Booklet #3

Booklet Series "Be in charge of your life cycle"

MANAGING YOUR FUTURE: SAVING, INVESTMENTS AND INDEBTEDNESS

ANGLE

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This booklet is number three in a series of five booklets that aim at improving economic and financial literacy of young people. Economic and Financial Literacy is basic knowledge possibly to be acquired early in life to make individual financial decisions better informed and more effective. This applies particularly to decisions that have long-term consequences and require thinking in terms of the individuals' complete life cycle. Although the five booklets are connected and refer to each other, each of them can be read independently of the others.

The first booklet in the series provides a general introduction on the concepts needed to make financial decisions over the life cycle. The other four booklets cover the most important economic decisions relevant at various stages of the life cycle. The second booklet is about educational choices, such as the decision when to leave school and enter the labour market or how much effort to invest in studying. Booklet 3 (this booklet) deals with the economics of saving and borrowing and what to do with money that is saved. Booklet 4 discusses many aspects of what is often one of the most important financial decisions in people's lives: the purchase and financing of their own house. Finally, Booklet 5 is about pensions and financial security after retirement.

The five booklets are part of the project "A network game for lifecycle education" (ANGLE), funded by the Erasmus+ programme of the EU. This project aims at promoting and enhancing Europe's younger generations' financial and economic literacy. It adopts a life-cycle perspective to help the young to consider a long-time horizon and to think about the future consequences of their decisions. In addition to the booklets, ANGLE focuses on creating a board game that helps the young to improve their financial and economic skills through active involvement and participation. Reading the booklets is an excellent preparation for playing the game. Also for readers who do not play the game, however, they help to make people more conscious and skilled in making important economic and financial decisions.

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Booklet 3

MANAGING YOUR FUTURE
Saving, investments and indebtedness

Incomes and expenditures vary during your life. When you are young, your needs and expenditures may be higher than your income. You therefore have to borrow or get money from your family to buy products or to finance the services you need. When you live with your parents, they provide you with a home, food, and clothing. When you get older, you start working. Your income then increases and exceeds your consumption, creating the opportunity for saving. No matter what your initial wealth is, your financial health in the life course depends on decisions regarding spending and saving money. However, these decisions can differ according to individual characteristics and preferences.

The idea of this booklet is to guide you through the issues of personal budget management, saving, and taking out loans. We will follow the choices that Andrea faced at different moments of her life.

1. Diversity of life courses

When Andrea attended high school class reunion, her classmates turned out to have very different occupations: administrative staff, a cook, a deliverer, a doctor, engineers, a nurse, a salesperson, a teacher, and business professionals. Despite the differences, they all followed the same general pattern: at some point in their lives, they entered the labour market and started working for pay, which was sometimes interrupted by periods of unemployment, parenting, care commitments, illness, and so on. At some point, they decided to retire, which meant exiting the labour market forever and financing their needs from old age pensions and savings.

They followed that course because none of them were affluent enough to not work. Paid work is globally the main source of income. This does not necessarily

mean that it is always sufficient. Unfortunately, household needs rarely go hand in hand with income. Many difficult situations stem from the fact that people are not working and are unable to meet their current needs. This is why Dan's father's severe illness or Mary's joblessness became a very large financial burden for their families; social transfers were barely sufficient.

Luckily, Andrea's parents did not encounter a similar situation, but Andrea remembered a time when she was a teenager. Her parents had decided to support one of her father's sisters whose house had burnt down. With relief, they found out that the amount dedicated to family holidays would be sufficient. That year they spent holidays at grandma's. Andrea sometimes wondered that things could have gone much worse if they hadn't had their savings.

Savings are very useful. Even if you cannot cover expenses with your current income, using savings enables you to cover the remaining part. This is how consumption goes smoothly: - there is no need to reduce it sharply (e.g. by not eating, not buying necessary medicine, or not paying utility bills) if needs increase or income becomes insufficient for some time. How can one accumulate savings? In most cases, just by not spending everything we earn. Savings in each period can be increased by earning more, by spending less, or both. In each period in which we record such a surplus, our savings can accumulate.

SAVINGS

Savings are created when we do not spend everything we earn. It is a difference between our income and our expenditures. More affluent individuals can also save by cumulating returns on existing wealth (passive saving).

This is easier said than done, though. Andrea easily recalls those moments when her parents refused to buy her that marvellous dress for prom or when she decided to move back to her childhood home, which became quite challenging for her marriage. The surplus does not fall out of the sky. More often, savings are the result of prudent household budget management: careful analysis of expenses, refraining from unnecessary purchases, and looking for cheaper substitutes, on the one hand, and job promotions and investment in one's own health and education, leading to higher income, on the other hand. Nevertheless, saving usually means refraining from consumption. In the rare cases of already wealthy people, saving also happens by cumulating returns on existing wealth.

As Andrea's parents became more affluent, they could afford more things - however, they were still saving, and saving for old age became their priority. The

history of her family members confirmed the statistics: older women had only seam jobs, while younger women were active but still had more career breaks than men, implying lower old age pension benefits. At the same time, women typically live longer than men. When husbands die, widows living alone can often barely afford substantial things, even with the survivor pensions that they may receive.

Andrea's colleague Maria shared that, after dealing with the grief of her husband dying, she had to cope with surprisingly poor material conditions. Andrea's mother, now in her nineties, also needed to be financially supported by her children. Such a situation would be particularly burdensome for an only child. After the reunion with her former classmates, Andrea was even more convinced of the necessity of saving to supplement the old age pension (for more on this, see Booklet 5).

2. Key principles of personal budget management

Bearing in mind her parents' prudence in household budget management, Andrea knew that she also needed good financial planning and personal budget management to be financially healthy no matter her age. Fortunately, she had learnt key principles of personal finance at home by observing her parents and being involved in individual budget management since early childhood. She received her first piggy bank when she was three and had started to save for sweets and toys she would like to buy at the corner store. In the course of time, she realized that even small amounts can make a significant savings when stored regularly.

