Reflection essay on monetary economics

Economics

Undergraduate study in Economics, Management, Financeand the Social Sciences Monetary economics R. Love EC3115, 2790115 2011 Monetary economics R. Love EC3115, 2790115 2011 Undergraduate study in Economics, Management, Finance and the Social Sciences This subject guide is for a Level 3 course (also known as a ‘ 300 course’) offered as part of the University of London International Programmes in Economics, Management, Finance and the Social Sciences. This is equivalent to Level 6 within the Framework for HigherEducationQuali? ations in England, Wales and Northern Ireland (FHEQ). For more information about the University of London International Programmes undergraduate study in Economics, Management, Finance and the Social Sciences, see: www. londoninternational. ac. uk This guide was prepared for the University of London International Programmes by: Ryan Love, BA, MSc, who is a PhD candidate and member of the Financial Markets Group at the London School of Economics and PoliticalScience, University of London. This is one of a series of subject guides published by the University.

We regret that due to pressure of work the author is unable to enter into any correspondence relating to, or arising from, the guide. If you have any comments on this subject guide, favourable or unfavourable, please use the form at the back of this guide. University of London International Programmes Publications Office Stewart House 32 Russell Square London WC1B 5DN Website: www. londoninternational. ac. uk Published by: University of London © University of London 2009 Reprinted with minor revisions 2011 The University of London asserts copyright over all material in this subject guide except where otherwise indicated. All rights reserved.

 Contents Contents

 Monetary economics Notes vi Introduction Introduction The subject guide and the syllabus As the name implies, this is only a guide to monetary economics.

The aim of the guide is to enable you to interpret fully the published syllabus. It does so by identifying what you are expected to know within each area of the syllabus, and suggesting the reading that would probably be most helpful in acquiring an understanding of the material concerned. It cannot be emphasised strongly enough that the guide is not a substitute for reading textbooks and other references. This guide, and the syllabus to which it refers, assume that you have completed courses 66 Microeconomics and, more particularly, 65 Macroeconomics, which is a prerequisite for this course.

Although 66 Microeconomics is not a prerequisite for this subject, there are elements of microeconomics that you will need in order to benefit from your study of monetary economics. In particular, you should be familiar with the ideas of consumer optimisation. All intermediate level microeconomics textbooks will have chapters that cover this material and you are strongly advised to consult these before commencing your studies in this subject. 1 However, where optimisation methods are used here, the particular model will be set up in some detail, allowing you to see exactly what is going on.

References for background reading will also be given to help you understand the material. Some parts of the monetary economics syllabus were included in 66 Macroeconomics (e. g. demand for money, inflation), whereas other parts of monetary economics build directly on, or extend, parts of the subject in macroeconomics (e. g. using the tools of aggregate demand and aggregate supply to explore the relationship between money, inflation and output). 1 The structure of the guide The subject guide broadly mirrors the syllabus, which is split into three sections. The first section of the guide

(Chapters 1–4) introduces the concept of money; what it is, why we use it and how it is created. The role of banks and the banking sector will be analysed in this section only, leaving the rest of the guide to focus on policy issues. • The second section (Chapters 5–9) examines monetary policy in a closed economy, considering a number of models that allow real effects of monetary policy, ranging from new-Classical to Keynesian. Specific models will be introduced and solved, allowing you to see exactly how these models work and what differentiates one from another. Finally, the guide considers monetary policy in an open economy (Chapters 10–14). This section will focus on exchange rate determination, any real effects of monetary policy in an open economy setting and it will also consider the different exchange rate regimes that have existed in the last hundred or so years. Please see the Monetary economics syllabus at the end of this ‘ Introduction’. See for example, Pindyck, R. and D. Rubinstein Microeconomics (1998) fourth edition, Chapter 3; Varian, H. Intermediate Microeconomics: a modern approach (2003) sixth edition, Chapters 1 to 6 (especially Chapters 5 and 6).

