

**SUBMISSION TO:**

**Royal Commission into Misconduct in the Banking,  
Superannuation and Financial Services Industry, 2018**

**That it be compulsory for the ERI (the effective annual rate of interest on a loan) be made public by the lender**

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**Objective of this submission**What problem is this submission trying to solve?

Loans tend to be very complicated, difficult to understand and mystifying. Most people or small businesses would not have the skills to work out the true costs of the loans available to them.

The current regulations mean lenders can dupe borrowers into thinking their interest charges are low, when in fact they may be exorbitantly high.

Consumers and businesses need a transparent quantitative measure of the true cost of a loan and a means for comparing different loans. The ERI, or effective rate of interest, proposed in this submission does just that. The ERI is expressed as an annual percentage rate, for example, a loan that claims to be charging 10.0% per annum might in fact effectively be charging 15.8%.

This submission argues that every loan (or equivalent) should be published with its ERI.

Who does it benefit?

This proposal benefits individuals and small businesses who are seeking the best loan for their personal or business purposes.

The ERI will enable borrowers easily determine which loan, from various options available, is the least costly. It enables them to compare the real cost of loans. The ERI will generally be difficult for the borrower to calculate but it can easily be calculated by the lender.

The ERI takes into account both the quoted or claimed rate of interest and any extra fees and charges over and above the interest cost on outstanding balances. The ERI will show up those lenders who claim to have a low rate of interest but who in fact have excessive charges as the ERI will come out somewhat higher than their claimed quoted interest rate.

Who will be against this proposal?

All or most lenders will be against this proposal as they will have to divulge the true underlying rate of interest being charged on a loan. This means they will not be able to hide exorbitant expenses behind what they claim to be a competitive rate of interest. It is likely no lenders will be happy with this proposal as by being made public, the ERI enables borrowers to easily compare loans on offer.

What legislation is required?

This submission argues that it should be compulsory for every loan (or any financial instrument that is effectively a loan or a borrowing or lending situation) to be accompanied by its *effective rate of*

*interest*, or ERI. (Note: Instead of ERI, other acronyms could be used, for example, EUARI - effective underlying annual rate of interest. However, the acronym needs to be uncomplicated.)

### **“Loans ain’t loans”**

Loans may seem to be the same or similar, but in fact can be quite different in terms of:

- the cost to the borrower
- the earnings to the lender

Consider the examples given below. In all cases the borrower borrows \$100.00. In all cases the lender could claim that the nominal rate of interest on the loan is 10% per annum, because, excluding any extra fees and charge, the total amount of cash paid to the lender for repaying the \$100 amounts to \$110 in actual dollar terms. The ERI on each of these examples is given at the end of this submission.

You borrow \$100:

- (a) Repay \$110 at the end of one year.
- (b) Repay the loan in two instalments of \$55.
- (c) Repay the loan in four instalments of \$27.50.
- (d) Repay the loan in twelve equal instalments of \$9.17
- (e) Repay the loan in four instalments of \$20, \$25, \$30 and \$35.
- (f) Repay \$110 at the end of the year but there is a \$5 set up fee at the beginning.
- (g) Repay \$110 at the end of the year but there is a \$6 termination fee at the end.
- (h) Repay the loan in four instalments of \$27.50 but there is a \$6 termination fee at the end.
- (i) Repay the loan in four instalments of \$27.50, but there is commission of 3% on each payment.
- (j) Repay the loan in four instalments of \$27.50, but there is commission of 3% on each payment, there is a \$5 set-up fee at the beginning and a \$6 termination fee at the end.

The best option in all of these is (a) as there are no extra fees and charges and you pay \$110 at the end of one year. The nominal rate of interest on this loan is 10% pa and the ERI (*effective rate of interest*) is also 10%. You get to use the \$100 for the whole year. You are paying interest at 10% pa; the lender is earning interest at 10% pa.

Later we will explain which of the loans given above is the most expensive in terms of paying the highest effective rate of interest, that is, the loan which has the highest ERI. (Or highest charge rate or the highest operative rate.)

The calculations are based purely on the financial costs or benefits. They do not take into account personal preferences, shortcomings or situations. Thus, someone might be happy to repay a loan as four equal instalments rather than one lump sum at the end as they prefer to get the repayments out of the way, even though financially they would be better off.

### **Nominal rate of interest**

Loans typically come with a *nominal rate of interest*, for example, “We charge an interest rate of 10% per annum.” The “*nominal rate of interest*” may be called something else. It is typically the quoted rate of interest and is quoted as an annual, or per annum or pa, rate. If not quoted on a per annum basis, for example, six monthly, it can easily be converted to a per annum rate.

The interest rate is normally, but not necessarily, fixed for the period of a loan. (The ERI is robust enough to allow for unusual lending situations.)

### **Interest rate per compound period**

Loans are (almost always) based on compound interest (as distinct from simple interest).

