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SZÉCHENYI 2020



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BEFECTETÉS A JÖVŐBE

Preface

My aim with this study guide is to help students prepare for the final exam in International Economics. All they need to know to take a successful final exam they are able to find in the book, in the lecture slides or in their lecture notes. Going through this study guide prepares them for the types of questions that are going to be asked during the final exam.

Firstly, you will find the definitions for every topic. These definitions mostly come from the book, but I have slightly modified some of them. Definitions are either in the list because they are very important concepts in international economics in their own right, or because they help you to better understand more complex concepts later on. Within the individual topics definitions come in the order they appear in that specific topic, but at the end of this book you will find an index of them all. The definitions presented in this study guide are not the only possibly correct definitions of the concepts listed, students may come up with their own variations, but in the end I am going to decide whether their own variation is a correct definition or not.

Secondly, you will find true or false questions followed by single choice questions. Statements that are partly true should be considered false. The statement “The GDP measures the economic performance of the country as well as the welfare of its citizens” is thus considered false, although the first half of the sentence is true. For the single choice questions there is only one totally correct answer, though more of them may partially be right.

After the questions for every topic you will find the solutions to the questions and also detailed explanations supplementing the solutions. Also you will find a detailed definition list, where the basic definition is accompanied by some further explanation to make the definition easier to understand and memorize. You will not need to give these explanations in the exam.

You will find essay questions too, where you will have to provide a longer answer than a simple definition in your own words. In real life this is the way you will have to demonstrate your understanding of phenomena connected to international economics.

I recommend that once you feel fully prepared for the final exam, sit down with the sample test at the end of this study guide, set your timer to 50 minutes (that is how much time you will have at the real test) and try to solve it as well as you can. Only check the answers after the 50 minutes are up to see how well you are doing under a time constraint.

This course contributes to the professional training of the students in the following ways:

a) regarding knowledge, the student:

- has a firm grasp on the essential concepts, facts and theories of international trade and international finances. The student is familiar with the interconnectedness of national economies and its significance;
- is aware of the connection of other professional fields to the field of international economics (law, politics, accounting, marketing, management etc.);
- is familiar with digital and other office appliances designed to aid economic processes and the effective operation of economic organizations;
- has mastered the professional and effective usage of written and oral communication along with the presentation of data using charts and graphs;
- has a good command of the basic linguistic terms used in international economics in English.

b) regarding competencies, the student:

- is familiar with and able to apply the

- concepts of optimizing and equilibrium in reasoning about, predicting and organizing economic activity in an international/open setting;
- can uncover facts and basic connections, can arrange and analyze data systematically, can draw conclusions and make critical observations along with preparatory suggestions using the theories and methods learned.
 - can make informed decisions in connection with routine and partially unfamiliar issues applying the economic way of thinking with the specificities of international interconnectedness;
 - follows and understands international and world economy events along with the changes in the relevant economic policies and laws and their effect at the national level. The student considers the above when conducting analyses, making suggestions and proposing decisions;
 - is capable of assessing the complex consequences of economic processes and organizational events on consumer and producer decisions;
 - can present conceptually and theoretically professional suggestions and opinions well both in written and oral form in English;
 - is an intermediate user of professional vocabulary in English.
- c) regarding attitude, the student:
- is open to new information, new professional knowledge and new methodologies;
 - is sensitive to the changes occurring to the wider economic and social circumstances of his/her job, workplace or enterprise. The student tries to follow and understand these changes within the framework learned;
- d) regarding autonomy and responsibility, the student
- takes responsibility for his/her analyses, conclusions and decisions;
 - organizes, leads and assesses economic activities in a firm or an economic institution

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Topic 1: Introduction (book chapters 1–2)

Topic overview

This topic defines what the whole course is going to be about. We are separating the whole of international economics material into two larger parts: international trade and international finances. The first 6 topics belong to international trade and the second 6 topics to international finances. The first part takes more of a microeconomic approach in which we are considering countries as single actors engaging in trade while the second part takes more of a macroeconomic approach. Accordingly, there are different kinds of questions asked in the two parts.

The international trade topics concern questions like why countries trade, how much they trade and what are the effects of trading going to be. It is important to keep in mind that international economics is a field within theoretical economics, so we are going to use similar tools to those that students are already familiar with from their micro- and macroeconomic studies. We will also build on the knowledge they possess in these fields. A method we are also employing in international economics is model building.

Just like ourselves as economic agents are specializing and trying to do what we are best at, subsequently trading the results of our specialized knowledge and skills for whatever we need, so do countries. Over the course of history countries found it beneficial to trade with each other as a way to get what they wanted but maybe couldn't produce, or get what they wanted cheaper than if they had to produce it themselves. Clever merchants realised how they could make profit from trading. Countries also realised how they could determine what the goods they were better off producing for themselves had been. Economists invented ways to identify if it is better to trade a good with some other country. Patterns of trade evolved and kept on changing constantly depending on the specific countries involved, on the goods to be traded and also on their quantity. Merchants generally did not need a lot of theoretical knowledge to spot profit opportunities and maybe the students themselves could well do the same without actually understanding the underlying reasons and processes. Economic theorists, however, like to identify the causes and effects and describe the mechanisms that lead to trade. Knowing how it works allows us to exploit its benefits, to fix it when it has broken down or to improve it.

Learning outcomes

- Students will know what the main questions of international economics are
- Students will have an idea of the importance of international trade worldwide
- Students will know the reasons why countries trade with each other
- Students will be able to use the lessons from the gravity model to explain world trade patterns

Definitions:

Autarky: a state of economic isolation, self-sufficiency and the absence of international trade.

Free trade: when there are no government interventions to impede or encourage voluntary trade between countries.

Liberalization: a change in a country's government regulations regarding international trade towards "freer" trade.

Protectionism: A change in a country's government regulations regarding international trade towards "less free" trade.

True or false questions

- A11. In the few decades before the financial crisis of 2008, world trade grew faster than world GDP.
- A12. The gravity model explains the growth in world trade.
- A13. According to the gravity model the magnitude of trade between two countries is increasing with the relative size of the importer.
- A14. Services are the second largest value items being internationally traded.
- A15. Judged by the export to GDP ratio Hungary is more open than the US.
- A16. Richer countries are generally more closed because they can afford to be more closed.

Single choice questions

- B11.** Approximately what percent of all world production of goods and services is exported to other countries?
- 10%
 - 30%
 - 50%
 - 100%
- B12.** Which of the following is *not* a major concern of international economic theory?
- protectionism*
 - the balance of payments*
 - exchange rate determination*
 - bilateral trade relations with China*
- B13.** Trade theorists have proven that the gains from international trade
- must raise the economic welfare of everyone in every country engaged in trade.*
 - must harm owners of "specific" factors of production.*
 - will always help "winners" by an amount exceeding the losses of "losers."*
 - usually outweigh the benefits of protectionist policies.*
- B14.** An important insight of international trade theory is that when countries exchange goods and services with one another it
- is usually beneficial to both countries but may hurt certain groups in both.*
 - is typically beneficial only to the low wage trade partner country.*
 - is typically harmful to the technologically lagging country.*
 - is usually beneficial to both countries and to every economic actors in both of them.*
- B15.** In general, which of the following does not tend to increase trade between two countries?
- linguistic and/or cultural affinity*
 - historical ties*
 - the existence of well controlled borders between countries*
 - larger economies*
- B16.** The gravity model explains
- what goods countries are trading with each other.*
 - which countries will trade with each other and which will not.*
 - the magnitude of trade between two countries.*
 - the difference in two countries' GDP.*

Solutions

True or False question

- A11. T
- A12. F
- A13. F
- A14. T
- A15. T
- A16. F

Single choice questions

- B11. B
- B12. D
- B13. D
- B14. A
- B15. C
- B16. C

Explanation to the solutions of true or false questions

- A11.** In the few decades before the financial crisis of 2008, world trade grew faster than world GDP.
TRUE. Between 1985 and 2007 world GDP little more than doubled, while international trade more than doubled.
- A12.** The gravity model explains the growth in world trade.
FALSE. The gravity model rather explains patterns of trade and tells us the main influencing factors of the magnitude of trade between two countries (which are, according to the model, the size or GDP of the two countries and the distance between them).
- A13.** According to the gravity model the magnitude of trade between two countries is increasing with the relative size of the importer.
FALSE. According to the gravity model of international trade the magnitude of trade between countries increases with the size of any of the two countries. If the importer country's GDP increases, so relative size of the importer increases, trade is predicted to increase, but so it is when the GDP of the exporting county increases, which is a decrease in the importer's relative "size".
- A14.** Services are the second largest value items being internationally traded.
TRUE. Manufactured products take the largest share in world trade, followed by services, then fuels and minerals (including oil!) and only than agricultural products.
- A15.** Judged by the export to GDP ratio Hungary is more open than the US.
TRUE. In 2015 the export to GDP ratio in Hungary was 92,1% and in the US is was only 12,6% (estimates from the CIA factbook).
- A16.** Richer countries are generally more closed because they can afford to be more closed.
FALSE. Rich countries generally become rich exactly because they are open, are willing to trade and specialize. One of the richest countries in the world, Monaco has to be very open, since it is so small that it certainly cannot produce for itself all the goods that it wants to produce (all those supercars for example).

Detailed definitions with page references

Autarky: a state of economic isolation, self-sufficiency and the absence of international trade.

If a country is in autarky, everything it wants to consume has to be produced domestically, and everything that is produced in the country also has to be consumed there.

Free trade: when there are no government interventions to impede or encourage voluntary trade between countries.

Liberalization: a change in a country's government regulations regarding international trade towards "freer" trade.

It means less government regulations and generally results in more international trade.

Protectionism: a change in a country's government regulations regarding international trade towards "less free" trade.

It means more government intervention and results in less international trade.

Topic 2: The Ricardian model (book chapter 3)

Topic overview

The second topic the course explores is the first and baseline model of international trade called the Ricardian model after David Ricardo, who first proposed the idea of comparative advantages in his 1817 book “On the Principles of Political Economy and Taxation”. Before David Ricardo it was believed that if a country can produce something at a lower cost than another country, they should produce it for themselves: this is the theory of absolute advantages from Adam Smith. Ricardo showed that countries can beneficially trade with each other even if one of them is a higher cost producer (and thus has an absolute disadvantage) in both products vis-à-vis the other country.

As for all of the models, it is important to keep their limitations and underlying assumptions in mind. This model is about two countries producing the same two goods using only one input (let us call it labor), which can freely and costlessly move across the different industries, but not between the countries. We also assume that the marginal product of the input is constant in, but can differ across the two industries in the countries.

Even though this model is simplified to the bone allowing only one simple difference among countries – that in constant labor productivities in the different industries – it still teaches important lessons. The model answers the question of what an underlying reason for international trade can be, but also explains what happens when countries respond to this and do start trading with each other. The Ricardian model sets the stage for further models in proposing the first international trade fact that free trade increases welfare in both participating countries.

Learning outcomes

- Students will understand how opportunity cost is related to comparative advantage, and how to think in terms of comparative rather than absolute advantages.
- Students will understand how productivity is linked to wages and prices.
- Students will understand how specialization, division of labor and trade increases welfare.
- Students will be able to apply their knowledge on constrained optimization from microeconomics.
- Students will be able to argue why free trade is beneficial to all participants.

Definitions:

Opportunity cost: the value of the most valuable alternative given up for a given choice.

Comparative advantage: a country has comparative advantage in producing a good if the opportunity cost of producing that good in terms of other goods is lower in that country than it is in other countries.

Unit labor requirement: the number of workers (or work hours) needed to produce one unit of a given product.

Production Possibility Frontier: gives the maximum amount of a certain good that a country is able to produce for any given quantity of other goods it is producing, assuming full utilization of available resources.

Absolute advantage: a country has absolute advantage in producing a good if its production requires less resources than in other countries.

Specialization: means producing a narrower variety of goods as a result of international trade than without international trade, in autarky.

True or false questions

- A21.** In a two country two commodity Ricardian model it is impossible that one of the countries does not have a comparative advantage in anything over the other.
- A22.** In a two country two commodity Ricardian model higher wages generally go together with higher labor productivity.
- A23.** In the Ricardian model if the world terms of trade is nearer to the domestic cost ratio of country H than that of F , then F will gain more from trade than H .
- A24.** In the Ricardian model if country A 's PPF has a higher X intercept than country B 's, then country A has a comparative advantage in producing X over country B .
- A25.** In the Ricardian model trade will increase the wages in both industries in both countries.
- A26.** If country A has a lower unit labor requirement in an industry than country B , country A has to specialize in this particular industry.