For a more technical review see Nicholson, W. Microeconomic Theory: basic principles and extensions (2002) eighth edition, Chapters 3 to 5. 1 115 Monetary economics Aims The aims of the course are to: • develop understanding of the theories that relate to the existence of money, explaining why it is demanded by individuals and used in the trading process • develop an understanding of the monetary transmission mechanism, whereby decisions made by the monetary authorities concerning money supplies or interest rates can have real effects on the economy • develop a number of macroeconomic models through which monetary policy can be evaluated.

Such models will include both Classical and Keynesian schools of thought and will consider why monetary policy matters and when monetary policy decisions may be impotent • introduce the concepts and monetary theories behind open economy models, focussing on different exchange rate regimes and exchange rate determination. Learning outcomes

On completion of this course and having completed the Essential reading and activities, you should be able to: • explain and discuss why people hold money and why it is used in the trading process • solve macroeconomic models and assess the role and efficacy of monetary policy for various types of models in both the Classical and Keynesian set-ups • describe and explain the main channels of the monetary transmission mechanism, through which monetary policy can have real effects on the economy • discuss the merits and disadvantages of different monetary policies used by Central Banks • evaluate the effects of monetary policy in different exchange rate regimes • discuss the differences between fixed and flexible exchange rates and the consequences on the workings of monetary policy. Subject chapters A different chapter is devoted to each major section of the syllabus, and the chapter order follows very closely, though not identically, the order of the topics as they appear in the syllabus.

This order will not concur with that in any one of the recommended textbooks and the fact that the order varies between the textbooks themselves reflects the view that there is no obvious sequence of topics because of the interrelationships between them. It is most important to appreciate that the ‘ topics’ in the syllabus are not selfcontained and mutually exclusive, and neither therefore are the chapters of this guide. Instead there is considerable overlap between many of the ‘ topics’ and between the chapters. For example, the chapter on ‘ the demand for money’ explains the link between the level of real money balances an economy wishes to hold and the nominal interest rate. This is essential for understanding how the exchange rate is determined in international asset markets in later chapters.

Similarly, an understanding of how, and to what extent, changes in the supply of money affect the macroeconomy will require an understanding of the subject matter of several chapters. 2 Introduction Consequently, you must expect the examination to include questions that require an understanding of several different parts of this subject, in other words you cannot ‘ pick and choose’ what to study from the guide. Each chapter begins with a checklist of learning outcomes; what you should know after having completed the chapter and done the essential reading and activities. Then follows some reading advice and a list of the most helpful books and articles for that particular chapter. Following the main text, each chapter concludes with a list of Sample examination questions.

Occasionally these questions will overlap with material covered in one or more of the other chapters. Reading advice Unfortunately no single textbook adequately covers the whole of the monetary economics syllabus. Indeed, using several different textbooks may still not prove adequate. Sometimes it will be necessary to consult a ‘ specialist’ book, or perhaps an article in a journal in order to get a good grasp of the subject matter concerned.

Consequently, the reading suggested at the beginning of each chapter might include not only references to one or more textbooks, but also references for wider reading. In some chapters, it might be useful to study the recommended reading before you move on to the material presented in the subject guide.

Where this is the case, the introductory paragraph will let you know what should be read before you work through the chapter. For each chapter, the reading list is split into two sections: Essential reading and Further reading. As the name suggests, Essential reading is required reading in order for you to fully understand the concepts introduced in the particular chapter. Again, it must be stressed that this subject guide is not a substitute for reading textbooks. The items listed under Further reading will give you greater insight into the topics covered in the chapter and will certainly help you understand any areas with which you still feel uncomfortable. Essential reading For Sections 1 and 2, you are encouraged to buy: either Goodhart, C. A. E.

