

THE MUSEUM OF SAVING

The mission of the Museum of Saving is to help people understand how they can efficiently use their financial resources. A unique place that brings the general public closer to a complex topic in an innovative, entertaining, interactive and, at times, spectacular way.

Empirical evidence shows that most people have difficulty in managing their own financial resources because they are not aware of the basic concepts necessary to make rational and informed choices. Saving is a question of balance between income and expenditure, between needs and wishes.

You can make excellent financial choices without being able to use complex mathematical equations, just as you can be a good car driver without knowing how an engine works, or be an expert computer user without being familiar with the hardware.

The museum aims to appeal to a wide and non-specialist public: from young children to teenagers to adults and seniors. The audiovisual material was designed to satisfy people's curiosity and wish to know.

This place is different from a traditional museum in many ways, especially because it is completely interactive. The use of RFID technology allows you to personalise your visit and keep track of the points you win when playing games. Your final score may put you into the daily top-ten chart ranking visitor performances.

At the Museum lobby you can check your level of financial literacy by answering questions from an international survey. This allows you to select the Museum material that better suits your initial know-how.

THE EXHIBITION

The exhibition rooms are set to guide you through interesting concepts with illustrative audiovisual testimonies. The aim is to make you think, in a pleasant and amusing way, on how to manage your own money.

The museum's mascots, the ants For and Mika¹, accompany you through the museum with video animations which are both informative and entertaining.

The visit starts with the history of money. It shows how money made saving and investing easier. The use of money encouraged the beginning of commercial trading, the creation of fiduciary loans and, with that, the concept of interest rates. As time passed money gradually took on the role of a store of value and allowed humanity to actively control consumption and savings decisions.

During the Renaissance period the first great personal fortunes were accumulated. These were used to finance arts and science, geographic exploration and new financial and commercial initiatives. In the 17th century the first speculative bubbles appeared and burst. The unstable financial system that developed in the following centuries led to the creation of the International Monetary System. The first international economic crises followed including the 1907 Bankers' Panic, which resulted in the creation of the Federal Reserve in the United States of America. After the period between the two World Wars and the 1929 crisis, we come to Bretton Woods – the period of free floatation of exchange rates to end up at the modern day.

After many historical points of interest, the heart of the exhibition is where you find presentations given by financial experts and the museum's mascots. They describe the main characteristics of the most popular financial instruments (stocks, bonds, derivatives, insurance contracts, mutual funds, pension funds) and the principles which form the basis for an informed financial choice (the difference between real and nominal return, the relationship between risk and return, the benefits of a diversified portfolio).

The museum is also enriched by the crossover between economics, literature and cinema. We learn how great writers and directors dealt with money in their works. Dante, Molière, Shakespeare and Hemingway appear out of the shadows to tell you how they managed their assets and how they described debt, saving, greed, loans, usury and many other items. In the Cinema Room clips from famous films explain concepts which appear complex, but are used to make decisions every day.

The exhibition continues in the Active Room where you can put your financial management skills to the test in interactive games which have been designed for young children, teenagers and adults. You can learn the consequences of your actions and test your ability in using money by looking at your final score.

¹ For & Mika are taken from the Italian "formica" which means ant. There is a fable by Aesop about an ant and a cricket. In summer the ant takes time to store things for the winter, the cricket doesn't and in winter has nothing to eat and has to ask the ant for some food, and so understands the benefits of saving for the future.

You can earn pocket money by doing some odd jobs and earning points that can be spent or deposited in an interest-bearing savings book; put yourself in a trader's shoes comparing the history of the stock and bond markets over the last twenty years; help a young entrepreneur to make her choices; instruct a rich gentleman to consider the pros and cons of the various methods of payment and to evaluate the marginal utility after satisfying the demands of family and friends; be catapulted into the future to make real estate investment choices bearing in mind such aspects as risk, return and diversification; or compare your financial planning ability by setting long term objective and managing income and expenditures to be able to reach the target within your lifetime.

You will also find a tool that simulates the evolution of your wealth until you are 90 years old. You can evaluate the effects of various degree of risk aversion, long run asset allocation decisions and changes in your expected income and expenditures.

Finally, along the tour, visitors will come across easy-to-understand information about the long-run evolution of financial markets as well as simple explanations of the main results of key scientific research projects. General public can therefore capture the link between scientific research and practical behavior and interpret the most recent financial market dynamics in light of long-term trends.