Single choice questions

- B21.** If the world relative price of a product is nearer to the autarky relative price in country A than to the autarky relative price in country B then
- the two countries cannot trade with each other beneficially.*
 - only one of the countries will benefit from trading.*
 - country B will benefit more from trade than country A.*
 - most of the gains of trade go to country A.*
- B22.** If one country's wage level is very high relative to the other's (the relative wage exceeding the relative productivity ratios), then if they both use the same currency
- neither country has a comparative advantage.*
 - only the low wage country has a comparative advantage.*
 - only the high wage country has a comparative advantage.*
 - it is still possible that both will enjoy the conventional gains from trade.*
- B23.** According to Ricardo, a country will have a comparative advantage in the product in which its
- labor productivity is relatively low.*
 - labor productivity is relatively high.*
 - labor mobility is relatively low.*
 - labor is outsourced to neighboring countries.*
- B24.** The Ricardian model of international trade demonstrates that trade can be mutually beneficial. Why, then, do governments restrict imports of some goods?
- Trade can have substantial effects on a country's distribution of income.*
 - The Ricardian model is often incorrect in its prediction that trade can be mutually beneficial.*
 - Import restrictions are the result of trade wars between hostile countries.*
 - Restrictions on imports are intended to benefit domestic consumers.*
- B25.** A nation opening up to free trade in the Ricardian model will find its consumption bundle
- inside its production possibilities frontier.*
 - on its production possibilities frontier.*
 - outside its production possibilities frontier.*
 - on its RS curve.*
- B26.** In the Ricardian model with *constant* labor productivity, the autarky relative prices are solely determined by
- relative wages in the two industries.*
 - preferences.*
 - comparative advantage.*
 - relative labor productivities in the two industries.*

Solutions

True or false questions

- A21. T
- A22. T
- A23. T
- A24. F
- A25. F
- A26. F

Single choice questions

- B21. C
- B22. D
- B23. B
- B24. A
- B25. C
- B26. D

Explanation to the solutions of true or false questions

A21. In a two country two commodity Ricardian model it is impossible that one of the countries does not have a comparative advantage in anything over the other.

TRUE. One way to establish comparative advantage is by the marginal or opportunity cost of production. Since for the two commodities the opportunity costs of production in a country are in a reciprocal relationship, if the opportunity cost of producing one of the commodities is larger in one of the countries, than the opportunity cost of producing the other commodity must necessarily be smaller. This, however, requires the assumption of the model that productivity in the two countries is different.

A22. In a two country two commodity Ricardian model higher wages generally go together with higher labor productivity.

TRUE. Since $p = w \cdot MP$ in both countries, $MP = w/p$, so factors of production are paid according to their marginal product, that is, their productivity. So, if $MP_{home} < MP_{foreign}$, the real wages in foreign are going to be higher than in home. Empirical studies also support this prediction.

A23. In the Ricardian model if the world terms of trade is nearer to the domestic cost ratio of country H than that of F, then F will gain more from trade than H.

TRUE. If the world terms of trade (that is, the world relative price) is between that of H and F, both will fully specialize in what they have comparative advantage in, and move to one of the intercepts of their PPFs. Their consumption possibility curve will have now a slope equal to the world price, and will be above their PPF. The larger the difference of the world relative price from their own, the more their consumption possibilities will be expanded. One limiting value would be their own relative price (in which case the consumption possibility curve would be their own PPF, and they could not get into a better position by trade), and the other limiting value would be the relative price of F (in which case H's consumption possibility frontier is the furthest possible from their PPF, and they get the maximum gain from specializing and trade).

A24. In the Ricardian model if country A's PPF has a higher X intercept than country B's, then country A has a comparative advantage in producing X over country B.

FALSE. Comparative advantage is not about the absolute value of the intercepts, but about the slopes of the PPF. Intercepts depend on labor productivity in the two industries and size of the labor force. The slope and thus comparative advantage depends only on the relative labor productivities.

- A25.** In the Ricardian model trade will increase the wages in both industries in both countries.
FALSE. Since opening up to trade in the Ricardian model results in full specialization in both countries, actually one of the industries will disappear in both of the countries. Thus, wages will increase only in one of the industries, in the one that the county will specialize in.
- A26.** If country A has a lower unit labor requirement in an industry than country B, country A has to specialize in this particular industry.
FALSE. The problem is easy if one of the unit labor requirements is lower in country A and the other one is higher. In this case absolute advantage is also comparative advantage. But what if both industries' unit labor requirements are lower in country A? Comparative advantage and specialization are not about lower absolute unit labor requirement, but lower relative unit labor requirement. So if country B's unit labor requirements are 10 and 30, and country A's are 8 and 20 (both being lower than in country B), A should specialize where the advantage is larger, in the second industry.

Detailed definitions with page references

Opportunity cost: the value of the most valuable alternative given up for a given choice.

When using a resource to produce something the opportunity cost is the value of the most valuable other thing that could have been produced with that resource. It is the slope of the PPF, and can be calculated as a ratio of unit labor requirements. (p.25)

Comparative advantage: a country has comparative advantage in producing a good if the opportunity cost of producing that good in terms of other goods is lower in that country than it is in other countries.

Allocating resources to and producing more Food means being able to produce less Cars. The country that has to give up the least amount of Cars for an additional unit of Food has comparative advantage in Food production, even if they happen to be using the most resources to produce a unit of Food (p.26, 29)

Unit labor requirement: the number of workers (or work hours) needed to produce one unit of a given product.

Can be calculated as $a = \frac{L}{Q}$, and is the inverse of labor productivity. The more productive the workers are, the lower the unit labor requirement is going to be (p.26)

Production Possibility Frontier: gives the maximum amount of a certain good that a country is able to produce for any given quantity of other goods it is producing, assuming full utilization of available resources.

In the two-goods case, it gives the maximum amount of good A a country can produce depending on how much it produces of good B (p.27)

Absolute advantage: a country has absolute advantage in producing a good if its production requires less resources than in other countries.

Absolute advantage means lower unit labor requirement or higher labor productivity for a given product (p.29)

Specialization: means producing a narrower variety of goods as a result of international trade, than without international trade, in autarky.

This is a result of international trade changing the relative prices of goods. Full specialization means that a country will end up producing only one good, partial specialization only means that a country will end up producing more of one of the goods and less of (the) other good(s) than before trading (p.33)

Topic 3: Heckscher-Ohlin model (book chapter 5)

Topic overview

The second model we explore during this course is the Heckscher-Ohlin model developed by Eli Heckscher and Bertil Ohlin in the early 1930s.

This model is sometimes also called the 2x2x2 model because beside the two countries that are trading with two goods just like in the Ricardian model, the number of inputs used in production is increased to two. The two countries' production functions are assumed to be uniform, with decreasing marginal products in both inputs, and both inputs can freely and costlessly move across industries in both countries. In this respect we could also say, that this is a kind of long run model, according to the interpretation of long run in microeconomics – no restrictions on the usage of the different inputs. Here, the main cause of the difference in the two countries' relative prices (which in turn gives rise to international trade between them) is the countries differing endowment with the factors of production. Eventually in this model the relative factor endowments will determine comparative advantage, pattern of specialization and direction of trade between the two countries.

It also explains a second important trade fact that although in the aggregate both countries will be better off with free trade than with autarky, nonetheless there are going to be winners and losers and international trade is going to affect the distribution of income in the countries.

Learning outcomes

- Students will appreciate the role of factor abundance in international trade.
- Students will understand the difference between the classical model of international trade and the Heckscher-Ohlin model.
- Students will better understand the patterns of trade in the world.
- Students will be able to assess the factor abundance of a country.

Definitions:

Factor intensity: tells which factor of production is more important in producing a given product. Production of a good A is intensive in a given factor X if for any relative return of factor X relatively more of it would be used in the production of A than in any other production.

Factor abundance: a country's factor abundance shows with which factor it is relatively better endowed than another country.

Hekscher-Ohlin theory: the country that is abundant in a factor exports the good the production of which is intensive in that factor.

Rybczynski theorem: With constant output prices if the amount of a factor of production increases the supply of the good that uses that factor intensively will increase and the supply of the other good will decrease.

Stolper-Samuelson Theorem: If the price of a good increases then the rate of return of the factor used intensively in its production will also increase.

Leontief paradox: An empirical refutation of the predictions of the H-O theory where a country was exporting products that were intensive in the resource the country was relatively scarce of, and import products that used intensively that factor of which the country was in relative abundance.

True or False questions

- A31. In the Heckscher-Ohlin model an increase in the relative wage is causing a country to produce higher relative quantity of the labor-intensive good.
- A32. The Rybczynski Theorem is a connection between goods prices and relative quantities of the goods produced.
- A33. The Leontief-paradox says that the US is proven to be labor-abundant when in theory it should be capital-abundant.
- A34. In the Heckscher-Ohlin model a higher relative wage will decrease the L/K ratio in both the labor-intensive and the capital-intensive industries.
- A35. In the 2x2x2 Heckscher-Ohlin model a country cannot be labor abundant and capital abundant at the same time.
- A36. Factor price equalization in the Heckscher-Ohlin model means that wages and rents of capital are equalized in both trading countries.

Single choice questions

- B31.** In the 2-factor, 2 good Heckscher-Ohlin model, trade will _____ the owners of a country's _____ factor and the country will _____ the good that uses that factor intensively.
- benefit; scarce; export*
 - benefit; scarce; import*
 - benefit; abundant; export*
 - harm; abundant; import*
- B32.** Starting from an autarky (no-trade) situation with Heckscher-Ohlin model, if Country *H* is relatively labor abundant, then once trade begins
- wages should fall and rents should rise in H.*
 - wages should rise and rents should fall in H.*
 - wages and rents should fall in H.*
 - wages and rents should rise in H.*
- B33.** In the 2-factor, 2 good Heckscher-Ohlin model, the two countries differ in
- tastes and preferences.*
 - the size of their economies.*
 - relative abundance of factors of production.*
 - labor productivities.*
- B34.** If a good is labor intensive it means that the good is produced
- using relatively more labor than goods that are not labor intensive.*
 - using labor as the only input.*
 - using more labor per unit of output than goods that are not labor intensive.*
 - using labor such that the total cost of labor is greater than the total cost of capital.*
- B35.** In the Heckscher-Ohlin model, when two countries begin to trade with each other
- all factors in both countries will gain from trade.*
 - all factors in one country will gain, but there may be no gains in the other country.*
 - relative factor prices in the two countries diverge.*
 - the relative prices of traded goods in the two countries converge.*
- B36.** Which of the following is consistent with the statement that "Country *A* has a comparative advantage in producing product *X*"?
- Product *X* is labor intensive, county *A* is labor abundant and relative wages are low.*
 - The relative price of product *X* in county *A* is higher than its world relative price.*
 - Country *A* is producing more *X* than other countries, and if *X* is labor intensive, they also have more labor than other countries.*
 - Product *X* is labor intensive, wages in country *A* are lower than rents.*

Solutions

True or False question

- A31. F
- A32. F
- A33. F
- A34. T
- A35. T
- A36. F

Single choice questions

- B31. C
- B32. B
- B33. C
- B34. A
- B35. D
- B36. A

Explanation to the solutions of true or false questions

A31. In the Heckscher-Ohlin model an increase in the relative wage is causing a country to produce higher relative quantity of the labor-intensive good.

FALSE. In the H-O model, differences in factor endowment lead to differences in relative wages and prices. Labor-abundant countries will have lower w/r ratio and also a lower relative price of the labor-intensive good. As they open up to trade they find that the world relative price of the labor-intensive good is higher than their autarky relative price, so they specialize in it and start exporting it (according to the H-O theorem). As they do so the demand for and the relative price of the relatively cheaper labor-intensive good increases, which is raising the demand for labor, and also the wages relative to rents (according to the Stolper-Samuelson theorem). The increase in the relative wage is the effect, not the cause of trading and specializing.

A32. The Rybczynski Theorem is a connection between goods prices and relative quantities of the goods produced.

FALSE. The Rybczynski Theorem is about the connection between relative factor abundance and relative quantities of the different goods produced at constant relative prices of the goods.

A33. The Leontief-paradox says that the US is proven to be labor-abundant when in theory it should be capital-abundant.

FALSE. Leontief's finding is a paradox because it showed that even though the US is capital-abundant according to the practical measures of factor abundance, the products it exports are rather labor-intensive than capital-intensive, which is contrary to the predictions of the H-O model (predicting that countries exporting labor-intensive goods are the ones that are labor-abundant).

A34. In the Heckscher-Ohlin model a higher relative wage will decrease the L/K ratio in both the labor-intensive and the capital-intensive industries.

TRUE. Using the iso-quant – iso-cost analysis for both labor-intensive and capital-intensive products the model finds that as the relative wage (w/r) increases, the iso-cost curves will become steeper, so producers will substitute labor becoming relatively more expensive for capital becoming relatively cheaper in both industries. So labor usage relative to capital usage becomes smaller in both industries, although to a different degree.

- A35.** In the 2x2x2 Heckscher-Ohlin model a country can not be labor abundant and capital abundant at the same time.
TRUE. Factor abundance is not about how much of each of the factors a country has relative to another country, but it is much more about how much of one of the factors relative to the other one country has, so about the L/K ratios in the countries. If L/K is higher in home than in foreign (so labor is abundant in home), then K/L must be lower (so capital is scarce in home). Home can be labor abundant even if it has less labor than foreign.
- A36.** Factor price equalization in the Heckscher-Ohlin model means that wages and rents of capital are equalized in both trading countries.
FALSE. Factor price equalization means that the relative wages (the w/r ratios) will be equal across the countries, not wages and/or rents themselves.