SMART GOALS

SMART financial goals are as follows:

S, specific
M, measurable
A, achievable
R, relevant
T, time-bound.

She also learnt that financial plans have to be SMART if we want to persevere in our efforts to achieve them. We have to save for something that is really important to us (*relevant*) and realistic (*achievable*). Moreover, a financial goal should be precisely described (*specific*, e.g. two-week holidays in Asia, a new bicycle), in money terms as well (*measurable*), and assigned to a definite period (*time-bound*). Otherwise, it is very hard to stick to the plan and not become discouraged from even mid-term saving goals.

Andrea knew that effective financial planning and saving cannot be realized without being aware of one's total income and expenditures. They also require conscientious household budget management, otherwise money slips through your fingers, as it did in the case of many of her friends. They earned much more than she did, but could never set money aside for a rainy day. Their expenditures inflated with their incomes, which meant that the more they earned, the more they spent. Andrea wondered why they spent more time planning their one-week inter-term holidays than their personal financial well-being. She tried to teach her best friend, Elisa, how to curb spending and start collecting a buffer fund. She had to convince Elisa to precisely analyse her costs and write down all her income and expenditures in a given period. But nothing comes easy.

First steps of personal budget management

1. Write down **all money that comes in and goes out**. Do this at least once a week, putting the amounts in a spreadsheet or just on a piece of paper. Do it without judgement.
2. **Categorize** your inflows and outflows. The key categories could be, for example, accommodation, food, clothing, transport costs, entertainment, childcare, gifts, debt payments, and savings. Make a personal set of significant categories. Check whether expenses are covered by your total income.
3. Think of **a share of a given category in your total spending**. Are you comfortable with it? Maybe you want to curb some costs and make room for additional saving?
4. **Make improvements in your budget**. Redirect your expenses and spend money on what you really care about. As a rule of thumb, expected monthly outflows (regular expenditures) should represent no more than 70% of your after-tax income.
5. The rest should be collected to cover larger expenses in the short, medium, and long term. Collect **a fund for emergency and irregular outflows** (10%, e.g., for holidays and car insurance and repairs), **a buffer fund** for rainy days (10%, e.g., for an unemployment period) and **old age saving** (10%).
6. **Try to make your planned budget come true**. It is natural that it will not balance out in the first months. Correct it regularly if necessary. After a few months, you will notice that money is no longer slipping through your fingers, and you will find additional room for improvement.

Covering irregular or unexpected expenses is one reason why people save, but there are several others as well. People may save for large purchases, such as a car or house. If we want to buy a house, we usually need to make a down payment before taking out a mortgage (see Booklet 4). Later on, when we want to furnish the house, this, too, can become impossible to finance with our current income. The affordability of a big purchase depends on the total short-

and medium-term savings we collected. These can be insufficient, however, if we are young or if we started to save just a few months earlier. Precautionary savings are also necessary to finance planned periods of unemployment, such as a gap year, during which you might want to travel or acquire broader life experience.

3. When your savings are not enough for a larger purchase

At the age of 24, Andrea started working at a small company. She did a lot of the work remotely from her rented apartment. Her old computer often malfunctioned, preventing her from performing her tasks efficiently, and she therefore also had to spend money on computer service repairs. Finally, she decided to replace her old computer with a new one. However, her savings were not enough to buy a new computer that met her expectations. She therefore decided to take out a loan of €1,000. This was Andrea's first decision to make any financial commitment. Therefore, before going to the bank, she carefully checked what decisions she must face to enter into a loan agreement. So she called her friend Sonia, who took out a loan a year ago to buy a computer. Her friend advised her to look into bank offers for information on the components of monthly loan instalments, possible forms of loan repayment, and additional fees charged by the bank.

Components and characteristics of loan instalments

In this box, you will learn about the components of a loan instalment, the types of loan repayment schedules, the interest rate, and the most important fees that the bank charges at the time of granting the loan.

Total loan instalment = Principal component + Interest component

Principal component: An amount that covers part of the loan.
Interest component: The interest portion is remuneration for the bank. It is calculated as the loan interest rate multiplied by the outstanding loan amount.

The loan repayment schedule can be constructed depending on various types of instalments:
1. Equal total monthly instalments.
2. Equal principal instalments (implying decreasing total monthly instalments).
3. Balloon instalments (where the largest part of the loan is repaid in the last instalment).

Examples of loan repayment schedules for a total loan amount of €1,000 with an annual interest rate of 2% are shown below. The loan is repaid in four quarterly instalments (for quarterly loan instalments, the quarterly interest rate is 2%/4 = 0.5%).

	Schedule for equal total loan instalments			
	Loan capital to be repaid	Principal part	Interest part	Total quarterly instalment
1	1,000	248.13	5	253.13
2	751.87	249.37	3.76	253.13
3	502.49	250.62	2.51	253.13
4	251.87	251.87	1.26	253.13

	Schedule for equal principal component			
	Loan capital to be repaid	Principal part	Interest Part	Total quarterly instalment
1	1,000	250	5	255
2	750	250	3.75	253.75
3	500	250	2.50	252.50
4	250	250	1.25	251.25

	Schedule for balloon loan instalments			
	Loan capital to be repaid	Principal part	Interest Part	Total quarterly instalment
1	1,000	50	5	55
2	950	60	4.75	64.75
3	890	70	4.45	74.45
4	820	820	4.10	824.10

Types of loan interest rates

The loan interest rate can be **fixed** (unchanging during the loan repayment period) or **variable** (the loan interest rate varies depending on market interest rates, which are also influenced by the decisions of the central bank. The central bank's decision to increase official interest rates will ultimately raise the amount of interest that is part of the instalment, and the decision to lower the official interest rate will lower it. The frequency of interest rate changes varies between countries, depending on central bank policy and macroeconomic conditions. For example, from 2010 to 2020, the European Central Bank made 12 decisions to change the official interest rate.