Andrea Beltratti and Giovanna Paladino are responsible for the contents of the museum.

THE ROOMS

1. **Know:** History
2. **Learn:** Financial instruments and principles
3. **Tell:** Literature
4. **Dream:** Cinema
5. **Experiment:** Games and applications
6. **Savings**

Room 1: Know

Stop, watch and listen to the stories about the history of money, its origins and its role in society. How we learnt to appreciate the advantage of not consuming everything we produced and to put something aside to use later. With the advent of money, saving and investing became easier, but risk is the price to pay to get an expected return on your investments.

The first room is divided into two sections:

In the first section, For and Mika are the main characters in four 3D videos. An ancient Roman banker, Cicero; the King of France, Philip the Fair; the Florentine merchant Marco Datini and Lorenzo de' Medici feature in four "impossible" interviews; while Gianni Toniolo features in an interview on the role of money.

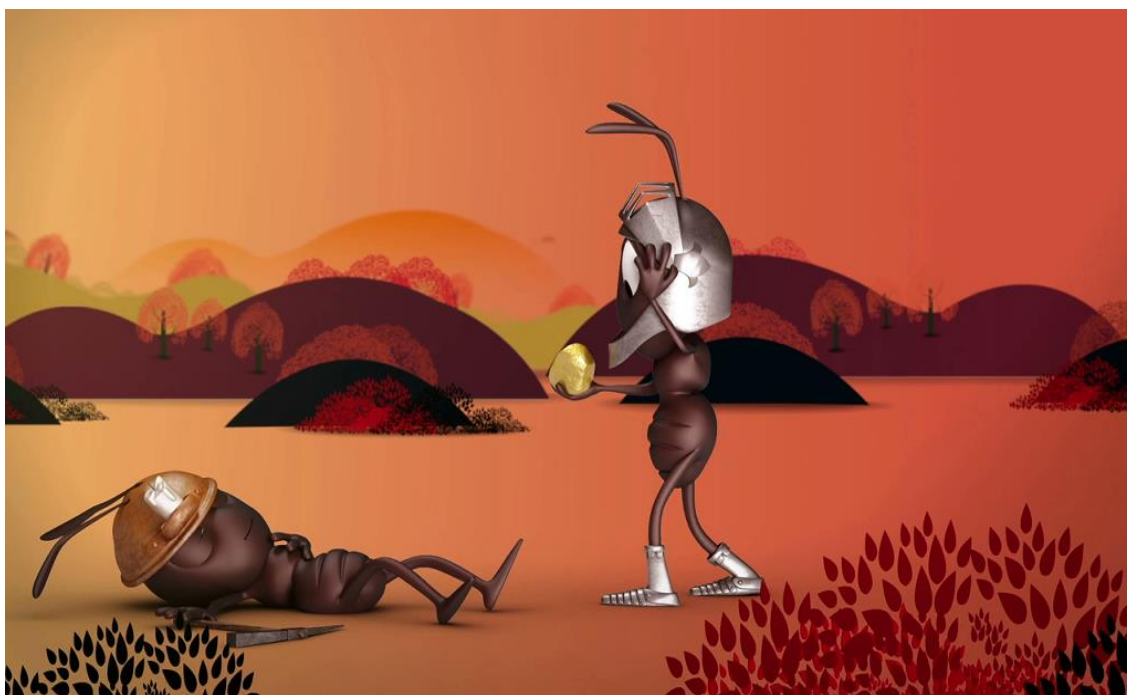
The visit starts in Ancient Egypt with people using barter to then move to the introduction of money. According to tradition money was first minted by Croesus, King of Lydia in the 7th century B.C. (3Dvideo 'From barter to money').



A very old map in the second video shows us how the use of money spread from the Babylonians to the Greeks (3D video *'Use of money from Babylon to the Greece'*). The history of Juno, the Gauls and the geese on the Capitoline Hill (Campidoglio) are presented in the video on the origins of the word "money" (3D video *'The origin of the word money'*).

We are then transported to Ancient Rome, where a silversmith exchanges money, offers deposits and payments, gives loans to private people, finances wars and public works. We meet Cicero who tells us how, in Republican Rome, the legislators started to deal with interest rates and usury (interview on *'Credit practices during the Roman times'*).

