Booklet #1

Booklet Series "Be in charge of your life cycle"

WELL PREPARED FOR YOUR FUTURE: ECONOMIC CHOICES OVER THE LIFE CYCLE

ANGLE

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This booklet is number one 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 (this 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 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.

The booklet has been realised by a **CeRP** team composed of: Elsa Fornero, Marco Maurizio Disarò

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Booklet 1

WELL PREPARED FOR YOUR FUTURE
Economic choices over the life cycle

Look at her! How self-confidently she walks around and speaks, as if she had realized most of her aspirations! Of course, it's rather easy to have a successful life when you are born into a privileged family and don't have to worry about making ends meet every month.

"Anything worth doing, is worth doing right", Hunter S. Thompson.

1. Childhood: Not only puppies and sunshine

Maria indeed appears to be an accomplished woman in her mid-60s, irrespective of the fact that she is getting older and just retired. She was a university lecturer in modern literature for more than 30 years and is now enjoying her retirement, with adequate resources for travelling, visiting museums, and a stimulating cultural life.

We see her returning home after a morning at the public library for some research and a detour to the local supermarket, carrying a grocery bag with the ingredients her husband, Peter, asked for in the morning to prepare a nice dinner for them and their son. She needs to hurry, since they have a family video call planned in a few minutes with her daughter, who lives abroad with her partner.

'Lucky lady', most people would think. Well, if they knew better, they would know that it was not merely a matter of luck, but also a matter of wise and farsighted decisions made at the right moments. Maria is not from a wealthy family. Indeed, lower-middle class would be a better description of her family's

social background. Her father, a rather strict man of principles, attached to traditions, and, as the family's breadwinner, very prudent with money and financial matters, had worked in a small shoe shop. Her mother, turning 90 soon, like mostwomen in the 1960s, had always been a stay-at-home mom who devoted her time to family chores, except for little jobs as a seamstress – paid off the books – for friends and acquaintances.

INCOME AND WEALTH

Income is revenues within a specific time span, such as a month, a year, or even a lifetime, received in exchange for working, social contributions, or providing services through financial (interests) or real capital (rents).

Examples: Wages, interest on bonds

Wealth is the amount of financial and/or real assets held by an individual/family/firm at a given point in time.

Examples: Bank account balance, house, non-residential buildings, car, bonds

Given her family background, Maria's childhood had not been 'all puppies and sunshine', because the family could count only on a rather small, although steady, income. She grew up in a family atmosphere that paid attention to money, which gave her some practical financial guidelines since childhood.

From the pocket money Maria's parents gave her every month in exchange for small family chores, she had learned that money can be saved to avoid being cash-strapped when wanting to buy something. Not that she was a compulsive consumer: ice creams in summer and hot chocolate in winter would beindulged in only occasionally, as well as to avoid embarrassment when confronted by her father as to how much she had been able to put into the bank account he had opened for her. Moreover, even without being a scrooge, Maria enjoyed seeing her sum of money grow beyond her small monthly deposits and had asked her dad to explain the role of the interest rate to her, which had been quite mysterious at the time!

INTEREST RATE

The interest rate is the proportion of a loan that is charged as interest to the borrower, typically expressed as an annual percentage of the outstanding loan (see Booklet 3).

An example is a bank deposit, considered money "loaned" to the bank, which, in return, recognizes an interest rate.

Example: €10,000 deposited into a bank account that recognizes a 2% yearly interest rate.

Interest = principal x interest rate = 10.000 x 2% =

= (10.000 x 2)/100 = €200

2. Education versus work

HUMAN CAPITAL/WEALTH

Human capital is an intangible asset that represents the stock of knowledge, experience, good habits, and social and personal attributes (including creativity) embodied in the ability to perform labor in order to produce economic value.

Example: Applied to a working context, it is represented by a worker's experience and skills, including assets such as education and training.

To this little financial knowledge spurred by Maria's dad, Maria's mother had added a fundamental piece: knowledge could also be 'accumulated' to build a different kind of capital, no less important than the financial kind. It was Maria's mother who insisted on saying that she had to 'invest in her human capital'. She did not use these exact words, which were more sophisticated than her education would allow, but that was the underlying idea: 'Just as your father and I invested our small savings to buy this house, additional years of studying will, up to a point, provide you with additional competences and increase your career opportunities and expected earnings.'