The interest component on a loan is paid periodically, in accordance with the instalment schedule. Additional fees, on the other hand, are payable once, and the amount of fees often increases the loan amount. Examples of additional fees that can be charged by a financial institution are as follows.

Processing charges: Charges that cover the administrative costs related to loan processing.
Verification charges: Before a final decision on your loan, the bank needs to check (sometimes via an external agency) your creditworthiness. This cost is regarded as a verification charge.
Late or early repayment fees: In the event of delays in repayment or early repayment, the bank can charge additional fees.

Knowing her credit preferences, Andrea went to a bank. In an interview with a consultant, she learned the terms of the loan and the repayment schedule, but she was also needed to bring several documents to the bank, including an income statement from her employer. In this way, the bank could verify Andrea's

creditworthiness. Therefore, the purchase of a computer had to wait, since Andrea first had to prepare all the documents indicated by the consultant.

CREDITWORTHINESS

When deciding on granting a loan, the bank assesses the client's creditworthiness, which is ability of the client to settle liabilities on time. When assessing creditworthiness, the bank takes into account, for example, the client's income, credit history, current debt, maintenance costs, and so forth.

On the way home, however, Andrea noticed an advertisement for a consumer finance company offering a loan in a few minutes. She decided to check the conditions of a loan offered by this institution. An employee at this institution presented a very interesting offer for her: the interest rate on the loan was 4% (the bank consultant had offered 5%).

CONSUMER FINANCE COMPANY

A consumer finance company is a non-bank lender engaged primarily in making personal loans to consumers. These institutions are much less regulated than banks, which makes them attractive for customers who have difficulties obtaining a loan from a bank, since their risk of not being able to pay back the loan is higher. This also causes the consumer finance company to charge more for the services they provide.

Moreover, it turned out that Andrea could receive €1,000 shortly after signing the loan agreement. The consultant of the consumer finance company only needed the basic data that appeared on her ID card. When analysing the repayment schedule, Andrea noticed, however, that the monthly instalment of the loan at the consumer finance company was much higher than that offered by the bank. She was surprised because, when comparing interest rates, a bank loan should be more expensive.

Conditions for a loan of €1,000 at a bank and at a consumer finance company

Exercise You need to borrow €1,000. Which institution's offer will be more advantageous for you?

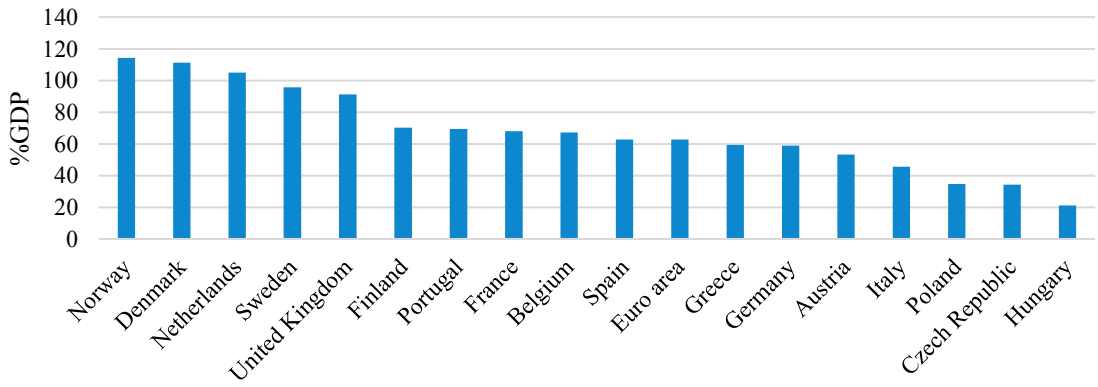
	Bank	Consumer finance company
Fixed interest	5%	4%
Number of instalments	12	12
Type of schedule	Equal total loan instalments	Equal total loan instalments
Total instalment amount	85.61	93.66
APR	5.12%	26.96%

Answer When comparing loan offers, pay special attention to the **annual percentage rate (APR).** This is the yearly interest rate, including all the costs a customer must pay on a loan. The APR is used to describe the conditions of any type of loan, from mortgages and car loans to credit cards. Generally, the APR is a percentage that expresses the numerical amount paid yearly by the customer for borrowing money (including all the additional costs associated with a particular loan). In this case, comparison of the APRs shows that the bank has the more advantageous offer.

Andrea therefore decided to take a moment to carefully read the terms and conditions of the loan offered by the consumer finance company. She noticed some very important information written at the end of the offer: 'to make funds available to the client, the institution charges a 10% processing fee, the amount of which is added to the loan amount'. Andrea compared the annual percentage rate (APR) of the bank's and the consumer finance company's offers. She had learnt from an educational campaign on television that the APR would precisely determine which offer was more advantageous. After comparing APRs, it turned out that the processing charges of the consumer finance company were so high that the bank's offer was much more favourable. Andrea therefore decided to spend the time collecting the relevant documents and to take advantage of the bank's more favourable offer.

Figure 1 Household indebtedness across countries

In some countries in the first quarter of 2021, households indebtedness in relation to the GDP exceeded 100% (Norway, Denmark, and the Netherlands), while, in others, it was below 40% (Poland, the Czech Republic, and Hungary).



Source: Author's own elaboration based on Bank for International Settlements statistics

Having a high level of debt requires households to have strong personal finance management skills. Otherwise, overindebtedness combined with unfavourable economic conditions can threaten the financial security of the household, with negative consequences for financial stability.

