

Offset Policies and Development Strategy

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Abstract

The developmental tools known under the generic term of offset are not unfamiliar to policy makers, especially in developing countries. Today, 82 countries have formal laws and regulations concerning offsets. Despite the relevance and the importance of the topic, little in-depth analysis has been undertaken on the theoretical premises upon which host governments mandatory offsets are justified. The contribution of this paper is double. Firstly, it is to remedy to this theoretical gap by producing an academic research on this particularly little studied domain. Secondly, it is to establish an analytical framework for offsets based on developments in the neo-classical economic theory related to TRIMs. We assumed in this paper that such an analogy is possible and we attempted to bring out the analytical implications.

Keywords

Offsets; development strategy; efficacy; efficiency; local content requirements; minimum export requirements; local equity requirements.

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I Introduction

Developmental tools known under the generic term of offsets are widespread and especially popular in developing countries. They are defined as a set of compensatory procurement measures aimed at encouraging local development or at improving the balance-of-payments. Offsets are perceived to have trade restricting and distorting effects generated by discriminatory procurement policies and are therefore explicitly prohibited under the WTO Agreement on Government Procurements. In spite of all these restrictions, offsets' incidence in the defence field did not decrease and it is more and more common in the civil trade field* (Bureau of Industry and Security - U.S. Department of Commerce 2013a; Matthews in Brauer et Dunne 2004). In fact, policy makers, especially from developing countries, consider offsets as a legitimate means to mitigate market power of multinational companies and influence their investment and location strategies, to shift the resource allocation in their favor and ultimately to facilitate the transfer of technology and know-how.

Host governments consider offset as an effective instrument to overcome their inherent disadvantages in the negotiation process with multinational companies. In addition, offsets are an important policy tool that helps to achieve a number of developmental (industrial) policy objectives. Although offsets may take various forms, their essential purpose is to focus on development. They are used to develop human capital (through knowledge/technology transfer and their local assimilation, workforce skilling), to support the emergence and the development of the private sector (through local content rules and local participation requirements), to enhance R&D and innovation funding etc. Nevertheless, it should be noted that offsets do not exist as an independent economic policy instrument and usually coexist with other developmental tools, and this explains the difficulty to establish offsets economic effects and thus their real efficiency.

This paper addresses these challenges and provides a theoretical framework within which it will be possible to critically appraise offset practices and to assess their economic impact for host countries, as well as foreign countries. The goal is to examine the role of offsets in development strategies and consequently their effectiveness and efficiency to achieve certain goals. In Section 2, an overview of different offset practices and their role in economic policies for developed and developing countries is highlighted. This is useful from two standpoints. From the one hand, it shows how widespread these practices are, and from the other hand, it defines the wide range of industrial policy goals that may be achieved through offsets. In Section 3, the analytical framework needed to study offsets' economic effects is explained. In Section 4, a more detailed analysis of the use of some offset practices (local content requirements, export-performance requirements, local equity requirements) for developmental and trade policy goals is presented. Finally, Section 5 contains some concluding comments.

II What are offsets?

* For simplicity reasons, therefore, no distinction is made between civil and defence offsets in this paper.

The current experience of nearly simultaneous development of a set of new countries is unprecedented in history. The growth of giants such as China, Brazil, India and South Africa have made "obsolete the old tandems East-West, North and South, aligned and nonaligned, developed and developing" countries. These geopolitical changes were associated with a renovation of the doctrines and practices of economic development. By opting for industrial strategies, having appropriate characteristics of their own, these emerging powers have emphasised the need to cancel strategies "one-size-fits-all"[†]. These unconventional industrial policies were conceived to respect countries' own institutions, social heritages, and economic policies (Rodrik 2008, p.25).