Detailed definitions with page references

Factor intensity: tells which factor of production is more important in producing a given product. Production of a good A is intensive in a given factor X if for any relative return of factor X relatively more of it would be used in the production of A than in any other production.
For example Cloth production is labor intensive if for every wage-rental ratio it uses a higher labor to capital ratio than the production of Food (p.84-85)

Factor abundance: A country's factor abundance shows with which factor it is relatively better endowed than another country.
For example if Home is labor abundant and Foreign is capital abundant that means at the same time that both the relative supply of labor to capital is higher in Home than in Foreign, and that the relative supply of capital to labor is higher in Foreign than in Home (p.89-90)

Rybczynski theorem: With constant output prices if the amount of a factor of production increases the supply of the good that uses that factor intensively will increase and the supply of the other good will decrease.
If food production is labor intensive and machinery production is capital intensive and you endow a country with more capital ceteris paribus, they will extend the production of machinery and will do this by taking away resources from food production resulting in less food.

Stolper-Samuelson Theorem: If the price of a good increases then the rate of return of the factor used intensively in its production will also increase.
Suppose Food production is labor intensive. So if the price of Food increases, the price of labor, ie. the wage will also increase (p.97)

Heckscher-Ohlin theory: The country that is abundant in a factor exports the good the production of which is intensive in that factor.
If Home is labor abundant (relative to Foreign), Home will specialize in the production of labor intensive goods, and will export that (p.91)

Leontief paradox: An empirical refutation of the predictions of the H-O theory, where a country was exporting products that were intensive in the resource the country was relatively scarce of, and import products that used intensively that factor of which the country was in relative abundance
According to the H-O theory, relatively capital abundant countries like the US should export capital intensive goods and import labor intensive goods, but this turned out not to be the case (p.98)

Topic 4: The specific factors model (book chapter 4)

Topic overview

The third model of international trade was developed as an extension of the Ricardian model by Jacob Viner to introduce partial rigidity into factor movement.

This model is sometimes also called the 2 countries 3 factors model because it illustrates what happens when some resources can only be used in one industry or the other. With this model we are again comparing extreme cases, just like the comparison of autarky and free trade, but now it is a comparison of the case when it is costless to move an input from one industry to the other versus the case when it is impossible or prohibitively costly to do so. In reality of course the degree of mobility can be anywhere between these two extremes. As a resource becomes more locked up in an industry, its price will be less and less equalized when a country starts specializing and trading. This also can make the owners of the immobile factors the lucky winners or the unfortunate sufferers of a country opening up to international trade. Thus we are reinforcing the message that although free trade increases overall benefits, it also has an effect on the distribution of income and some interest groups may be harmed.

We also investigate the possibility of international factor mobility and its effects. Thus, we are now allowing a mobile factor to move not just across industries but also countries. We will find that as free movement across industries equalizes workers' wages in those industries, free movement across countries can equalize workers' wages across countries. By distinguishing between GDP and GNI we reinforce the message that free trade and free movement of workers increases overall welfare.

Learning outcomes

- Students will appreciate the role of factor immobility in international trade.
- Students will understand how factor immobility can create winners and losers.
- Students will understand how a change in comparative advantages creates winners and losers when some inputs are immobile.
- Students will be able to assess sectoral shifts that affect factor owners' incomes.
- Students will be able to interpret and explain patterns in international labor mobility and assess its probable effects.

Definitions:

Specific factor: a factor is specific to an industry if moving it away from the given industry is impossible, or is prohibitively costly.

Mobile factor: a factor is mobile if it can move freely, costlessly or with negligible costs between industries.

Wage equalization: If work as a factor of production can freely move between sectors, the price of labor, the wage will be equal in all sectors.

Budget Constraint: Starting out from a bundle of products a country produces it shows what are the bundles available for consumption assuming given relative price of the goods.

True or False questions

- A41. In the specific factors model the movement of the mobile factor across industries will equalize the returns on the immobile factor.
- A42. In the specific factors model an increase in the relative price of product X will decrease the earning of owners of the immobile factor specific to product Y.
- A43. In the specific factors model the winners of specialization and trade are the owners of the factor specific to the import-competing industry.
- A44. In the Specific factors model the contracting industry is going to be also import-competing.
- A45. In the specific factors model trade will not necessarily equate all factor prices.
- A46. Partial specialization is the consequence of decreasing marginal product.

Single choice questions

- B41.** International trade can have an important effects on the distribution of income because
- different countries use different currencies.*
 - some resources are immobile in the short run.*
 - the more powerful country dictates the terms of trade.*
 - rich countries take advantage of poor countries.*
- B42.** Those who will lose from free trade are _____ factors in sectors that produce goods that are _____.
- immobile; also imported*
 - mobile; also imported*
 - immobile; exported*
 - mobile; exported*
- B43.** In the specific factors model, a 5% increase in the price of food accompanied by a 5% increase in the price of cloth will cause wages to _____, the production of cloth to _____, and the production of food to _____.
- increase by more than 5%; increase; remain unchanged*
 - increase by less than 5%; decrease; increase*
 - increase by 5%; remain unchanged; remain unchanged*
 - remain constant; increase; increase*
- B44.** The degree of a factor's specificity is directly related to
- the amount of time required to redeploy the factor to a different industry.*
 - the cost of the factor as a proportion of the long-run total cost of production.*
 - the mobility of the factor, with more mobile factors having more specificity.*
 - technological differences between two countries, with a more advanced technology resulting in more factor specificity.*
- B45.** In the two-country model of international labor mobility,
- the effect of migration is to cause real wages in the two countries to converge.*
 - the effect of migration is to cause real wages in the two countries to diverge.*
 - GDP will decrease in the country where the labor is moving toward.*
 - GNI will decrease in the country where the labor is moving toward.*
- B46.** As your country's comparative advantage in industry A is increasing, you would want to
- own more non industry-specific resources.*
 - own more resources that are specific to industries other than A.*
 - own more resources specific to industry A.*
 - sell your resources specific to industry A.*

Solutions

True or False question

- A41.** F
A42. T
A43. F
A44. T
A45. T
A46. T

Single choice questions

- B41.** B
B42. A
B43. C
B44. A
B45. A
B46. C

Explanation to the solutions of true or false questions

A41. In the specific factors model the movement of the mobile factor across industries will equalize the returns on the immobile factor.

FALSE. The possibility to move from one industry to the other requires that if we want to have production in both industries, returns have to be equal. If they are not, the factor will move from where the return is lower to where it is higher. Since immobile factors cannot do this, their returns do not necessarily have to be equal across industries even in the equilibrium.

A42. In the specific factors model an increase in the relative price of product X will decrease the earning of owners of the immobile factor specific to product Y.

TRUE. As a result of the increase of relative price of X, production will be shifted towards industry X and the mobile factor will move towards that industry and away from industry Y. As the mobile factor shifts away from industry Y, the immobile factor will become a less and less strict constraint (bottleneck) in production, so it will become less and less valuable, and its return will decrease.

A43. In the specific factors model the winners of specialization and trade are the owners of the factor specific to the import-competing industry.

FALSE. In the specific factor when international trade is possible, the countries will specialize in what they have comparative advantage in, and shift the immobile factor away from the industry where they have comparative disadvantage. In this model, specialization is not full: so the product in the production of which they have comparative disadvantage will be imported but some – less, than in autarky – will still be produced at home. This industry is called contracting or import-competing industry (as opposed to the expanding or exporting industry). As the mobile factor shifts away, demand for the immobile factor decreases, and with its supply fixed, the return to the factor owners decrease.

A44. In the Specific factors model the contracting industry is going to be also import-competing.

TRUE. The contracting industry is the one that shrinks, that the mobile factor is shifting away from as a result of specialization and trade. Specialization, however, is not full in the specific factors model, so even if some of the product of this shrinking industry is imported, some is still produced at home, and these home producers in the free trade case are going to be competing with the foreign importers.

A45. In the specific factors model trade will not necessarily equate all factor prices.

TRUE. The possibility of movement across industries equalizes factor prices in a country, and the possibility to trade will equalize factor price across countries in the specific factors model. Since in this factor we have immobile factors too, that cannot move across industries, their returns (prices) will not be equalized neither within one country, nor across countries.

A46. Partial specialization is the consequence of decreasing marginal product.

TRUE. Decreasing marginal product makes the production possibility frontier concave, and along the concave PPF the marginal rate of transformation decreases gradually. With trade the country has to find that point on the PPF where this marginal rate of transformation equals the world relative price of the product. If marginal product is constant, the PPF is linear and marginal rate of transformation is constant. That means it is either higher or lower than the world relative price everywhere along the PPF. This is the reason such models result in full specialization (see the Ricardian model).

Detailed definitions with page references

Specific factor: a factor is specific to an industry if moving it away from the given industry is impossible, or is prohibitively costly.

Thus, a specific factor is very useful in one industry, but would be useless in another, like a very specialized machine (p.51)

Mobile factor: a factor is mobile if it can move freely, costlessly or with negligible costs between industries.

Such factors are useful in more industries, can be put to use in one or another industry alike, for example low-skilled workers performing simple tasks (p.51)

Wage equalization: If work as a factor of production can freely move between sectors, the price of labor, the wage will be equal in all sectors.

If wage would be higher in any of the sectors, all the labor would like to move to that sector, lowering wage there and increasing it in other sectors (p.57)

Budget Constraint: Starting out from a bundle of products a country produces it shows what are the bundles available for consumption assuming given relative price of the goods.

If free trade is possible, a country can consume a different mix of products than it produces, but the value of total production has to be equal to the value of total consumption: this is true for all points of the budget constraint (p.64)

Topic 5: Further models of international trade (book chapters 7–8)

Topic overview

In this topic we introduce some further possible causes for international trade. This topic uses a wide variety of models building on different parts of the students' prior microeconomic knowledge.

The first one in this topic is explaining how different tastes can be the root cause of different relative prices and thus can signal comparative advantage and give rise to specialization and international trade. The second group of models is about economies of scale. When there is economies of scale in production than either a larger industry with a larger number of smaller firms (external economies of scale) or an industry with a smaller number of larger firms (internal economies of scale) is more efficient. This can result in the clustering of firms into a certain location or the clustering of production into a small number of firms.

External economies of scale provide a narrative for geographical clustering of industries like the Silicon Valley information technology cluster or the button-producing city of Qiaotou in China. Internal economies of scale explain for example the international mergers between large automotive firms.

Internal economies of scale and differing tastes also give an explanation to the seemingly strange very common phenomenon of intra-industry trade between countries: when a country both sells a certain type of good to and at the same time also buys the same type of good from another country.

Learning outcomes

- Students will understand how the clustering of firms is connected to comparative advantage and trade.
- Students will realize the magnitude, importance and role of intra-industry trade.
- Students will understand the reason behind integrated markets like the EU.

Definitions:

Economies of scale: production is more efficient the larger the scale at which it takes place.

External economies of scale: when economies of scale depend more on the size of the given industry, and not so much on the size of the individual firms.

Dynamic increasing returns: when production of a product gets cheaper in average cost terms with cumulative production over time rather than with producing more at any given point in time.

Internal economies of scale: when the average cost of producing decreases as the size of the individual company grows.

Monopolistic competition: is made up of firms that are able to differentiate their products from that of their competitors, and thus even though they face competition, they can behave as if they were monopolists.

Intra-industry trade: two-way exchange of similar goods between countries.

Foreign Direct Investment (FDI): when a firm acquires a controlling interest, that is, a higher than 10% stake in a company in a foreign country.

Outsourcing: Contracting a foreign firm to perform specific parts of the production process in a foreign location with the best cost advantage.

Offshoring: Licensing an independent foreign company in a foreign location to produce and sell the parent firm's products there.

True or False questions

- A51.** When there are internal economies of scale, the integration of two markets will definitely increase the number of firms *producing* in one of the countries.
- A52.** When there are external economies of scale, the average cost of companies is decreasing.
- A53.** If two trading partner countries have different tastes, then as a result of trade their production will converge, rather than diverge.
- A54.** When there are external economies of scale production will concentrate at the best possible location.
- A55.** Concave PPF means there is decreasing returns to scale in production.
- A56.** When there are external economies of scale it is best if all firms in that industry gather at one location.

