

Chapter 1 : PPT “ Numeracy PowerPoint presentation | free to view - id: 1b6eZjRIN

Numeracy, financial literacy, and financial decision-making Annamaria Lusardi. NBER Working Paper No. Issued in February NBER Program(s):Aging Financial decisions, be they related to asset building or debt management, require the capacity to do calculations, including some complex ones.

This course is for international students who have completed A-levels or equivalent, or who are already in the first year of a relevant undergraduate degree in their home country, but do not meet the academic or English language requirements for direct entry at University of Exeter. International students should check details of our English language requirements and may be interested in our Foundation programme for Engineering, Mathematics, Computer Science and Physical Sciences. Further information Please read the important information about our Typical offer. All our academic staff are active in internationally-recognised scientific research across a wide range of topics. You will also be taught by leading industry practitioners. All our degrees involve a combination of teaching methods, including lectures, seminars, workshops and tutorials. Most modules in mathematics involve three one-hour lectures per week, so you would typically have 12 lectures per week. In the first year there are tutorial classes for each module every week and example classes every fortnight, except for modules involving computing or project work. Thus in the first year you would typically have around 16 contact hours per week. In addition to this, you are expected to spend about 20 hours per week in private study. The tutorials and exercise classes enable you to discuss the lecture material and coursework problems. Further support is available at lunchtime mathematics surgeries run by postgraduate students. You are encouraged to discuss any mathematical problems or questions that may arise with the lecturer. All lecturers have advertised office hours when they are available to provide help. Working through examples and solving problems is a vital part of learning mathematics so coursework is set in each module. Assessment for all degrees is through a combination of examinations and coursework. Examinations are the more important part of the process, but the assessed coursework will help you to work steadily throughout your degree. This is particularly important in Mathematics where the subject matter develops logically from fairly simple beginnings. Most modules also have either a mid-term test or coursework contributing to the assessment. Coursework typically contributes 20 per cent to the assessment of all modules except in the final year of the MMath and MSci programmes. In the third and fourth years several modules allow you to undertake further coursework to contribute to your overall degree classification. You must pass your first year assessment in order to progress to the second year, but the results do not count towards your final degree classification. Careers Exeter has an excellent reputation with graduate recruiters and a strong employment record. We offer a very wide range of opportunities for you to develop the skills employers are looking for, including industrial placements and study abroad. This combination of skills makes graduates from this programme very attractive to a wide range of employers. You will receive research-led teaching, meaning that you will study and learn with the experts - those who are shaping the field of study and writing core texts. Professional experience All our undergraduate students can choose to take an optional Commercial and Industrial Experience module during the vacation before the third year. This opportunity allows you to gain paid work experience in a commercial setting while earning credits towards your degree programme. Industrial experience not only develops your CV but helps you to determine your career aspirations. Your placement will be spent working in an appropriate business or industry related to mathematics, and you will benefit from our established connections with local, national and multinational organisations. We find that our students gain valuable experience from working in industry. As well as increasing their first-hand knowledge, they also improve personal and transferable skills, make new contacts and enhance their employability. Who is this for? Does it count towards my degree? How does it affect my tuition fee? During this year you will pay a reduced tuition fee. Visit the Tuition Fees page for more information. How do I apply? You can apply for this programme through UCAS using the code at the top of this page. Preparation and support We will help you to prepare for your work placement from early in your studies. This is an opportunity to start thinking about your placement well in advance.

Numeracy, Financial Literacy, and Financial Decision-Making Abstract Financial decisions, be they related to asset building or debt management, require the capacity to do.

