). These IO loans had grown in popularity, but regulators have been concerned about the greater default risk (and consistency with responsible lending) and have increased supervisory intensity and bank capital and other requirements for IO and Investor loans relative to P&I owner occupier loans. Details can be found in this [RBA article](#).

Lenders can enhance the quality of a mortgage loan by requiring lender’s mortgage loan insurance (LMI), and will do so for high LVR loans. (The borrower pays the insurance premium, but it is the lender who was insured against loss). Previously HLIC, MGIC etc., provided facilities for mortgagees to insure against default by borrower. [Genworth](#) is now main provider, and some banks have “captive insurers” which they use instead. Mortgage insurers are “mono-line” and have a “diversified” portfolio of loan insurance commitments - and are only effectively insuring excess of loan obligations over property value. Details of LMI can be found at bank websites such as [this one](#).

The most common Australian housing mortgage contracts have a somewhat unique characteristic. Australian homebuyers sign a mortgage contract with banks which gives banks the right to change the loan interest rate whenever and to whatever they want. Elsewhere, fixed rate or adjustable (tied to an index) rate mortgages are more common. This has two important consequences:

When banks change their standard variable home loan interest rate, the change applies to the “back book” (existing borrowers) as well as to new loan applicants. However, there has been an increasing trend towards “specials” and “discounts” for new borrowers which have led to significant gaps between the rates on the back book and new loans. ([Marion Kohler, RBA, 2017](#))

The risk of bank funding cost changes (both due to general movements in interest rate levels and factors specific to that bank – such as credit rating changes) is passed on to existing borrowers.

The former Chairman of ASIC, Greg Medcraft, has argued that Australian banks should be required to make housing mortgage loans as “tracker mortgages” for which the interest rate charged adjusts in line with the RBA cash rate. Is there merit in this? (see [here](#) for my views)

Prepayments

A common occurrence is that a borrower might wish to sell the underlying asset before the maturity of loan. There thus needs to be some mechanism to facilitate this.⁴ Most commonly, the borrower has an option to prepay the loan. In a variable rate loan, there should be no penalties for doing so. Australian banks used to impose penalties (partly to prevent customers switching to another bank offering better deals) but [legislation](#) prohibiting such exit fees was introduced in June 2011. Of course, if the loan is a fixed rate loan, some penalty may be appropriate (and is allowed).

One problem for lenders is that a mortgage is an illiquid (long term) asset. While it is possible to sell the loan to a third party, information asymmetries and transactions costs create impediments to a sale. For example the lender has better knowledge about default risk than a potential purchaser, and has an established mechanism for collecting repayments from the borrower. Nevertheless, some direct loan sales do occur and many are implicit in securitisation processes. In the latter, a package of loans is placed in a Special Purpose Vehicle (SPV), credit enhancement is provided via third party insurance and/or overcollateralization, to make securities issued by the SPV to investors attractive. Those securities are sold in “tranches” giving differential rights to timing of cash flows (to deal with loan prepayments) and differential seniority.

⁴ One approach used in the USA is assignment of a mortgage to new owner. However the new owner may not want that loan or the lender might not like the new owner's credit rating.

Inflation-Indexed Mortgages

As well as discretionary variable rate, adjustable rate, and fixed rate loans, a number of innovations in interest rate arrangements have been seen over time. We focus here on housing mortgage loans.

One is "fixed real rate" loans or "indexed" loans. In one approach, the nominal interest rate is determined each period as a constant real rate plus an inflation premium determined by reference to the published inflation rate for that (or the previous) period. Alternatively, the principal amount outstanding is indexed in line with inflation, and interest calculated as a fixed real rate applied to the adjusted principal. The borrower bears the risk of inflation, but not that of real interest rate changes. This may appear attractive because the borrower has "asset exposure" of the property value to inflation, providing something of a hedged position.

But also important has been the cash flow pattern consequences of an indexed loan to a standard loan. In particular an indexed loan "back-ends" nominal repayments to later periods when inflation will have increased the borrower's income and ability to meet those payments. Naturally these types of loans have attracted more interest in periods of high inflation and consequent high interest rates, when the real repayments of a traditional loan are relatively high initially but decline over time.

Other innovations seen from time to time are shared equity loans or shared appreciation mortgages (SAMs). The borrower is charged a lower interest rate, but gives up some proportion of the increase in value of the mortgaged property to the lender.

Determining Mortgage Loan Interest Rates

The standard (eg RAROC) approach to setting loan interest rates (discussed in Section 10.3) could be described as a "cost plus" approach. The loan rate is set to cover the cost of funds (including return on bank equity) plus a margin to reflect loan administration/operating costs and an allowance for default risk. Because there are also significant initial fixed costs in valuing properties offered as collateral, checking title, assessing the credit rating of applicant etc., there may be significant up-front fees (rather than these costs being incorporated in the interest rate charged).⁵

Comparison Rates

How do you compare the effective cost of two loans, which have different interest rates and different up-front fees? The pattern and amount of cash flows obviously differ between the two loans. A common (although imperfect) approach is the *comparison rate* which Australian lenders provide. This aims to convert up-front or other fees into an equivalent interest rate such that a "comparison rate" can be calculated. Examples can be found [here](#) and [here](#). Using either, compare the rates on loans (a) \$300,000, interest rate 5.00% p.a., 30 years, up front fee of \$2,000, and

⁵ In U.S.A these are referred to as "points" i.e. a fixed amount equal to some percentage of the loan principal.

monthly account fee of \$100, and (b) \$300,000, interest rate 5.20% p.a., 30 years, no up front fee, and no monthly account fee.

