

Credit Cards

Learning Goals

- discuss pros and cons of credit cards
- discuss how to use a credit card responsibly

Introduction to Credit Cards

Use the words from the following word box to complete the statements in the next two sections below

bills	cash advances	daily	interest	rates
buyer	charges	full	merchant	seller

HOW DO CREDIT CARDS WORK?

- The customer (buyer) presents the credit card to the merchant (seller)
- The merchant bill the credit card company for the cost of the item
- The credit card company charges the customer's credit card for the amount

HOW DO CREDIT CARD COMPANIES MAKE MONEY?

1. Charge the customer interest if the bill amount is not paid off in full.
2. Charge the customer immediate interest on cash advances
3. Set high interest rates and compound interest daily on unpaid balances
4. Charge the merchant a small amount (2-3%) for each purchase made

Advantages of Credit Cards	Disadvantages of Credit Cards
<ul style="list-style-type: none"> • make a purchase if you don't have \$ → • don't need to carry cash • pay later (21 days) credit score 	<ul style="list-style-type: none"> • high interest rate (20+ %) • security

MAKING CREDIT CARD PAYMENTS & HOW CREDIT CARD COMPANIES CHARGE INTEREST

- From the time your bill arrives companies offer a 21 days grace period before they charge interest (any interest charged is added to your next bill)
- If you pay your balance IN FULL by the due date you will not pay interest
- Credit card companies REQUIRE you to make a minimum payment
- The **minimum payment** is usually a percentage of your balance (i.e. 5%) **OR** a set amount (i.e. \$20) whichever is **MORE**
- If you **do not** pay your bill IN FULL (pay all of it by the due date);
 - Simple interest is charged from the date of purchase until the due date of the bill
 - After that, interest is compounded daily until the balance is paid off

CREDIT CARD PAYMENTS & INTEREST EXAMPLE

Suppose you buy a \$545 bike (plus 13% HST) using your credit card on March 2nd. No other purchases are made using your credit card. The annual interest rate on your card is 18.9%

- a) If you receive your credit card bill on March 15 what will be the due date on the bill?

Due date = 21 days after the statement date (date your bill is mailed/sent to you)

$$\text{March 15} + 21 \text{ days} \Rightarrow \text{April 5}$$

- b) If your credit card company requires a minimum payment of 4% of your balance **OR** \$20, whichever is more, what will be your minimum payment due?

Calculate price including tax: $545(1.13) = 615.85$

Calculate the minimum percentage:

Compare with the set amount:

percentage

$$615.85(0.04) = 24.63$$

$$24.63 > 20$$

∴ we pay \$24.63

- c) If you forget to pay your bill until April 10, at which time you pay the entire balance, how much interest will be charged (added to your next bill)?

April 10 is _____ days after the due date, therefore...

- ~~simple interest~~ is charged from _____ to _____ days
- **compound interest** is charged from Apr 5 to Apr 10 → 5 days

$$\begin{aligned}
 A &= P(1+i)^n \\
 &= 615.85 \left(1 + \frac{0.189}{365}\right)^5 \\
 &= 617.45 \quad \therefore \$1.60
 \end{aligned}$$

CREDIT CARD FEATURES

- Some offer lower interest rates
- Some offer rewards programs (travel rewards, cash back, retail purchases, etc.)

Example: A credit card offers 2% cash back on all purchases. Over time, how much would you need to spend to get \$50 cash back?

$$\begin{aligned}
 \frac{x \cdot (0.02)}{0.02} &= \frac{50}{0.02} \\
 x &= 2500
 \end{aligned}$$

1. Is there an annual fee for holding the card? If so, how much is the annual fee? usually not

2. What annual interest rate is charged on an overdue balance? 18-25%

3. How often is the interest compounded? daily

4. How many days after the monthly statement is issued is the payment due? 21

5. How much interest is charged if the balance is paid in full by the due date? none

6. Are there any incentives or rewards associated with being a cardholder?

cash back
air miles

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Ben get's his first credit card so that he can pay for a trip to Vegas.