While interest rates are normally quoted on an annual basis, the interest period is usually less than a year, that is, interest is normally charged (or earned) more frequently than a year. And interest is compounded each period.

If interest is charged on a sub-annual basis (for example, quarterly or monthly) we must determine the interest rate per interest period from the nominal annual rate. This is done using a straightforward convention of dividing the nominal rate by the number of interest periods per year. For example, if the nominal rate of interest is 12% pa and interest is charged quarterly, the interest rate per quarter is 3.0%. Of course if interest is both quoted and charged on an annual basis then the annual rate and the period rate are the same since the interest period is one year.

The frequency with which interest is charged must always be specified under borrowing and lending situations hence these conversions can always be made.

### **Effective annual rate of interest**

Loans are based around compound interest, meaning that the interest amount each period is based on the original principal plus accumulated interest, that is, "interest is paid on interest".

Under compound interest charged sub-annually (that is, when interest is charged more frequently than annually) the effective (or true) annual rate of interest will always be higher than the nominal annual rate (assuming positive interest rates).

For example, if the nominal rate is 12% pa:

- if interest is charged (and compounded) quarterly, the effective annual rate of interest is 12.55% pa
- if interest is charged monthly, the effective annual rate of interest is 12.68% pa
- if charged weekly, the effective rate is 12.73% pa
- if charged continuously, the effective annual rate of interest is 12.75% pa
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Thus, the greater the frequency of compounding, the higher the effective annual rate of interest.

These differences are not inconsequential for the borrower, with the differences being more marked the higher the nominal rate of interest.

For example, if a credit card charges 22% pa:

- if interest is charged monthly, the effective annual rate is 24.36%
- if interest is charged daily, the effective annual rate is 24.60%

Thus, if someone borrows \$100,000 at 22% pa:

- if interest is charged annually, the interest bill at the end of 12 months is effectively \$22,000.
- if interest is charged daily, the interest bill at the end of 12 months is effective \$24,600, or \$2,600 more.

Thus, if interest is charged sub-annually (for example, monthly), the interest monetary cost to borrowers is higher and the interest monetary revenue to lenders is also higher compared to the case where interest is charged annually.

This is one reason why the underlying, or effective, interest rate on a loan can be higher than the nominal rate of interest.

### **Effect of fees and commissions**

Lenders can hide a high ERI by quoting a relatively low nominal rate of interest but charging excessive fees and commissions.

Fees and commissions mean the effective (or true or operative) annual rate of interest on a loan is higher than the nominal rate and the effective annual rate due to compounding sub-annually. We will still call this higher rate of interest the ERI - effective rate of interest.

### Upfront fee

Everything else being equal: A fee at the beginning of a loan means:

- i. The borrower is in fact borrowing more than the stated loan amount, or
- ii. The borrower is receiving less than the stated loan amount.

For example, you borrow \$100 at 10% pa, compounded annually and repay \$110 at the end of the year but there is a \$5 set-up fee at the beginning.

Under (i) the lender is in effect making two payments: they receive \$100 but pay out \$5 at the beginning of year 1 and pay \$110 at the end of year 1.

Analysing this from the lender's point of view, we could assume that the \$5 at the beginning of year 1 can be invested at 10% during the year, amounting to \$5.50 at the end of the year. Then they also receive \$110 for the loan of \$100. Thus, at the end of year 1, the \$100 they loaned will be worth \$115.50. Thus, the ERI (or effective rate of interest) for this lending situation is 15.5%, compared to the quoted nominal rate of interest of 10%.

Under (ii) the lender is in effect receiving \$95 at the beginning of year 1 and paying out \$110 at the end of year 1. Here the lender in effect outlays just \$95 at the beginning of year 1, but receives \$110 at the end of the year. Here the ERI can be calculated as 15.8%, somewhat higher than the quoted nominal rate of 10%.

There will be other options for upfront fees, for example, where the fee is incorporated into the repayments.

For example, the lender receives \$100 at the beginning of year 1 and repays a total of \$115.50 at the end of year 1 (\$110 plus \$5.50 = \$5 compounded at 10%). As in (i) here the ERI (or effective rate of interest) for this lending situation is 15.5%, compared to the quoted nominal rate of interest of 10%.

In all cases the ERI is greater than the nominal per annum rate.

### Termination fee

If there is a termination fee, the lender is in effect repaying more than the stated loan repayment.

For example, you borrow \$100 and repay \$110 at the end of the year but there is a \$6 termination fee at the end. The repayment is in effect \$116, meaning that the ERI is 16%, somewhat higher than the quoted nominal rate of 10%.

### Loan repayment schedule

We let ERI, the effective rate of interest, stand for the operative annual rate of interest once sub-annual compounding and fees and commissions are taken into account.