The problems with the comparison rate calculation (including the fact that the average loan has an actual life of around 5 years even though its contractual life may be 30 years) are discussed [here](#).

The standard approach to setting loan interest rates raises the question of what is the appropriate cost of funds figure to use in home loan pricing. Banks typically (for a decade or so) used monthly RBA cash rate changes as an opportunity to change rates by generally the same amount. That relationship has broken down in recent times. See, for example, this analysis in the [RBA Bulletin, 2017](#) and the Funds Transfer Pricing approach used by larger banks in determining cost of funds for different types of loans is discussed in Chapter 15.

Repayment Terms

The standard mortgage loan is generally referred to as a *Credit Foncier* loan involving equal regular repayments consisting of a changing mix of principal and interest sufficient to amortise the loan by the required date. This is, from the bank's perspective, an annuity - an outflow of say \$500,000 today, generates a number of equally spaced constant cash inflows over the term of the loan. (Of course, if the interest rate is adjusted during the life of the loan, the repayments change to ensure amortisation under the new interest rate at the maturity date. Lenders may alternatively keep the repayment rate constant but change the maturity date)

To calculate the required repayment, use the annuity formula to answer the question: what is the regular repayment required (X) if the principal amount borrowed (P) and interest charges at rate r% per period is to be repaid by N equal payments? The P.V. of that annuity must be equal to the principal handed over. Hence:

$$P = X[1 - (1+r)^{-N}] / r$$

Rearranging

$$X = r.P / [1 - (1+r)^{-N}]$$

Example: Principal \$100,000, 25 years, monthly instalments, *monthly* interest rate 1.5 %.

$$\begin{aligned} X &= .015 (100,000) / (1 - .0114865) \\ &= 1,500 / .9885 \end{aligned}$$

= \$1,517.45 per month

(Using a spreadsheet and the =PMT() function (or equivalent) is a very quick way to calculate repayments)

Note that for very large N, $X \approx r.P$, so that

$$dX/X \approx dr/r$$

In that case, a 10 per cent increase in r from say 10% to 11% increases required repayments by almost 10%. In practice sensitivity of repayment amounts to interest rate changes is not quite this large. For example a 10 per cent increase in the interest rate charged from 6.0% to 6.6% p.a. would increase monthly repayments on a 30 year loan by 6.5 per cent, which could push a borrower into financial distress or default. This is one reason why banks (and prudential regulators) when considering loan applications examine repayment capacity at interest rates several percentage points above current rates.

Alternative mortgage options

There have been a range of alternative mortgage products developed over the years, and it is conventional wisdom that such products contributed to the GFC. Cocco ([JF, 2013](#)) suggests that many of the products have merit by providing better alternatives for households to smooth lifetime consumption and to manage risks.

But all innovations turn out to be desirable. A good example is [Endowment Mortgages](#) commonly used in the UK in the 1980s- 1990s? The [problems](#) they caused were substantial.

Selling Mortgage Loans

Traditionally, home buyers obtained a mortgage loan via dealing with their local bank branch manager. In the last two decades that has changed to the point where around half of new mortgage loans are obtained through a mortgage broker. The mortgage brokers provide advice to borrowers on alternative loan products and their suitability and cost, and produce and send the necessary documentation for a loan application to the preferred bank. Some mortgage brokers are individuals (with an Australian Credit Licence) while others are representatives of large mortgage broking firms (such as Mortgage Choice). Those larger firms will have their own electronic systems to interface with banks' systems, while individual brokers will typically use the services of an "aggregator" to provide that electronic link.

The remuneration of brokers is a controversial topic, and has generally been by way of the bank providing a commission on loans originated for it by the broker. The commission structure has involved an up-front commission (typically around 0.6% of the loan size) and an annual trailing commission (around 0.18 % of the outstanding loan balance). Brokers may also receive "soft-dollar"

commissions in the form of free services from the bank or third parties (paid for by the bank). A report by [ASIC \(2017\)](#) identifies problems with this model including incentives to push borrowers into larger loans and interest only loans (which means higher trailing commissions). The Hayne Royal Commission recommended the ending of the commission structure, but this recommendation was rejected by the Government.

Loan Pricing and Switching

Topics which have been of concern for policy-makers have been:

1. The determination and disclosure of loan interest rates
2. The ease of “switching” from one lender to another during the term of a mortgage.

These issues were investigated by the ACCC in its inquiry into home loan pricing. The first topic was addressed in an April 2020 [report](#) and the second in a November 2020 [report](#)

9.4 Reverse Mortgages (Equity Release) Products

Many argue that reverse mortgage products are a desirable way for retirees to “unlock” the equity in their home to generate cash flow for retirement consumption. But they have had a chequered history in Australia (partly due to some poorly designed products) and have not proven as popular as they might.

A reverse mortgage is essentially just what the name implies. An owner of a house obtains cash either as a lump sum or regular payment over time from a lender in return for agreeing to pay back those funds received (with interest) when the house is sold at some future (uncertain) date.⁶ (Early repayment of the outstanding balance will also be generally possible). Most often the reverse mortgage will involve the loan providing the borrower with a regular (eg monthly) cash flow (like an annuity) to supplement pension or other retirement income. But a lump sum could alternatively be obtained to finance some large once-off expenditure.

