

# TRADE THEORY IN A CHANGING WORLD

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## Abstract

Trade theory has changed conspicuously during recent years owing to institutional changes and developments that included insights from the New Geographical Economics. Offshoring is the latest development that challenges theoretical as well as empirical analysis. Recently it has been suggested in the literature to explain offshoring in terms of trade in tasks. This paper explores this possibility within the context of imperfect competition.

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International trade expanded rapidly in the post World War II period owing to several factors. This went hand in hand with the decline in the importance of certain regions and a rise in the significance of new trading countries. Some of the factors that were important in the expansion of trade during this period of the so-called globalisation, were for instance discussed by Feenstra (1998). The main trade enhancing factors were trade liberalization, falling transportation cost and the growth in manufacturing industry. The latter developed owing to a new specialisation in narrow product ranges within particular industries. This intraindustry trade comprises the importation and exportation of products within the same industry. Intermediate products feature prominently in this trade and Feenstra (1998) described this as the disintegration of the production process. Different elements of the production process are completed in different countries. Krugman (1995) described this process as slicing up the value chain. As indicated by Feenstra (1998), other terms were also suggested in the literature. Recently Grossman and Rossi-Hansberg (2006) described this process of offshoring as trade in tasks. The production process is described in terms of sets of tasks as opposed to the conventional combination of different inputs. Tasks can be performed at home or offshored to a remote country. This concept will be applied in an analysis of offshoring below. It would appear that new insights are to be obtained in analyzing offshoring within the context of imperfect competition.

## 1. SPATIAL ELEMENTS, SPECIALISATION AND OFFSHORING

Economies of scale, product differentiation and spatial dispersal are important elements in the explanation of trade in a globalised world. Economies of scale together with product differentiation enforce greater specialization. These factors generate the higher volumes of trade, particularly in intraindustry trade that features prominently in contemporary international trade (Helpman, 1999). These different elements emphasise the importance of imperfect competition and trade in differentiated

products that are close substitutes. Moreover, these trading activities occur between similar countries regarding economic structure, income levels and consumer tastes. Product differentiation and imperfect competition imply that economic agents are price makers and not price takers as suggested by the models of perfect competition.

As indicated by Krugman (1991), spatial elements have been recognised in the development of international trade theory over a long period. It is the New Economic Geography that convincingly demonstrated the significance of spatial aspects in modern international trade. Proximity appears to be important in understanding modern patterns in international trade. Simultaneously with this, one has to emphasise the fact that the prominence of multinational firms in international trade is facilitating the disintegration of the production process. It is this phenomenon that made offshoring an important element in the international economy. Recently Venables (2006) described these geographical aspects within the context of international trade and offshoring. In terms of this analysis proximity is good for productivity. The disintegration of the production process is encouraged by the low cost of offshoring, low production cost in new locations and little opportunity cost at home in giving up certain advantages of proximity.

These characteristics of the modern international economy are very different from the assumptions in neo-classical trade theory where trade is dependent on fixed factor endowments in geographically isolated regions. In this conventional framework trade occurs in homogeneous products where production depends on the condition of relative factor endowments. Offshoring contradicts these conventional assumptions while the process in itself secures the global allocation of production to areas of low cost. Moreover, production processes that qualify for offshoring can easily forgo advantages of proximity in the home country.

Thus far our exposition concentrated on the disintegration or the offshoring of the production of physical goods. In conventional trade theory services are usually considered as non-tradable. In the new globalised world services are entering the tradable category on a large scale. Moreover, it is apparent that the production process of services can also be disintegrated or offshored. Furthermore, the internet and computers enable producers of tradable services to transfer the disintegrated elements of production to low cost centres at virtually zero cost. This important feature in the production of tradable services has been referred to by Blinder (2006) as the third industrial revolution.

Grossman and Rossi-Hansberg (2006) have given an analytical meaning to trade activities that are associated with offshoring, namely trade in tasks.

They distinguish between low-skilled and high-skilled tasks that can be traded internationally. This distinction opens up the possibility of applying endowment oriented trade theories in explaining trade in different tasks. Furthermore, these authors distinguish tasks that can be described with “rules-based logic” and therefore identified as codified tasks. As opposed to these they distinguish tasks that cannot be codified and their production depends on personal interchange. These tasks are high-skilled based, complex and not easily decomposed into well defined components. In the Grossman and Rossi-Hansberg exposition the codifiable tasks are usually low-skilled in nature and readily transferred at low or zero cost to low cost centres, i.e., offshored.

In sum, trade in tasks is primarily referring to an economic activity that disintegrates the production process of goods and services in time and space. Commodities or physical products with disintegrated production processes are usually traded as intermediate inputs that are well documented and readily identifiable. Trade in tasks with respect to services is not well documented and not readily identifiable. This trade is, nevertheless, associated with services that can be codified, in the terminology of Grossman and Rossi-Hansberg (2006). The service components are transferred or offshored for completion to low cost centres. After completion they are returned to the home country. These services are associated with low-skilled labour in the home as well as in the remote country. As a rule the offshoring country happens to be a developed country.