It puzzled Maria to think of education as a process similar to saving and depositing money into a bank account. The intuition, however, had been very useful when she had to decide whether to continue school or to look for a job after compulsory education. Indeed, she had little doubt, because she liked to study and was convinced that, with more education, she would be able to achieve a better position in the job market – just as having more money deposited in a bank would allow her to buy more things in the future than what she could afford today.

A scholarship was then essential for Maria, because she did not want to burden her parents, who already would have to forgo the little income she could provide to her family had she chosen to work instead (finding a job was not so much of a problem in those days, very different from the situation today for young people in many countries). She knew, however, that to be

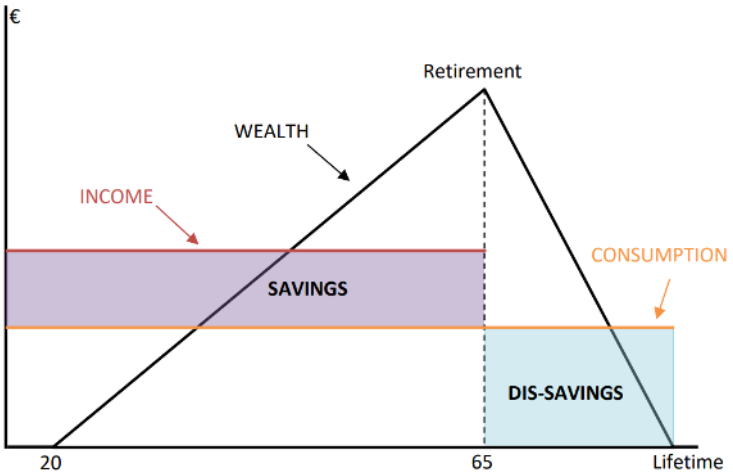
awarded a scholarship she had to study hard: 'Sacrifices today for a better tomorrow' was a clear principle for her, since she often had to say 'no, thank you' to friends' invitations in order to focus on her study.

Maria felt bad on those occasions, but she knew she would be rewarded in terms of higher chances of reaching her objective: a university degree, the first member of her family to reach that goal. She reached that goal some years later, a degree in literature, followed a few years later by a PhD, since, more than being attracted to teaching, she wanted to engage in research. Thus, more study and more sacrifices today, but hopefully a more satisfactory life in the future.

Modigliani's life-cycle model

In the early 1950s, Franco Modigliani, later a Nobel laureate in economics, and Richard Brumberg developed an economic model that describes how individuals plan (or should plan) their consumption and savings paths over their whole life, taking into account resources available in the present as well as in the future. The underlying assumption is that sensible individuals would like to maintain stable lifestyles in periods when they face varying economic conditions (e.g. different incomes or required expenditures). The only way to achieve a (more or less) constant consumption level in retirement, when people no longer work and do not earn an income, is to accumulate wealth during the working period (i.e. spend less than what you earn) and dissave after retirement (i.e. spend more than what income alone would allow). A fall in consumption due to retirement can thus be prevented.

As all theoretical models, Modigliani's model does not perfectly overlap with reality (neither income nor consumption expenditures are truly constant over time, e.g. family considerations must be taken into account). Still, this model provides a useful insight into the importance of evaluating present choices according to their long-lasting foreseeable effects.



After having obtained her PhD in modern literature, Maria was determined to get a position in a good university. Meanwhile, she had to look for a job, possibly as a schoolteacher, because she wanted to be economically independent and because this gave her time to pursue her research activity while she waited for a postdoc position in a university. So, this is what she did, at the beginning merely as a substitute teacher, but eventually gaining tenure. Some years later, with a couple of research papers published in renowned journals, she was awarded the position of associate professor at a good university, with a more than decent salary, nice colleagues, and interested students. She had to sacrifice more leisure time, but it was worth it!

Maria did what her parents had not had the chance to do. Both her father and mother had left school after compulsory education to start working and to help in the house. Even if education had been a priority, their budget constraints were too strict: they simply could not have afforded it. The priority was food and heating and being able to have enough money until the next meagre pay arrived. To make ends meet, even a modest salary earned by the youngest in the family was helpful.

OPPORTUNITY COST

Opportunity costs are the potential benefits an individual, investor, or business forgo if they choose one alternative over another.

Example: When someone decides to put all his/her money into a bank account, he or she foregoes the opportunity to invest part of it in more profitable investments.