What makes a reverse mortgage appear complicated is the potential problem that the amount owed could grow over time to exceed the value of the house.⁷ The house owner would thus need to use other wealth (if they have any) to repay the loan amount owed. And from the lender’s perspective there is uncertainty about the timing of the house sale (which is at the owner’s discretion) and thus timing of receipt of the amount owed. Consequently, such products will typically involve (either because of legislation, or good product design) a restriction that the owner’s equity in the house can

⁶ Conversely, in a regular mortgage the individual receives a lump sum to help buy a house and repays it, together with interest, over time.

⁷ Consider for example, if a loan of \$400,000 granted as a lump sum at date 0 at an interest rate of 10%, secured against a house of value \$600,000. If the house value did not grow, then the outstanding loan obligation (given by $\$400,000(1.10)^T$ at date T would exceed the house value after just 4 ¼ years.

never become negative. (This can be thought of as the reverse mortgage being a “limited (or no recourse” loan where the lender can only claim repayment from the house sale proceeds and not from the borrower if the sale proceeds are not sufficient to meet the loan obligation).⁸

Another complication arises if the product design involves the house owner receiving an annuity which runs until the house is sold rather than for some fixed period (or lump sum). Then the total principal amount which will have been advanced by the lender over time until the uncertain date of future sale will be uncertain. This is in addition to any uncertainty created by future changes in the interest rate being applied to the amount outstanding.

To avoid the “negative equity” risk, reverse mortgages will generally be limited to some maximum percentage of the house value which will typically be higher for older owners. The rationale is that sale is likely to occur sooner for older owners (due to downsizing, moving into aged care accommodation, or due to death). For example, a typical loan/valuation ratio for a 65 year old homeowner could be in the order of 20-25 per cent. Generally, lenders restrict eligibility to elderly home-owners (for example of age 60 or above).

In Australia, reverse mortgages began to grow in popularity during the 1990s, but growth stalled at around the time of the GFC. (Some history, and much more information on the topic is available in Chapter 5 of this [research paper](#) by the Productivity Commission). One cause was the problem that the GFC disruption to financial markets created for the ability of reverse mortgage providers to obtain finance to fund their lending activities. Another was bad publicity arising from some unsuitable products (such as involving a sale to the lender of the home at a discounted price in exchange for a stream of cash flows and occupation agreement with, the lender)⁹. In 2012, new government [regulation](#) of reverse mortgages was introduced (including a no negative equity guarantee (NNEG) requirement, responsible lending and disclosure obligations, and prescribed maximum loan/valuation ratios for loans to be deemed suitable¹⁰).

The GFC experience led to a mass exodus from the industry. Following the 2012 regulation there was a further exodus, with major banks abandoning the product, such that by 2020 there were only a handful of providers. These included [Household Capital](#), [HomeSafe](#), [Heartland Senior’s Finance](#), and [P&N Bank](#). Other than one equity release provider ([Homesafe](#)) associated with Bendigo and Adelaide

⁸ Equivalently, it can be thought of as the owner having a put option granted by the lender to give the house to the lender to meet the loan obligation owed.

⁹ The 2005 failure of a provider of such a product, Money for Living, meant that payments to the borrower ceased and created problems regarding continued occupation of the house (which had been on-sold to another party), and led to ASIC action against the product provider.

¹⁰ For a loan to be deemed suitable by ASIC, the maximum loan to valuation ratio cannot exceed 15 per cent plus an additional 1 per cent for every year by which the borrower’s age exceeds 55.

Bank¹¹, the remainder were non-banks. (Some have suggested that the regulatory capital requirements applied to reverse mortgages for banks has contributed to their lack of interest in the product). In 2018 ASIC released a report ([Report 586](#)) examining the reverse mortgage market in Australia. It found that while there were potential benefits for retirees from such products, there were still cases where terms and conditions and advice could be improved for enhanced financial consumer protection.

In addition to private providers, the Government operates a form of reverse mortgage scheme, the [Pension Loans Scheme](#) (PLS), available to pensioners. Participants receive the cash flows as an addition to their age pension benefits. It has not proven particularly popular, partly reflecting poor marketing, but also partly reflecting householder concerns regarding use of reverse mortgages.

There are a number of possible explanations advanced for households being hesitant to enter reverse mortgages. One is the change in psychology required from focusing on paying off a mortgage to going back into debt via a reverse mortgage. A second is the relative complexity and lack of understanding of the product (and its implications if assisted aged care accommodation is needed in the future). A third is the level of interest rates applied which are generally around 300 basis points or so higher than for normal mortgages – reflecting the higher administration costs, costs of funding to providers, and repayment risks faced by providers. A fourth is the bequest motive, with many retirees willing to accept lower living standards in order to pass on unencumbered ownership of the family home to their descendants.

Interestingly, the decision by banks to offer mortgage repayment deferrals to customers during the crisis of 2020 can be interpreted as temporary informal provision of reverse mortgages. Regular repayment obligations of principal and interest of traditional mortgages were suspended with the interest accruing and increasing the amount owed. The zero net cash flows for the customer over the period of deferral can be interpreted as equivalent to regular mortgage repayments being offset by the cash flows received from a reverse mortgage.

