

## Taxation of exports – theory and practice

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**Abstract:** Taxation of export has been used by many countries. As of June 2014, there are 53 member countries of the WTO using export tariffs or taxes. Theoretically, a large country which is able to influence the world price of the given commodity could be better off by the export tax levied on it. Practically, there are many problems with implementing this tool of trade policy. Empirical case studies have shown that usually the objectives of this policy were not accomplished. The key problem connected with the export taxation of primary agricultural products is that it can even harm the poor because of the significant share of these products in their consumption. From the point of the world economy as a whole, this policy leads to distortions and efficiency losses. Therefore, it can never be the first-best policy.

**Key words:** developing countries, efficiency loss, primary agricultural products

Trade policies usually rely on import restrictions and/or support of exports. Most countries aim at increasing the volume of exports and/or decreasing the volume of imports. Politicians (as well as many economists) believe that higher exports and lower imports should contribute to a higher GDP growth and a lower unemployment. This opinion is usually based on the well-known Keynesian identity which says that the GDP is given by the sum of consumption expenditures, private investment, government purchases and the difference between exports and imports of goods and services:

$$\text{GDP} = C + I + G + \text{NX}$$

Theoretically, it has been proven that such policies unambiguously result in significant efficiency losses in both the domestic country as well as the foreign country (rest of the world). Actually, there are two basic approaches to this analysis. The *partial equilibrium* analysis focuses only on a given market assuming away the interactions with other markets. The *general equilibrium* analysis attempts to include the effects of trade policy in one market on the other markets. Not surprisingly, both approaches provide us with similar conclusions. Except large economies which are able to influence significantly the world price, the use of tariffs, quotas or other trade policy instruments makes the country as a whole inevitably worse off. Moreover, the foreign country (the rest of the world) would be worse off as well. Thus, the

total effect on the world economy as a whole (the sum of domestic country and the rest of the world) must be unambiguously negative.

Practically, there are many side effects of different trade policies which one should take into account. Some economists stress the difference between the short-run and long-run effects arguing that in the long-run the elasticity of demand for exports is higher in comparison with the short-run (Piermartini 2004).

Export taxation could seem to be a rather strange policy which could damage the domestic economy by restricting its exports. However, there are many examples of the use of this trade policy instrument in the world economy. Officially, the use of export taxes is not prohibited by the WTO. About one third of the WTO members impose export duties (Piermartini 2004). Nevertheless, the candidate country can be pushed to give up this kind of trade policy. Actually, the effects of export taxes are opposite to the effects of import tariffs. From the point of view of the European Union (EU), which is purely endowed with raw materials, the export taxes used by other better endowed countries are viewed as a serious threat. Actually, the European Commission (EC) published the Raw Materials Initiative – Meeting Our Critical Needs for Growth and Jobs in Europe and other documents by which it initiated the prohibition of trade distorting export taxes. In general, this initiative has been supported by the developed countries like Canada, the United States, Switzerland, and Korea and opposed by the less developed countries

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like Argentina, Malaysia, Indonesia, Brazil, Pakistan, Cuba, India, and Venezuela. Export taxes and export restrictions could clearly become a new and major bone of contention between the high-income countries and the agro-food exporting middle-income countries (Bouet and Debucquet 2010).

*The objective of this article is to analyse theoretically this instrument of trade policy and to compare the pros and cons of this kind of trade policy using case studies of the selected countries.*

## CURRENT TRENDS IN USING EXPORT TAXES

As of June 2014, there are 53 member countries of the WTO that use export tariffs or taxes. According to the World Bank and its gross national income indicator<sup>1</sup>, these countries belong to the following groups (and thus a specific level of economic development) – Table 1.

Based on the data in the table it is apparent that the use of export tariffs or taxes is negatively correlated with the level of economic development. There is only one highly developed member economy of the OECD charging its exports, namely Norway. Six other developed countries (among others the Russian Federation or China) are imposing quantitative restrictions on exports. The rest 46 economies belong to developing ones or to the least developed countries in the world.