Maria's mother was continuously supportive: 'You have to study. I never had the opportunity of a proper education. We girls were raised to become housewives and mothers. You have more chances. Do not waste them.' Maria has always been grateful to her mother for insisting on 'enlarging the set of options in life'. It was her intuition of the notion of opportunity cost, a potential benefit that you miss out on when choosing one alternative over another.

Maria did not want to lose out on the best opportunities. After graduation, she thus sent her CV to check her potential in the labour market and to see how she could finance progressing her education. When a few job offers arrived, she pondered the pros and cons of the choices and tried to estimate the likely returns (i.e. the income received from an investment) of each choice.

Of course, a better education would allow her to get a better job, but that would mean, for example, not being able to help the family in buying a new car (the old one was almost unusable) or in repairing the roof. Would 'following her

dream' be a sufficient reason to renounce an immediate, far from negligible income? Furthermore, as her father was always saying, starting to work at a younger age would provide 'fuel' for her future pension, allowing her to retire earlier (her father was very concerned about his own pension benefits).

On the other hand, to continue studying would involve various types of material and immaterial costs: university fees, to begin with, to be paid for several years, which, in her case, made it almost imperative to obtain a scholarship instead of resorting to student loans (see Booklet 2), and then also time and commitment and, again, having to give up leisure time. And then there was the risk of dropping out, which would mean she would have wasted precious years. Maria devoted many evenings to considering all these possibilities in a sort of cost–benefit analysis, which always had too many elements for her to tackle.

COST–BENEFIT ANALYSIS

A cost–benefit analysis is a process for evaluating the expected profitability of an investment or a decision.

It is computed by adding up the benefits and subtracting the costs – all in present value (see Booklet 2) – associated with the decision/investment, in terms of both tangibles and intangibles. More advanced analysis can also consider opportunity costs.

Example: A business that wants to expand and open a new subsidiary.

All this process, however, was worth better 'career opportunities and expected earnings', as her mother said to her. Maria was surprised when she used the word expected. Neither her mother nor she had the mathematical notions to understand it properly, but it gave the idea that you could engage in something and obtain a return not just in terms of personal satisfaction, but also in terms of money, like investing money.

In the end, Maria never regretted the decision to continue her studies to the point of earning a PhD. She learned later, talking to colleagues in economic departments, that she had taken the right approach to the problem. Indeed, she had acted on the basis of a sound basic financial education, even if nobody had formally taught her the main concepts. Behind all those numbers that are sometimes difficult to interpret, economics and finance are much closer to our life than one might think, in the present, as well as in the future.

3. Saving versus indebtedness

Despite her love for literature and the humanities, Maria had always been a practical person. Her parents may have not received an extensive education, but they had taught her some good principles for managing money. Of course, it was a different time back then, but some of their advice still applies today.

Her parents had always considered thrift as a virtue and, conversely, taking on debt – except to buy a house – as a kind of sin. Their economic decisions had as much a moral as a rational economic foundation. Maria is less categorical, but she still made good use of this imprint. Through the pocket money she already received at a young age, she learned to make a budget to better manage her money. Moreover, comparing the budget plan and the actual cash flow, she could check how much she had departed from her original intentions and for what reasons.

On the rare occasions when Maria found herself facing shortfalls, that is, when her expenses were higher than her income, budgeting had proved to be particularly useful. She understood that, at the beginning, her problem was that she only considered *recurring expenses*, while, in many months, there are also unexpected expenses too, such as a pizza with friends. In this case, saving can help handling *unforeseen expenditures* ('saving for a rainy day', her mother would call it, far before economists considered this concept in their models), a kind of self-insurance against unexpected indispensable outlays. Much later, both Maria and her husband, Peter, had been shocked to learn how many households could not even handle an unexpected expenditure

such as $5,000. Not having any precautionary savings would be a source of misery to her.

Maria knew, however, that saving was also strategic in carrying out planned expenditures. She learned to set SMART goals, an acronym that a friend once mentioned and that she immediately loved, because it mirrored her way of dealing with decisions to be made: having *Specific, Measurable, Assignable, Realistic,* and *Time-bound* objectives. For example, when Maria and Peter moved into their new house, she made a plan of what was immediately needed and what could wait, such as some of the more out-dated appliances, particularly an old washing machine that was neither energy efficient nor environmentally friendly. Maria did not want to drain her buffer funds – i.e. a little reserve she had accumulated for precaution - so she preferred creating a plan that would allow her to save a little bit of money each month and to accumulate the amount required over a longer period.