Single choice questions

- B51.** External economies of scale often arise because similar firms
- locate in the same geographic region.*
 - collude to fix prices and increase profits.*
 - have excellent internal logistics.*
 - agree to cooperate to expand global trade.*
- B52.** When there is external economies of scale then free trade leads to
- increasing prices in the country where production moves away from to the level of the prices of the country where production moves towards.*
 - prices in all countries decreasing.*
 - the trading countries prices diverging.*
 - only few firms remaining to produce the product.*
- B53.** The existence of internal economies of scale
- focuses more on the industry than individual firms.*
 - may be associated with a perfectly competitive industry.*
 - cannot form the basis for international trade.*
 - cannot be associated with a perfectly competitive industry.*
- B54.** In an industry where firms experience internal scale economies, the long-run cost of production will be inversely related to
- individual firms' fixed costs.*
 - the size of the labor force.*
 - the size of the market.*
 - price elasticity of demand*
- B55.** International trade based solely on internal scale economies in both countries is likely to be carried out by
- a relatively large number of price competing firms.*
 - a relatively small number of price competing firms.*
 - a relatively small number of imperfect competitors.*
 - monopolists in each country.*
- B56.** Countries A and B are forming an integrated market. Which of the following will we observe in an industry where there are internal economies of scale?
- the same firms will start producing more and the prices settle somewhere between the two countries' autarky prices.*
 - some firms go out of business, the rest will produce more and prices decrease everywhere.*
 - new firms appear on the market, firm level production decreases and thus prices decrease.*
 - all firms locate to the same location, firm level production increases while industry level production decreases. Cost decrease but prices increase.*

Solutions

True or False question

- A51.** F
A52. F
A53. T
A54. F
A55. F
A56. F

Single choice questions

- B51.** A
B52. B
B53. D
B54. C
B55. D
B56. B

Explanation to the solutions of true or false questions

A51. When there are internal economies of scale, the integration of two markets will definitely increase the number of firms *producing* in one of the countries.

FALSE. The theory of internal economies of scale only tells us that the number of firms producing and selling in the integrated market will be larger than the number of firms on any of the markets before the integration but smaller than the sum of them. It does not tell us anything about where this larger number of firms will be located. Let us assume that initially there are 3 firms in both countries and after the integration there will be altogether 4 (probably larger) firms. We cannot know whether 1 firm goes bankrupt in each country, or 2 in the first country and none in the second, or whether 2 goes bankrupt in the first, and the remaining one relocates to the second country. The statement would only be true in this last case.

A52. When there are external economies of scale, the average cost of companies is decreasing.

FALSE. Decreasing company-level average cost is in the case of internal economies of scale, when producing at a greater scale is more cost-efficient. In the case of external economies of scale, only the industry-level AC is decreasing.

A53. If two trading partner countries have different tastes, then as a result of trade their production will converge, rather than diverge.

TRUE. In other models, the reason for the price difference was that the different PPF was touching the same set of country indifference curves at a different point. In the case of different tastes, the same PPF is touched by different country indifference curves. So when the relative prices change as a result of trade, both countries move along a same PPF. Thus if the relative price (the world relative price) is the same for them, they will necessarily end up choosing the same point along the PPF, so an initially different production bundle becomes uniform. Consumption will then subsequently diverge, resulting from the different tastes.

A54. When there are external economies of scale production will concentrate at the best possible location.

FALSE. With external economies of scale all we know is that it is advantageous for the industry's firms to cluster somewhere, but the theory will not tell us anything about where. Once a starting advantage of one location is established, the process feeds on itself, and the cluster attracts firms from other locations, but this starting advantage may have been a result of some arbitrary choice of location by a significant firm, or purely by luck.

A55. Concave PPF means there is decreasing returns to scale in production.

FALSE. Concave PPF only means decreasing marginal product or productivity. Decreasing returns to scale would make the PPF actually convex, with decreasing slope between the two intercepts.

A56. When there are external economies of scale it is best if all firms in that industry gather at one location.

FALSE. I would argue that industry clusters based on external economies of scale can become too big. The obvious advantages of gathering to one place eventually become dominated by the disadvantages (kind of congestion). I can also believe that there can be strategic reasons why you would not want to give up an industry even if there are external economies of scale: this is an extreme example, but what if there are external economies of scale in the production of missile defense systems?

Detailed definitions with page references

Economies of scale: production is more efficient the larger the scale at which it takes place.

Increasing all input usage at the same time n -times, production will increase disproportionately more, more than n -times (p.138)

External economies of scale: when economies of scale depend more on the size of the given industry, and not so much on the size of the individual firms.

Economies of scale thus do not come from firms getting larger, but from more firms concentrating in a certain location (p.139)

Dynamic increasing returns: when production of a product gets cheaper in average cost terms with cumulative production over time rather than with producing more at any given point in time.

This is because by producing for a longer time the industry and firm accumulates knowledge which makes production cheaper (p.149)

Internal economies of scale: when the average cost of producing decreases as the size of the individual company grows.

In this case it is rather the size of the company itself than the whole industry it is operating in that matters (p.155)

Monopolistic competition: is made up of firms that are able to differentiate their products from that of their competitors, and thus even though they face competition, they can behave as if they were monopolists.

They are really a monopolist seller of their variation of the product, but these variations are fairly close substitutes, so they do compete (p.160)

Intra-industry trade: two-way exchange of similar goods between countries.

Depends on how narrowly one defines industry, but if car industry is concerned, both Germany and France produce cars and they are selling their cars in both countries (p.169)

Foreign Direct Investment (FDI): When a firm acquires a controlling interest, that is, a higher than 10% stake in a company in a foreign country.

This can happen either by buying such an interest in an already existing company (brownfield FDI) or by building a new production facility abroad (greenfield FDI) (p.180)

Outsourcing: Contracting a foreign firm to perform specific parts of the production process in a foreign location with the best cost advantage (p.185)

Offshoring: Licensing an independent foreign company in a foreign location to produce and sell the parent firm's products there.

This is an alternative for FDI: rather than setting up a production plant we allow a foreign company to produce (p.185)

Topic 6: Trade policy (book chapters 9–10)

Topic overview

In this topic we discuss trade policy tools to find out how they work, what their effects are and the reasons that might lie behind their implementation.

So far during the course we were comparing two extreme cases of total closeness or autarky and perfect free trade. In reality all countries lie somewhere in between these two extremes employing a wider or narrower variety of trade policy tools. Trade policy is introduced here as a way to protect domestic industry, and its strength is indicating how strongly protectionist a country is. The effects of trade policy interventions will be analyzed in a partial equilibrium setting, when we are concentrating on a market of one single product. An important player is going to be the government instituting the various trade policy or protectionist measures. By analyzing the effects of these tools and measures in the home country we will find out why a government might want to use them and also who they want to protect and how. By introducing the concepts of small and large countries we will be able to see how the protectionist measures affect the world price of the good.

Trade policy can take on various forms and efforts have been made to standardize the tools used and also to restrict their use to bring the world trade closer to free trade in order to reap the most benefit possible from world trade. As we will find international treaties regulating trade policy tools allow market-conform trade policy interventions (like tariffs) as opposed to less market-conform interventions (like bans).

Learning outcomes

- Students will understand how countries can decide where they end up on the continuum between autarky and free trade.
- Students will understand the goals and effects of the different economic policy tools.
- Students will be able to predict the winners and losers of a trade policy intervention.
- Students will be able to reason for and against trade policy interventions.

Definitions:

Ad valorem tariff: taxes that are levied as a percentage of the value of the good that is being traded internationally.

Import quota: a limitation on the quantity that is allowed to be imported of a certain good.

Large country: a country is large when its decision regarding the quantity of a good it wants to trade has an effect on the world price of that good.

Small country: when a country's decision about what quantity to trade of a certain good has no effect on the world price of the good.

Terms of trade gains: part of the advantageous effects of a tariff for a large country that is due to the import tariff lowering the world price of the import good.

Quota rent: when there is an import quota, those who can get licenses to import can buy at the lower world price but sell at the home price which is higher due to the quota.

Nontariff barriers: any tool of trade policy aiming at protecting an industry by directly limiting trade, or indirectly increase transaction costs.

Optimum tariff: a tariff rate that maximizes national welfare.

Free-trade agreement: an agreement that allows free trade between members but members can determine their trade policy toward non-members individually.

Customs union: members can freely trade among each other and their trade policy towards non-members is common.

True or False questions

- A61. Home import tariffs affect national welfare less if the home country is a large country than if it is small.
- A62. Non-tariff barriers also create deadweight-loss because they also increase the cost of goods imported.
- A63. The introduction of an (effective) import quota in a large country will raise the world price of the good in question.
- A64. No matter how much a small country increases tariffs, the welfare will not be lower than it would be in autarky.
- A65. Trade policy tools are used when the aggregated gain of those who benefit from the quota is more than the aggregated loss of those who are hurt by it.
- A66. If a country is small, higher tariff rates always increase government tariff revenues.

Single choice questions

- B61.** If a small country imposes an import tariff, then
- the home producers must suffer a loss.*
 - the home consumers must suffer a loss.*
 - the government revenue must suffer a loss.*
 - the world price on that item will shift.*
- B62.** The *prohibitive tariff* is a tariff that
- is so low that it causes domestic producers to leave the industry.*
 - is so high that it causes undue harm to import competing sectors.*
 - is so high that it eliminates imports.*
 - is so low that the government prohibits its use since it would lose an important revenue source.*
- B63.** An important difference between tariffs and quotas is that tariffs
- raise the price of the good.*
 - generate revenue for the government.*
 - stimulate international trade.*
 - are paid by foreign producers.*
- B64.** The most vocal political pressure for tariffs is generally made by
- producers lobbying for import tariffs.*
 - producers lobbying for export tariffs.*
 - consumers lobbying for lower import tariffs.*
 - consumers lobbying for export tariffs.*
- B65.** Which of the following is NOT a consequence of a large country lowering import tariffs:
- consumers in the large country can get more of the product.*
 - producers of the rest of the world see a decrease in the price of this product.*
 - consumers of the rest of the world will see their consumers surplus decreasing.*
 - the government in the large country loses revenue.*
- B66.** Which of the below can definitely NOT be a reason to raise import tariffs:
- we want to protect our industry from foreign unfair competition.*
 - we want to retaliate against our trading partners also raising tariffs.*
 - we want to protect our consumers from artificially high prices in the world market.*
 - we want to improve our country's balance of trade.*

Solutions

True or False question

- A61. T
- A62. T
- A63. F
- A64. T
- A65. F
- A66. F

Single choice questions

- B61. B
- B62. C
- B63. B
- B64. A
- B65. B
- B66. C

Explanation to the solutions of true or false questions

A61. Home import tariffs affect national welfare less if the home country is a large country than if it is small.

TRUE. For large countries, the negative welfare effects of a tariff coming from the deadweight loss are at least partly offset (and maybe even reversed) by the terms of trade gain coming from the fact that with the introduction of the tariff by a large country as the demand for import goods falls the world price of the good also falls. This effect is 0 for small countries.

A62. Non-tariff barriers also create deadweight-loss because they also increase the cost of goods imported.

TRUE. In an indirect way, non-tariff barriers also make importing goods costlier. Rather than simply pay a tariff upon bringing the goods into the country, you might have to spend time and money on getting some licenses or authorization. The cost of this will also be incorporated in the price you will ask in the domestic market.

A63. The introduction of an (effective) import quota in a large country will raise the world price of the good in question.

FALSE. An import quota in a county will increase the domestic price of the good in that county. If the importing county is large, then the world price is also affected. As a result of in import quota, import demand in the county will decrease, and since it is a large country, this decrease in demand will also be felt on the world market, and will result in the lower world price of the good.

A64. No matter how much a small country increases tariffs, the welfare will not be lower than it would be in autarky.

TRUE. If the country is importing, higher tariff will reduce welfare of the country. The worst thing that can happen is that the price after tariff becomes so high that it does not pay any more to import the good, the whole domestic demand could be met by local companies: so the country returns to autarky (with respect to this specific good). This is called prohibitive tariff, but it can also be a form of protective tariff. If you increase tariff further, it will cease to have any effect on consumption, production and welfare.

A65. Trade policy tools are used when the aggregated gain of those who benefit from the quota is more than the aggregated loss of those who are hurt by it.

FALSE. It is likely that those are going to argue (lobby) for the trade policies who benefit from them, but it is not a necessary condition, that the overall gain be greater than the overall loss. Imagine there are 2 firms each gaining 500 forints against for example 600 consumers each losing 2 forints. While the two firms would be willing to sacrifice a sensible amount of money to lobby for the trade policy, it is not very likely that a large share of the consumers would even care about the small loss they will have to suffer.

A66. If a country is small, higher tariff rates always increase government tariff revenues.

FALSE. Government tariff revenue is the tariff rate times the world price times quantity imported. As the tariff rate increases, quantity imported decreases. Increasing tariff rate from 0% obviously raises government revenues, but only up to a certain point when the effects of the decreasing quantity start dominating the effects from higher tariff rate. When we get to the level of prohibitive tariff, revenue falls back to 0 again.

Detailed definitions with page references

Ad valorem tariff: taxes that are levied as a percentage of the value of the good that is being traded internationally.

Mostly it is like if you import a certain good from abroad, as it crosses the border of the home country you pay a certain percent of its value as a tax to the home government (p.192)

Import quota: a limitation on the quantity that is allowed to be imported of a certain good.

Once the country has imported in a given year as much of the good in question as the quota, it is not allowed to import any more (p.193)

Large country: a country is large, when its decision regarding the quantity of a good it wants to trade has an effect on the world price of that good.