The fourth video is set in the Middle Ages, when bimetallism became widespread in Western Europe and in the Islamic World. In such a system gold coins were hoarded. Silver coins were used for major commercial transactions and copper coins were used for retail. The value of a coin was set on the basis of its content of precious metal. This value was certified by the State "punch" (stamp), but when the real value of the coin became affected by people shaving a little gold from the coin, prices went up. (3D video *'The intrinsic value of money'*).



The manorial economy of the Middle Ages and the Crusades created the background for the involvement of the Knights Templar in banking activities. The enormous wealth they gathered created envy and anger amongst the emerging European monarchies. The King of France, Philip the Fair, tells us how he confiscated all the Templar goods in the French kingdom in 1307, which led to the disappearance of the Order (interview on *'The diffusion of banknotes and the role of Templars'*).

Over time, money as well as being used as a form of payment, took on the role of a store of value. The bill of exchange became the main instrument for loans and financing in international commerce. Francesco di Marco Datini introduces us to the Florentine Renaissance world, where between the

fourteenth and fifteenth centuries the great banking families – Bardi, Peruzzi, Frescobaldi and later the Medici – had branches all over Europe as well as in Africa and Asia Minor. In an interview Lorenzo de' Medici tells us how the Florentine banks financed political and entrepreneurial activities, wars and commercial operations with the most distant Asian countries, while still sponsoring art and science. (interview on *'The modern banking system: the Florentine bankers'*).



Finally, Gianni Toniolo, from the University of Rome, talks about money and its role in the development of society. (interview on *'The role of money in the development of civilization.'*)

In the second section there are seven documentaries, an interactive map which represents the chronology of the creation of Stock Exchanges in Europe, an interview with J.P.Morgan and three interviews with European Central Bank Governor Mario Draghi and economists Pier Carlo Padoan, Deputy Secretary and Chief Economist at the OECD, and Luigi Zingales, Professor of Economics at the Chicago Booth Business School.

J.P. Morgan talks about his role in solving the 1907 crisis (known as the Bankers' Crisis), the first global crisis in the twentieth century. When, in October alone the Wall Street index lost 37% of its value and all over America crowds of savers laid siege to the banks. J.P. Morgan injected enough liquidity to resolve this situation and was able to organise a credit network which involved the most important American economic players, including the magnate John Rockefeller. The solution identified by Congress and President Roosevelt was clear: it was necessary to clean up an opaque financial system that had no rules; for this reason in December 1913 Congress established the Federal Reserve, the United States central bank. (interview on *'History of the 1907 financial crisis and the creation of the Federal Reserve.'*)



A short documentary describes the period between the two World Wars. A floating exchange rate regime prevailed on the foreign exchange markets, after the suspension of convertibility into gold, following the outbreak of World War I. In Europe and, in particular in Great Britain, people wanted to return to the stability of the gold standard and, as a result, convertibility into gold was reinstated (initially for the pound sterling and after for other major currencies). However, in 1931, after the 1929 crisis, Great Britain was the first to abandon the gold standard under great financial pressure. (documentary 'The period between the two World Wars 1919-1939')

In this section there is a brief analysis of the different causes and effects of the 1929 crisis. Among the causes we mention euphoria, slowing consumption and the opportunism of a wide number of speculators who took advantage of the increase in stock prices on the New York Stock Exchange. The effects were an economic depression, a dramatic fall in prices and in demand, the rise of unemployment. The 1929 crisis is the most dramatic of all times and had great repercussions on the international banking system for many years. (documentary 'The 1929 crisis')

The Bretton Woods Agreement is the main focus of the video which deals with the period after the Second World War. During this period the United States and the United Kingdom started working on the construction of a more stable International Monetary System. The 1944 agreement, called the Bretton Woods Agreement, put the dollar at the centre, guaranteeing its convertibility into gold. The International Monetary Fund (IMF) and the World Bank were founded. The convertibility of the dollar was suspended on 15th August 1971 and the Bretton Woods system ended. (documentary 'The Bretton Woods Agreement')

The documentary covers the period from 1971 to date. In 1971 the main industrial Countries – members of the G10 – negotiated a multilateral system for the realignment of exchange rates designed to avoid the overvaluation of the dollar. In 1979 the member countries of the EEC, with the exception of Great Britain (which joined in 1990) created the European Monetary System and the ECU.

The 1992 Treaty of Maastricht created the Economic and Monetary Union which provided for the adoption of a single European currency, the Euro. (documentary 'The free floating exchange rates regime, from 1971 to present day').