The situation was different when Maria and Peter considered buying a car. Their first idea was to buy a new economy car, but they had (again) to cope with their still strict budget constraints. Certainly, they could have paid in instalments, but that would mean earmarking another fraction of their monthly income. Maria had a kind of golden rule, which, again, she owed to her mother's (indirect) education: debt was allowed only to buy a house or for unexpected, unavoidable expenses, not for leisure, such as financing holidays. As for buying a car on debt, her mother would have at least frowned.

RECESSION

A recession is a period of significant decline in general economic activity. In macroeconomic terms, it is defined as two consecutive quarters of economic decline, usually associated with a rise in the unemployment rate, lower productivity, and a lower consumption level.

The most recent (and infamous) recession was the *Great Recession*, which started as a financial crisis in the United States in 2007 and then spread all over the world.

Although Maria was inclined to follow her mother's conduct – always save a bit, possibly for specific purposes (precaution being one of them), and be very prudent about going into debt – she was both more pragmatic and flexible. She had the habit of considering the pros and cons of a decision and did not consider saving always good nor debt always bad. At school, she had had the occasion to read a macroeconomic textbook that explained that more savings in the aggregate could harm the economy to the point of causing a recession and

increase unemployment! This made Maria more at ease with financing to buy durable consumption goods by instalments. In any case, she was more educated than her parents and knew that things are always more complicated than they appear at first sight. Sometimes she even thought that by going into some debt this she could actually help the economy!

As for their savings (Peter had gladly left their financial decisions up to her), although not used to approaching financial markets, she was aware of a generational effect: she would not limit herself to depositing her savings in a bank or savings account, as her parents had always done. She knew that things had changed and that keeping money in a safe, although it could appear to be the more cautious choice, but not the best for her finances. Unlike in the old days, bank accounts and similar deposits grant interest rates close to zero, and the costs can even outweigh the interest. This means that it is wise to consider different types of assets, such as bonds (both government and corporate), mutual funds, pension funds, and even stocks (see Booklets 3 and 5).

Maria knew the old saying, 'don't put all your eggs in one basket' (indeed, as a child, she had often laughed at the idea of someone breaking all the eggs in a basket!) and was ready to accept some risk in just a portion of their portfolio in exchange for a higher return. The rest had to be safe, for the down payment for the house they intended to buy – the family was getting larger! – as well as for their old age. Their financial wealth was therefore largely made up of government bonds, of different maturities, and the accumulated value of the contributions to their professional pension funds.

The other part of their wealth had been invested – when they were younger and could be confident they would still have a long working life – in riskier assets, according to what had been explained to her as portfolio diversification. With such diversification, even if an investment turned out to be bad, there were still other investments to balance out the loss and guarantee an overall positive result. Indeed, irrespective of her childhood amusement at the broken eggs, Maria likes to think that investing is like grocery shopping for a quiche: put half of the eggs in one bag

DIVERSIFICATION

Diversification is a risk management technique that mixes a wide variety of investments, since a portfolio composed of different kinds of investments will, on average, yield safer returns than any individual investment fund within the portfolio.

and half in the other. Then, even if one of the bags happens to break, there will still be eggs for dinner. Hoping that an omelette will do just as well.

Compounding

Compounding is a process whereby the value of the accrued interest of an investment is added to the total capital to generate additional interest.

Bonds, like any other financial asset, have an interest rate that corresponds to the gains the owner makes as a percentage of the amount invested. This is called 'simple interest', but you can earn even more by making time 'work' for you. Instead of withdrawing the interest accrued each year, you can reinvest it and buy other assets. This process is called compounding, and it allows your profit to increase significantly in the long term. This is the reason why the earlier you start investing, the earlier money will start growing 'by itself'.

Example: Both Amy and Bruce have invested €10,000 in financial bonds that yield a yearly return of 5%, paid at the end of each year. Bruce reinvests the profits in other identical bonds, while Amy immediately spends her annual return.

Let's see how much their investments will yield in time.