In the terms of the specific tool, which the countries employ, there can be found differences. Some governments impose a general export tariff on all exports (mostly ad valorem, or sometimes in a form

of an export procession fee), but the majority of all measures focuses on the export of certain products. In more than 90% of all cases, tariffs are of ad valorem form, compared to minority of specific ones. Two countries use a cess. In most of the countries, the export tariff is set on a permanent basis. The only exception is the Kyrgyz Republic, in which the government implements temporary measures, typically seasonally based.

Concerning the size of export tariffs or taxes, an interesting phenomenon can be found. It is positively correlated with the economic development of the country. The high or upper middle income economies tend to impose higher tariffs or taxes (in some cases reaching close or beyond 100%), while the lower middle or low income countries typically charge export considerably lower, mostly on one digit level.

The products being protected by export tariffs or taxes form a uniform group of natural resources. This can be further decomposed into three different subgroups:

- (1) agricultural products of both plant and animal origin (mainly timber, grain, coffee, cattle or skins),
- (2) oil and gas,
- (3) metals, mainly precious.

The structure is determined by the main export groups of the respective countries. When it comes to the reasons of imposition, the following ones prevail: to collect the revenue, to preserve the natural resources and environment, to promote the use of the locally produced commodities in the domestic downstream industries, to stimulate the production and export of highly processed products, or to lower the production, which is not environmentally friendly.

Table 1. Countries using quantitative export restrictions assorted by the level of economic development

Group of countries	Number
High income: OECD	1
High income: non-OECD	6
Upper middle income	14
Lower middle income	15
Low income	17

Source: Authors, based on the WTO Reports

## ARGUMENTS FOR TAXATION OF EXPORTS

As was indicated above, the main broad category of goods under the import tariff protection is agricultural products. Out of 53 member countries of the WTO that use trade policy tool, 35 of them impose an export tariff on these products. After the inclusion of timber, the number would be raised by 10 to 45, which would indicate an 85% share on total number of countries.

<sup>1</sup>GNI is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad. For more details, see <http://data.worldbank.org/indicator/NY.GNP.PCAP.CD/countries/XL?display=graph>.

The second largest group of goods is represented by natural resources. Almost 40% of countries under the consideration impose export tariffs on the other type of primary products. As already indicated, exports of oil, gas or metals are typically levied with this additional tax.

The role of other types of goods is negligible, but it is worth mentioning that four countries charge an export tariff on the universal basis, i.e. on all exported products. These countries are: Cameroon, Congo, Argentina and Niger (Table 2).

Piermartini (2004) stated the following arguments for the use of export taxes:

- the terms of trade argument,
- stabilization of the domestic prices of commodities, export earnings and income,
- controlling inflationary pressures,
- infant industry argument,
- retaliating to the tariff escalation in export markets,
- easing the challenges of government revenue collection,
- increasing the income of the poor.

However, one could find other reasonable arguments for the use of this trade policy tool. Especially, a shift from the low value-added exports to those with a higher value-added, typically from mining to manufacturing industry, seems to be a very good reason for the introduction of export taxes in less developed countries dependent on the exports of raw materials or primary agricultural products. Environment protection can also be mentioned as an argument which could be taken into account. The export tax can be also considered a windfall tax.

One could think that export taxes are typically used by the least or less developed countries, however, the

truth is different. Export taxes are often used by the most developed countries even in the present. We can mention Japan as an example of a country using this tool of trade policy. As many other tools of trade policy export tariffs can be misused by the developed countries to increase their competitiveness in the expense of the less developed countries.

## EXPORT TAXES IN THEORY

An export tax can be defined as a tax levied on a good (or a service) exported from the domestic country (to the rest of the world). Basically, it shows the same but an opposite effect as an import tariff. The analysis of the import tariff is well-known as it is included in most textbooks in the international economics. However, the analysis of export taxes usually is not included in the international economics textbooks (see for example the most frequently used Krugman et al. (2012)). The basic analysis of tariffs usually consists of a partial as well as general equilibrium analysis.

This static analysis is based on the comparison of the changes in consumer and producer surpluses. Taking this analysis into account, one could conclude that a small country, which is not able to influence the world price of a given product (or a service), using import tariff is always worse off.