The final documentary is about the Euro. The birth of the new European currency and its spreading across 12 countries is, indeed, an epic event not only for its economic repercussions but also for its sociological impacts. The functioning of the Euro is, thus, briefly examined within the unique framework of independent fiscal policies and a single monetary policy setting (documentary 'The rise of the Euro').

Speculative bubbles are the topics treated in the last two documentaries. The first one describes the 1600 bubble, known as Tulip Mania. This speculative phenomenon was related to the price of black tulip bulbs in Amsterdam. In a period of a few years these bulbs reached prices comparable to a rich merchant's annual income or the value of a whole building. (documentary 'The Tulipmania'). The second one looks at the value of internet- based companies in the late 1990s, the so-called dot-com bubble. In this case the stocks of companies operating on the Internet and IT sectors reached values that could not be explained on the basis of fundamentals. (documentary 'The dot-com bubble').

You can find three interviews in this room. The Governor of the European Central Bank, Mario Draghi, talks about the ECB and its role in stabilising the financial markets, 10 years after the introduction of the Euro. Pier Carlo Padoan, the Deputy Secretary-General and Chief Economist of the OECD, describes how the supranational institutions intervene when there is an international crisis and their role in supporting development and economic growth. Luigi Zingales, Professor of Finance at the Chicago Booth School of Business, comments on the recent sub-prime and sovereign debt crises, identifying the causes and outlining the medium-term consequences. (interviews on 'The role of the ECB', 'The role of multilateral institutions', 'The sub-prime and sovereign debt financial crises').

In the second section there is also an area dedicated to children under 5. Here they can play two interactive games and watch an illuminated map describing where and when the first European stock exchanges were created.

Room 2 : Learn

Take a seat and the time needed to understand stocks, bonds, derivatives, pension funds, insurance policies. You'll learn how to recognize them, to identify their advantages and disadvantages and to evaluate their use according to your needs. You'll hear comments from experts, as well as have some private lessons with For and Mika.

The second room has nine "totems", three for each area. You can ask questions about the main financial instruments (stocks, bonds, derivatives), forms of protection (insurance, pension funds) and many other topics.

The “investment” totem



For plays the role of the Chairman of Cereals &Co and answers questions about stocks:

- what rights you enjoy by holding a stock and the difference between savings and ordinary shares;
- the creation of stocks in Ancient Rome and their spreading associated with the need to share the risks arising from commerce in the 17th century;
- the drivers of stock price volatility;
- the impact of stocks on the overall economy, that is how companies can realise otherwise impossible projects by sharing the risk.



Mika talks about bonds:

- the driver of the price of a bond and the inverse relationship between the interest rate and the price;
- the main types of bonds, the difference between bonds with and without a coupon and structured bonds;
- the impact of bonds on the overall economy, how the State raises financial resources by issuing bonds to cover the public deficit.

On derivatives, For explains:

- their meaning, how they can be used to reduce risk and the relationship between their prices and those of the underlying activities;
- the main types of derivatives i.e. forward contracts, futures, swaps and options;
- the main actors in financial markets and what drive the choices of hedgers, speculators and arbitrageurs.



In the last video the museum's two mascots explain:

- how you measure the return of a financial operation including the capital gain;
- the trade-off between risk and return, the reduction of risk through diversification;
- the difference between real and nominal return.

In this section there are two interviews. The first one is with Paolo Sodini, Professor of Finance at the Stockholm School of Economics, on the relationship between return and risk, and the second one with Andrea Beltratti, Professor of Economics at Bocconi University, on the stock markets and their evaluation.

The "protection" totem

This totem contains three 3D videos and an interview.



In the first video, For plays the role of a London insurance broker and takes you on a tour of the insurance world, illustrating:

- What is the purpose of insurance, and how, by sharing risks, you can be protected against the negative consequences of unforeseen events;
- the typologies of events that are covered by insurance.

In the second video, For, still in his role of a London insurance broker, explains:

- how insurance works, the law of large numbers that allows people to join a big group of insured people. Everyone pays a premium and those who suffer losses or damages can claim compensation.

In the last video, Mika, who is now getting on in years and is on holiday in Hawaii, explains:

- how pension funds and life insurance policies work.