Submitted by plusadmin on September 1, September If I tell someone I am a financial mathematician, they often think I am an accountant with pretensions. Since accountants do not like using negative numbers, one of the oldest mathematical technologies, I find this irritating. A roll of the dice I was drawn into financial maths not because I was interested in finance, but because I was interested in making good decisions in the face of uncertainty. Mathematicians have been interested in the topic of decision-making since Girolamo Cardano explored the ethics of gambling in his *Liber de Ludo Aleae* of , which contains the first discussion of the idea of mathematical probability. Cardano, famously, commented that knowing that the chance of a fair dice coming up with a six is one in six is of no use to the gambler since probability does not predict the future. But it is of interest if you are trying to establish whether a gamble is fair or not; it helps in making good decisions. The average value of rolling a dice converges to the expected value of 3. He introduced the law of large numbers, proving that if you repeat the same experiment say rolling a dice a large number of times, then the observed mean the average of the scores you have rolled will converge to the expected mean. In conjunction with statistics, probability theory became an essential tool of the scientist. For the first third of the twentieth century, probability was associated with inferring results, such as the life expectancy of a person, from observed data. But as an inductive science i. Kolmogorov defined probability to be any measure on a collection of events " not necessarily based on the frequency of events. What is it worth? This idea is counter-intuitive if you have been taught to calculate probabilities by counting events, but can be explained with a simple example. If I want to measure the value of a painting, I can do this by measuring the area that the painting occupies, base it on the price an auctioneer gives the painting or base it on my own subjective assessment. For Kolmogorov, these are all acceptable measures which could be transformed into probability measures. The measure you choose to help you make decisions will depend on the problem you are addressing: Kolmogorov formulated the axioms of probability that we now take for granted. Secondly, that you know all the possible outcomes, and the probability of one of these outcomes occurring is 1 e. And finally, that you can sum the probability of mutually exclusive events e. You can read more about probability and its development on the Understanding Uncertainty site , and the Plus article Measure for measure is an excellent introduction to measure theory. Deciding a fair price Why is the measure theoretic approach so important in finance? Financial mathematicians investigate markets on the basis of a simple premise; when you price an asset it should be impossible to make money without the risk of losing money, and by symmetry, it should be impossible to lose money without the chance of making money. If you stop and think about this premise you should quickly realise it has little to do with the practicalities of business, where the objective is to make money without the risk of losing it, which is called an arbitrage, and financial institutions invest millions in technology that helps them identify arbitrage opportunities. An asset should be priced so as to prevent such arbitrages. The explanation of risk-neutral measures is pretty straightforward and is described here. You can also read a general introduction to arbitrage and pricing in the Plus article Rogue Trading. However, as with much of probability, what seems simple can be very subtle. A no-arbitrage price is not simply an expectation using a special probability; it is only an arbitrage-free if it is risk neutral and will not result in the possibility of making or losing money. And you have to undertake an investment strategy, known as hedging, that removes these possibilities. In the real world, which involves awkward things like taxes and transaction costs, it is impossible to find a unique risk-neutral measure that will ensure all these risks can be hedged away. One of the key objectives of financial maths is to understand how to construct the best investment strategies that minimises risks in the real world. Financial mathematics is exciting because, by employing advanced mathematics, we are developing the theoretical foundations of finance and economics. To appreciate the impact of this work, we need to realise that much of modern financial theory, including Nobel prize winning work, is based on assumptions that are imposed, not because they reflect observed phenomena but because

they enable mathematical tractability. Just as physics has motivated new maths, financial mathematicians are now developing new maths to model observed economic, rather than physical, phenomena. Financial innovation currently has a poor reputation and some might feel that mathematicians should think twice before becoming involved with "filthy lucre". However, Aristotle tells us that Thales, the father of western science, became rich by applying his scientific knowledge to speculation, Galileo left the University of Padua to work for Cosimo II de Medici, and wrote *On the discoveries of dice*, becoming the first quant. Personally, what was good enough for Newton is good enough for me. Moreover, interesting things happen when maths meets finance: And looking at the 23 DARPA Challenges for mathematics, several of these "the mathematics of the brain, the dynamics of networks and capturing and harnessing stochasticity in nature, beyond convex optimization" are all highly relevant to finance. The Credit Crisis did not affect all banks in the same way. Some banks, like J. Since Cardano, financial maths has been about understanding how humans make decisions in the face of uncertainty and then establishing how to make good decisions. Making, or at least not losing, money is simply a by-product of this knowledge. As Xunyu Zhou, who is developing the rigorous mathematical basis for behavioural economics at Oxford, recently commented: Financial mathematics needs to tell not only what people ought to do, but also what people actually do. This gives rise to a whole new horizon for mathematical finance research: This is the theory. In practice, in the words of one investment banker: Banks need high level maths skills because that is how the bank makes money. He is active in promoting the sensible use of mathematics in finance and highlighting the need for more research into mathematics in order to better understand random and complex environments. He is Course Director for the only undergraduate course in Financial Mathematics, on which he teaches, and undertakes research in stochastic optimal control. Prior to becoming an academic, he worked for sixteen years in the oil exploration industry.