We assume that there are just two countries in the world – domestic and foreign. For the sake of simplicity, the foreign country is assumed to be the rest of the world. Thus, the foreign price of a given commodity can be considered the world price. Further, we have to differentiate between a large and small country.

### Small country

A small country can be defined as a country which is not able to influence the world price by any change in its export supply of the considered commodity. On the contrary, a large country is able to alter the world price of a given commodity by the change in its export supply. If a small domestic country imposed an export tariff on some commodity, the only effect would be a lower price in this country by the full amount of the tariff. The world price of this commodity would remain unchanged. In the case of a large country implementing an export tariff, there

Table 2. Types of goods assorted by the frequency of their protection

Type of good	Number
Agricultural products	35
Natural resources	21
Timber	10
All exports	4
Manufactured products	2
Arms	1
Cigarettes and alcohol	1

Source: Authors, based on WTO Reports

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would be a change in both the domestic as well as world prices.

The basic welfare analysis based on the change both in the consumer and producer surpluses says that a small country as a whole would be worse off by the tariff. There would be a positive effect on the domestic consumers' surplus and the government revenue. However, the domestic producers would be worse off because of a lower surplus and this negative effect would prevail over both positive effects. As a small country is not able to affect the world price, there would be no terms of trade gain. The foreign country representing the rest of the world as a whole would be worse off, too. There would be a rise in the world price making the foreign consumers worse off and the producers better off. Again, the negative effect would exceed the positive one. It is obvious that world economy as a whole would be worse off. This total negative effect would be given by the sum of both negative effects mentioned above and it is called the efficiency loss.

### Large country

The large country can be defined as a country which is able to influence the world price by the change in its export supply and improve its terms of trade (terms of trade gain). It actually means that the share of this country in the world market is not negligible. Theoretically, a large country could be better off by the export tariff. The higher the share of this country in the world market of the considered commodity is, the higher is the probability that positive effects of an export tariff on this country as a whole prevail. We can get a total effect of an export tariff on a large country as a whole by comparing the positive terms of the trade gain with the efficiency losses. The producer efficiency loss arises because too little is produced in the domestic country. The consumer efficiency loss arises because too much is consumed in the domestic country. From the point of view of the foreign country, too much is produced and too little consumed. Nevertheless, the foreign country (the rest of the world) would be definitely worse off because there is no terms of trade gain which could offset the efficiency losses. Moreover, there would be a terms of trade loss which has to be added to the efficiency losses. Hence, the use of an export tariff is the so-called "beggar-thy-neighbour" policy. The world economy as a whole would unambiguously get worse off because of the efficiency losses in both

countries. The terms of trade gain of the domestic country equals the terms of the trade loss of the foreign country. The volume of trade would decline.

The question arises how to set a right export tax rate to maximize the gain for the economy. The export tax should be set on the basis of the long-run elasticity of foreign demand in the case of commodities in which the country has the market power and at a rate to ensure that the exportable production equals the quota in the case when the export quotas are applied (Balassa 1989). The unexploited market power in the world market could be considered a distortion from the point of view of the exporting country. By levying the optimal export tax which targets this distortion, a country with the market power can improve its terms of trade and welfare. While there are several possible interventions which could improve the country's terms of trade, and an export tax is the preferred instrument on the analytical grounds because they precisely correct this underlying distortion without inducing others (Devarajan et al. 1996).

### EXPORT TAXATION AND ITS IMPACT ON THE DISTRIBUTION OF INCOME

Actually, there would arise a change in the distribution of income in both countries. Even if a large country as a whole is better off by the export tax it does not mean that all citizens would be better off, too. Moreover, not all citizens of the foreign country which is worse off as a whole by the tax implemented by home country would be worse off, too.

In case of a large home country introducing an export tax, there would be redistribution of income from producers both to consumers and government. This redistribution effect would be more significant in case of a small home country because domestic producers would bear full amount of the terms of the cost.