The section closes with 3 interviews:

- Elsa Fornero, Professor of Economics at Turin University, describes the Italian pension system functioning;
- Anna Maria Lusardi, a worldwide expert in financial literacy, talks about the importance of financial education
- John Young Campbell explains how to make good financial choices.

The “savings” totem

This totem contains two 3D films and four interviews.

Video Interview ‘What is meant by Asset under Management’

For and Piero Chiambretti, a well known Italian showman, talk about asset management, playing with the meaning of words that are often not clear.

Video Interview ‘How to read a bank statement’

For and Piero Chiambretti read a bank statement together, trying to understand the jargon used.

The first interview is with Bruno Cucinelli, a successful Umbrian businessman, who talks about how he realised his project and what is his relationship with money.

This is followed by an interview with the Governor of the Bank of Italy, Ignazio Visco, on the relationship between a Central Bank and the protection of savings and savers.

Guido Tabellini, Professor of Economics at Bocconi University, speaks about the links between saving and economic growth.

Anna Maria Lusardi, Professor of Economics at the George Washington University (USA), explains the impact of financial education on our everyday life.

Room 3: Tell

Be entertained by great story tellers, who will take you to far away times and places. They will tell you their story and other adventures as well and how they were challenged by the lack of money.

In room 3 you are surrounded by the theatre with the appearances of Dante, Shakespeare, Molière and Hemingway.

Dante: His personal story is a sad one, as is that of Florence in his lifetime and the one that we find in his “Divina Commedia” where misers and extravagant were not able to find the right equilibrium between giving and keeping. The real balance that make men free.

Shakespeare: Not everything is clear about his life. What is known for sure is that he wrote a lot and earned a lot. His rise as a playwright brought him success and his works were found all over. Some people say he wrote for money.

Molière: He dared to talk about hypocrisy in a period when the ostentatious lifestyles of a few nobles and the clergy were in stark contrast to the struggles and hardships of the peasants, and where an emerging bourgeoisie was ready to compromise to gain power and wealth.

Hemingway: He had a see-saw relationship with money, as we can infer from his works. For him money was essentially a means for living more or less comfortably. For a long time lack of money was for him a cause of real worry and anxiety.



Room 4 : Dream

Reflect on arts and learn from films. You can admire how great directors have talked about money and all that goes with it.

In room 4 you can watch clips from famous movies that deal with topics treated in the previous rooms.

At the moment there are four films, but more will be added in the future.

In 'Io Chiara e lo Scuro' (The Pool Hustlers) (1982) the topic of covering risks is dealt with. In 'The Band of Honest Men' (1956) the legal value of money and its use are the basis for some very amusing dialogues between Totò and the rest of the band. In 'Il gioiellino' (The Jewel) (2011) the world of finance and derivatives takes on a tragic tone, while in 'If I had a million' (1932) we can see how you can reach your objectives by managing your wealth in an informed manner.

Room 5 : Experiment

Throw yourself into the mix, put yourself to the test, choose your favorite game and win points for the final classification. It is not difficult to learn how to manage your own money; it is only a question of balance. Use the knowledge you have acquired from what you have seen and heard in the other rooms.

In room 5, there are games and applications for all ages, available in Italian and English.

GAMES

Job Search



A game for children aged 5 and above, in which they are asked to do some odd jobs to earn pocket money, which is the Museum's unit of currency. At the end of the game each child has to decide whether to spend the money or put it in a savings book which guarantees a 2% interest. The idea is to make children think about how they manage their money and to teach them the concept of savings.

Family Manager



A game for teenagers and adults alike, where you are asked to play Mr or Mrs Rich. They have to go away and so are looking for someone to manage their money. You can use different forms of payment (cash and credit cards, with the relative benefits and negative events) to satisfy the demand of family and friends. Like in real life, positive and negative events can change your wealth. You earn points, based on how well you manage Mr and Mrs Rich's money, taking into consideration how long family and friends are satisfied with your work. The idea is to highlight the pros and cons of different means of payment and the concept of marginal utility as a result of satisfying requests.

Smart trader



A game for teenagers and adults who would like to try to make financial choices drawing on the history of the stock and bond markets of the last 20 years. Once you have chosen the assets for your portfolio, you can try to win points by changing your choices to account for economic, financial and political

news that you think could affect the prices of your stocks and bonds. At the end of the game your performance is compared with the return of a buy and hold portfolio and that of the 15 benchmark. The points you receive are proportional to your performance. You will deal with topics such as risk aversion, diversification and rate of return. You will understand how the news affects prices and expectations about the future.