	Alice			Bruce		
	Interest	Consumption	Assets	Interest	Consumption	Assets
YEAR 1	10,000 x 5% = 500	500	10,000	10,000 x 5% = 500	0	10,500
YEAR 2	10,000 x 5% = 500	500	10,000	10,500 x 5% = 525	0	11,025
YEAR 3	10,000 x 5% = 500	500	10,000	11,025 x 5% = 551.25	0	11,576.25
YEAR 4	10,000 x 5% = 500	500	10,000	11,576.25 x 5% = 578.81	0	12,155.06
YEAR 5	10,000 x 5% = 500	500	10,000	12,155.06 x 5% = 607.75	0	12,762.81
YEAR 6	10,000 x 5% = 500	500	10,000	12,762.81 x 5% = 638.14	0	13,400.95
YEAR 7	10,000 x 5% = 500	500	10,000	13,400.95 x 5% = 670.05	0	14,071
YEAR 8	10,000 x 5% = 500	500	10,000	14,071 x 5% = 703,55	0	14,774.55
YEAR 9	10,000 x 5% = 500	500	10,000	14,775.55 x 5% = 738.73	0	15,513.28
YEAR 10	10,000 x 5% = 500	500	10,000	15,513.28 x 5% = 775.66	0	16,288.94
		5.000			0	
	TOTAL = 10,000 + 5,000 = 15,000			TOTAL = 16,288.94 + 0 = 16,288.94		

Reinvesting annual returns allows one to take advantage of compounding, leading to a more total capital. The longer the period considered, the greater the gain. In the example above, if we extend our observation to 40 years, Amy's total amount will be €30,000 (of which €20,000 is consumption, at €500 per year), while Bruce would have a total amount of €70,400.

4. Housing choices

When Maria started university, she had to leave her parents' home and find a place closer to the school. She contacted the university office designated to help students find affordable accommodations and was thus able to rent a room in a university residence using part of her scholarship. That proved to

be a good solution. After earning her PhD in modern literature, through much hard work but also with great personal satisfaction, Maria faced the prospect of entering the job market. She wanted to engage in research but again had to provide for herself. She thus got a teaching qualification and entered regional competitions until she managed to become a substitute teacher.

She was assigned to a school about an hour away from her family's home. However, apart from the nuisance of commuting every day and her desire for her own independence, Maria soon learned that the cost of renting would be much higher than that of a transport membership card. At home, furthermore, she could enjoy free meals and services, like laundry. With some frustration, Maria concluded that the wisest choice was to move back to her parents' home, where she was determined to contribute to part of the expenses.

The situation changed, however, when Maria met Peter, the man who would become her husband within a year. When they decided to move in together, she had just become a tenured high school teacher, which allowed her financial independence, while he worked as a junior geologist specialized in water resources management. Now, the two had to choose whether to buy a home or just rent one big enough for both of them.

Peter leaned toward the latter, saying that renting would allow more flexibility and the chance to easily move whenever they wanted or if they had to because of their jobs. Moreover, homeownership is a large investment with very low liquidity, which you might need if you do not have enough cash on hand or money in the bank. And owning a home also means paying property taxes! On the other hand, Maria argued that her

LIQUIDITY

Liquidity is the ease with which an asset or security can be converted into money.

Examples: Cash and bank accounts have the highest liquidity (with virtually no time needed to access the money), while financial investments, such as bonds or stocks, are less liquid.

Even tangible assets usually have low liquidity (selling a house or a piece of art can take much time).

mother used to say that renting is like 'throwing money out the window', while buying a home is an investment for the future.

Before making their final choice, they asked a financial advisor (they spent some time selecting one) about the down payment, mortgage possibilities and costs, repayments schedules, the distinction between fixed and variable interest rates, fixed expenses (e.g. stipulation and management fees), tax deductibility, and various other aspects. They considered all the information very seriously and, after having carefully considered their current and expected financial situations, they agreed on buying a house large enough for possible 'small newcomers'. Indeed, a year later, their daughter Emma joined the family, followed by little Tom when Emma was four.

Maria, however, never left her job as a teacher. Indeed, she found the time for conducting and publishing some research, which later allowed her to get a position as a lecturer at the university. Again, the choice was not easy: move the family or commute. She did not want her children to be distanced from their school, friends, and activities. Her husband would be obliged to commute, and they would have to enter into another mortgage while they were still paying for their current home. The most convenient option, then, was to rent a small place just for Maria, so that she could stay there when her presence was needed for teaching and exams and stay with her family the rest of the year, to continue her research activities and carry out her share of the family duties. Life is made of choices, and compromises have to be made.

MORTGAGE

A mortgage is a debt instrument, secured by the collateral of a specified real estate property, that the borrower is obliged to pay back with a predetermined set of payments.