From the point of view of foreign country there would be a redistribution of income from foreign consumers to foreign producers. Furthermore, in case of a large home country there would be some redistribution from foreign consumers to the home government because they would bear some part of the terms of trade gain. Nevertheless, in the long run the foreign demand is more elastic than in the short run as the consumer are able to find some substitutes which can be supplied by foreign producers. It means that in the long run, the cost of the export tax can

be paid more and more by the domestic producers instead of the foreign consumers. It is obvious that in the long run both domestic producers as well as foreign consumers could be able to avoid this export tax.

The impact of a tax on exports is not limited to the market of the taxed commodity. It extends to the markets of the substitutable and complementary good, and also to those of the goods backwards and forward in the production chain (Piermartini 2004). If the price of one product decreased due to the export tax introduction, it would affect the demand for both substitutes as well as complements. The demand for substitutes would decline and, other things being equal, the price of them would go down, whereas the opposite would happen to the demand for the complements and the price of them.

The Ricardo-Viner model<sup>2</sup> can be used to analyse the change in the income distribution among the factors of production. Basically, there are three factors of production employed in this model: labour, capital, and land. Labour is assumed to be the mobile factor of production; capital and land are assumed to be specific. The mobile factor of production can easily move from one industry to another, the specific factor of production cannot. In general, if there are just two industries producing two commodities in the economy, then the change in the relative price of these two products would cause the redistribution incomes of the owners of specific factors of production. The owners of the factor of production specific to the industry experiencing the positive change in the relative price of its commodity would be better off in the real terms; however, the owners of the factor of production specific to the second industry would be worse off. The owners of the mobile factor of production (labour) should not be affected dramatically by this change as they can move from the shrinking industry to the expanding one. Hence, in the case of the export tax, the owners of the factors of production specific to the taxed industry would be worse off as the price of their product in the home market decreased. From the point of view of the foreign country, the owners of the factors of production specific to the taxed industry would be better off as the price in the foreign market increased.

## EXPORT TAXES IN PRACTICE – DISCUSSION

### Terms of trade

Theoretically, a large country which is able to influence the world price of some commodity can be better off by the export tax because of the terms of the trade gain. It seems like a very good opportunity for poor countries to increase their wealth at the expense of other countries. The problem is that developing countries usually are in the position of a small country which is not able to change the world price of the given commodity and the collusion with other countries usually fails. Moreover, there is always a risk of foreign retaliation. Another problem can arise because of a price elasticity of export demand in the long run as mentioned in the theoretical part. Nevertheless, the optimal export tax can be calculated as the inverse of the price elasticity of the export demand. However, only estimates are available and they can be wrong. Thus, the question is what export tax should be used? It is obvious that even in the case of large country there are too many risks connected with the taxation of exports.

### Stabilization of domestic prices and export earnings

As developing countries usually rely on exports of just few commodities, they can be hurt significantly by a decrease of world prices of these commodities. One way how to manage this risk is the implementation of variable export taxes (windfall tax). In the case of the increasing world price, the tax rate is automatically growing and vice versa. It means that such a positive change in the world price is redistributed from domestic producers to both the government as well as the domestic consumers as the price in the home market remained unchanged or increased less than the world price. In the case of a negative change in the world price, the domestic producers are supported by the lower export tax. Although the taxation of exports is not the best solution of the dependence of the developing countries exports on few commodities, it can be considered the second best solution (Piermartini 2004).

<sup>2</sup>The Ricardo-Viner model is often referred to as the Specific Factors Model (refer for example to Krugman, Obstfeld, and Melitz International Economics textbook (Krugman et al. 2012) or Feenstra's Advanced International Trade textbook (Feenstra 2004)). This model was further developed by Paul Samuelson and Ronald Jones while Michael Mussa contributed by graphical expression of the model.

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It is obvious that export taxes can mitigate the inflationary pressures in the domestic economy which can be important from the point of view of poor countries, especially in the case of agricultural products. However, the market structure must be taken into account as well. In the case of the monopoly or oligopoly implementation of the export tax need not to lower the domestic price of the particular commodity inevitably.