Card Details:

-> 18% annual interest rate (= 1.5% per month)

-> minimum payment = \$10 or 2% (whichever is higher)

He uses the card to book

- his flights --- \$800

- his hotel room --- \$1200

Therefore, his first monthly statement will show that Ben owes the credit card company \$ 2000

***** do not copy *****

What are Ben's payment options?...

Option A

Pay the **full** amount before the due date.

BEST

Option B

Only pay the **minimum payment**.

WORST

Option C

Pay somewhere **in between** the full amount and the minimum payment.

***** do not copy *****

If Ben chose:

Option A (paying the **full** amount by the due date)

He would pay **no interest**, and thus only pay back the principal amount of **\$2000**.

Option B (only paying the **minimum payment** each month)

His initial minimum payment would be **\$40** (2% of \$2000), it would take him **30 years and 10 months** to pay it off, he would end up paying **\$4931.11** in interest.

Option C (paying **in between** the full and minimum amount)

If he made monthly payments of **\$100** dollars, it would take him **2 years** to pay off his balance, and he would pay **\$395.65** in interest.

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Summary:

- To avoid ever paying interest, **always pay off the full amount** before the due date.
- Only paying the minimum payment every month will cost you tons of \$\$\$ in interest.
- Therefore, **always pay as much as you possibly can** every month to keep the amount of interest you have to pay to a minimum.

***** Late or missed payments** not only mean that you get charged interest on the entire remaining balance, but you are also often charged a late penalty fee, and your credit score goes down.

On the Boards...



Mrs. Major's credit card details:

- > annual interest rate = 19.5% (_____% per month)
- > minimum payment = 5% or \$10 (whichever is higher)
- > interest-free / grace period = 21 days

Mrs. Major's credit card usage in December:

Suppose that prior to December, Mrs. Major had a credit card balance of \$0. However, between December 1st and 31st, she made purchases with her card totaling **\$1300**.

At the beginning of January, she receives a bill (or statement) for \$1300, which is the full amount of the purchases she made back in December.

Determine the **minimum payment** required for this bill?

$$\begin{aligned} & 5\% \text{ of } 1300 \\ & = 0.05(1300) \\ & = 65 \end{aligned}$$

\therefore minimum payment is \$65.00

If she were to only pay the minimum amount in January...

- a. calculate the **remaining balance** after her payment.

$$1300 - 65 = 1235$$

- b. calculate the **interest** that will be charged on the remaining balance.

$$A = P(1+i)^n$$

interest \$20.62

$$= 1235 \left(1 + \frac{0.195}{365}\right)^{31} = 1255.62$$

- c. determine how much she will owe when she receives her **next monthly statement** in February.

$$\$1255.62$$

* Assume she makes no new purchases from January 1st to 31st.

Annoyed by the amount of interest that she just paid, she decides to pay as much as possible on this bill. If she makes a payment of \$600, how much will she still owe on the following monthly statement in March?

Assuming no new charges were on the credit card.

$$1255.62 - 600 = 655.62$$

$$A = P(1+i)^n$$

$$= 655.62 \left(1 + \frac{0.195}{365}\right)^{28}$$

$$= 665.50$$

∴ interest \$9.88
total \$665.50

On the Boards...

Jeremy didn't have any money to pay his credit card debt on the due date. He owed \$1755.00

The credit card company charged 19.5% interest compounded daily.

Minimum payment is 5% or \$15 whichever is higher.

- a. What is the minimum payment?

$$0.05(1755.00) = 87.75$$

- b. How much does he still owe after the minimum is paid?

$$1755 - 87.75 = 1667.25$$

- c. Jeremy did not pay the minimum.

34 days later he paid the full amount.

How much extra did he have to pay?

$$1755 \left(1 + \frac{0.195}{365} \right)^{34} = 1787.16$$

Seatwork

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