After collecting all the documents, Andrea took out a loan from the bank and was excited to buy a new computer. Her income was enough to regularly pay the monthly loan instalments, and she repaid the loan without any problems within a year. She could even have repaid the loan earlier, but she avoided this possibility because she had read in the loan agreement that the bank charges a small fee for early repayment of the loan.

4. Taking out a car loan

After three years, Andrea had collected a large amount of savings and was thinking more and more often about buying a new car. However, car prices were not so low, and she would have to collect savings over the next two years to buy a car with her own funds. Andrea often read about the conditions that must be met to receive a car loan. She learned from a bank consultant that, when deciding on granting a car loan, the bank takes into account the client's income, education, workplace, form of employment, and credit history.

CREDIT HISTORY

The main factor in granting a loan is the customer's credit history. This is information on the customer's past repayment of credit obligations. A good credit history means that the customer has regularly repaid his or her loans in the past, which means the customer is a reliable debtor.

Because Andrea had repaid the earlier loan on time, the bank assessed her as being a reliable debtor. She also had a permanent job contract and higher education. Before going to the bank, Andrea carefully analysed how much money she would be able to spend on paying car loan instalments. When she went to the bank, she was convinced that she met all the requirements set by the bank. The bank consultant instructed her to think about the form of instalments she preferred and the type of interest, fixed or variable. The consultant also gave her an information brochure that presented the level of instalments depending on the repayment period, loan amount, and interest rate.

Monthly instalments of a car loan

Exercise You would like to buy a car for €30,000. You have analysed your expenses and you know that you are able to spend €300 per month to pay your car loan instalments. What do you think the loan repayment period should be?

Below we present the monthly loan instalments (in euros) depending on the interest rate, repayment period, and loan amount. The loan is repaid in equal monthly instalments. In addition, 1.5% processing charges have been added to the loan amount.

Loan	Repayment period: 5 years		
	2%	3%	4%
30,000	534	547	561
50,000	890	912	935
100,000	1,779	1,824	1,869

Loan	Repayment period: 10 years		
	2%	3%	4%
30,000	280	294	308
50,000	467	490	514
100,000	934	980	1,028

Loan	Repayment period: 15 years		
	2%	3%	4%
30,000	196	210	225
50,000	327	350	375
100,000	653	701	751

Answer According to the loan conditions presented in the tables above, you are able to borrow €30,000 and repay the loan within 10 years. However, the amount of €300 that you intend to spend on your monthly loan repayment can be exceeded in the event of an increase in interest rates up to 4% (see the amount marked in blue in the table above).

Another finding: With large loan amounts, even a 1% change in the interest rate can significantly affect the size of the loan instalment. A customer taking out a loan with a variable interest rate should consider a possible increase in interest rates in his or her personal budget. This is especially important for long-term loans, such as a housing loan.

After several days, Andrea found a car that met her preferences. After checking her creditworthiness, the bank granted her a loan for the car purchase. Before that, however, Andrea had to decide on the type of interest rate on the loan. She was prepared for both increases and decreases in instalments due to changes in interest rates. Therefore, she decided on a variable interest rate for her loan. The monthly instalment of a €30,000 loan for five years with an interest rate of 3% was €547.

Andrea also considered decreasing instalments, because that would allow her to pay off the principal component faster, which would translate into a lower amount of interest paid, but she did not want to overburden her budget with the first high instalments of the loan. Finally, she agreed to pay equal monthly loan instalments, and the size of the instalments accounted for 20% of her net income, which meant that she would be able to repay the loan without any problems.

Along with the loan, the bank offered Andrea a credit card for €10,000. She remembered that her friend had been using a credit card for many years and was satisfied with this banking product, since many stores and petrol stations provide discounts for credit card users.

5. Using a credit card

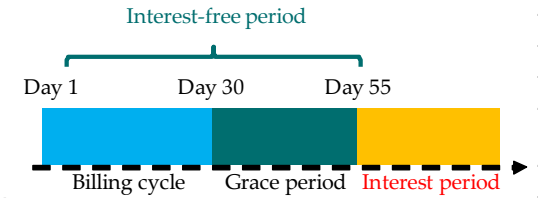
After purchasing the car, Andrea had to pay for its insurance. She heard that the insurance company gave discounts when paying with a credit card. She therefore decided to use the funds available on her credit card. She knew that paying off the credit card debt in the next few days would not be expensive for her in any way. However, she had so many urgent responsibilities that she forgot to make the payment during the grace period. Fortunately, the amount of interest related to the credit card debt was not high, because the insurance cost only €80. However, this was a lesson for her, because in the case of higher amounts of credit used on the card, the costs and interest could be much higher.

Andrea also remembered the case of her friend who had paid €3,000 for a trip with a credit card. In this situation, her friend had huge problems with the one-off repayment of such a large amount and was forced to take out another loan to pay off the credit card debt. Since Andrea's friend's repayment was made after the grace period, the bank charged her very high interest.

Credit cards

In this box, you will learn the terms of a credit card. Pay special attention to the most important benefits and dangers of using a credit card.

A credit card is a payment card that is associated with the granting of a credit limit by the bank. The credit card holder can use the funds that are currently not on the account up to the credit limit granted by the bank.



The basic periods associated with credit card settlements are as follows.
Billing cycle: This is the period during which we can use funds from the credit limit. Usually it lasts for a month and its end is marked in the credit card agreement.
Grace period: After the end of the billing cycle, the bank summarizes the funds used and gives us time to settle the debt. This period will depend on the bank's policy, but it usually lasts 20 to 30 days. During the billing cycle and the grace period, we can use a free loan granted by the bank within the credit card limit.
Interest period: If the repayment of the funds used in the billing cycle takes place after the grace period, the bank will charge interest for the period from the beginning of the billing cycle to the repayment date. The interest in this case is much higher than the interest in the case of a housing loan or cash loan.