The ERI can be calculated for any lending or borrowing situation that meets normal community expectations. That is, a loan should, as a minimum, indicate the following:

- (a) The loan amount
- (b) The period of the loan
- (c) The repayment amounts in each period, either as a lump sum, or in equal payments or in unequal payments
- (d) Any fees
- (e) Any commissions

The nominal or quoted rate of interest and the compounding period do not need to be known if the full payment details are given, along with the timing.

These details (a) to (e) mean that the lender should be able to provide the borrower with a schedule of cash flows. That is, the lender should provide the borrower with a loan repayment schedule.

The schedule can be easily set out in a spreadsheet and should indicate how much is to be paid or received each period, and the dates. That is something that any borrower should be able to ask for and which the lender should be able to provide.

Following is the loan repayment schedule for Example (h), along with the interest rate per quarter and the ERI – the effective annual rate of interest.

Loan Repayment Schedule - Example (h)				
Borrow \$100, repay in four quarterly instalments of \$27.50				
Termination fee of \$6.00				
End of Quarter	Loan to Borrower	Cash Payments by Borrower	Fees	Cash flows for Borrower
0	\$100.00	\$ -	\$0.00	\$ 100.00
1		-\$27.50	\$0.00	-\$27.50
2		-\$27.50	\$0.00	-\$27.50
3		-\$27.50	\$0.00	-\$27.50
4		-\$27.50	-\$6.00	-\$33.50
			Interest Rate Per Quarter:	6.0%
			ERI, Effective Annual Rate of Interest:	26.3%

In the case of repeated payments over many years or periods, a full schedule would not be necessary provided the payments and dates are specified, for example, repay \$1509.67 at the end of each month from July 31 2018 until June 30 2038.

### Calculating ERI, the effective rate of interest

The ERI can be calculated for any loan repayment schedule as described above, that is, with all cash flows and time periods given.

The ERI is calculated in the same way as the Internal Rate of Return, or IRR, used in financial mathematics when determining the yield on a given project. The ERI is thus the rate of interest that would equate the discounted values of all the future cash flows to the net amount of the loan at the beginning of the loan period.

Lending institutions might argue that the ERI is too difficult to calculate. However, in fact it is easy to calculate, for example, by listing all the cash flows in Microsoft Excel and applying the inbuilt IRR function. (If a lender claims they cannot calculate the ERI on a loan, their lending practices need to be investigated.)

Once calculated for a loan and publicised, the borrower will see the ERI – the operative interest rate - they would be paying. The ERI might be close to the nominal annual rate of interest, but it may well be significantly higher: possibly twice as high, three times or higher still. See the examples below.

### Examples of calculating the ERI

We use the examples given in the first section; they assume repayments are made at the end of a period.

These examples all relate to a loan of \$100 repaid over one year. Ostensibly, it could be claimed by the lender in each instance that the nominal rate of interest is 10% pa. The reason is that all actual dollar loan repayments total to \$110. However, each example has some subtle differences, many of which seem innocuous. However, these seemingly harmless differences result in the borrower paying a higher effective annual rate of interest than the quoted nominal rate of 10%.

- (a) Repay \$110 at the end of one year.  
Answer: ERI = 10% pa
- (b) Repay the loan in two instalments of \$55.  
Answer: ERI = 13.6% pa
- (c) Repay the loan in four instalments of \$27.50.  
Answer: ERI = 16.6% pa
- (d) Repay the loan in twelve equal instalments of \$9.17.  
Answer: ERI = 19.5% pa
- (e) Repay the loan in four instalments of \$20, \$25, \$30 and \$35.  
Answer: ERI = 15.1% pa
- (f) Repay \$110 at the end of the year but there is a \$5 set up fee at the beginning.  
Answer: ERI = 15.8% pa
- (g) Repay \$110 at the end of the year but there is a \$6 termination fee at the end.  
Answer: ERI = 16.0% pa

(h) Repay the loan in four instalments of \$27.50 but there is a \$6 termination fee at the end.  
Answer: ERI = 26.3% pa

(i) Repay the loan in four instalments of \$27.50, but there is commission of 3% on each payment.  
Answer: ERI = 22.4% pa

(j) Repay the loan in four instalments of \$27.50, but there is commission of 3% on each payment, there is a \$5 set-up fee at the beginning and a \$6 termination fee at the end.  
Answer: ERI = 43.6% pa

These examples show that seemingly innocuous conditions on a loan can raise the operative interest rate to exorbitant levels. In the last example (j), the borrower would effectively be borrowing at an interest rate of 43.6% pa. The complement of this is that the lender could be deemed to be earning interest at 43.6% pa (assuming they benefit from the fees, charges and commissions).

#### **Our recommendations**

I argue that for all loan or equivalent situations:

- (a) The lender should provide the borrower with:
  - A full loan repayment schedule for any loan, and
  - The ERI for each loan.
- (b) This be a legal requirement.
- (c) The ERI must published with all publicity and advertising material.