Money, Information and Uncertainty. (London: Macmillan, 1989) second edition [ISBN 9780262570756]. or Lewis, M. K. and P Mizen Monetary Economics. (Oxford; New York: Oxford . D. University Press, 2000) [ISBN 9780198290629]. For Section 3, you are encouraged to buy: Krugman, P and M. Obstfeld International Economics: Theory and policy. . R. (Pearson, 2008) eighth edition [ISBN 9781408208076]. For Sections 1 and 2 the best books are Goodhart, and Lewis and Mizen. Lewis and Mizen is more up-to-date and easier to read and both also have chapters relevant for Section 3. Goodhart offers a very detailed treatment of the subject area and is not as easy to read as the other texts.

However, it is very thorough, providing excellent coverage and you may benefit most from this book after consulting the other readings when you have at least some understanding of the subject material. For Section 3, Krugman and Obstfeld is the best text and a lot of what is presented here is taken from this book. This is both up-to-date and comprehensive, and covers issues including international trade as well as 3 115 Monetary economics the open economy monetary economics topics on which this part of the subject will focus. Since the material for Section 3 is primarily taken from this book, those chapters (Chapters 10 to 14) tend to be smaller than those for Sections 1 and 2.

In order to avoid unnecessary repetition, only the basic ideas will be presented in these latter chapters and you are directed to the relevant sections in Krugman and Obstfeld for a more thorough analysis and for real world applications. Throughout this guide, there are references in both the Essential and Further reading sections to articles in The New Palgrave Dictionary of Money and Finance. This includes essays and articles on most aspects of money, contributed by authors who are internationally recognised authorities on the subject matter of their particular entry. In each chapter you will be directed to the relevant entries in this book in either the Essential or Further reading categories.

Other books are special topic books (e. g. on the demand for money) or are particularly useful on specific topics. Where such books (and indeed articles as well) are recommended, page references or chapter numbers are given.

Detailed reading references in this subject guide refer to the editions of the set textbooks listed above. New editions of one or more of these textbooks may have been published by the time you study this course. You can use a more recent edition of any of the books; use the detailed chapter and section headings and the index to identify relevant readings. Also check the virtual learningenvironment(VLE) regularly for updated guidance on readings.

The Essential reading for all chapters in this subject guide is taken from the three textbooks above but also includes the following: Books Artis, M. J. and M. K. Lewis Money in Britain: Monetary policy, innovation and Europe. (New York; London: Philip Allan, 1991) [ISBN 9789991577456]. Cagan, P ‘ The monetary dynamics of hyperinflation’, in Friedman, M. (ed.) . Studies in the Quantity Theory of Money. (Chicago: University of Chicago Press, 2000) [ISBN 9780226264042]. Gordon, R. J. , ‘ A century of evidence on wage and price stickiness in the US, the UK and Japan’, in Tobin, J. (ed.) Macroeconomics, Prices and Quantities. (Oxford: Blackwell, 1983) [ISBN 9780815784852]. Hallwood, C.

P and R. MacDonald International Money and Finance. (Oxford: . Blackwell, 2000) third edition [ISBN 9780631204626]. Hargreaves Heap, S. P The New Keynesian Macroeconomics: Time, belief and . social independence. (Aldershot, Hants, England; Brookfield, Vt. , USA: Edward Elgar Publishing, 1992) [ISBN 9781852785987]. Harris, L. Monetary Theory. (New York; London: McGraw-Hill, 1985) [ISBN 9780070663480]. Hoover, K. D. The New Classical Macroeconomics. (Oxford: Blackwell, 1988) [ISBN 9780631146056]. Laidler, D. E. W. The Demand for Money: Theories, Evidence and Problems. (New York: Harper Collins, 1997) fourth edition [ISBN 9780065010985].