Benefits of having a credit card	Dangers of the improper use of a credit card
- A credit card allows you to use a free-rate loan for a given period. - You do not need to have any money or cash in your account to pay by card. - Popular stores offer discounts and promotions for credit card holders. - The credit limit is renewable (when the loan is repaid, the credit card limit returns to the original amount).	- The interest is high in the event of debt repayment after the grace period. - Having a credit card reduces your creditworthiness for future loans. - Sometimes banks require you to pay off a minimum amount of debt over the interest-free rate. Otherwise, additional fees will apply and your card may be blocked. - Loan repayments on the last day of the grace period may be settled during the interest rate period, which can result in unintended charges.

Main findings: Credit cards in the United States are one of the fastest-growing types of debt. In many cases, the improper use of a credit card causes a **debt trap** (involving taking on new obligations to repay the credit card debt). To avoid the credit card debt trap, follow these rules:

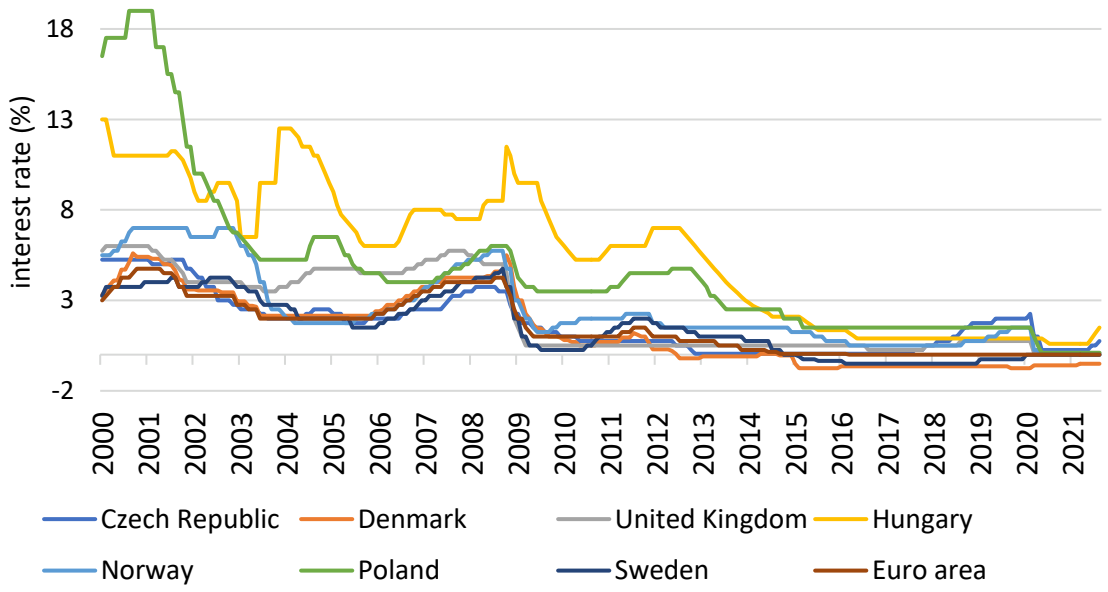
1. To cover unplanned events (e.g. expensive car repairs), maintain emergency savings. Using credit card debt to cover unexpected expenditures can cause big problems, since you will have to pay off a large debt within a short period of time.
2. Pay off all your credit card debt instead of the minimum amount required by your bank.
3. Use common sense when using multiple credit cards (especially do not pay off credit card debt with another credit card).

After one year of Andrea's car loan repayments, the interest rates rose by one percentage point. Andrea knew this would result in an increase in the interest part of her loan instalments, but she did not care, because an increase of one percentage point was not much, in her opinion. She received a letter from the bank with a new repayment schedule. Previously, she had repaid the loan in monthly instalments of €547, and now her instalment according to the new schedule, after the decision to increase the rates, amounted to €558. This meant that her instalment increased by only €11; however, it was still more than 1%. Although such an increase was not a burden for Andrea's finances, she took a moment to understand the source of this growth.

The brochure she had received from the consultant was clearly indicated how the instalment would increase in the case of a given interest rate increase. She found in the brochure that, in the case of large loan amounts (e.g. housing loans; for more details, see Booklet 4), this increase in loan instalment is substantial.

Figure 2 Is a zero–interest rate bank loan possible?

Central banks in the last year have been lowering interest rates more frequently (see the chart below). In some countries, the level has been zero or even negative. Some banks offer loans with zero interest rates. In this case, a client must be careful, because a zero interest does not mean a zero APR. Banks will compensate for a zero-interest loan with high one-off fees, for example, insurance costs or processing charges.

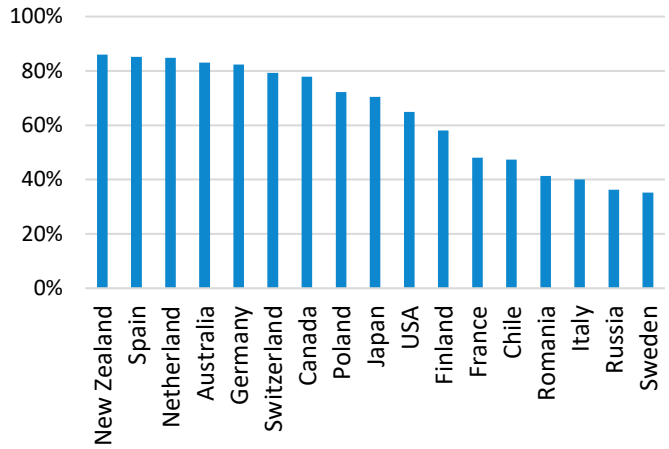


Source: Author's own elaboration based on Bank for International Settlements statistics

Experiences with a car loan and a credit card taught Andrea that using financial services requires adequate knowledge about the services offered by banks and consumer finance companies. Therefore, it is worth taking the time to deepen your knowledge of personal finance. Using the services offered by the financial sector in an appropriate and sensible manner can provide many benefits. On the other hand, a lack of financial literacy or imprudent behaviour can cause someone to fall into the overindebtedness trap.