Equity release products have potential as one component of funding of retirement living, but that potential remains largely untapped with only around 50,000 reverse mortgages in existence in 2020. But in a period of very low interest rates such as currently, their attraction could be expected to increase (since the outstanding balance owed will grow more slowly).

¹¹ The Homesafe product differs from the typical reverse mortgage in that the agreement involves the provider of funds obtaining a percentage equity stake in the eventual sale price of the house.

9.5 Credit Card Lending

Credit cards provide both a payments service as well as being a revolving credit facility. The card holder is given a credit limit on the card and can have up to that amount outstanding on the account as a result of purchases or direct borrowings using the card. Repayments made on amounts outstanding increase the credit available for use by the cardholder. Typically there will be a requirement for the holder to make a monthly minimum payment of some percentage of the outstanding end of month balance within some specified time (such as three weeks) after the end of the month. The holder thus will have credit provided, generally with no interest charge, for up to seven weeks (for a purchase made at the start of the billing month). However, if the entire balance is not paid by the specified date, a substantial interest charge will apply to the outstanding balance – often backdated to the end of the billing month.

Card issuers charge annual (and other) fees for provision of cards, recent figures are shown in Table 1. In 2016 Australian banks generated \$1.56 billion from such fees. Table 1 identifies different types of cards – rewards cards and non-rewards cards, where the former involve higher fees but where the user receives rewards (such as frequent flyer points with an airline) related to use of the card in making purchases.

Banks will generally issue a credit card which is branded with a VISA or Mastercard logo. While the credit involved is extended by the bank, that branding indicates the payments system involved – such that use of the card as a credit card means that the electronic signals are routed through that particular system.

At May 2017, aggregate credit limits on credit (and charge) cards were \$151.6 billion (or about \$10,000 per adult). Of \$52 billion outstanding balances, \$33 billion was accruing interest. Cash advances in that month (often via ATM withdrawal) were \$0.84 billion.

Credit card loans outstanding (measured by balances accruing interest – Table C01 RBA Statistics) grew steadily from the early 2000's, doubling by 2010, since when it remained relatively constant until the start of 2019, since when it has declined (particularly in the first half of 2020) by about 25 percent.

[Rodgers \(2015\)](#) provides information on credit losses on credit cards for major banks from 2008 to 2013. The annual net write-off ratio has fluctuated around 3 per cent (slightly above credit losses on other personal lending since 2011, but below prior to then). Table 2 provides information on interest rates charged on credit cards.

Why is the standard interest rate on credit cards so much higher than the rate on personal term loans, given that default rates are relatively similar?

What are the implications of banks offering rewards cards?

What factors might explain the decline in credit card loans since the start of 2019?

TABLE 1: CREDIT CARD FEES (SOURCE [RBA](#))

	2014	2015	2016	Annual growth 2016 Per cent
Annual fees (\$)				
Non-rewards cards	51	53	53	0.0
Rewards cards	186	185	191	3.3
All cards	134	133	137	3.3
Other fees				
Foreign currency conversion fees (per cent of value)	2.9	2.9	2.8	-1.0
Late payment fee (\$)	19	17	18	2.3

(a) Simple average fees for cards issued by a sample of seven banks; only cards that are available to new cardholders are included in the sample; note that changes in the sample affect the average fee; as at June of each year
Sources: Credit card issuers' websites; RBA

TABLE 2: PERSONAL CREDIT INTEREST RATES (SOURCE: [RBA STATISTICAL TABLES – F5](#))

	Personal loans (unsecured) - Variable rate	Term loans	Credit cards; Standard Rate	Credit cards; Low rate	Home equity (revolving credit) loans	Margin loans
Jun-17	14.51		19.77	12.93	6.35	7.01
Jan-20	14.41		19.94	13.03	6.20	6.55
Notes	(\$15,000, 3 years)		(Visa/Mastercard)	(fewer features)	(secured by property)	

ASIC undertook a review ([Report 580](#)) of credit card lending in Australia between 2012-2017. It found that: 18.5% of card-holders showed evidence of problematic debt (delinquencies, debt persistence, low repayments); a number had cards with characteristics which were not well suited to their behaviours; "balance transfers" to a new card were not always desirable; Card providers were not proactive in addressing consumer problems. The Senate Economics Committee also produced a [report](#) in 2015 focusing on the "stickiness" of credit card interest rates and consumer understanding of card characteristics

One commonly heard complaint (generally when interest rates have fallen) is on the lack of sensitivity of credit card interest rates to changes in the general level of interest rates. At mid 2020 [Canstar](#) indicated interest rates in the vicinity of 20% p.a. for many cards.

An alternative to credit cards is for a customer to obtain an overdraft facility at their ADI and use a debit card. The main difference is that minimum repayments of the amount owing are required on

credit cards, whereas that is not so with an overdraft (although the bank will encourage such behaviour). Also an overdraft facility will incur some annual fee.

Buy-Now-Pay-Later (BNPL) schemes are a recent challenger to credit cards. One response has been the announcement in 2020 by banks such as NAB ([NAB StraightUp](#)) and CBA ([CommBank Neo](#)) of no-interest credit cards. While the details vary, these innovations essentially involve users paying a monthly fee (linked to the size of their credit limit), but only if they use or have an outstanding balance on the card during that month.