If the country decides to buy less of a good because of a tariff, for example, the world price of the good will fall (p.196)

Small country: when a country's decision about what quantity to trade of a certain good has no effect on the world price of the good.

If the country wants to import more, the price will not increase, when the country wants to export more, the world price will not decrease (p.196)

Terms of trade gains: part of the advantageous effects of a tariff for a large country that is due to the import tariff lowering the world price of the import good.

For a small country the tariff does not change the world price, so there is no terms of trade gain (p.201)

Quota rent: when there is an import quota, those who can get licenses to import can buy at the lower world price but sell at the home price which is higher due to the quota.

It is unclear, who receives this rent, maybe local companies, maybe foreign companies, maybe foreign governments (p.206)

Nontariff barriers: any tool of trade policy aiming at protecting an industry by directly limiting trade, or indirectly increase transaction costs.

Examples of this might be the ban on Cuban cigars in the US, government subsidies to home producers to limit import or requiring certain licenses to be able to bring a product in a country (p.193)

Optimum tariff: a tariff rate that maximizes national welfare.

At 0 tariff rate there are no costs or benefits from the tariff, at a certain positive tariff rate the terms of trade gains outweigh the societal costs of the tariff, but at too high tariffs trade would be altogether eliminated (p.225)

Free-trade agreement: an agreement that allows free trade between members but members can determine their trade policy toward non-members individually.

Trade policy towards non-members will most likely be different for every member country (p.246)

Customs union: members can freely trade among each other and their trade policy towards non-members is common.

Every member country will have to use the same trade policy tools when dealing with external trade partners (p.246)

Topic 7: National Income Accounting and the Balance of Payments (book chapter 13)

Topic overview

This chapter commences the second big part of the material, which will look at international relations at the macro level. In the following chapters we will be using the terminology of macroeconomics to explain important phenomena connected to countries trading with each other.

In this chapter we introduce the foreign sector into the macro circular flow model to see how it changes the income flows between the different sectors and markets in an economy. Another thing this addition complicates is the measurement of a country or nation's economic performance. In a closed economy model the people working, producing and earning incomes in a country are necessarily only the nationals of that country (since we assume that the country has no connection to foreign countries whatsoever). In an open economy, however, we can have foreign workers producing and earning incomes in the country as well as nationals of the country doing the same abroad. This makes it difficult to interpret and answer the question "How much is Hungary producing?". We will get to know the different indicators from the System of National Accounts (SNA) that are used to assess production or income of a country or nation. We will also study how these different indicators connect to the macro circular flow of incomes.

Eventually we will have two additional indicators which are used to assess how well an economy is performing: the Balance of Payment balance and the net foreign investments. Improving these indicators becomes an additional economic policy goal we will explore later during the course.

Learning outcomes

- Students will understand the measurement problems associated with opening up an economy.
- Students will be able to explain how certain economic events affect the balance of payment and its components.
- Students will have an idea about the magnitude and evolution of the balance of payment of some significant countries.

Definitions:

Gross National Product (GNP): the value of all final goods and services produced by the country's factors of production and sold on the market in a given time period.

Current account deficit: is when a country's imports exceed its exports.

Financial account: records all international purchases or sales of financial assets in a given time period.

Capital account: records transfers of wealth between countries that result from acquiring or disposing of nonproduced, nonfinancial and possibly intangible assets.

Balance of payments (official settlements balance): is the sum of the current account, capital account and the nonreserve part of the financial account. It is a payment gap that official reserve transactions need to cover.

True or False questions

- A71. If the balance of the current account is negative it means that the foreign reserves of the country has decreased over the year.
- A72. If I hope to make profit by buying foreign currency now and selling it later, I am speculating on the depreciation of the home currency.
- A73. $GNDI = C + I + G + \text{Current Account}$.
- A74. If a country's current account is negative but the balance of payment is positive then the stock of incoming FDI must have increased.
- A75. When national savings are smaller than the investment, than the current account is negative.
- A76. Foreign aid received by the country only appears once as a positive item in the balance of payment.

Single choice questions

- B71.** Approximately how much Hungary's Current account balance relative to the GDP in the last 10 years is (positive numbers meaning a surplus, and negative numbers meaning deficit)?
- +10-15%.
 - +1-7%.
 - 1-5%.
 - 15-20%.
- B72.** An open economy
- can save only by building up its capital stock.
 - can save only by acquiring foreign wealth.
 - can save either by building up its capital stock or by acquiring foreign wealth.
 - can save by avoiding excessive imports.
- B73.** If the goods' money prices do not change, an appreciation of the dollar against the pound
- makes British sweaters cheaper in terms of American jeans.
 - makes British sweaters more expensive in terms of American jeans.
 - makes American jeans cheaper in terms of British sweaters.
 - makes British jeans more expensive in Britain.
- B74.** When the balance of payment (BP) of a country is negative, then
- they import more than they export.
 - trade liberalization can improve it.
 - the official reserves of the Central Bank decrease.
 - the country's currency automatically depreciates to balance the BP.
- B75.** Which of the following is correct?
- current account = national saving – investment.
 - current account = private consumption + government purchases + investment.
 - current account = national income – national saving.
 - investment = national saving + current account.
- B76.** The "official reserves settlement" line in the balance of payment is negative, whenever
- the balance of payment is not in equilibrium.
 - there is an expansionary monetary policy.
 - current account balance < (financial account balance + capital account balance).
 - more money moves into the country than out of it.

Solutions

True or False question

- A71. F
- A72. T
- A73. T
- A74. F
- A75. T
- A76. F

Single choice questions

- B71. B
- B72. C
- B73. A
- B74. C
- B75. A
- B76. D

Explanation to the solutions of true or false questions

A71. If the balance of the current account is negative it means that the foreign reserves of the country has decreased over the year.

FALSE. The current account is only a part of the whole balance of payment. From the fact that more currency has flown out of the country in from exports of goods and services, factor incomes, and transfers than into the country we cannot say anything for sure about the change in the reserves. We would need to know what happened in the Capital and Financial Accounts too.

A72. If I hope to make profit by buying foreign currency now and selling it later, I am speculating on the depreciation of the home currency.

TRUE. Depreciation of the Home currency means I have to pay more of it for one unit of the foreign currency or that I will get more of it in return for one unit of the foreign currency, so it means that the foreign currency becomes more expensive. Thus, I plan to buy foreign currency when it is relatively cheap (now) and plan to sell it when it is relatively more expensive (later).

A73. $GNDI = C + I + G + \text{Current Account}$.

TRUE. GNDI is defined as $Y + (\text{incoming factor incomes} - \text{outgoing factor incomes} + \text{incoming current transfers} - \text{outgoing current transfers})$, and these correction items in brackets are giving us exactly the balance of the current account.

A74. If a country's current account is negative but the balance of payment is positive then the stock of incoming FDI must have increased.

FALSE. Current account deficit has to be financed somehow, and how it is financed will become clear from the Capital and Financial account. FDI, foreign direct investment is but one way to do it, another one is debt financing.

A75. When national savings are smaller than the investment, than the current account is negative.

TRUE. Using the national income identity for open economies it turns out that home investment can be financed from three sources: private saving, government saving and foreign saving. The first two together is national saving. So if this national saving is smaller than investment, than part of the investment is financed by foreign, which is only possible if they earn more income from trading with us than they spend, so $IM > EX$, which means that $EX - IM = CA < 0$. In general $CA = -S_{\text{Foreign}}$.

A76. Foreign aid received by the country only appears once as a positive item in the balance of payment.

FALSE. Every item must appear twice, once as a credit and once as a debit. The positive side is obvious: our country has either more foreign exchange or more claim on foreign banks (which are in the Financial Account). The countering item is transfer received in the Current Account.

Detailed definitions with page references

Gross National Product (GNP): the value of all final goods and services produced by the country's factors of production and sold on the market in a given time period.

Notice how it is important that the factors of production used are the country's, and how it is not important whether they are employed within the country or in a foreign country. Also, as in GDP, only final goods and services matter, not all. GNI (or Gross National Income) is used interchangeably throughout this course with GNP, although not entirely the same. (p.295)

Current account deficit: is when a country's imports exceed its exports.

The current account balance is the difference between the value of the goods and services that a country imports and what it exports. If this difference is negative, the country has a Current account deficit. (p.300)

Financial account: records all international purchases or sales of financial assets in a given time period (p.306)

Capital account: records transfers of wealth between countries that result from acquiring or disposing of nonproduced, nonfinancial and possibly intangible assets

Most typical items entering the capital account are debt forgiveness and flows of intellectual property-related incomes, copyrights, patents and royalties. (p.307)

Balance of payments (official settlements balance): is the sum of the current account, capital account and the nonreserve part of the financial account. It is a payment gap that official reserve transactions need to cover.

So if the balance of payment shows a deficit, the reserves of the central bank decrease. (p.313)

Topic 8: Exchange rates and the foreign exchange market: an asset approach (book chapter 14)

Topic overview

This topic introduces a new concept, that of exchange rates. The use of exchange rate (the price of one country's currency expressed in another country's currency) is inevitable when we want to compare prices of goods in different countries. In earlier topics that relied heavily on the relative prices of goods as an important determinant of the pattern of international trade we implicitly used exchange rates, but we did not explicitly say how we compare prices that prevail in different countries.

In this topic, however, we will approach exchange rate from another angle, when we say that one can use their money to invest in different currencies, which investments provide possibly different rates of return in form of interest, plus another possible source of return from exchanging currencies at different rates.

The interest rate parity condition introduced in this chapter and then later extensively used in the following chapters will use the exchange rate as a new endogenous variable to our model of the open macroeconomy and shows how it is determined on the foreign exchange market where different currency denominated assets are exchanged. We will also see how expectations of the economic actors about the future move the exchange rate, and how the possibility of arbitrage, a riskless immediate profit opportunity helps the foreign exchange market find the equilibrium.

Learning outcomes

- Students will understand how exchange rates can be used not only to compare prices of goods but also rates of return on different currency denominated assets.
- Students will know how the different exogenous variables affect the exchange rate through the foreign exchange market.
- Students will be able to identify arbitrage opportunities based on the interest rate parity condition, and will be able to tell how it is going to move the exchange rate.

Definitions:

Exchange rate: the price of one country's currency in terms of another country's currency.

Indirect quote: giving the exchange rate in such a way as to express the price of the foreign currency in terms of the home currency.

Depreciation of home currency: is the fall in the price of the home currency expressed in terms of a foreign currency.

Arbitrage: buying cheap and selling dear at the same time in two different markets and getting risk-free profit.

Spot rate: an exchange rate that one can use in spot transactions, for transacting in the present.

Future rate: exchange rate that one uses when the transaction would take place at a future time.

Hedge: a future buying or selling transaction the aim of which is to mitigate a foreign currency exchange risk by fixing in advance the exchange rate.

Interest parity condition: is fulfilled when the expected return on deposits in any two currencies are the same measured in the same currency.

True or False questions

- A81.** When the interest parity condition holds, the interest rates in the two countries must be equal.
- A82.** In the long run expansionary monetary policy will not have any effect on the nominal exchange rate E .
- A83.** An expected appreciation of the home currency increases the rate of return on foreign currency denominated assets.
- A84.** If the interest rate parity does not hold than income (Y) will change to make it hold again.
- A85.** The appreciation of the home currency makes home goods more expensive relative to foreign goods.
- A86.** If domestic interest rate is 5%, foreign interest rate is 4% and expected appreciation of home currency is also 2%, you should rather invest in home currency.