The emergences of practices known under the generic term of offset are part of these unconventional economic and industrial policies. Offsets are defined as "measures used to encourage local development or improve the balance-of-payments accounts by means of domestic content, licensing of technology, investment requirements, counter-trade or similar requirements"(« WTO | legal texts - Marrakesh Agreement », 2013). Generally in literature, offsets are considered as a sophisticated form of countertrade because they imply bilateralism and are used as a complement to monetary exchange (Hammond 1990). In legal terms, offsets stand for a specific kind of contractual obligations imposed by the purchasing entity (government of a given country) when it signs a major international public procurement contract with a foreign company following an international tendering procedure. An offset requires two contracts proceeding in parallel and usually interconnected. The primary contract is related to the supply of goods or services by the foreign company to the Client, according to the contractual specification. The secondary, offset contract, deals with the commitment of the foreign supplier to add value in the buyer's country, according to offset contractual agreement. Mostly, governmental acquisitions subject to an offset obligation apply to highly-added-value markets "such as markets in the fields of defence, energy, transport, telecommunications or other kinds of infrastructure" (European Club for Countertrade & Offset, 2013).

Offset can take the form of "co-production, credit assistance, licensed production, investment, purchases, subcontracting, technology transfer, training" or others (ACECO 1993, Martin 1996,(Bureau of Industry and Security - U.S. Department of Commerce 2013b). Therefore, an offset activity intends to *compensate* the consequent shortages in foreign currency and ensure that the acquisition allows the country to get the best value for its money. The local government aims through offset practices to attain its purely nationalistic goals: (i) compensate the increase in import expenditure by stimulating local economy and therefore retaining or recovering the local multiplier effect of such a spending; (ii) restore payment balance by generating new or more exports by accessing to the market of the seller country; (iii) develop local (generally high-added-value) infant industry and enable it to achieve international competition; (iv) acquire new technologies and spread them to the economy to stimulate economic growth and reduce the country's reliance on foreign suppliers; (v) create employment and regional development; (vi) achieve cost reduction of the primary contract by avoiding the effect of oligopolistic distortions, (vii) justify governmental spending toward the tax payers and ensure

[†] Chang (2002) provides a historical perspective on the use of developmental practices.

public and political acceptance (European Club for Countertrade & Offset 2013, Martin, 1996, Bureau of Industry and Security - U.S. Department of Commerce 2013b).

Offset is politically and economically motivated if perceived from a purely nationalistic perspective. Indeed, major governmental purchases are financed by public funds collected in taxes, the government must ensure that the acquisition protects the country's fundamental interests and suits its individual needs. However, under WTO these practices are forbidden because regarded as distorting free market trade flows. They create market access restrictions, bilateralism and influence FDI decisions. In accordance with the paragraph 1 of Article XVI of the Agreement on Government Procurement (GPA): “[e]ntities shall not, in the qualification and selection of suppliers, products or services, or in the evaluation of tenders and award of contracts, impose, seek or consider offsets”. But the Agreement contains also a specific article that provides for differential treatment for developing countries so they can catch up with OECD countries. Paragraph 2 of Article XVI stipulates that: “[n]evertheless, having regard to general policy considerations, including those relating to development, a developing country may at the time of accession negotiate conditions for the use of offsets”. Recent revision of GPA on special and differential treatment for developing countries (article IV) stipulates that: “based on its development needs, and with the agreement of the Parties, a developing country may adopt or retain one or more of the following transitional measures, during a transition period and in accordance with a schedule, set out in an Annex to its Appendix I, and in a manner that does not discriminate among the Parties: [...] b) an offset, provided that any requirement for, or consideration of the imposition of the offset is clearly stated in the notice of intended procurement”. Thus, while the use of offset in the civilian procurement is tolerable during a transition period that may induce sustainable economic development, the offsets are largely acceptable in defence.

As per the WTO legislation, offsets are presented as a developmental tool and may therefore give the impression that these practices are specific to developing countries. Nevertheless, today, more than 120 countries around the world have implemented some form of offset programs (more or less explicit) with unique requirements, suiting their individual needs (IDP UAE, 2013). They may be legal requirements in some cases and merely one aspect of negotiations in others. We can classify countries into three categories: those that provide offsets - represented only by the United States because they are the largest exporter of military equipment among other things, those who offer and require offsets, which is limited to a number of small developed countries (France, Germany, Great Britain) - that import and export equipment with high technological value, and those who generally benefit from offsets, which is the vast majority of developing countries that generally import capital goods (Martin, 1996, p. 4). Countries from the second category are predominantly looking to acquire new technologies and know-how and seeking to benefit from free-rider behaviour and attain its goals in research and development. According to the Belgian Ministry of Economy, these countries have nor the need, nor the resources to develop large projects by their own and have therefore developed these kind of offset requirements (SPF Economie, 2008, p.4). This is also partially the motivation for emerging countries (BRICS). Therefore, emerging countries share characteristics in terms of offsets with the second and third groups because they have the

specificity to build offsets into a larger industrial development strategy, just as developing countries do.