### **Infant industry**

Typically, the poor countries exports consist of a low value-added primary or intermediate products which mostly serve as the inputs in the production of the processed higher value-added products produced by more developed countries. In the long run, it has negative impact on the terms of trade. It means that the poor countries must export more and more the low value-added primary or intermediate products to be able to import an unchanged quantity of the processed higher value-added products. The introduction of the export tax on the given primary or intermediate product could lower its domestic price which can be considered as a support of the higher value-added production in the domestic country.

### **Taxation of exports as a response to the discriminating import tariffs by other countries**

Some countries use import tariffs on the processed goods and lower or zero tariffs on the unprocessed goods to support the domestic production of the processed goods with a higher value-added. Again, this tariff escalation is a “beggar-thy-neighbour” policy and one of the possible responses can be the taxation of exports of the unprocessed products. Nevertheless, the use of the tariff escalation by developed countries is rather low nowadays. Again, the introduction of the export tax in response to the tariff escalation can be considered a second best policy. The first best policy would be a removal of a tariff escalated by the foreign country.

### **Taxation of exports as source of the government revenue**

For many developing countries with a poor tax administration system, the primary commodity exports constitute an easily exploitable taxable base (Piermartini 2004). The governments of some devel-

oping countries may not be able to collect effectively the income taxes from small domestic businesses producing primary agricultural products. Therefore, it can be easier for them to get some revenue from exports as there usually is better evidence available. However, in the case of the world price fluctuations these revenues are subject to a high volatility.

### **The effects of the export taxation of the poor**

As we concluded in the theoretical part, the introduction of an export tax inevitably leads to a change in the income distribution within the country. Actually, it means that the poor unskilled labour can become even poorer which can be considered a problem especially in the case of developing countries. This can be caused by the fact that the poor usually consume the primary agricultural products the price of which can increase as a result of the export taxes levied on these products.

## **CASE STUDIES OF THE SELECTED COUNTRIES**

### **The Philippines**

In the 1970s the Philippines were the largest exporter of copra and coconut oil in the world trade (Piermartini 2004). It seemed then that it was in a position of a large country which could be better off by the export tax on these products because of the improved terms of trade. A positive effect on inflation was expected, too. Based on this belief, the Philippine government imposed export taxes on copra (6%) and coconut oil (4%). An additional tax ranging from 20 to 30 per cent was levied in 1974 on the premium that the coconut exporters received from the increased price. The export levy was abolished only in 1985 (Piermartini 2004).

Empirical studies (Warr 2002) showed that the expected positive effects of export taxes actually were not delivered. The main reason was that the Philippines were not able to influence the world price of these commodities because they could be substituted by similar products (vegetable oil) produced in other countries. Moreover, the introduction of export taxes led to lower income of both coconut producer and unskilled low-wage labour. The beneficiaries of the tax are concentrated on the richest quintile of the population, who gain from the increase in skilled

wages and the tax reductions made possible by the revenue raised by the tax. All other quintile groups lose (Warr 2002).

### **Indonesia – export tax on palm oil**

Indonesia is the world's second largest producer of palm oil, behind Malaysia. In 1993, Indonesia supplied 27 per cent of the world crude palm oil production. However, in the terms of the market for the vegetable oil, the Indonesian palm oil represents less than 5% of the production (Piermartini 2004). Hence, Indonesia could be considered as a large country concerning palm oil production. Nevertheless, taking substitutes into account Indonesia seems to be a rather small country from the point of view of the vegetable oil market.

In 1994, Indonesia imposed export taxes on the palm oil products because of the increasing price of cooking oil. The objective was to mitigate the negative effects of the growing price on the domestic consumers, especially on the poorest ones. The price of palm oil in Indonesia really decreased; however, the positive effect of that on the domestic consumers was rather negligible because the share of palm oil in the consumption of the poorest Indonesians was very low. Though the policy provided some benefits to the consumers, much of the benefit of the price reduction appears to have been appropriated by the distributors (Marks et al. 1998). Moreover, the oil palm growers, the crude palm oil producers, and the coconut cooking oil sector were adversely affected by this policy. The total effect on the government revenues was negative as well.