Single choice questions

- B81.** The forint rate of return on euro deposits is
- approximately the euro interest rate plus the rate of depreciation of the forint against the euro.*
 - approximately the euro interest rate minus the rate of depreciation of the forint against the euro.*
 - the euro interest rate minus the rate of inflation against the euro.*
 - the rate of appreciation of the forint against the euro.*
- B82.** The interest parity condition requires that
- all countries have the same interest rate.*
 - there is a unique exchange rate for every output level.*
 - purchasing power parity hold.*
 - the money supply is held constant.*
- B83.** According to the asset approach of exchange rates a reduction in a country's money supply causes:
- its currency to depreciate in the foreign exchange market.*
 - its currency to appreciate in the foreign exchange market.*
 - does affect its currency in the foreign market in an ambiguous manor.*
 - affects other countries currency in the foreign market.*
- B84.** Under sticky prices, a fall in the money supply
- raises the interest rate to preserve money market equilibrium.*
 - reduces the interest rate to preserve money market equilibrium.*
 - raises the income level to preserve money market equilibrium.*
 - does not affect the interest rate in the short run, only in the long run.*
- B85.** After a permanent increase in the money supply,
- the interest rate overshoots in the short run.*
 - the exchange rate overshoots in the long run.*
 - the exchange rate gradually depreciates in the long run.*
 - the exchange rate gradually appreciates in the short run.*
- B86.** When the rate of return on forint deposits is higher than the rate of return on dollar deposits, how is interest rate parity restored?
- the forint depreciates against the dollar.*
 - the expected exchange rate changes.*
 - the interest rates in the two countries change.*
 - prices in the two countries change.*

Solutions

True or False question

- A81.** F
A82. F
A83. F
A84. F
A85. T
A86. T

Single choice questions

- B81.** A
B82. B
B83. B
B84. A
B85. D
B86. A

Explanation to the solutions of true or false questions

- A81.** When the interest parity condition holds, the interest rates in the two countries must be equal.
FALSE. The interest parity condition requires that rates of return on different currency denominated assets be equal. For domestic currency denominated assets this return is simply the home interest rate, but for foreign denominated assets the foreign interest rate is only a part of this return, another part is from the expected depreciation of the domestic currency.
- A82.** In the long run expansionary monetary policy will not have any effect on the nominal exchange rate E .
FALSE. The assumption that in the long run money is neutral means that if prices have time to adjust to any changes in the money supply, then these changes will only affect nominal but not real variables. Nominal variables are for example the prices of goods and services, but also the price of a foreign currency, so the nominal exchange rate.
- A83.** An expected appreciation of the home currency increases the rate of return on foreign currency denominated assets.
FALSE. Expected appreciation of the domestic currency means that I expect the exchange rate to be lower at the end of the time period (say a year), then at the beginning. So if I invest my money in foreign currency I have to exchange my domestic currency now at some exchange rate, will earn the foreign interest rate, but change back my money into the home currency at a less favorable exchange rate. This change in the exchange rate will then reduce the return I can attain when investing in foreign denominated assets.
- A84.** If the interest rate parity does not hold than income (Y) will change to make it hold again.
FALSE. In the foreign exchange market it is the free movement of the exchange rate E that makes excess demand or supply of a currency disappear. Y only indirectly affects the foreign exchange markets though the national money markets influencing the interest rates, but work less slowly than exchange rate.

A85. The appreciation of the home currency makes home goods more expensive relative to foreign goods.

TRUE. As a result of the home currency appreciation, so a decrease in E will mean that the price of the home good relative to the price of the foreign good calculated in a same currency increases. A home currency appreciation is good for Home's imports and bad for Home's exports for the same reason.

A86. If domestic interest rate is 5%, foreign interest rate is 4% and expected appreciation of home currency is also 2%, you should rather invest in home currency.

TRUE. The interest rate parity condition is $R = R^ + \frac{E^e - E}{E}$. Expected appreciation of the home currency means that the second term on the right is negative, so we have a $4 - 2 = 2\%$ rate of return on the foreign denominated assets vis-à-vis a 5% rate of return on the home currency denominated asset. So it makes more sense to sell foreign currency against home currency and invest that. This would make the home currency more valuable decreasing the exchange rate and appreciating the home currency until the interest rate parity condition is fulfilled.*

Detailed definitions with page references

Exchange rate: the price of one country's currency in terms of another country's currency. (p.320)

Indirect quote: giving the exchange rate in such a way as to express the price of the foreign currency in terms of the home currency.

This type of quote is used in Hungary when we express the exchange rate of the Euro as 310 HUF/EUR. The other would be the direct quote: how much foreign currency can one unit of home currency buy (p.321)

Depreciation of home currency: is the fall in the price of the home currency expressed in terms of a foreign currency.

In case of an indirect quote system it is an increase in the exchange rate (like up to 320 HUF/EUR, you have to pay more Forint for one Euro), in case of a direct quote system it is a decrease (meaning you get less foreign currency for a unit of your home currency). The opposite of depreciation is appreciation (p.322)

Arbitrage: buying cheap and selling dear at the same time in two different markets and getting risk-free profit.

Low transaction costs like trading through the internet enables actors to keep an eye on temporary differences in prices in different markets, and bring things from where they are cheap to where they are expensive, thereby raising their price at the source and lowering their price at the destination until the arbitrage opportunity vanishes (p.326)

Spot rate: an exchange rate that one can use in spot transactions, for transacting in the present.

One can buy and sell currencies at any moment at the going spot rate (p.326)

Future rate: exchange rate that one uses when the transaction would take place at a future time.

With this you can fix the exchange rate for a future time. You can make a contract to sell a certain amount of dollars at a certain point in time at an exchange rate agreed upon now. You are willing to do this because you think the spot rate at that future time will be lower, the buyer is willing to do this because he/she thinks the spot rate will be higher (p.327)

Hedge: a future buying or selling transaction the aim of which is to mitigate a foreign currency exchange risk by fixing in advance the exchange rate.

If you know you will have to pay 200Eurs in a year you might find it advisable to buy future Eur now at a future rate fixed now. This way you will not have to worry that you lose money if the Forint depreciates against the Euro. True, you also cannot win if the Forint happens to appreciate. But at least the risk is gone (p.328)

Interest parity condition: is fulfilled when the expected return on deposits in any two currency are the same measured in the same currency.

Return on a deposit in home currency is the home interest rate. Return on a deposit denominated in a foreign currency is the foreign interest rate plus the expected rate of depreciation of the home currency against the foreign currency (p.337)

Topic 9: Money, interest and exchange rates (book chapter 15)

Topic overview

This topic continues with the exchange rate determination. The previous topic showed through the interest rate parity condition how the exchange rate between two countries' currencies is determined by the interest rates of two countries in the foreign exchange market. In this chapter we take the analysis one step further and ask how the interest rates of the countries themselves are determined. To answer this question we will turn to the national money markets, the basic model of which is well known from undergraduate macroeconomics.

This topic introduces the idea that the exchange rate as a new endogenous variable in the macro model can be another important variable for the economic policy to monitor and influence. Monetary policy can now be used not only to influence the rate of inflation in an economy, but also the exchange rate.

In this topic we will also make a distinction between temporary and permanent changes in exogenous variables. Temporary changes do not change the expectations of the economic actors, while permanent ones do. The changing expectations will be an additional source of change in the exchange rate, causing it to overshoot. This overshooting is a major cause of the volatility in the exchange rates that can be observed.

Learning outcomes

- Students will understand the connection between the national money markets and the foreign exchange market.
- Students will understand how monetary policy can influence the exchange rates in the long run.
- Students will understand the difference between temporary and permanent changes in exogenous variables.
- Students will be able to infer from a monetary policy intervention its likely effect on the national currency's exchange rate.

Definitions:

Money supply (M1): is the quantity of coins and banknotes outside of the bank system plus checkable deposits.

Short run: is the time period during which the price level is fixed.

Long run: is the time period during which all prices can adjust and accommodate any changes in demand and/or supply.

Long run neutrality of money: In the long run any change in the money supply only changes affects nominal variables (like price level) but not the real variables (like real output, interest rate).

Exchange rate overshooting: when the immediate response of the exchange rate to a disturbance or shock is greater than the long run response.

True or False questions

- A91. Money demand changes as a result of a changing exchange rate.
- A92. An excess demand on the home money market will appreciate the home currency.
- A93. Exchange rate overshooting happens because interest rates overshoot too.
- A94. If the foreign central bank does a restrictive monetary policy intervention, the home central bank also has to do a restrictive monetary policy intervention to keep the exchange rate constant.
- A95. As a result of any monetary intervention the E will change more if expectations change too than if they remain constant.
- A96. Anti-inflationary monetary policy will depreciate your currency.

Single choice questions

- B91.** If individuals are holding more money than they desire,
- they will attempt to reduce their liquidity by using money to purchase goods.*
 - they will attempt to reduce their liquidity by using money to purchase interest-bearing assets.*
 - they will attempt to reduce their liquidity by converting real money holdings into nominal money holdings.*
 - they will keep their holdings constant.*
- B92.** A reduction in a country's money supply causes
- its currency to depreciate in the foreign exchange market.*
 - its currency to appreciate in the foreign exchange market.*
 - does not affect its currency in the foreign market.*
 - the other country's currency to appreciate in the foreign exchange market.*
- B93.** A permanent increase in a country's money supply will in the long run
- cause a more than proportional increase in its price level.*
 - cause a proportional increase in its price level.*
 - leave its price level constant.*
 - cause an inversely proportional fall in its price level.*
- B94.** A change in the level of the supply of money
- increases the long-run values of the interest rate and real output and the exchange rate.*
 - decreases the long-run values of the interest rate and real output and the exchange rate.*
 - has no effect on the long-run values of the interest rate and real output, only on the exchange rate.*
 - does not affect the exchange rate, only the long-run values of the interest rate and real output.*
- B95.** The reason why exchange rates overshoot in the short run is
- that the money supply is increasing.*
 - that the price level only adjusts in the long run.*
 - that the interest parity condition does not hold.*
 - that exchange rate expectations change as a result of a monetary policy intervention.*
- B96.** Let us say that a domestic expansionary monetary policy intervention lower domestic interest rates and also changes the exchange rate expectations. The overshoot is the difference between the exchange rates...
- before and after the long run change in prices.*
 - before and after the change in expectations.*
 - before and after the policy intervention.*
 - before and after the interest rate change.*

Solutions

True or False question

- A91. F
- A92. T
- A93. F
- A94. T
- A95. T
- A96. F

Single choice questions

- B91. B
- B92. B
- B93. B
- B94. C
- B95. D
- B96. A

Explanation to the solutions of true or false questions

A91. Money demand changes as a result of a changing exchange rate.

FALSE. The causation is rather the other way around: it is a change in the money demand that results in a change of the interest rate in the money market, and that in turn will change the equilibrium exchange rate in the foreign exchange market.

A92. An excess demand on the home money market will appreciate the home currency.

TRUE. An excess demand on the home money market will push the home interest rate up and a higher interest paid on domestic denominated assets creates an excess demand for the domestic currency making it more valuable, so domestic currency appreciates.

A93. Exchange rate overshooting happens because interest rates overshoot too.

FALSE. Exchange rate overshooting happens if a monetary intervention changes people's expectations about the future exchange rate. Without a change in the expectation the monetary intervention would immediately move the exchange rate, then subsequent price adjustment would bring the exchange rate back to its original level. If, however, the expectations are changed, the initial move in the exchange rate is going to be bigger, and the subsequent equilibrium after the price adjustment will be different from the original, but closer to it than the immediate change.

A94. If the foreign central bank does a restrictive monetary policy intervention, the home central bank also has to do a restrictive monetary policy intervention to keep the exchange rate constant.

TRUE. The exchange rate together with the expected exchange rate fixes an interest rate differential between the home country and the foreign country. When the foreign interest rate changes either the exchange rate changes and this differential will change, or if the exchange rate is not to change, then the home interest rate should change to keep the interest rate differential at its original level. When the differential is to stay the same, the home interest rate should change in the same direction and by the same amount as the foreign, so the home monetary authority should mimic what the foreign is doing.

A95. As a result of any monetary intervention the E will change more if expectations change too than if they remain constant.

TRUE. Without changes in the expectations any monetary intervention will only change one determinant of the exchange rate, that is, an interest rate. With the change in the expectations, two determinants are changing at the same time, so the combined effect of these changes on the equilibrium will be larger.

A96. Anti-inflationary monetary policy will depreciate your currency.

FALSE. Anti-inflationary monetary policy means decreasing the money supply and hiking up the interest rate. If you can get higher return on the domestic currency now, people will want to invest rather in domestic currency, and the increased demand for the domestic currency will make it more valuable, appreciating the domestic currency.

Detailed definitions with page references

Money supply (M1): is the quantity of coins and banknotes outside of the bank system plus checkable deposits.

The quantity of those type of assets in a country that are the most liquid, that can be used to make transactions with immediately and costlessly (p.356)

Short run: is the time period during which the price level is fixed.

If prices are fixed, changes in demand and/or supply do not affect prices, but instead employment and national income (p.363)

Long run: is the time period during which all prices can adjust and accommodate any changes in demand and/or supply.

In the long run, full employment is warranted in the model, thus the production and national income is fixed, but the price level can change (p.368)

Long run neutrality of money: In the long run any change in the money supply only changes affects nominal variables (like price level) but not the real variables (like real output, interest rate).

As the supply of money increases in the long run, all prices, including the price of foreign currency increases, so the result will be a depreciation of the home currency against foreign currencies (p.369)

Exchange rate overshooting: when the immediate response of the exchange rate to a disturbance or shock is greater than the long run response.

For example when the money supply is increased then interest rate falls, and that together with changing exchange rate expectations raises the exchange rate. Then later as the price level adjust the interest rate slowly goes back to its original level, and the exchange rate goes down and settles higher than the original (because of changed expectations) but lower than the initial response (because of higher interest rate) (p.377)

Topic 10: Prices and exchange rates in the long run (book chapter 16)

Topic overview

This topic builds upon the previous two topics. Still thinking within the long run model we focus now on another nominal variable, the price level, and how its inclusion changes the way we treated exchange rate determination so far.

With the help of the price level we introduce the notion of real exchange rates which allows us to directly compare costs of identical baskets of goods in two countries given the price levels and the nominal exchange rate. When the monetary policy intervenes in the economy, real variables might be affected in the short run, but still in the long run money is neutral, so its quantity only determined nominal variables and has no effect on real variables.