Risky City



A game for teenagers and adults who can either play against three other players or against three avatars. You are given an initial amount of 'money' and then you roll the dice and move to a space – you are then asked if you want to buy or sell different kinds of property (cinema, supermarket, hospital, library, etc) or pay for staying there. Various characteristics are linked to the property – risk, return, wellbeing. The game is characterized by random events that can lead to unforeseen increases or decreases in your property. At the end of game you are given points based on your economic results, taking into consideration how well you were able to diversify the kinds of property you own. This game is useful to understand the effects of supply and demand on prices and to reflect on diversification as a way of limiting risk against unforeseen circumstances that mainly hit the riskiest properties.

It's my life

Your monthly income: 1.700,00 €		Your planned savings: 102,00 €		Generate result Your savings: 176,00																					
Your dream's value: 20.000,00 €																									
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A game for teenagers and adults, with fascinating graphics, where you can test your managerial skills. You choose your own dream – which is represented by an object – from the boxes. You then place this object on a specific reader and the game starts. The long term value of the dream is declared and by taking into account monthly income and necessary and non-necessary expenditures, you will be able to calculate how long it will take to reach your objective. The idea is to make you think about what is necessary and what is not, as well as helping you to evaluate your ability to manage resources to realise your objective.

APPLICATIONS

Debbi & friends



A simple application for teenagers and adults. By answering questions you can help Debby take important decisions. In the first part, Debby has to decide how to buy a computer: whether she should ask for a loan, use her savings or ask her parents for the money she needs. In the second parts the choices are more complicated and deal with the possibility of setting up a business. It's not easy, courage is not enough as you need to be able to evaluate future cash flows and create a business plan. The aim of this is to make you think about how you can use your savings as the main source of finance when setting up your own business.

Financial Timeline



This is an application for teenagers and adults who want to see what happened on the stock and bond markets in the last twenty years and how these events affected both political and economic news. By touching the screen at a point of the line that represents market performance, you will receive the most important news of that day. This will make it easier to understand the link between news and the market index.

Financial Planner

It is an application for teenagers and adults who want to see how their financial assets will perform over time. The simulation is created by using some demographic and market information, supplemented by user-provided information about assets, income, risk aversion and pension savings. It simulates the evolution of your wealth starting from your current age until you are 90, taking expected increases in expenditure and future income into consideration. As well as giving you an average scenario, it also shows you the consequences of positive and negative status of your assets, which are in turn also affected by random events inserted in the simulation model. You will get an idea of the future consequences of your savings decisions and your financial choices.

Room 6 : Savings

You are now in the last room and so far we have tested your ability to handle money. Now, it is time for a break and a chance to view the collection of money boxes. A simple object that comes in all shapes and sizes and that has been used for centuries to help us is making complex intertemporal choices.



The “Savings” room has been especially set up to house an extensive and prestigious collection of money boxes donated to Museo by Rocco and Nicola Tana. The two collectors have entitled it “From the past to the future” to underline the choice between today and tomorrow that this object represents.

The collection consists of more than 1,500 items from around the world and different eras and made in a variety of materials and forms. Already the classic earthenware piggy-bank to be broken, or better “sacrificed”, in times of need, is the most popular, there are also examples in more precious materials, such as cast iron, porcelain and glass. The English name “piggy bank” in fact derives from an old English term – pygg – for an orange-coloured clay and was only later used identified with the shape of a pig, an important source of sustenance.

In addition to the traditional pigs, there is a wide variety of other animals, including some splendid examples of US ceramic cows made for the 2000 Cow Parade. There are also cars, trains, scooters, ships, balloons and airships, books, cash registers, commodes, post boxes, cartoon characters. The human figure is represented by heads, busts, or whole figures. A special section is given over to late 19th-century US mechanical boxes, constructed both to entertain children and to encourage them to save money.

The room can house approximately 700 pieces at any one time, so the money boxes are exhibited on a rotational basis and in themed displays.

Points

At the end of your tour you can check how many points you've earned. Where will you be in the chart? If you want, you can modify the answers you gave to the questionnaire that you filled in at the entrance.

In this room you will be able to see your final score and your final position on the top-ten chart. You can leave your email address if you want to receive more information and revise the answers to the questionnaire you completed at the lobby.