The main two types of contracts are fixed-rate mortgages (FRMs) and adjustable-rate mortgages (ARMs). In the former, the interest rate remains constant throughout the whole life of the mortgage; in the latter, the interest rate varies according to some financial market index. This means that ARMs can represent an advantageous offer under specific conditions (which are not always foreseeable), while FRMs are usually safer, since the payment amount is the same whatever the financial market's trend (for more, see Booklet 4).

In any case, be sure to have an adequate income remaining after the monthly payment to avoid having to ask for further loans and accumulate debts on top of debts (with the consequence of high interest costs).

5. Retirement choices

After more than 30 years of teaching, Maria is now in her 60s. She is satisfied with what she has accomplished in her life, as well as with her retirement. Even this, however, had not been an easy choice. She had loved her job. Teaching and doing research, without the pressure of having to publish in top journals, she had been able to place some of her essays in refereed journals, and her two books had experienced moderate success, more than she had expected, in any case.

It was almost like Mark Twain, one of her favourite authors, had once said: '*Find a job you enjoy doing, and you will never have to work a day in your life*.' That is why Maria had postponed retirement for as long as she could (she knew she was lucky in this respect), and, indeed, she even continued to do some work after her retirement. It was unpaid work, such as conferences and citizenship activities, mainly teaching English and other topics to immigrants, but it was satisfying.

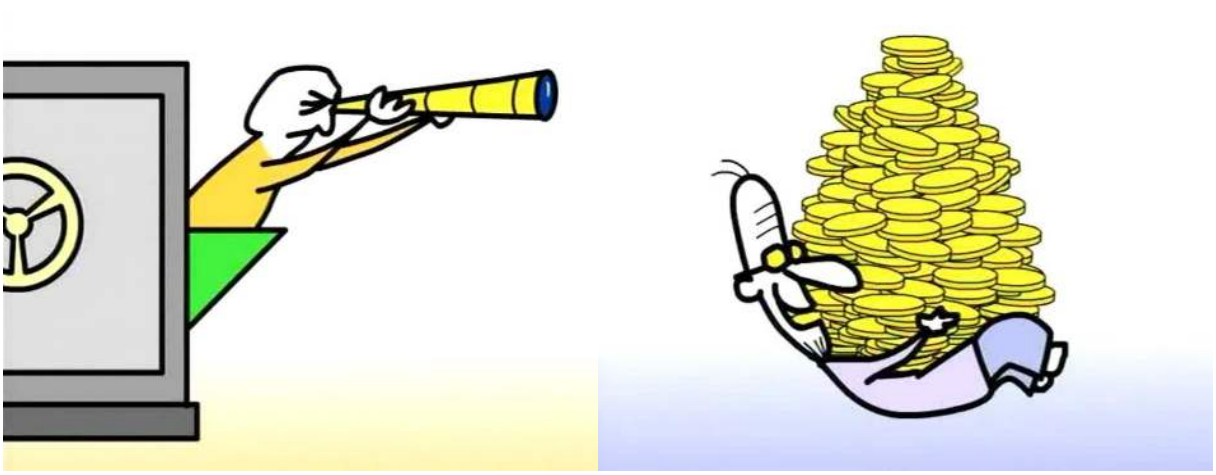
Beyond a positive feeling of accomplishment, Maria knew that working as long as possible would be economically convenient, given that, by continuing working, she could raise the ratio of her pension benefits to her earnings (now a bit higher than 70%). People at the HR department of the university had clearly explained to her the mechanics of the so-called defined contributions formula: every euro that you put in counts for your pension and for a given amount of 'pension wealth'; if you retire at a later age, you receive a higher benefit.

DEFINED CONTRIBUTIONS PENSION SCHEME

A defined contributions pension scheme is a plan where part of the labor income is systematically deducted as contributions that go to form the future pension. Early contributions are more valuable, thanks to compounding, so one would think that the best choice is to start work as soon as possible. However, investing in human capital and having a proper education can help increase one's expected income and thus the amount devoted to contributions and overall benefits in the long term.

Individuals must be aware of the fact that pension contributions essentially transfer current income into future income. Having a steady and sufficiently long working career is an essential requirement for building an adequate pension, since every month without a job means fewer contributions and hence a lower pension. In this case, saving becomes even more important in order to create retirement funds for old age. To avoid unpleasant situations, it is fundamental to have a proper retirement plan and, if necessary, to think of other solutions to compensate for an insufficient public pension (for more on this, see Booklet 5).