Lucas, R. E. Econometric policy evaluation: a critique', in Brunner, K. and A. H. Meltzer (eds) The Phillips Curve and Labor Markets. (Amsterdam; Oxford: North-Holland, 1976) [ISBN 9780444110077]. Mankiw, N. G. Macroeconomics. (New York: Worth Publishers, 2002) fifth edition [ISBN 9780716752370]. McCallum, B. Monetary Economics. (New York: Macmillan; London: Collier Macmillan, 1989) [ISBN 9780023784712]. 4 Introduction Mishkin, F. S. The Economics of Money, Banking and Financial Markets. (Boston, Mass. ; London: Prentice Hall, 2007) eighth edition [ISBN 9780321415059]. ., Newman, P M. Milgate and J. Eatwell (eds) The New Palgrave Dictionary of Money and Finance. London: Macmillan, 1994) [ISBN 9780333527221]. Journal articles Dornbusch, R. ' Expectations and exchange rate dynamics', Journal of Political Economy 84(6) 1976, pp. 1161–176. Dornbusch, R. ' Lessons from experience with high inflation', The World Bank Economic Review (6) 1992, pp. 13–31 Kydland, F. E. and E. C. Prescott ' Rules rather than discretion: the inconsistency of optimal plans', Journal of Political Economy 85(3)1977, p. 473. Long, J. and C. Plosser ' Real business cycles', Journal of Political Economy 91(1) 1983, pp. 39–69. Plosser, C. ' Understanding real business cycles', Journal of Economic Perspectives 3(3) 1989, pp. 51–77. Taylor, J. B. An historical analysis of monetary policy rules', National Bureau of Economic Research working paper, w6768, (1998). Available at http://papers. nber. org/papers/W6768. Taylor, M. ' The economics of exchange rates', Journal of Economic Literature 33(1) 1995, pp. 13–47. Further reading Please note that as long as you read the Essential reading you are then free to read around the subject area in any text, paper or online resource. You will need to support your learning by reading as widely as possible and by thinking about how these principles apply in the real world. To help you read extensively, you have free access to the VLE and University of London Online Library (see below).

A full list of all the Further reading referred to in this guide can be found in Appendix 1 on page 173. Online study resources In addition to the subject guide and the Essential reading, it is crucial that you take advantage of the study resources that are available online for this course, including the VLE and the Online Library. You can access the VLE, the Online Library and your University of London email account via the Student Portal at: http://my. londoninternational. ac. uk You should have received your login details for the Student Portal with your official offer, which was emailed to the address that you gave on your application form.

You have probably already logged in to the Student Portal in order to register! As soon as you registered, you will automatically have been granted access to the VLE, Online Library and your fully functional University of London email account. If you forget your login details at any point, please email uolia.london. ac. uk quoting your student number. The VLE The VLE, which complements this subject guide, has been designed to enhance yourlearning experience, providing additional support and a sense of community. It forms an important part of your study experience with the University of London and you should access it regularly. 5 115 Monetary economics

The VLE provides a range of resources for EMFSS courses: • Self-testing activities: Doing these allows you to test your own understanding of subject material. • Electronic study materials: The printed materials that you receive from the University of London are available to download, including updated reading lists and references. • Past examination papers and Examiners' commentaries: These provide advice on how each examination question might best be answered. • A student discussion forum: This is an open space for you to discuss interests and experiences, seek support from your peers, work collaboratively to solve problems and discuss subject material. Videos: There are recordedacademicintroductions to the subject, interviews and debates and, for some courses, audio-visual tutorials and conclusions. • Recorded lectures: For some courses, where appropriate, the sessions from previous years' Study Weekends have been recorded and made available. • Study skills: Expert advice on preparing for examinations and developing your digital literacy skills. • Feedback forms. Some of these resources are available for certain courses only, but we are expanding our provision all the time and you should check the VLE regularly for updates. Making use of the Online Library The Online Library contains a huge array of journal articles and other resources to help you read widely and extensively.