9.6 Syndicated Loans

The main features of syndicated loans are that the borrower appoints a lead manager and arrangers (2-3 per deal), who put together other funders such as banks or institutional investors, both domestic and foreign.¹² Major Australian banks are lead arrangers of about half of Australian syndicated loans. The composition of a syndicate is an important decision for the lead manager, and the number of lenders varies but can be as many as twenty or so. There is one loan contract with syndicate members having a claim and associated risk on their agreed portion. The resulting efficiencies indicate why there are benefits relative to the borrower arranging smaller individual loans with a number of different lenders.

But, an important question is why would a bank syndicate a loan and share possible profits rather than make the entire loan itself. One reason is that the risk is also shared – although that raises the obvious question of why other lenders (with less detailed knowledge about the credit risk of the borrower) would participate given the likely superior knowledge about default risk held by the lead bank. That asymmetry of information problem can be overcome if the borrower is well-known to participating banks, but also important is risk to the reputation of the lead manager and arrangers, and future prospects of obtaining management/arrangement fees, if they have arranged loans which fail and involve losses to members of the syndicate. Syndicate members will also derive comfort from the fact that the lead manager will hold a significant portion of the loan itself. The lead manager plays an implicit *certification* role regarding the quality of the borrower's debt.

¹² This [ANZ article](#) indicates that the number of non-bank lenders (such as superannuation funds) involved in the market was around 40 in 2018 and likely to grow substantially to perhaps account for fifty per cent of lending in future years. ([APLMA](#) is the Asia-Pacific trade association for syndicated lenders).

As well as the *ex ante* information problems, regarding whether the borrower is a good credit risk and what risk premium should be incorporated in the interest rate charged, there is also the *ex post* information problem. Once the loan is made, who is going to monitor the borrowing company to ensure that it complies with loan covenants and is not taking actions which increase the risk of the loan. While all participants will undertake some monitoring, the existence of a lead manager with reputational incentives to perform those tasks can reduce the level of effort for other participants.

Another reason is that individual banks will have self-imposed limits on credit risk exposure to individual borrowers. Syndicating a loan reduces the likelihood of not being able to arrange a loan for a valued customer because of those limits.

Syndicated loans can be term loans or revolving lines of credit. Many syndications (about 1/3) involve a number of tranches with different risk characteristics (eg term loans and revolving facilities). There is one loan contract, multiple lenders (banks) each with a separate claim on a proportion of the loan. Lead managers have a monitoring role.

The Australian syndicated loans market is large.¹³ Over recent years the number of deals done has generally been in the 150-200 per year. (Some data providers present the data on a LTM (last twelve months) basis which smooths out the quite significant quarterly variability). The total volume lent has been in the order of \$100 billion per year since 2015. Loans are of large size, the average being in the range of \$0.5 – 1 billion, with many exceeding the \$1 billion amount. Typical maturity is in the 3-7 year range. There is potential for secondary market trading of participations, but not much occurs in Australia. Tram Vu and Viet Do argue in [this article](#) that lack of standardisation of syndicated loan contracts is one reason for this situation. For the US [Berger et al](#) provide evidence that where lead banks have higher capitalisation the bid ask spreads in secondary markets for loan syndications are lower. This, they argue is due to lead banks being the principal market makers.

Components of a loan contract pricing can include: spread over LIBOR or BBSW; upfront fee; commitment fee (on unused amount) or facility fee (on committed amount regardless of usage); utilisation fee (when over some percentage usage); cancellation fee. Some fees may vary over time with some measure of the borrower's credit quality. Fees can be significant relative to spread.

As an example Woolworths Ltd obtained a syndicated loan in November 2016. There were three tranches of: \$320m for 3 year maturity at a spread of 140bp; \$200m for 4 years at a 160 bp spread; and \$140m for 4 years at a 160bp spread. There were 30 banks involved. In 2019, it did another

¹³ The historical development and characteristics of the Syndicated Loan market in Australia is discussed in this 2005 [RBA Bulletin article](#).

syndicated borrowing of \$1.5 billion (partly replacing existing facilities) in three tranches with tenors of 4,5 and 7 years and at spreads over the bank bill swap rate of between 95 and 130 basis points.

KPMG (among others) produces regular debt market updates (see [here](#) for the q3-2020 version) which include some information on syndicated lending.

9.7 Bank Accepted Bills

The *Bills of Exchange Act 1909* defines a bill of exchange as "An unconditional order in writing, addressed by one person to another, signed by the person giving it, requiring the person to whom it is addressed to pay on demand or at a fixed or determinable future time, a sum certain in money or to the order of a specific person, or to bearer". A bank accepted bill is a bill of exchange which has been "accepted" by a bank.

It is a discount security involving three parties: payer/acceptor (bank), drawer, payee. It is an instruction by the drawer to the payer to pay a specified sum on some future date to the payee, and becomes a bank accepted bill when the designated payer (a bank) accepts the obligation to make the payment. (The bank will require the drawer to reimburse it for making that payment, and charge a fee for providing the service).

Bills originally arose as trade financing instruments. Bank accepted bills enable a buyer of goods to defer payment and providing the supplier of goods with a bank guarantee of payment – in the form of a negotiable instrument (BAB) which could be sold for cash prior to maturity if so desired. (Sale requires endorsement and a contingent liability for the seller of a bill is created in that if the acceptor, drawer, and any preceding endorsers (sellers) default, the endorser is liable for payment).