However, the concept of real exchange rate enables us to make a distinction between changes in the price of goods and the price of a currency, and see why the latter is much more volatile than the former. The real exchange rate can also be used in a practical way, when one can infer from a currency being under- or overvalued whether exporting or importing is more profitable. Possible arbitrage opportunities arising from this however should change the prices until the law of one price holds. We will see what are the circumstances that in the real world prevent this from happening perfectly.

Learning outcomes

- Students will understand the significance and limitation of the law of one price.
- Students will understand how monetary policy changes only the nominal variables in the long run.
- Students will be able to use the real exchange rate and from the under- or overvaluation of a currency can identify opportunities to trade.

Definitions:

Law of one price: In competitive markets with no transportation costs and official barriers to trade identical goods sold in different countries must sell for the same price expressed in a common currency.

Absolute PPP: states that the exchange rate between two countries' currencies equals the ratio of the two countries' price levels.

Relative PPP: states that the percentage change in the exchange rate between two countries over any period equals the difference between the percentage changes in national price levels.

Nontraded goods: goods for which transportation costs are so high relative to the cost of producing the good, that they can never be traded internationally at a profit.

Home currency undervaluation: home currency is undervalued if the current exchange rate makes domestic products relatively cheaper to similar goods sold abroad.

Real exchange rate: is the ratio of the Foreign price level expressed in home currency at the going exchange rate and the Home price level.

Home currency real depreciation: is the fall in the purchasing power of the Home currency in Foreign relative to its purchasing power Home.

True or False questions

- A101.** If the CHF/EUR exchange rate is 1, then what you can buy for 1 franc in Switzerland you can buy for 1 euro in the Euro Zone.
- A102.** Absolute purchasing power parity may hold even if the law of one price does not hold for any single commodity across two countries.
- A103.** If the home price level increases relative to the foreign, it will result either in a nominal, or a real appreciation of the home currency.
- A104.** If the real exchange rate is greater than 1, the spot official exchange rate is higher than the PPP exchange rate.
- A105.** When the home currency is undervalued you can expect to find the same commodity basket being more expensive in foreign than in home.
- A106.** If the Norwegian Crown is overvalued against the dollar, then the Norwegian GDP at official exchange rate is actually higher than their PPP GDP.

Single choice questions

B101. In practice

- a) *changes in national price levels match identical changes in the exchange rate.*
- b) *changes in national price levels raise the interest rate.*
- c) *changes in national price levels lower the exchange rate.*
- d) *changes in national price levels often tell us relatively little about exchange rate movements.*

B102. Which of the following statements is the most accurate?

- a) *Absolute PPP may be valid even when relative PPP is not, provided the factors causing deviations from relative PPP are more or less stable over time.*
- b) *Relative PPP may be valid even when absolute PPP is not, provided the factors causing deviations from absolute PPP are more or less stable over time.*
- c) *Relative PPP is not valid when absolute PPP is not.*
- d) *Relative PPP is only valid when absolute PPP is valid, providing the factors causing deviations from relative PPP are more or less stable over time.*

B103. When relative PPP holds and home inflation is greater than foreign inflation,

- a) *the real exchange rate of the home currency will decrease.*
- b) *home inflation will go down to the level of foreign inflation, so that the nominal exchange rate does not change.*
- c) *home money supply will fall to cause a real appreciation of the home currency.*
- d) *the home currency depreciates in nominal terms to accommodate for the lower purchasing power of the home currency.*

B104. When your currency is undervalued against another country's currency, it means

- a) *Prices in the foreign country converted to your currency are lower than at home.*
- b) *Prices in the foreign country converted at purchasing power parity exchange rate are lower than at home.*
- c) *Prices in the foreign country are higher denominated in local currency than at home.*
- d) *Your home income converted into the foreign currency buys less goods in the foreign country.*

B105. In order for the condition $E_{\$/HK\$} = P_{US}/P_{HK}$ to hold, what assumptions does the principle of purchasing power parity make?

- a) *Only that there are no transportation costs and restrictions on trade.*
- b) *The factors of production are identical between countries.*
- c) *No arbitrage exists.*
- d) *HK and US are perfectly competitive and there are no transportation costs or restrictions on trade.*

B106. Which of the following would not cause the real exchange rate to rise?

- a) *a rise in the exchange rate, E*
- b) *depreciation of the home currency*
- c) *a fall in foreign prices, P^**
- d) *a fall in domestic prices, P*

Solutions

True or False question

- A101.** F
A102. T
A103. F
A104. T
A105. T
A106. T

Single choice questions

- B101.** D
B102. B
B103. D
B104. D
B105. D
B106. C

Explanation to the solutions of true or false questions

A101. If the CHF/EUR exchange rate is 1, then what you can buy for 1 franc in Switzerland you can buy for 1 euro in the Euro Zone.

FALSE. This is only true if the two countries' price levels are the same. Another way to say it is if the exchange rate is the PPP exchange rate, which is rarely, but absolutely not automatically the case.

A102. Absolute purchasing power parity may hold even if the law of one price does not hold for any single commodity across two countries.

TRUE. Absolute PPP means that the exchange rate is such that a certain amount of money will buy you the same amount of typical baskets whichever country you spend your money in. The price of the basket is a weighted average of the prices of goods, so if the weights are different, than the prices calculated in the same currency do not need to be equal for the average to be equal. Even if the weights are the same, some goods can be more expensive and others less expensive in one of the countries and the averages can still be equal.

A103. If the home price level increases relative to the foreign, it will result either in a nominal, or a real appreciation of the home currency.

FALSE. If the real exchange does not change, the larger home inflation will make the home currency less valuable, so nominal exchange rate should increase and the home currency depreciates. If the nominal exchange rate does not change, so the home currency does not depreciate when it should, it becomes overvalued, so the real exchange rate decreases, and there will be a real appreciation of the home currency. So nominal and real exchange rates would move in the opposite direction.

A104. If the real exchange rate is greater than 1, the spot official exchange rate is higher than the PPP exchange rate.

TRUE. The PPP exchange rate is one that makes the real exchange rate equal to 1, or which makes the price of the foreign bundle equal to that of the home bundle. If the real exchange rate is over 1, than we have a nominal exchange rate which makes the foreign bundle more expensive than the home bundle, so E is too high, the home currency is too weak, it is undervalued.

A105. When the home currency is undervalued you can expect to find the same commodity basket being more expensive in foreign than in home.

TRUE. When the home currency is undervalued the current exchange rate E is too high, higher than would be justified by the absolute PPP. So if you exchange your money into the foreign currency and spend it in foreign, you will actually be able to buy less (bundles). This is bad news for you if you want to or have to travel to this foreign country, but is good news for foreigners: they will be happy to come and spend their overvalued currency in our home country.

A106. If the Norwegian crown is overvalued against the dollar, then the Norwegian GDP at official exchange rate is actually higher than their PPP GDP.

TRUE. Overvaluation means the Norwegian crown is more expensive than justified by the PPP. When you exchange your dollars into crowns, you will be able to buy less goods and services. To be able to buy the same basket, one crown should be worth less dollars, or one dollar should be worth more crowns. Calculated at this purchasing power parity exchange rate then the Norwegian GDP expressed in dollars would decrease.

Detailed definitions with page references

Law of one price: in competitive markets with no transportation costs and official barriers to trade identical goods sold in different countries must sell for the same price expressed in a common currency.

This says that prices of the same good in two countries measured in the same currency must be the same, otherwise people would start bringing the good from where it is cheap (making it more expensive there) to where it is expensive (making it cheaper there), so price differences would vanish. Price differences can prevail if there are transportation costs or barriers to trade (p.385)

Absolute PPP: states that the exchange rate between two countries' currencies equals the ratio of the two countries' price levels.

Take the same consumption bundle in two countries. Take their prices expressed always in the country's home currency then divide the two prices. If the ratio is the same as the exchange rate, absolute PPP holds. Put another way if dividing the price levels of the two countries expressed in the same currency at the going exchange rate you get 1, absolute PPP holds, relative purchasing power of the two currencies are the same (p.386)

Relative PPP: states that the percentage change in the exchange rate between two countries over any period equals the difference between the percentage changes in national price levels.

If the two countries' price levels change to the same extent, nominal exchange rate should not change. Put another way if dividing the price levels of the two countries expressed in the same currency at the going exchange rate is not necessarily 1, but is constant over time, relative PPP holds, relative purchasing power of the two currencies does not change (p.387)

Nontraded goods: goods for which transportation costs are so high relative to the cost of producing the good that they can never be traded internationally at a profit.

Perishable goods might be of this kind: it is too costly to transport them, so countries produce them for themselves. Some services are like this: hiring a hairdresser from the US or travelling there for the service is prohibitively costly. Not all services are like this, however, see distant working in the software industry (p.396)

Home currency undervaluation: home currency is undervalued if the current exchange rate makes domestic products relatively cheaper to similar goods sold abroad.

When we calculate the price of the same good in the same currency at the going exchange rate, we get a cheaper price in Home than in Foreign. To get to purchasing power parity, home currency should appreciate (p.398)

Real exchange rate: is the ratio of the Foreign price level expressed in home currency at the going exchange rate and the Home price level.

If the foreign price level in home currency is lower than the home price level, the real exchange rate of the home currency will be lower than 1, and the home currency is overvalued (p.404)

Home currency real depreciation: is the fall in the purchasing power of the Home currency in Foreign relative to its purchasing power Home.

You can better spend your money at home than convert it to foreign currency at the going exchange rate and spend it abroad than earlier, the real exchange rate has increased (p.405)

Topic 11: Output and exchange rate in the short run (book chapter 17)

Topic overview

In this topic we are incorporating the exchange rate into the short run model of the economy. For closed economies we use the familiar IS-LM model which will be enhanced to get the Mundell-Flemming model of open economies. This model lets us study not only how the foreign exchange market interacts in the short run with asset and good markets, but also how fiscal and monetary interventions aiming at stimulating the economy, lowering unemployment or inflation will affect the exchange rate and the current account.

Throughout all these studies we implicitly assume a floating exchange rate regime where the exchange rate is determined through market forces. The interventions that the government or the central bank do have an additional effect on the exchange rate and the current account, the exchange rate itself is not considered an economic policy objective.

The balance of the current account, however, might be an important factor the government or the central bank might want to influence. We will look closer into how a change in the exchange rate affects the current account balance through the volume and the value effects and conclude, that a currency depreciation might have an opposing effect on it depending on the time frame the economic actors are allowed to adjust.

Learning outcomes

- Students will understand the functioning of the Mundell-Flemming model of open economy.
- Students will know how expansionary or restrictionary fiscal or monetary policies affect the exchange rate and the current account.
- Students will understand how elasticities of demand influence the way a change in the exchange rate affects the current account.

Definitions:

DD schedule (function): shows all combinations of exchange rate and income level for which the output market is in equilibrium so that $Y = C + I + G + CA$.

AA schedule (function): those combinations of income level and exchange rate for which the asset markets (meaning both the domestic money market and the foreign exchange market) is in equilibrium.

J-curve: shows that immediately after the home currency real depreciation the current account worsens, but after about 6-12 months it improves over and above the initial situation.

Marshall-Lerner condition: states that if the initial current account balance is zero, then a real currency depreciation will cause a current account surplus if the combined price elasticities of import and export are greater than 1.

True or False questions

- A111.** Higher income leads to higher money demand, higher interest rate and lower exchange rate, so the AA curve is downward sloping.
- A112.** A simultaneous expansionary fiscal and monetary policy may result in no change in the exchange rate.
- A113.** An (temporary) increase in the money supply will in the short run increase the income level in the country and appreciate its currency.
- A114.** If the Marshall-Lerner condition is fulfilled, the depreciation of the Home currency will increase Home's imports.
- A115.** The J-curve effect shows that a monetary expansion will immediately depreciate the home currency, but after time it will slowly appreciate.
- A116.** When export and import are both very price-inelastic than a depreciation of the domestic currency can decrease the current account.

Single choice questions

- B111.** Always assuming equilibrium and floating exchange rates, the asset markets would react to a fall in the Y with
- a decreased demand for domestic products.*
 - a contraction of the money supply.*
 - a depreciation of the home currency.*
 - an appreciation of the home currency.*
- B112.** In the short run, with prices fixed, what would an increase in government spending cause in the DD-AA system?
- It will decrease output and appreciate the home currency.*
 - It will decrease output and depreciate the home currency.*
 - It will increase output and depreciate the home currency.*
 - It will increase output and appreciate the home currency.*
- B113.** Temporary tax cuts in the short run would cause
- the AA-curve to shift left and the exchange rate to increase.*
 - the AA-curve to shift right and the exchange rate to decrease.*
 - the DD-curve to shift left and the exchange rate to decrease.*
 - the DD-curve to shift right and the exchange rate to decrease.*
- B114.** Which of the following is true in terms of the current account balance?
- Fiscal expansion increases the current account balance.*
 - Monetary expansion has no effect on the current account balance.*
 - Monetary expansion decreases the current account balance.*
 - Monetary expansion increases the current account balance.*
- B115.** How does an increase in the (real) exchange rate affect exports and imports?
- Exports increase; imports change ambiguously.*
 - Exports increase; imports decrease.*
 - Exports change ambiguously; imports decrease.*
 - Exports increase; imports are constant.*
- B116.** In the short run AA-DD-XX model an expansionary monetary policy intervention will
- increase GDP, depreciate domestic currency and improve the balance of payment.*
 - decrease GDP, appreciate domestic currency and worsen the balance of payment.*
 - increase GDP, appreciate domestic currency and worsen the balance of payment.*
 - decrease GDP, depreciate domestic currency and worsen the balance of payment.*

Solutions

True or False question

A111. T
A112. T
A113. F
A114. F
A115. F
A116. T

Single choice questions

B111. C
B112. D
B113. D
B114. D
B115. A
B116. A

Explanation to the solutions of true or false questions

A111. Higher income leads to higher money demand, higher interest rate and lower exchange rate, so the AA curve is downward sloping.

