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Tessellations in Al Hambra palace,
Granada, Spain

Image: Andrew Wrigley

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DOING THE MATHS ON BUY NOW PAY LATER SERVICES

Carly Sawatzki, Simone Zmood, Jill Brown

New technologies have driven innovative financial and payment solutions - and while schools might cover 'the basics' in finance well, it can be hard to know how to prepare students for what tomorrow will bring. Post-Banking Royal Commission, it seems that the message about credit cards and other debt traps has gotten through. Research shows that young people distrust banks, are worried about personal debt, and consider credit cards to be risky and costly (Deloitte Australia, 2018). They're bank-xious!

What they do find appealing is buy now pay later (BNPL) arrangements like Afterpay and Zip. Afterpay allows customers to split the cost of a purchase across four payment instalments. Customers pay the first instalment at the time of purchase and receive their goods straight away. They make the remaining three payments fortnightly. These payments occur as withdrawals from a debit or credit card (whatever the customer nominates).

THE FINE PRINT

BNPL providers lend differently to banks. They are not classified as credit providers under the National Consumer Credit Protection Act 2009 (National Credit Act) because they don't technically charge interest. This means that BNPL providers do not need to hold an Australian credit licence (credit licence) or comply with responsible lending obligations.

Those who make every payment on time pay no fees. Those who miss a payment are charged a \$10 fee and won't be able to use Afterpay until the payments are up-to-date. If you don't have enough money on your debit or credit card to cover the automatic payment and your payment is declined, you have 24 hours to log into your account and pay the amount before Afterpay charges you a \$10 late fee.

For orders below \$40, a maximum of one \$10 late fee can be applied per order. For orders of \$40 or more, a further \$7 late fee will be charged if the payment remains unpaid seven days after the due date. The total of the late fees that may be applied is capped at 25% of the original purchase amount or $4 \times (\$10 + \$7) = \$68$, whichever is less. Consider these examples.

Sophie uses Afterpay to buy two Cotton On tees for \$35, but misses one payment. She will be charged a \$10 late fee. This means she will pay \$45 for her item - an effective interest rate of 28.6%.

Saxon uses Afterpay to buy hiking boots for \$265, but is more than 7 days late to make all four payments. He will be charged the lesser of 25% or $4 \times (\$10 + \$7) = \$68$. Can you calculate the effective interest rate in this scenario?

CONSUMER GROUPS ARE CONCERNED

Consumer group CHOICE argues that BNPL services entice customers to make impulse purchases and satisfy a desire for

instant gratification (Ibrahim & Evans, 2020). In response to these concerns and customer complaints, the Australian Securities and Investments Commission (ASIC) undertook a formal review of the industry.

ASIC found that:

- Sixty percent of BNPL users are aged 18-34 years.
- Forty percent earn under \$40 000 per annum and of these, 40% are students or work part-time.
- Most (80%) report that BNPL services allow them to buy more expensive items and spend more.
- Sixty-five percent perceived missing a BNPL payment to be less risky compared to other payment options.
- More than 15% had either incurred late fees or borrowed more money because of a BNPL debt.

(ASIC, 2018)

The question is, are customers' perceptions of Afterpay well-informed?

MAKING MONEY FROM INSTANT GRATIFICATION

Afterpay uses a business model based on factoring of accounts receivable. It works like this:

- Sophie uses Afterpay to buy pyjamas from Peter Alexander for \$100.
- Afterpay pays Peter Alexander \$100, less 4% commission. This means that, for Peter Alexander, the Afterpay transaction cost associated with this sale is \$4.
- Afterpay will collect four instalments of \$25 from Sophie - more if she fails to make payments on time.
- Afterpay earns at least \$4 as a result of this sale.

What makes Afterpay innovative is that while it finances merchants (such as Cotton On and Peter Alexander), it is consumers who repay Afterpay. Acting as an intermediary, Afterpay markets itself to merchants as having collective buying power. The idea is that merchants stand to make a greater volume of sales if they offer Afterpay than if they don't. This is why Afterpay can effectively secure a 4% discount on purchases.

Afterpay recently reported year-to-date sales of \$7.3 billion. About three-quarters of Afterpay's revenue comes from commission and fees paid by merchants. The other quarter comes from late fees charged to customers when they fail to make timely repayments.

ADVICE TO YEAR 7 TEACHERS

We suggest that teachers share the above information about buy now pay later services with Year 7 students. The intention is for students to practice reading and interpreting information about financial products and services and to apply their mathematical knowledge and skills in the context of this information.

The *Do the maths!* tasks below relate to the following aspects of the Victorian Curriculum: Mathematics:

- Find percentages of quantities and express one quantity as a percentage of another, with and without digital technologies. (VCMNA248)
- Investigate and calculate ‘best buys’, with and without digital technologies. (VCMNA250)

Students can also develop the proficiencies, for example:

- Understanding: Read and interpret mathematical information within written statements.
- Fluency: Draw on mathematical information and manipulate equations to find solutions.
- Problem-solving: Interpret, formulate, model and investigate problem situations to make financial decisions, with or without technology.
- Reasoning: Compare, contrast and explain related ideas and choices.

The tasks are designed to help students discover the circumstances under which it might be okay to use Afterpay compared with when it might lead to trouble. This is important preparation for considering product disclosure and terms and conditions of use statements. Preparing students for adult tasks in this way is an example of anticipatory socialisation.

DO THE MATHS!

1. Jane uses Afterpay to purchase a pair of runners for \$139.95. Jane’s Afterpay account is linked to her debit card, which has a small amount of money saved so that transactions are always approved. What is the total cost of Jane’s shoes?
2. James uses Afterpay to purchase an iPad and protective case for \$629. James’ Afterpay account is linked to his debit card. However, because he works casually, his hours and amount of pay vary and his bank balance often runs low. This means that transactions are sometimes declined. If James misses two payments, what will be the total cost of his iPad? What is the effective interest rate?
3. Jamal is thinking about creating an Afterpay account. What advice would you give him? Use mathematics to explain your thinking.

Should customers who pay using cash or a gift card demand that merchants give them a 4% discount as a reward for not using Afterpay? Justify your thinking mathematically.

FIND OUT MORE

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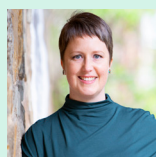
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