Bank Accepted Bills became popular as a lending technique in the 1970s and 1980s –no underlying trade transaction is necessary, and using BABs enabled banks to avoid regulatory restrictions. Banks could either hold the BAB (and thus provide the funding to the borrower themselves), or discount (sell) it in the market such that the funds were effectively provided by a third party (the purchaser of the bill). The market has shrunk dramatically since the start of 1990s as the Basel Capital Accord capital requirements treated such financing as equivalent in terms of credit risk as making a normal loan.

Another aspect of bill financing is that it generally involves the bank providing a *facility* to the customer, giving the customer the option for some period (eg a year) to draw bills up to some limit on outstanding value for various maturities. This enables to customer to borrow via “rolling over” a series of bills – eg drawing a 90 day bill and then a subsequent 90 day bill when that one matures.

Pricing of bank bills Treasury Notes and other money market securities in Australia uses “Yield Rate” where:

$$P = F / [1 + r.t / 365]$$

P is price, F is face value, r is the yield for maturity t .

Note that this is just a present value relationship where a simple interest method is used to calculate the part year interest factor. Note that a 365 day year convention is used in Australia – choice between 360 and 365 differs between countries and markets.¹⁴

Bank Accepted Bill Financing Example

1/4/xx, A draws a bill instructing BANK to pay A (or bearer) \$mill 1.0 on 1/7/xx.

BANK accepts obligation (for a fee - say 1% - and A's promise to reimburse BANK \$mill 1.0 on 1/7/xx).

A discounts (sells) bill to some third party B at 8% p.a. yield for receipt of $P = \$980,444.83$ (typically bank will do this itself and simply provide A the funds)

	1/4/xx		1/7/xx	
A:	Receives	\$980,444	Pays (to bank)	\$1.0 mill
	Less fee	\$10,000		
	Net	\$970,444		
BANK	Receives	\$10,000	Pays (to B or presenter of bill)	\$1 mill
	Incurs \$1 mill liability		Receives from A	\$1mill
	Acquires \$1 mill asset (A's promise to pay)		Net	\$0
B	Pays	\$980,444	Receives	\$1 mill
	Receives Bank Bill		Presents Bank Bill	

Bank Certificates of Deposit are generally seen as perfect substitutes for Bank Accepted Bills, such that the bank bill swap rate is now calculated for “prime bank eligible securities” which incorporates BABs and NCDs.

¹⁴ A Discount Rate approach is used in quoting of US Treasury Bills and in some other markets. If d is the discount rate, and t is the maturity (in days) of a US Treasury Bill with Par (face / future) value of F , the price of the US T Bill is $P = F [1 - dt/360]$. Note: a 360 day year is used.

9.8 Merchant Cash Advances

A different style of “loan” is available for (primarily) smaller businesses that make sales that customers pay for via some form of mechanism which enables a potential financier to verify the level of sales per period. These are known as [merchant cash advances](#). This could be the case for an on-line retailer who accepts payment via credit cards or PayPal. The key features of such loans are that:

(a) because repayment of finance provided comes directly as an agreed specified percentage of sales revenue until repayment is completed, the provider needs to be confident that sales revenue can be verified, and

(b) the repayment obligation is specified as a percentage margin over the amount advanced (rather than an interest rate p.a.), meaning that the lender benefits when higher sales revenue means that the repayment occurs faster.

To illustrate, an online retailer might have an average sales revenue of \$4,000 per month and wants funding of \$3,000 for purchasing some inventory. The cash advance contract might specify that repayments will be made as 10 per cent of sales revenue until the \$3,000 plus a margin of 2 per cent (ie a total of \$3,060) is repaid. Based on the average level of sales, the expected time till the funding is repaid is just over $\frac{3}{4}$ months, but could be much longer (shorter) if sales fall off (improve).

The 2 per cent margin used in this example might seem like a small amount, but based on the expected time to repayment it equates to a very high effective annual interest rate. With \$3,000 initially borrowed, and smooth sales and repayments the average amount outstanding is around \$1,500 over $\frac{3}{4}$ months. The \$60 fee (for an average loan amount of \$1,500 for just under a month) expressed as an annual percentage interest rate is in the order of 60 per cent!

In practice the margin (fee) can be much higher than the 2 per cent used in the example (perhaps 10 per cent or more). It will reflect the expected length of time till repayment is completed, the volatility of the merchant’s sales (which creates uncertainty over the time to repayment), as well as other factors such as default risk and administration costs. The attraction for a merchant is that the cash outflows associated with the loan are linked directly to cash inflows from sales, avoiding the problem of having to meet fixed repayment amounts in periods when sales revenue has declined. The loan is also generally unsecured. A downside may be conditions applied by the lender to ensure that sales are routed via some particular payment method(s) to enable verification of sales level.

PayPal is one provider of such [Working Capital Loans](#), with a main target audience of on-line retailers making sales via EBay. Loan amounts of up to 25% of the retailer’s PayPal sales over the last year are available, and there is also a condition that at least 5% (for longer term loans) or 10 % (for shorter

term loans) of the total loan amount must be paid every 90 days. Started in 2013 Paypal had lent more than \$1 billion to over 60,000 small businesses in the U.S., U.K. and Australia by October 2015.