Financial literacy as a global issue

Annamaria Lusardi and Olivia S. Mitchell created the Big Three financial literacy questions used in many countries to measure financial knowledge. These questions were presented in the *Journal of Pension Economics and Finance* (2011) in the paper 'Financial literacy around the world: An overview'. Below we present these questions, and next to each question is the percentage of correct answers for several countries.

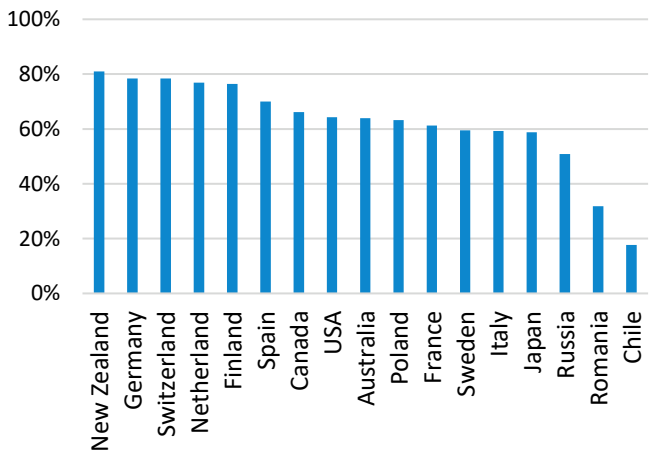


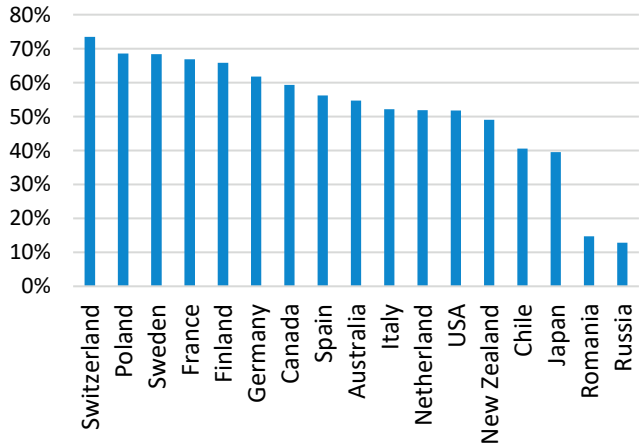
Interest compounding: Suppose you had €100 in a savings account and the interest rate was 2% per year. After five years, how much do you think you would have in the account if you left the money to grow?

a) More than €102
b) Exactly €102
c) Less than €102

Inflation and savings: Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After one year, how much would you be able to buy with the money in this account?

a) More than today
b) Exactly the same
c) Less than today





Risk diversification: Please tell me whether this statement is true or false. "Buying a single company's stock usually provides a safer return than a stock mutual fund".

a) True
b) False

Studies in particular countries were conducted in different periods, from 2007 (for Italy) to 2020 (for Poland). The sample sizes vary from 500 (for Spain) to 14,463 (for Chile). More information on these studies, see Annamaria Lusardi and Olivia S. Mitchell's paper 'The Economic Importance of Financial Literacy: Theory and Evidence', published in 2014 in the *Journal of Economic Literature*.

Main findings: Worldwide research on the Big Three financial literacy questions has demonstrated that the financial education of the society is a global and important issue. The percentage of correct answers varies greatly across countries. On average, the greatest lack of financial literacy is found for the risk diversification question.

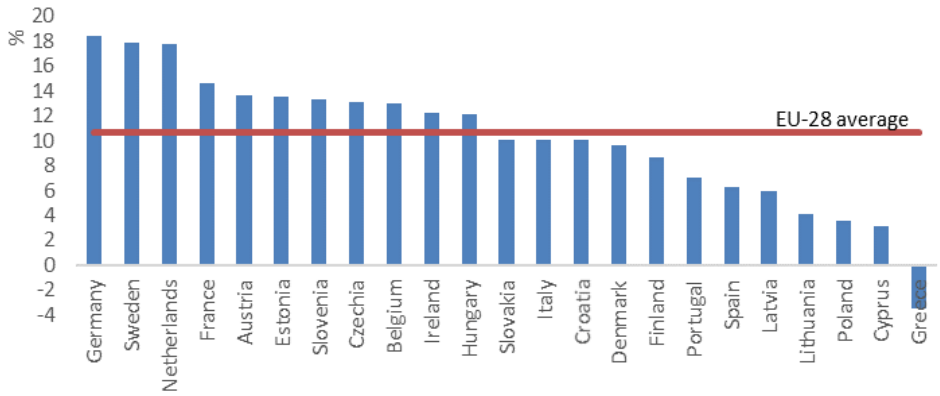
6. Start saving: The earlier, the better

Andrea knew that making solid financial plans and feeling financially secure are not possible without savings. She managed her personal budget carefully and decided to borrow money only for really important needs. She regularly collected money to build her fund for emergency spending and irregular expenses and the buffer fund. She was aware that no matter what the objectives, it is better to start saving early. Forming proper habits is one reason for this, but, most importantly, even if the surplus is modest initially, starting early means more savings.

How much do European households save?

In this box, you will find the statistics for household savings rates, the share of household income that is not spent. On average, the EU-28 savings rate in 2019 was 10.7%, and it varied from 18.4% (Germany) to -3.5% (Greece). The Greek case shows that households may consume more than they earn – thanks to previous savings – but one cannot do this sustainably. There are multiple reasons why some nations save more than others, including the level of income, aspirations, and cultural norms.