To access the majority of resources via the Online Library you will either need to use your University of London Student Portal login details, or you will be required to register and use an Athens login: http://tinyurl. com/ollathens The easiest way to locate relevant content and journal articles in the Online Library is to use the Summon search engine. If you are having trouble finding an article listed in a reading list, try removing any punctuation from the title, such as single quotation marks, question marks and colons. For further advice, please see the online help pages: www. external. shl. lon. ac. uk/summon/about. php How to use this subject guide At the start of most chapters you are advised on how to approach the material and which readings to consult as well as when to consult them.

In general though, for each topic in the syllabus you should read through the whole of the chapter in the guide so as to get an overview of the material to be covered. Then try to read as much of the suggested reading as you can. This is important as you will often find that things you have difficulty understanding in one book are made perfectly clear in another. A thorough understanding of the material covered in recommended passages is essential if you are to maximise the benefits you derive from this subject. Use the checklist and Sample questions as a way of testing your understanding of the material covered. The textbooks will also include 6 Introduction exercises and questions, and you would be well advised to attempt as many of these as you can.

The real test of whether you understand something is not whether you have followed the explanation, but whether you can apply that understanding to answering questions. A number of chapters include an ‘ extended activity’. This is a longer question, which you should be able to work through after having consulted the relevant readings. Although an outline of the solution is included at the end of the chapter, you are strongly encouraged to use this only to check your answers or to get hints as to how to start your answer. The examination Important: the information and advice given here are based on the examination structure used at the time this guide was written. Please note that subject guides may be used for several years.

Because of this we strongly advise you to always check both the current Regulations for relevant information about the examination, and the VLE where you should be advised of any forthcoming changes. You should also carefully check the rubric/instructions on the paper you actually sit and follow those instructions. Examination questions will require short essays, demonstrating understanding of the subject material and critical ability. The three-hour unseen examination consists of three sections: • Section A (40 marks) contains 12 statements, which are true, false or uncertain. You will be asked to answer any eight of these, also explaining your answer in a short paragraph.

A typical ‘ true, false or uncertain’ question will appear at the end of each chapter and in the first half of the guide a suggested answer is also included, in order to give you an idea as to how detailed the explanation should be. • Section B is worth 30 marks. You must answer three out of four questions. These will typically involve the analysis and interpretation of some data in the light of various theories. • Section C is worth 30 marks and you are required to answer one of two questions. Each of these questions will be made up of a number of short exercises, each leading on from the previous parts. To give you an idea as to how the examination will be structured, an example is included in Appendix 2. In addition to the Sample examination paper, the questions at the end of each chapter will also give you an insight into the examination.

The ‘ true, false or uncertain’ question in each chapter is representative of the questions you will be asked in Section A and the remaining questions are similar to those found in Section B and to the exercises that make up the questions in Section C. The extended activities, found in a number of chapters, are exactly the type of question you should expect to find in

Section C of the examination. To give you an idea as to how you should structure your answers in the examination, feedback to some of the Sample examination questions is given at the end of each chapter. However, as is the case for the feedback to the extended activity, you should only use this to check your answers, or to get hints as to how to start. Remember, it is important to check the VLE for: • up-to-date information on examination and assessment arrangements for this course 7 115 Monetary economics where available, past examination papers and Examiners’ commentaries for the course which give advice on how each question might best be answered. Use of mathematics and statistics Economics is becoming an increasingly technical subject and, as such, in this subject you will be required to employ mathematics in order to solve simple optimisation problems. However, what is most important is the intuition behind the models, which can often be demonstrated easily using diagrams. Any mathematics that is used in this subject is limited to simple calculus (differentiation), algebra and basic statistics (the definition and calculation of means and variances).

The most technically demanding chapter is Chapter 7 but in order to help you work through this, the maths is presented so as to allow you to see how the models are solved, step-bystep. Some of the passages in some of the recommended books and articles do contain more complicated or lengthy mathematics/statistics but almost invariably its meaning is clarified in the written text. Model-based approach of the guide This subject guide follows a more model-based approach to monetary economics than the previous guide. Each chapter introduces one or more models that, when solved, will show you the linkages between monetary variables (money supply or interest rates, for example) and other variables such as output.