## 2. OFFSHORING UNDER PERFECT COMPETITION

The identification of trade in tasks opens the possibility of explaining offshoring in terms of factor endowment. Grossman and Rossi-Hansberg (2006) analysed this process with the assumptions of the Heckscher-Ohlin trade model. The endowment feature of this model is particularly helpful in explaining offshoring between developed and developing countries. The production process is envisaged as involving sets of tasks. Certain tasks can be performed remotely and information technology reduces the cost of offshoring. The authors distinguish tasks performed by low-skilled and tasks performed by high-skilled labour. In a two country two goods model the two goods will differ in terms of factor intensities. The production of low-skilled intensive products can be described precisely so that these tasks are regarded as codifiable. Because of this property they qualify for offshoring. Tasks are performed offshore owing to cost advantages in the remote country. This enhances the productivity of low-skilled labour and it is equivalent to labour augmenting technological progress. In a small open economy offshoring of low-skilled labour intensive tasks initially reduces

the demand for low-skilled labour but the positive technological progress benefits low-skilled output through lower production cost. The low-skilled intensive industry will expand, creating employment and in the Grossman and Rossi-Hansberg analysis this expansion will offset the initial fall in labour demand. Offshoring benefits low-skilled labour.

Offshoring in a large open economy leads to a different outcome under Heckscher-Ohlin assumptions because international prices are no longer given as in the case of a small open economy. Offshoring of low-skilled labour intensive tasks by a technology superior country expands the world output of this production and the terms of trade of the advanced country improves. This relative price change exerts upward pressure on high-skilled wages in both countries and downward pressure on low-skilled wages. Offshoring, therefore, goes hand in hand with a productivity effect, a factor supply effect (labour augmenting) and a relative price effect. The authors conclude that the positive productivity effect outweighs the negative labour supply effect and offshoring is beneficial to the trading countries.

Although this exposition is very helpful in explaining the different aspects of offshoring within a globalised trade environment it has important limitations owing to the assumption of perfect competition. In this framework full employment is secured as price changes encourage substitution processes in production and consumption that are completed at zero cost. The evidence suggests that the adjustment process does not occur smoothly and without cost. In developed countries certain segments of the labour market are negatively affected by globalization. These issues are best analysed within a framework of imperfect competition, as will be evident below.

### 3. OFFSHORING UNDER IMPERFECT COMPETITION

Imperfect competition introduces new dimensions into the analysis of offshoring. This analysis explicitly acknowledges the importance of the supply-side shocks that characterize the present international economy in the wake of the liberalization of Eastern Europe and Asia. The liberalization of these regions resulted in a significant increase in the availability of labour in the world economy. Moreover this enhanced labour supply is biased in favour of the supply of low-skilled labour and the emergence of low cost centres of production. Production at these low cost centres is encouraged by falling transportation cost and probably more importantly, is the development in information technology that facilitates low-skilled labour in conducting codified tasks and to transport them at virtually zero cost. In terms of the terminology introduced above we maintain that these tasks, that do not have high proximity costs, are destined to be offshored to low cost centres. Offshoring is an important aspect in

the production of these tasks. The relatively low cost of production particularly refers to the cost of low-skilled labour. Considering the global extent of this labour supply shock it is evident that this phenomenon is exerting downward pressure on the remuneration of low-skilled labour. In a similar direction one could claim that, on a global basis, the cost of low-skilled labour intensive tasks has an upper bound determined by Asian wage rates. Industries participating in this global low-skilled intensive labour market are price takers and they are participants in a market that resembles perfect competition. Labour markets that do not clear at these prices are faced with unemployment.

At the opposite of this condition we have high-skilled labour intensive tasks trading at prices that are set in a competitive environment of price makers. Industries supplying high-skilled labour tasks do so in monopolistic competitive markets where they are price makers. Moreover, in these markets we experience specialization that is aimed at the exploitation of economies of scale. In respect of low-skilled tasks, specialization in order to exploit economies of scale is highly unlikely. Proximity is important to high-skilled labour tasks since skills are complementary while knowledge sharing enhances productivity and efficiency. These tasks cannot be codified and personal attendance as well as personal relations is important in conducting them successfully. They are unlikely to be offshored.

The outcome of this exposition is that low-skilled labour intensive tasks experience downward pressure on their price and consequently wage rate increases have an upper bound. Industries in this business are price takers and global conditions dictate their prices. High-skilled labour intensive tasks do not suffer from these global supply forces with deflationary price effects. These tasks are unique and distinguished by product differentiation. Suppliers of these tasks are price makers.

Developed countries are relatively well endowed with educated people or high quality human capital. Specialisation in high-skilled tasks in these countries will go hand in hand with positive scale effects since these tasks are not produced under conditions of constant returns to scale. Specialisation in production will not be determined by endowment but by economies of scale.

In order to take advantage of the third industrial revolution, in the terminology of Blinder, advanced countries will have to shift production in favour of high-skilled tasks. It is in the production of these tasks that specialization will deliver economies of scale while production is featured by price making behaviour. Expanding production creates employment

opportunities that can be accessed by low-skilled labour only after thorough training and education.

#### 4. SUMMARY AND CONCLUSION

Trade theory originally explained trade in terms of the endowment of factors of production. Geographically separated and dissimilar countries were entering into trade with each other. As opposed to this interindustry trade, trading patterns shifted in favour of intraindustry trade where trading partners were similar and trade in similar products featured prominently in international trade. Owing to these similarities proximity became less important and footloose production resulted in the disintegration of the production process or the slicing up of the value chain. Apart from endowments economies of scale entered as a driving force behind trade between countries. Together with this imperfect competition featured prominently in explaining trade. The development of information technology contributed towards a new dimension by reducing the cost of transferring production to low cost centres to virtually zero. This is particularly true in the case of trade in business services and the new phenomenon of offshoring started featuring in international trade. Grossman and Rossi-Hansberg (2006) systematized the explanation of this as trade in tasks. Following this distinction we indicated the importance of perfect versus imperfect competition in explaining trade in tasks. The analysis suggests that offshoring is presenting new employment opportunities, technological progress and specialization with benefits in economies of scale. Investment in human capital by advanced countries will secure the exploitation of these benefits and offshoring is likely to have definite positive effects to the international economy.

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