Maria had learnt early that it is never too soon to care about old age financial security. She tried to stay informed by watching the news and talk shows, reading newspapers, and browsing the Internet, especially consulting reliable sources and checking for possible fake news. As a public employee, she had been compulsorily enrolled in the public pension scheme. At the administration office, they had explained to her how this system was financed (a so-called pay-as-you-go scheme), and she had understood that there was a 'safe' into which workers would put their contributions (rather than a small fraction of their salaries) and from which retirees would draw their pensions, so that the safe was always empty! This was an intergenerational contract, they had explained, and not a bad one as long as both the younger generations and their salaries were increasing at a good rate. So she was financing her mother's survivor benefits, while her children would finance Peter's and her own!



This contract was sometimes made quite generous by political measures, but it was perhaps not so considerate with respect to younger and future generations. Maria had come to confront the question of the sustainability of social security and had learnt that, even in the domain of public pensions, overly generous promises can threaten the financial stability of these schemes. That is why there had been reforms, strengthening the system by raising the retirement age (having people work longer) and reducing the generosity of pension benefits.

INTERGENERATIONAL CONTRACT

In a pay-as-you-go system, retirees receive their pensions thanks to contributions paid by current workers, who contribute under the assumption that future generations will also pay and thus indirectly finance their own pensions.

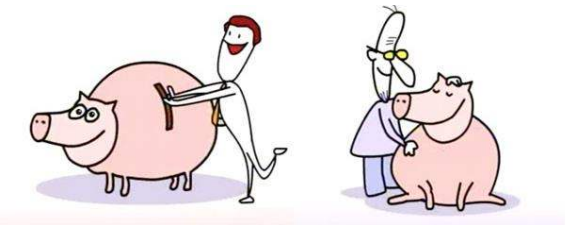
In an intergenerational contract, the state is also supposed to represent the interests of future generations, who obviously cannot participate directly in the deal

More proof that risk is everywhere and not just in financial assets, is that both Peter and Maria had made voluntary contributions by participating in their occupational pension funds, to increase their public pension. There is no intergenerational contract here: that pension derives from the accumulated value of contributions and interests in the money box, so the risk is financial. Just as for their other financial assets, Maria had acted here with prudent diversification, allowing for a fraction of stocks in their portfolio when they

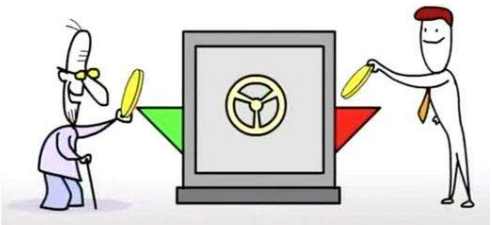
were young and could take on a bit of risk. Luckily, they had not lost (overall) and had later moved back to safer assets, such as government bonds.

So, their retirement had been provided for, particularly considering that the National Health Service was a good one. Maria and her husband could look to their (true) old age with enough confidence and even set something aside as a bequest for their children.

Private pension funds (financial accumulation)



Public pension based on pay-as-you-go system



Maria's mother, however, was worried. Now almost 90 and living alone in the home she once shared with her husband, who passed away many years ago, she has no intention of leaving her home, at least 'as long as I can manage', she says. The problem is that she is becoming increasingly frail, also from a financial point of view, as expenses for care services – long-term care services and some medical treatments not paid for by the National Health Service – are

constantly increasing. Being proud, she lives on her survivor pension and, occasionally, on her savings account, now almost drained.

Maria had considered the possibility of a reverse mortgage (see Booklet 4), a financial product that would allow liquidity to be extracted from the house to live without financial anxiety. Her mother, however, stubbornly refuses the idea, so that Maria must rely on cash advances to the caregiver to support her mother. Maria is determined, however, to look into these new products that allow money to be extracted from an illiquid asset such as a house.

Returning home with her groceries, Maria feels that her new awareness another reason to look to the future with some degree of serendipity (she had recently seen a film with this title and rather liked it). With her good endowment of family affection, social networks, books, savings, material wealth, and basic financial knowledge, she can look at her retirement – a period where time is no longer strictly connected to duty and money – as an opportunity to devote her energy and intellect to enjoy herself and care for others.

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