As such, for the examination you will be expected to solve and work through mathematical models but these will be no more complicated than what is presented in this subject guide. However, what is just as important is that you demonstrate that you understand what is going on. To do this, you must explain your answer using words, and possibly also diagrams. Even though all you need to know to succeed in your study of monetary economics is presented in the essential and further reading sections of each chapter, for those of you who require more help with this model-based approach, you can consult Walsh, C. Monetary Theory and Policy (2003) second edition and Sargent, T.

Macroeconomic Theory (1987) second edition. It should be stressed, however, that you should read the items in the recommended reading sections first, before you consider reading these more advanced/technical textbooks. Hopefully you will find your study of monetary economics interesting and enjoyable. Good luck. Syllabus Important: the information given in the following section is based on the syllabus at the time this guide was written. However, you should refer to the Regulations for the latest version of the syllabus and any additional information. Section 1: Introduction to money and monetary economics The nature of money • What constitutes money.

Why people hold money; introduction to cash in advance (CIA) and money in the utility (MIU) functions. Money demand and supply • Microeconomic determinants of the demand for money and macroeconomic money demand functions. Financial intermediaries, banks and money creation. 8 Introduction The Classical school, neutrality of money and the quantity theory • The Classical dichotomy, Walras' and Say's laws, introduction to money in a general equilibrium setting. Section 2: Monetary policy The Classical model, flexible price economies and monetary policy • Rational expectations, representative agents and real business cycle theory. MIU, CIA, Lucas supply functions and the effects of monetary policy.

The Keynesian approach to monetary policy – nominal rigidities • Multi-period pricing and the persistence of monetary policy shocks. Policy ineffectiveness and Central Bank independence • The Lucas critique. Monetary policy rules: interest rate targeting and money targeting. Issues in monetary policy: rules versus discretion. The welfare effects of inflation and monetary policy • Neutrality and superneutrality of money, welfare costs and the Friedman rule, seigniorage and the inflation tax. Term structure of interest rates • Explanation of the yield curve: expectations hypothesis and the segmentation hypothesis. Section 3: International monetary arrangements

Money, interest rates and exchange rates • Introduction to income accounting in an open economy, uncovered and covered interest rate parity. Prices and the exchange rate • Law of one price, absolute and relative purchasing power parity. Monetary policy in an open economy setting • Monetary theory of the exchange rate, monetary policy and exchange rate overshooting. Exchange rate regimes • Gold standard, Bretton Woods, floating exchange rates, optimal currency area theory and issues in the euro. 9 115 Monetary economics Notes 10 Section 1: Introduction to money and monetary economics Section 1: Introduction to money and monetary economics 11 115 Monetary economics Notes 12 Chapter 1: The nature of money Chapter 1: The nature of money Learning outcomes

By the end of this chapter, and having completed the Essential reading and activities, you should be able to: • discuss the nature and shortcomings of a barter economy • list and describe the general functions performed by money • describe the Wicksell problem and demonstrate how indirect barter can lead to the emergence of a commodity money • describe the differences between transactions using credit cards and bank debit cards • list and describe what the different types of money are. Reading advice You will certainly find it easiest, and probably most useful, to read the appropriate sections on the nature of money in one or more of the basic 1 textbooks before you move on to the material in this chapter.

All textbooks on money and banking will have a section covering the material here. However the best, although most difficult, is that of Goodhart (1989a) Chapter 2 – see below under ‘ Essential reading’. You may find it helpful to read Goodhart (1989b) first – see below under ‘ Further reading’. 1 See for example, Harris, and Newlyn and Bootle. Essential reading Goodhart, C. A. E. Money, Information and Uncertainty. (London: Macmillan, 1989a) Chapter 2. Lewis, M. K. and P Mizen Monetary Economics. (Oxford; New York: Oxford . D. University Press, 2000) Chapters 1 and 2. Further reading Clower, R. W. ‘ Introduction’ in Clower, R. W. (ed.) Monetary Theory: Selected readings. (Harmondsworth: Penguin, 1969).