9.9 Margin Accounts / Lending

Margin accounts are a facility enabling a customer to purchase securities partly financed by loan from the financial institution, where the securities are held in the account. An initial deposit of funds / eligible securities is required and margin calls (requiring the customer to deposit more cash) will be made if the value of the securities falls (below some point) relative to the loan amount outstanding. Current margin loan facilities on offer can be found [here](#).

In the USA typically securities purchased by customer are registered and held in “street name” (name of securities firm). The customer gets regular account statement and dividends etc passed through to customer. The securities firm has right to use securities held for collateral for bank loans to it and to borrow securities for short selling.

In Australia, new legislation ([Corporations Legislation Amendment \(Financial Services Modernisation Act\)](#) in 2009 (following a Treasury Green Paper of 2008) introduced a “standard” margin loan facility, in which the customer retains legal title to the securities. This was a response to the failure of *Opes Prime* and some other “margin lenders” who were using a securities loan transaction involving transfer of title).

Margin Lending Example

Customer deposits \$10,000 in margin account

Initial Margin requirement is 50%

Customer has borrowing capacity of \$10,000

Customer buys \$20,000 of ABC stock

Account has Asset: \$20K of ABC, Liability \$10K borrowed funds, net worth \$10K

If ABC price drops 10%, account has assets of \$18K ABC and Liability \$10K, such that net worth is now \$8K. The actual margin is now $\$(18-10)/18 = 44.4\%$.

This illustrates the effect of leverage, a 10% share price fall creates, 20% fall in net worth.

If the actual margin drops below some specified “maintenance margin” (of say 35%) a margin call requiring deposit of cash will be triggered (or the securities will be sold).

There was massive growth in margin lending prior to the stock market collapse at end 2007 and the financial crisis, to a peak of around \$40 billion of loans outstanding, since which time the sector has been subdued. As Figure 1 shows loans outstanding have since been around \$10 billion, but appear

to have increased substantially since late 2019. Within margin lending, capital protected products have fallen in use dramatically.

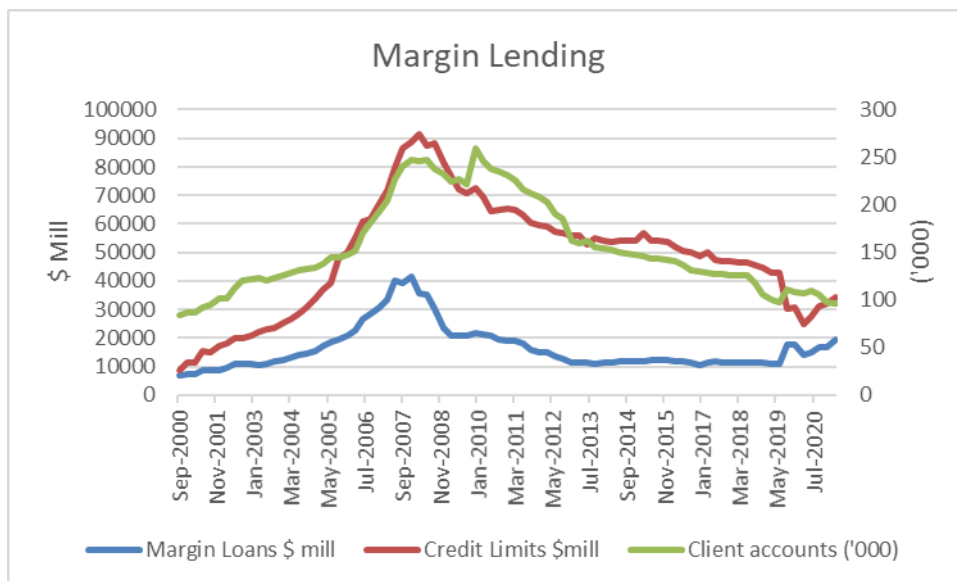


FIGURE 1: MARGIN LENDING IN AUSTRALIA (SOURCE RBA)

“Stormified” – A Case Study

Storm Financial became infamous after the GFC through its role as a financial planner in destroying wealth of its clients. It was one of the main subjects of a Parliamentary Inquiry into Financial Products and Services in Australia ([Ripoll Report](#))

Storm’s approach is roughly characterised by the balance sheet evolution of a typical (retired) client below: Step 1 involves remortgaging the house to generate cash which in step 2 is combined with a margin loan to invest in equities.

Initially		Step 1	
Assets	Liabilities	Assets	Liabilities
House \$1m	New Worth \$1m	House \$1m	New Worth \$1m
		Cash \$0.8m	Mortgage \$0.8m
Step 2		Outcome (Stock market crash)	
Assets	Liabilities	Assets	Liabilities
House \$1m	New Worth \$1m		
Shares \$1.4m	Mortgage \$0.8m		
	MarginLoan \$0.6m		

Calculate what happens to net worth when the value of shares falls to say \$0.4m

Appendix: Protected (Capital Guaranteed) Investment Products (Equity Loans)

These were a popular investment bank product where the Investor borrows amount L , for (say) 3 years which is invested in a specified share portfolio. Typically “interest only” repayments (in advance) until maturity so L is amount owed. Protection is provided against a fall in the market value of those shares via the loan involving a “no-recourse” or “limited-recourse” feature. The bank has security in the form of a mortgage on the share portfolio in the event of default by the borrower

- If the share portfolio value $S_T < L$ borrower can default and surrender shares to bank.
- If $S_T > L$, borrower repays loan, benefits from higher share value.