Figure 3 Saving rates of households in 2019 (%)



Source: Author's own elaboration based on Eurostat data

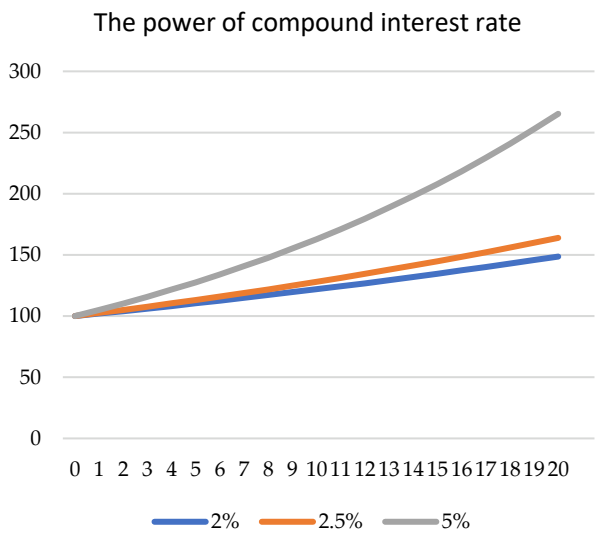
If we only save in the bank, we are remunerated for lending the bank our money. This remuneration is called the (nominal) interest rate. An annual interest rate of 5% means that, for each €100 saved, the bank will pay us €5 extra after one year. However, people typically save for more than one year. Each additional year of saving provides more, not only because of the larger amount saved, but also because this remuneration is piling up. This feature is called compound interest (see also Booklet 1) and offers surprisingly good progress.

Andrea had an opportunity to check this personally. She completely forgot about the post office account her father had opened for her. In her early 20s, she left €100 there. Her mother reminded her of it after 20 years (see the box on *the power of compound interest*). When Andrea checked her account, it turned out that, with an interest rate of 2.5%, she had earned €63.9 only because of compound interest. If the interest rate had been slightly lower (2%), the final amount would have been €48.6.

The power of compound interest

In this box, you will learn the mechanics of compound interest, particularly how the interest rate affects the amount saved and how interest cumulates over time.

Years	Interest rate		
	2%	2.5%	5%
1	102.0	102.5	105.0
2	104.0	105.1	110.3
3	106.1	107.7	115.8
4	108.2	110.4	121.6
5	110.4	113.1	127.6
6	112.6	116.0	134.0
7	114.9	118.9	140.7
8	117.2	121.8	147.7
9	119.5	124.9	155.1
10	121.9	128.0	162.9
11	124.3	131.2	171.0
12	126.8	134.5	179.6
13	129.4	137.9	188.6
14	131.9	141.3	198.0
15	134.6	144.8	207.9
16	137.3	148.5	218.3
17	140.0	152.2	229.2
18	142.8	156.0	240.7
19	145.7	159.9	252.7
20	148.6	163.9	265.3



Main findings

1. For savers, a higher interest rate is favourable. When choosing between saving accounts, the one with the interest rate of 2.5% remunerates higher than the one with the interest rate

of 2%, if all other conditions remain the same. This holds true when saving for one year (with an interest of 2.5% vs. 2.0%) and for 20 years (€63.9 vs. €48.6, respectively).

2. When saving for more than one year, the interest rate remunerates both the initial capital and the previously earned interest. This is why 20 years of saving in the account with the 5% interest rate provides more than twice as much as the account with the 2.5% interest rate.

7. Nominal and real interest rates

Andrea knew that not everything saved increases future consumption. We are saving but, at the same time, the products and services we are going to buy are becoming more expensive. This is how inflation partially reduces our wealth. In the majority of European economies, inflation is low and affects savings minimally. However, Andrea remembered the early 1980s, when the Italian economy struggled with high inflation. Her father's wage was quickly exchanged into products, because purchasing power decreased each day.

There is a rule of thumb for assessing the value of our savings. We can estimate this value by deducting the inflation rate from the interest rate. The result is called the real interest rate, and it shows how much more affluent saving makes us each year. Andrea's saving account offered a (nominal) interest rate of 2.5%. In times of a low inflation rate (0.5%), this was quite attractive – the annual real interest rate was 2% – but when inflation increased to 2.5%, no progress was observed, since the entire remuneration was consumed by the increasing price level.

It once occurred to Andrea that, if the account is not earning, maybe it is time to withdraw the money. Peter, her husband, made a sobering calculation, though. Keeping savings "under the mattress" has a zero nominal interest rate, but this is not proof against inflation, so withdrawing money would be an even worse idea. They needed to learn more about other financial assets.

Nominal and real interest rates

In this box, you will learn how inflation affects the real interest rate and how keeping savings under the mattress is not an optimal solution in times of high inflation.

	Inflation rate	0.5%	1.0%	2.0%	2.5%
Savings account	Nominal interest rate	2.5%	2.5%	2.5%	2.5%
	Real interest rate	2.0%	1.5%	0.5%	0.0%
Savings kept under the mattress	Nominal interest rate	0.0%	0.0%	0.0%	0.0%
	Real interest rate	-0.5%	-1.0%	-2.0%	-2.5%

Main findings

1. The real interest rate can be approximated as the difference between the nominal interest rate and the inflation rate.

2. Typically, savings accounts offer a positive nominal interest. Keeping one's savings under the mattress always has a zero nominal interest. This is why withdrawing savings from the savings account does not make us inflation-proof.

8. Making money work for you

The accumulation of savings is only one part of the story; another very important part is the allocation of savings between instruments. In other words, we need to make our savings work for us. There are several rules that are useful when allocating money.