Goodhart, C. A. E. ‘ The Development of Monetary Theory’ in Llewellyn, D. T. (ed.) Reflections on Money. (Basingstoke: Macmillan, 1989b). Harris, L.

Monetary Theory. (New York; London: McGraw-Hill, 1985) Chapter 1. Kiyotaki, N. and J. H. Moore ' Evil is the Root of all Money'. Clarendon Lecture series, Lecture 1 (2001). Available at: www. princeton. edu/~kiyotaki/ papers/Evilistherootofallmoney. pdf Kiyotaki, N. and R. Wright ' Acceptability, Means of Payment, and Media of Exchange', Federal Reserve Bank of Minneapolis Quarterly Review, Summer 1992. Also in Newman, P M. Milgate and J. Eatwell (eds) The New Palgrave . , Dictionary of Money and Finance. London: Macmillan, 1994). McCallum, B. Monetary Economics. (New York; Macmillan; London: Collier Macmillan, 1989). Newlyn, W. T. and R. P Bootle Theory of Money. (Oxford: Clarendon Press, 1978) . Chapter 1. 13 115 Monetary economics What is money? Money is defined by its function rather than the form in which it takes. In this sense, money is defined as ' anything which is in general use, and generally accepted, as a means of payment. ' In the past, money has taken the form of corn, rice, cattle, shells, various precious metals and more recently, pieces of paper issued by governments. In all cases though, money was and is used as a means of payment in exchange.

The payer in a transaction (he or she who is purchasing a good or service) hands over money to the value of the item bought and at this point the payee (the seller of the good or service) accepts that the payment is complete. The payee neither holds any further claims on the payer, nor on any third party who may have produced or issued the money. In this chapter we will discuss and explain the important functions, properties and different types of money. We will also explain why we use money and compare the alternative trading strategies, both with and without money. The functions of money Below, we will discuss the three main functions of money, although, arguably, some authors will expand these into four. 2 2 1. Money as a means of payment

As suggested above, the most important function of money is its use as a means of payment – money being used to pay for items purchased or to settle any debts. A related role of money is that as a medium of exchange, which Wicksell defined as ‘ an object which is taken in exchange, not on its own account…not to be consumed by the receiver or to be employed in technical production, but to be exchanged for something else within a longer or shorter period of time. ’3 In this sense, a means of payment can also be a medium of exchange. A gold coin for example, used to buy a piece of land, will be a means of payment (the seller of the land will not hold a claim on the payee who has just handed over the gold) but it will also be a medium of exchange.

The receiver of the gold coin will not use it for decorative purposes or to ‘ make’ any other goods or services, but will use it as a medium of exchange when he or she wishes to purchase a good or service some time in the future. However, the converse is not necessarily true. 4 That which may act as a medium of exchange may not act simultaneously as a means of payment. For example, if I wish to pay for a television set using a credit card, the seller may accept this as a medium of exchange. Although the television shop’s account may be credited effectively immediately, it may not be a means of payment since I, the payer, still have a debt outstanding, namely that to the credit card company.

I have merely replaced a debt to the television shop with a debt to the credit card issuer. The purchase of the television set with the credit card is then not a means of payment. For this reason we will not include credit cards, trade credit between firms, or any other line of credit such as unused overdraft facilities, in our definition of money. The fourth function of money commonly quoted, is that as a standard for deferred payment. This simply means that if something is bought today although payment for it does not have to be made until some later date, then the amount due for deferred payment can be measured in terms of money. 3 Wicksell, 1906, quoted by Kiyotaki and Wright, 1992. For an excellent analysis of the differences between ‘ means of payment’ and ‘ medium of exchange’ see Goodhart (1989a) Chapter 2, Section 4. 2. Money as a unit of account This function is also described as money acting as a measure of exchange value, money acting as a standard of value, or money as a numeraire. The essential point about this function is that money is acting as a 14 14 Chapter 1: The nature of money common denominator, in terms of which the value in exchange of all goods and services can be expressed. Money is simply acting as a unit of measurement in the same way that metres measure length and kilograms measure weight. Money in this sense is being used to measure the value of goods, services and assets relative to other goods, services and assets.