Some CPEPs may involve only partial protection. These are an allowable “geared” investment for self managed super funds.

Hypothetical Protected Equity Loan Product: Cash flows

Date	0	1	2	3	
				$S_3 < S_0$	$S_3 > S_0$
				Default on loan (Bank takes share portfolio)	Repay loan
Loan principal	$+S_0$			0	$-S_0$
Interest	$-rS_0$	$-rS_0$	$-rS_0$		
Share Portfolio	$-S_0$			0	S_3
Net cash flow	$-rS_0$	$-rS_0$	$-rS_0$	0	$S_3 - S_0$

Note: the date 3 payoff to the investor is a call option with strike S_0 , Also equivalent to having stock, owing loan and buying put option to put stock to the lender to expunge the debt

Table 2:

Hypothetical Partially-Protected Equity Loan Product: Cash flows

Date	0	1	2	3	
				$S_3 < L$	$S_3 > L$
				Default on loan (Bank takes share portfolio)	Repay loan
Loan principal	$+L$			0	$-L$
Interest	$-rL$	$-rL$	$-rL$		
Share Portfolio	$-S_0$			0	S_3
Net cash flow	$-(S_0-L)-rL$	$-rL$	$-rL$	0	$S_3 - L$

Note: the date 3 payoff to the investor is a call option with strike L , also equivalent to having stock, owing loan and buying put option to put stock to the lender to expunge the debt.

A “no-recourse” loan secured by the underlying asset is equivalent to the borrower buying an option to put the asset to the lender at a strike price equal to the amount owed. Enables leveraged positions without exposure of other wealth

Terms of the “no recourse” loan (“interest rate”) incorporate both the pure interest rate on the funds lent and the value of the option provided. Option component compensates for “default” risk such that pure” interest rate should be risk free rate

Replicating Protected Equity Loan Product: Cash flows

Date	0	1	
		$S_1 < S_0$ Default on loan (Bank takes shares)	$S_1 > S_0$ Repay loan
Loan principal	$+S_0$	0	$-S_0$
Interest	$-rS_0$		
Share Portfolio	$-S_0$	0	S_1
Net cash flow	$-rS_0$	0	$S_1 - S_0$
REPLICATION			
Buy Shares	$-S_0$	S_1	S_1
Buy Put (deferred payment, strike S_0)	0	$(S_0 - S_1) + P$	P
Borrow & repay	$(S_0 + P)(1 - r)$	$-(S_0 + P)$	$-(S_0 + P)$
Net cash flow	$r(S_0 + P) = r_q S_0$	0	$S_1 - S_0$

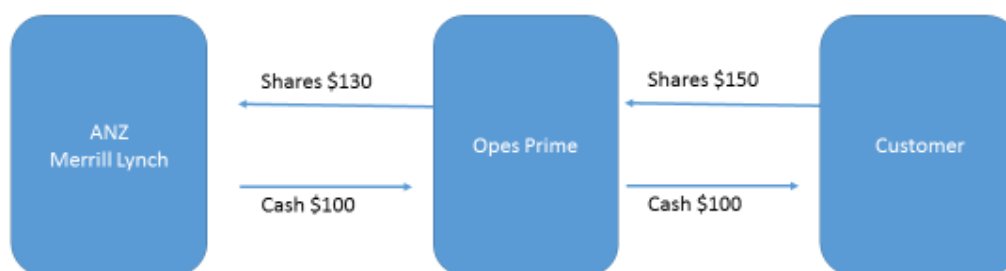
Quoted rate (r_q) reflects risk free rate (r) plus put option cost (has tax implications – option purchase is a capital transaction)

Appendix: An Australian Case Study: Opes Prime

Opes Prime was engaged in margin lending activities – loans to clients secured against shares purchased, (many were major shareholders in small companies borrowing against existing holdings):

But: the transactions were done under a securities lending contract. This meant that ownership passed to Opes Prime (and they subsequently on-lent shares to ANZ, Merrill Lynch to raise funds – “rehypothecation”). See Figure 2.

The Opes Prime Margin Lending Case



Provided “haircut” on funding from banks was less than that applied to customers then Opes Prime had “spare” assets available for use as collateral to raise further funds.

FIGURE 2: OPES PRIME

Accounting “irregularities” etc saw Opes Prime fail. (An overview is available [here](#)). The clients had lost title to shares, worth more than amounts owed to Opes Prime. Some compensation was ultimately provided by bank funders of Opes Prime, but not before there were a range of “unofficial” attempts at resolution. (The principals of Opes Prime received jail sentences for a range of

misdeeds).

Opes Prime: Resolution issues

"Mr Gatto will fly to Singapore today with a business associate to pursue the Opes Prime money trail, but has declined to reveal who he will be seeing there or who he is representing. Mr Gatto's private company, Arbitrations & Mediations — which he says makes "problems disappear" — has in the past been engaged to deal with feuds on Melbourne construction sites. Yesterday, Mr Gatto told *The Age*: "These Opes Prime clients can take their chances and lose all their money to lawyers and to the receivers, or they can take their chances with me to extract a return on their behalf."



<http://www.theage.com.au/articles/2008/04/07/1207420303583.html>