Much depends on risk. Some people react to potential losses badly and would like to avoid risk as much as they can. We call them risk averse. They will typically prefer safe financial instruments, such as saving accounts or government and European bonds. Andrea was one of these people. Her family lived modestly for many years, she sacrificed much to be where she is, and the thought that she could lose her wealth frightens her from time to time. Risk takers are the opposite, like Jerome, Andrea's

BONDS AND STOCKS

Government bonds and stocks are among the most popular financial instruments in which one can invest. However, they vary significantly in terms of features and the risk involved. When savers buy a government bond, they lend money to the government and receive a known interest in advance. Governments rarely go bankrupt, hence the savers' income is certain, but low. In contrast, a stockholder buys shares in a company (and thus becomes the owner of part of the company), and the value depends on the company's future growth prospects, which are highly uncertain. The return is the income received from investing in an instrument.

brother-in-law, who invests more often, for example, in stocks. Risk takers are ready to suffer losses to have a chance at earning a great deal, while the risk averse are satisfied with low but very safe returns. Most people are somewhere in between, but closer to the risk averse.

If interest is remuneration for lending our savings, a higher return is offered, on average, when using them for risky investments, with a lower return for safer investments. Thus, institutions offering high real interest rates at low risk are almost always scams. Transferring money to unauthorized institutions usually ends badly, since getting one's money back is extremely difficult. Luckily, Andrea and Peter avoided these successfully, partially because of being risk averse and partially because of their financial education.

LOW INTEREST RATES AND INVESTMENTS

In a low–interest rate environment, the profitability of bank deposits is very low. In many cases, bank deposits offer a 0% return. In such an environment, it is worth looking for other forms of investing, in funds that will ensure greater returns on your investment. Depending on the preferred level of risk, these can be government bonds (with a low level of risk), real estate, or investments in one or more stocks of private companies (with a higher level of risk).

But, even for risk-averse individuals and authorized institutions, there are still strategies allowing for decent growth. Diversification is amongst the most important rules. Andrea's mother used to tell her to *not put all her eggs in one basket*. She certainly was not discussing financial investments, but this rule holds even there. Allocating all one's resources into one risky instrument will most likely lead to either high profits or high losses. By contrast, allocating resources into a single safe instrument can lead to unsatisfactory returns. However, individuals can have both kinds of assets, optimizing them between expected returns and safety.

Andrea liked this concept very much. She analysed the situation of her household and concluded that 25% of stocks and 75% of government bonds would satisfy her. Diversification should also be used when deciding within one type of instrument. Purchasing the stocks of one company will almost always be a riskier investment than purchasing the stocks of multiple companies.

Asset allocation

In this box, you will compare different investment portfolios and learn why mixing different financial instruments can be beneficial for returns and the safety of one's investment.

Scenario	Portfolio				
	Stocks (100%)	Stocks (75%) + govt. bonds (25%)	Stocks (50%) + govt. bonds (50%)	Stocks (25%) + govt. bonds (75%)	Government bonds (100%)
Positive	15.0%	12.0%	9.0%	6.0%	3.0%
Moderate	7.5%	6.4%	5.3%	4.1%	3.0%
Negative	-15.0%	-10.5%	-6.0%	-1.5%	3.0%
Variability	*High*	*Rather high*	*Modest*	*Rather low*	*Low*

Main findings

1. There are many types of instruments in which one can invest, with stocks and government bonds among the most popular. While the former offers high risk and potentially high returns (or significant losses), the latter offers low risk and low returns.
2. In our example, when investing only in stocks, one can end up with a 15% profit, but also a 15% loss. By contrast, investing all one's capital in government bonds gives a sure 3% return, which can be an unsatisfactory outcome. This is why individuals create so-called investment portfolios consisting of a combination of various types of financial instruments.

The proportions between stocks and bonds differ between people. The optimal proportion depends on someone's attitude towards risk, as well as on the expected period of investment, which usually goes hand in hand with age. Young people have a long investment horizon; even if their risky investment goes bad, there is still plenty of time to improve. If you are close to retirement, the chances that the return will not recover after a large loss are quite high (for more on this, see Booklet 5). In particular, it may happen that stocks will be at low levels just before you retire. This is why, theoretically, the older you are, the lower the share of stocks in your investment portfolio should be. Thus, younger savers are encouraged to have a greater share of stocks (equities) in their portfolio and to reduce this share over time. One common rule of thumb prescribes the optimal share of equities as 100 or 110 minus one's age.

INVESTMENT PORTFOLIO

An investment portfolio is a set of financial instruments one owns.

Besides government bonds and stocks, there are many other investment instruments, including advanced financial instruments, foreign currencies,

cryptocurrencies, property, commodities, gold, diamonds, stamps, rare books, artwork, and alcohols – and this list is not exhaustive. People buy these to gain profits in the future. However, typically, to earn such profits, the initial capital must be substantial, this type of investment requires knowledge, and the risks are far more complex than for a simple asset such as government bonds. Therefore, although these alternative forms can complement an investment portfolio, they are rarely a good fit for beginners.

ADDITIONAL ISSUES FOR CONSIDERATION

- There is nothing wrong with using a bank loan. As long as you carefully analyse the loan repayment possibilities and carefully read all the terms of the contract, a bank loan allows you to finance purchases that would be difficult to realize with your own household budget.

- Banks offer the possibility of taking out loans in foreign currencies. In this case, use the following rule: take out a loan in the currency in which you earn your income.

- If you have problems with loan repayment, contact the bank and try to suspend the repayment for a given period or change the terms of the contract to allow you to repay the loan. The bank will likely enable you to repay the loan, since it also cares about paying the client's liabilities.

- When making a deposit, check carefully whether the funds are guaranteed by the deposit guarantee system in the event of the bankruptcy of the institution to which you are entrusting the funds. If you have doubts about a financial product or financial institution, you can check information with the financial regulator of your country.

- When you save with a product, remember to always check if it corresponds to your time horizon and risk preferences, and always read the product's key document, which indicates its past performance and level of risk.

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