If it is convenient to trade all commodities in exchange for a single commodity, so it is convenient to measure the prices of all commodities in terms of a single unit, rather than record the relative price of every good in terms of every other good. If there is to be a single unit of account, it is again clearly convenient (though not necessary) that the unit of account be the medium of exchange, given that goods actually exchange against the medium of exchange. A clear advantage of having a single unit of account is that it greatly reduces the number of exchange ratios between goods and services. With four goods (A, B, C and D), in order to facilitate exchange, exchange ratios of each good in terms of all the others must be available (i. e. the six ratios A: B, A: C, A: D, B: C, B: D and C: D must be available).

In fact with n goods, there are n(n–1)/2 relative prices. However, if we introduce a fifth good, ‘ money’ that acts as a unit of account then there only need to be four prices. With n goods and money being the n+1th commodity acting as a unit of account, we only need n prices. For example, with 1, 000 goods and no unit of account, the economy needs 499, 500 relative prices of one good in terms of another. Introducing money as a unit of account dramatically reduces this to only 1, 000. Thus, having money as a unit of account can encourage trade by making it easier for individuals to know how much one good is worth in terms of another. 3. Money as a store of value

The exchange attributes of money, in particular that it is durable and can readily be used in the purchase of goods, also mean that people may wish to hold it as an asset, that is as part of their stock of wealth. In this sense, money serves as a store of value: it is permitting the separation in time of the act of sale from the act of purchase. The existence of a means of payment enables a person to sell a good without simultaneously having to buy another good in exchange. Receiving a means of payment in exchange for the good sold allows the seller to hold on to it until such time as it is needed to be exchanged for the goods and services he or she requires.

Money is not unique as a store of value: any asset, such as equities, bonds, real estate, antiques and works of art can all act as stores of value. Money itself is sometimes a poor store of value. This will occur when the relative price of money falls as a result of the money prices of other goods and services rising, that is, during periods of inflation. Why do we have money? The use of money helps facilitate trade since in the absence of money, trade has to proceed through barter, that is the direct exchange of one good for another. Barter Barter tends to be associated with primitive economies in which individual households operate in an isolated manner, and in particular have no ophisticated information systems concerning what is going on in the rest of the economy. For various reasons households may wish to consume a different bundle of goods from those they produce, so that there are gains 15 115 Monetary economics from trade. The problem is how to achieve these potential gains, given that trade is a voluntary activity and can proceed only when it is to the benefit of both parties. In barter, there has to be what is known as a ‘ double coincidence of wants’. If I grow corn but want to consume apples, not only do I have to find someone willing to trade apples but they must also want what I have to offer, namely corn.

In other words for trade to be mutually beneficial, it is necessary not only that trader A has what trader B wants but also that trader B has something to offer in exchange which trader A wants. It is quite possible that no trade will occur, especially in cases where the goods desired are so specialised that the probability of a double coincidence of wants occurring is so low that the cost of finding a match (for example in terms of advertising, transport, and so on) becomes very large and outweighs the increased utility derived from trade. Even if the goods offered for trade are readily available, it may still be the case that no trade occurs.

This is the subject of the Wicksell problem in which it is impossible to secure gains from trade through bilateral exchange. The Wicksell problem Consider the situation in Table 1. 1 and shown in Figure 1. 1. There are three individuals who each only produce one good but derive more utility from the consumption of another. Avinash produces bread but wants wi

Hire verifie