TRUE. This is the logic of the asset markets. The money market reacts to higher income by higher interest rate, and as the rate of return on domestic denominated assets increase, demand for home currency increases in the foreign exchange market, so the domestic currency appreciates. Higher Y leads to lower E.

A112. A simultaneous expansionary fiscal and monetary policy may result in no change in the exchange rate.

TRUE. Thinking in terms of the downward sloping AA function for asset markets and the upward sloping DD function for the output or goods market, if both of these shift to the right as a result of a monetary and fiscal expansion, this will have a reinforcing effect on the income (both policies increase it), but an opposing effect on exchange rate (fiscal expansion pushes it down and the monetary pushes it up). As a result, it is possible, that E is not changing.

A113. An (temporary) increase in the money supply will in the short run increase the income level in the country and appreciate its currency.

FALSE. As the downward sloping AA curve is shifted to the right as a result of the monetary expansion, its intersection point with the unchanged upward sloping DD will be at a higher income level and a higher E, so together with an increase in the income, the home currency will depreciate.

A114. If the Marshall-Lerner condition is fulfilled, the depreciation of the Home currency will increase Home's imports.

FALSE. The depreciation of the home currency will always decrease home's import, as foreign goods become more expensive than before. It is the current account that will increase if the Marshall-Lerner condition is fulfilled.

A115. The J-curve effect shows that a monetary expansion will immediately depreciate the home currency, but after time it will slowly appreciate.

FALSE. The J-curve is about how a depreciation in the short run worsens, then subsequently improves the current account. The sudden depreciation and the gradual subsequent appreciation of the currency is the exchange rate overshooting.

A116. When export and import are both very price-inelastic than a depreciation of the domestic currency can decrease the current account.

TRUE. Being price-inelastic means that the price elasticity of demand is close to 0. If both price elasticities are close to 0 then their sum is likely to be below 1, in which case the Marshall-Lerner condition is not fulfilled, so the exchange rate and the current account balance move in the opposite direction.

Detailed definitions with page references

DD schedule (function): shows all combinations of exchange rate and income level for which the output market is in equilibrium so that $Y = C + I + G + CA$.

There is a direct relationship between the two. At higher exchange rate the demand for domestic goods and services increase so production must keep pace with it and will also increase (p.429)

AA schedule (function): those combinations of income level and exchange rate for which the asset markets (meaning both the domestic money market and the foreign exchange market) is in equilibrium.

This shows an indirect relationship between variables. At a higher income level the money market equilibrium will happen at a higher interest rate, and for the higher interest rate the interest parity condition on the foreign exchange market will hold at a lower exchange rate (p.432)

J-curve: shows that immediately after the home currency real depreciation the current account worsens, but after about 6-12 months it improves over and above the initial situation.

The real depreciation will change the relative price of foreign and home goods, but until the pre-agreed export and import shipments are fulfilled the firms cannot adjust to the new relative prices and buy where it became relatively more expensive and sell where it became relatively cheaper (p.448)

Marshall-Lerner condition: states that if the initial current account balance is zero, then a real currency depreciation will cause a current account surplus if the combined price elasticities of import and export are greater than 1.

Real currency depreciation has an opposing effect on exports (increase) and imports (decrease). The current account will only improve if the positive effect is stronger than the negative. This depends on how sensitively the export and import quantities react to changes in the price. (p.424, p.460-461)

Topic 12: Fixed exchange rates and foreign exchange intervention (book chapter 18)

Topic overview

In the last topic we get to know the different exchange rate regimes that countries can use. These exchange rate regimes determine how much a country considers the exchange rate itself as an economic policy goal, so how strongly they wish to control it. The floating exchange rate system that we implicitly used in the previous topics is one extreme, when the economic policy is not controlling the exchange rate in any way. The opposite extreme is the fixed exchange rate regime, when the country sets a fixed exchange rate for its currency and the central bank commits itself to intervene in such a way that the fixed exchange rate does not change.

Looking at the different regimes we will find trade-offs yet again, and finally get to the impossible trinity, which says that of the three valuable goals of stable exchange rates, free movement of capital and autonomous monetary policy any country can have only two: the floating exchange rate regime taking away stability in the exchange rates but fixed exchange rate sacrificing autonomous monetary policy. When deciding on the exchange rate regime to be used, countries have to make a non-trivial choice.

Learning outcomes

- Students will understand how a central bank can purposefully influence the exchange rate of a currency.
- Students will know the advantages and disadvantages of the different exchange rate regimes.
- Students will know how the choice of the exchange rate regime influences the effectiveness of the different economic policy interventions.

Definitions:

Floating exchange rates: Monetary authorities themselves do not trade in the foreign exchange market to influence exchange rates.

Managed (dirty) floating: The exchange rate is not fixed, but the Monetary authorities do try to influence the exchange rate movements in a direction considered favorable.

Foreign exchange intervention: is the Central Bank's buying and selling international reserves in private asset markets in order to affect domestic macroeconomic conditions, most notably the exchange rate.

Sterilization: is a transaction of the Central Bank that aims at mitigating the effect of a foreign exchange transaction on the domestic money supply.

Devaluation of home currency: When the domestic Central Bank raises the domestic currency price of a foreign currency.

Balance of payment crisis: a sharp decline in the official foreign reserves caused by the people's expectations about future devaluations of the domestic currency.

True or False questions

- A121.** Suppose Home uses fixed exchange rate system. If Foreign decreases its interest rate, official reserves in Home will decrease.
- A122.** When a country credibly pegs its currency to another country's currency, it automatically imports foreign inflation.
- A123.** When a country credibly pegs its currency to another country's currency, it cannot use monetary policy any more to affect the income level.
- A124.** The Home Central Bank can make the home currency appreciate if it sells home assets against foreign assets.
- A125.** When a country credibly pegs its currency to another country's currency, this increases exchange rate risk to companies.
- A126.** A sterilized Central Bank intervention means a transaction in the opposite direction on the domestic bond market as on the foreign exchange market.

Single choice questions

B121. Under fixed exchange rates system, which one of the following statements is the most accurate?

- a) *Monetary policy can affect only international reserves.*
- b) *Monetary policy can affect only output.*
- c) *Monetary policy can affect only employment.*
- d) *Monetary policy can only affect money supply.*

B122. By fixing the exchange rate, the central bank gives up its ability to

- a) *increase government spending.*
- b) *influence the economy through fiscal policy.*
- c) *depreciate the domestic currency.*
- d) *influence the economy through monetary policy.*

B123. If home has fixed exchange rate system

- a) *the interest rate parity does not hold.*
- b) *the foreign Central Bank cannot influence their interest rate so that it is different from the home interest rate.*
- c) *the home interest rate must be equal to that of foreign.*
- d) *increased government purchases deplete the home Central Bank's official reserves.*

B124. How would a sterilized intervention from the home Central Bank look like, when it reacts to a foreign monetary expansion? The home Central Bank should

- a) *buy foreign currency and sell domestic bonds.*
- b) *sell foreign currency and buy domestic bonds.*
- c) *sell foreign currency and also sell domestic bonds.*
- d) *only make sure that home inflation does not change.*

B125. Which of the following is an advantageous characteristic of the fixed exchange rate system?

- a) *The Central Bank cannot influence the economy through monetary policy.*
- b) *The effectiveness of fiscal policy is increased.*
- c) *The Central Bank's foreign reserves fluctuate as a result of foreign exchange intervention.*
- d) *The exchange rate is (more) predictable.*

B126. Why would a Central Bank revalue a currency in a fixed exchange rate system?

- a) *To keep domestic prices low.*
- b) *To prevent the depletion of foreign exchange reserves.*
- c) *To eventually switch to floating exchange rate system.*
- d) *To satisfy the Marshall-Lerner condition.*

Solutions

True or False question

- A121.** F
A122. T
A123. T
A124. F
A125. F
A126. T

Single choice questions

- B121.** A
B122. D
B123. C
B124. A
B125. D
B126. A

Explanation to the solutions of true or false questions

A121. Suppose Home uses fixed exchange rate system. If Foreign decreases its interest rate, official reserves in Home will decrease.

FALSE. The decrease in the foreign interest rate will cause an excess demand for the domestic currency. If the Central Bank does not want the domestic currency to appreciate, it needs to sell domestic assets and buy foreign assets, so reserves will grow. It is trying to keep the domestic currency more valuable than it actually is for a long time that depletes official reserves.

A122. When a country credibly pegs its currency to another country's currency, it automatically imports foreign inflation.

TRUE. For the exchange rate to remain constant Home has to keep up the same interest rate as foreign. So, if the foreign interest rate changes as a result of an inflation, the Home Central Bank has to follow suit and do the same policy as Foreign which will cause inflation here just like it did there.

A123. When a country credibly pegs its currency to another country's currency, it cannot use monetary policy any more to affect the income level.

TRUE. Any monetary policy aimed at influencing the income level will shift the AA curve, and change the exchange rate together with the income. With fixed exchange rate, the Central Bank is obliged to keep the exchange rate at a fixed level, so it should do a kind of reverse sterilization, undoing therewith what it has been doing to influence the income.

A124. The Home Central Bank can make the home currency appreciate if it sells home assets against foreign assets.

FALSE. With fixed exchange rate the Central Bank may not make the home currency diverge from its fixed value. If this sale of domestic assets is an attempt to bring the exchange rate back to its fixed lower level, the statement is also false, since selling domestic assets against foreign assets creates additional supply of domestic assets and additional demand for foreign assets, so the effect would be a depreciation of the home currency.

A125. When a country credibly pegs its currency to another country's currency, this increases exchange rate risk to companies.

FALSE. One of the main purposes of the fixed exchange rate regime is to decrease exchange rate risk. Under floating or flexible exchange rate regime if the exchange rate actually changes differently than expected, then expected and actual return on foreign assets may differ. In case of the fixed exchange rate system this cannot happen.

A126. A sterilized Central Bank intervention means a transaction in the opposite direction on the domestic bond market as on the foreign exchange market.

TRUE. Sterilization of a foreign exchange intervention means that the Central Bank wants to neutralize the foreign exchange intervention's effect on domestic money supply. If the Central Bank has purchased foreign assets in the foreign exchange market, it increased domestic money supply, and the way to pull this excess money supply out of the money market is to sell bonds. Also if the foreign exchange intervention was a sale of foreign assets, then the Central Bank can buy bonds to restore money supply. Either way, we need a sale and a purchase, opposite direction transactions on the two markets.

Detailed definitions with page references

Floating exchange rates: Monetary authorities themselves do not trade in the foreign exchange market to influence exchange rates.

Exchange rates are perfectly flexible and their actual value is determined by the simultaneous equilibrium of the asset and output markets (p.463)

Managed (dirty) floating: The exchange rate is not fixed, but the Monetary authorities do try to influence the exchange rate movements in a direction considered favorable.

Without declaring what exactly is the favorable exchange rate (which would be fixing) if the Central Bank sees fit it tries to lower the exchange rate, at other times it tries to raise it through foreign exchange intervention (p.464)

Foreign exchange intervention: is the Central Bank's buying and selling international reserves in private asset markets in order to affect domestic macroeconomic conditions, most notably the exchange rate.

Any foreign exchange transaction will include the exchange of foreign assets to domestic assets, so it will have an effect on the home money supply and thereby the interest rate and the exchange rate (p.312)

Sterilization: is a transaction of the Central Bank that aims at mitigating the effect of a foreign exchange transaction on the domestic money supply.

This generally means conducting a foreign and domestic asset transaction at the same time but in an opposite direction. Selling foreign currency for domestic money would decrease domestic money supply but buying domestic bonds at the same time brings the money back into circulation (p.468)

Devaluation of home currency: When the domestic Central Bank raises the domestic currency price of a foreign currency.

In this case the change in the exchange rate is the result of an economic policy decision, unlike in the floating exchange rate case, when it is the result of the market agents optimizing and the market arriving at a new equilibrium (p.474)

Balance of payment crisis: a sharp decline in the official foreign reserves caused by the people's expectations about future devaluations of the domestic currency.

When people expect the domestic currency to devalue the Central Bank needs to sell foreign reserves to keep the exchange rate at its original level despite new expectations (p.477)

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