Similar results were confirmed by a recent study using the case of Malaysia (Wong et al. 2014). They found out that further reductions in the Malaysian export duty are likely to promote some positive impacts on the Malaysian palm oil industry. On the other hand, this impact has been shown not to be significant.

### **Pakistan – export tax on cotton and yarn**

Between 1988 and 1995, the Government of Pakistan imposed an export tax on raw cotton, with the objective of encouraging the development of the yarn cotton industry, a higher value-added industry (Piermartini 2004).

The policy had several direct impacts. First, the export tax held the internal market price below the

international market prices by an average 15 US cents per lb over the 1988–1993 periods. The exports of cotton decreased significantly after the implementation of the export tax in 1988. Although the cotton production continued to increase, it became more erratic after 1988 and decreased by 1995 (Hudson and Ethridge 1998).

The conclusions of the empirical analysis provided by Hudson and Ethridge (1998) has been that this policy of the Government of Pakistan led to the transfer of income from the cotton to yarn producers as it was expected. However, it did not generate any additional growth of the yarn industry in Pakistan. As a result, a new technology was not adopted and the efficiencies were not captured. The potential explanation was that the yarn production is globalized, a high volume/low margin industry. The yarn spinner may have used the lower input cost to lower the output price in order to gain the market share.

### **Thailand – export tax on rice**

Thailand has been the largest exporter of rice. It used export taxes on rice until 1996. Export taxes were subsequently abandoned as a consequence of their negative impact on the income of people living in the rural areas (Piermartini 2004). However, the reintroduction of the export tax on rice was discussed as one of the possible solutions of the financial crisis in 1997. One of the impacts of this crisis on Thailand was the depreciation of its currency which threatened the inflationary pressures. The introduction of the export tax on rice was expected to mitigate them.

Nevertheless, Warr (2001) concluded that the export tax would actually harm the poor in both rural and urban areas because of the negative effect on the price of rice and consequently the wage of unskilled workers. The real wage of the unskilled labour was expected to decline. The rice industry in Thailand is both a very large employer of unskilled labour in absolute term and is highly intensive in its use of unskilled labour relative to other mobile factors of production. The most important conclusion of the Warr's article was that in the case of commodities which are both large employers of the unskilled labour and the labour intensive in their production, suppressing their prices – for example, by taxing them – can harm the poor, even though these same commodities are staple foods for the poor people. Thus, the introduction of the export tax should be based on the general equilibrium analysis instead of

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the partial equilibrium analysis; otherwise the export taxation can become very a risky policy.

## CONCLUSIONS

The taxation of exports has been still used by many countries in their trade policies. Although theoretically there could be some positive effects caused by the export tax introduction, it should never be considered a first-best policy. As the other tools of the active trade policy taxation of exports lead to inefficiencies in both the domestic country as well as the rest of the world. The production in the domestic country and the consumption in the rest of the world are both inefficiently low, on the contrary, the consumption in the home country as well as the production in the rest of the world are both inefficiently high.

Empirical analyses showed that the expected positive effects usually were not fulfilled. Moreover, there were many negative effects, some of them unexpected. The key problem identified by studying various case studies has been the negative effect on the real incomes of the poor which can happen if a country aims at helping the higher-value-added sectors by imposing the export tax on the lower-value-added sectors. Unskilled labour employed in this lower-value-added industry can be negatively affected by the increased prices of the primary products as its consumption usually is biased to these products.

Even in the case of a large country the potential positive effects of the export taxation can evaporate in the long run because of the higher elasticity of demand for the exports of this country. Nevertheless, there could be found some examples of the successful use of the export taxation by some countries in the history as a source of their development at the expense of other countries. Especially, the case of the Great Britain and its colonies could be considered as the best example. However, even if we know that theoretically it could make sense for some developing countries to use the export taxation the problem is

that the governments usually do not know how to do it appropriately. Therefore, there is always a significant risk that the negative effects prevail. Moreover, the taxation of exports typically is the beggar-thy-neighbour policy which can face the foreign retaliation and result in a trade war.

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