Chapter 3 : Numeracy and mathematics

Get this from a library! Numeracy and finance: a practical introduction to the application and interpretation of financial and statistical information in organisations.

Numeracy and mathematics 01 August Mathematics is important in our everyday life, allowing us to make sense of the world around us and to manage our lives. Using mathematics enables us to model real-life situations and make connections and informed predictions. It equips us with the skills we need to interpret and analyse information, simplify and solve problems, assess risk and make informed decisions. Mathematics plays an important role in areas such as science or technologies, and is vital to research and development in fields such as engineering, computing science, medicine and finance. Learning mathematics gives children and young people access to the wider curriculum and the opportunity to pursue further studies and interests. Being numerate helps us to function responsibly in everyday life and contribute effectively to society. It increases our opportunities within the world of work and establishes foundations which can be built upon through lifelong learning. Numeracy is not only a subset of mathematics; it is also a life skill which permeates and supports all areas of learning, allowing young people access to the wider curriculum. Practical support and resources National Numeracy and Mathematics Hub: This includes examples of effective practice from establishments and local authorities. There is a Yammer Group which encourages and supports professional discussion with practitioners across Scotland and the opportunity to share resources. All Education Scotland resources for numeracy and mathematics can be accessed here. Requires a Glow log-in. Numeracy and Mathematics Skills Professional Learning resource - This professional learning resource is designed to support improvement by highlighting eight key skills required to support and extend knowledge and understanding in numeracy and mathematics: Differentiated learning in numeracy and mathematics Briefing 1 - A short, practitioner-focused research briefing which summarises research on differentiated learning and considers how it could be used to improve learner outcomes in numeracy and mathematics. It has a particular focus on meeting the needs of children from disadvantaged backgrounds. Higher order thinking skills in maths: This resource illustrates practical activities to improve learning and teaching skills. It will support improvement by utilising higher order thinking skills by tackling the following key areas: Find more resources, examples of practice, research and improvement frameworks and tools for numeracy and mathematics in the National Improvement Hub. Events and activities Maths Week Scotland, 10â€“16 September - Experience the benefits, joy and beauty of maths in exciting new ways by participating in Maths Week Scotland, a brand new initiative to help everyone in Scotland see maths positively. For more information on planned activities, visit the Making Maths Count blog.

Chapter 4 : BBC Bitesize - GCSE Maths Numeracy (WJEC) - Household finance - WJEC - Revision 1

Numeracy skills are basic mathematical skills that include a range of abilities to understand and analyse numerical information and to make the right conclusions and decisions. They also include the ability to express ideas and situations using numerical or mathematical information.

Chapter 5 : Personal Finance & National 5 Numeracy | Dunoon Grammar School

*Numeracy and Finance [Peter Fearn, Kathleen Fearn] on blog.quintoapp.com *FREE* shipping on qualifying offers.*

Chapter 6 : Numeracy: the biggest hidden customer vulnerability â€“ UK Finance

We measure levels of numeracy and financial literacy in the Swedish population and link these to participation in two key asset markets: stocks and housing. Many adults have low levels of both numeracy and financial literacy, with large differences between demographic groups. Numeracy is positively.

Chapter 7 : Financial Numeracy Resources | National Adult Literacy Agency

numeracy is found to be linked to many financial decisions. This paper is organized as follows: Section 2 provides an overview of some of the existing work on numeracy as it relates to financial literacy and financial.

Chapter 8 : Mathematics with Finance BSc | Undergraduate Study | University of Exeter

Well National Numeracy is an independent charity, established just 5 years ago, to support numeracy in both adults and children. It aims to enable everyone to have the confidence to use numbers and data to make good decisions in their daily life.

Chapter 9 : Correlation of Financial Literacy to Student Loan Debt, Numeracy, and Personal Finance Train

A numeracy leaflet covering responding to questions involving turnover, revenue or sales. This is one of 24 numeracy resources created by Eleanor Lingham, De Montfort University and reviewed by Julie Crowley, Cork Institute of Technology.