In spite of the broad utilisation of offset practices, there is no agreement on their functionality for local economies to achieve their developmental or other goals. This difficulty to gain insight into their economic effects is related to their variety on the one hand and to the complexity to assess the value of externalities created by offsets on the other hand. It is also problematic to quantify offsets, especially those translated by the transfer of technology and know-how. Offset practices “vary greatly from one country to another depending on the aims of industrial policy pursued [...] the national legislation in the public procurement field, the budgets [available for the purchase of] equipment, the funds for research and development and the industrial and technological capabilities” of the country (SPF Économie, 2008, p.5). Therefore, there is no compromise on offsets effectiveness and performance for local development or other goals. The added value of this paper is to offer a theoretical framework within which it will be possible to critically appraise the effectiveness and efficiency of these practices. For simplicity reasons, the political objectives of offsets will be neglected in this paper and only economic reasons will be considered.

III Offset practices and Development Strategies

The goals of development strategies differ from a country to another and so do the tools used by governments for these purposes. Offset is one developmental tool among others but it has the specificity of being related to a governmental acquisition. According to the offset definition, offsets are a variety of development measures which can range from technology transfer and co-production to the export of raw materials and these practices are limited only by the imagination of the players involved in their execution (Hammond 1990). Therefore, an offset practice is usually designated as an action. The action to get the “fair price” for a big investment made abroad, which is perceived as the synonym for the verb to *compensate*. The offset action materialises locally in local content requirements, export-performance requirement, local equity requirement, investments in human capital etc. Some of these counterparts may restrict trade while others favour it. Some have very obvious trade effects (such as local content and export-performance requirements) and others are less clear (e.g. investment in human capital and licensing requirements) (see Table 1). Therefore, even if offset practices are partly designed to address development, they affect trade flows directly or indirectly. On this basis, current offsets are prohibited by WTO and discouraged all over the world.

Table 1: An Inventory of Offsets

A. Input oriented Offsets	
Instrument	Intended Effect
- local content requirement	- require the foreign supplier company to purchase a certain amount of local materials for incorporation in the supplier’s product.

- local equity participation	- imply that some proportion of equity must be shed locally
- local hiring targets	
- socially and economically disadvantages individuals quota	- ensure specified employments targets are hit
- national participation in management	
- R&D requirements	- commit the foreign supplier company to investment in R&D
- technology and know-how transfer	- require the foreign supplier company to transfer new technologies and know-how (e.g. train the end-user to effectively use and maintain the product purchased, management practices transfer etc.)
- export-performance requirements	- commit the foreign supplier company to export a certain quantity of local production
- investments	- any kind of investments favouring economic growth (e.g. investments in small and medium companies, allocation of funds for training and education etc.)

B. Output oriented offsets

Instrument	Intended Effect
- technology and know-how transfer	- require the foreign supplier company to transfer new technologies and know-how (e.g. train the end-user to effectively use and maintain the product purchased, management practices transfer etc.)
- export-performance requirements	- commit the foreign supplier company to export a certain quantity of local production
- investments	- any kind of investments that favour economic growth (e.g. investments in small and medium companies, allocation of funds for training and education etc.)
- licensing requirements	oblige the foreign supplier to licence production of output in host country

Sources: Greenaway (1992, p.141), European Club for Countertrade & Offset (2013) and South African offset beneficiary consultations.

Trade effects of certain offset practices mentioned here below are better known and predicable, like those of local content requirements and export-performance requirements. Trade effects of other offset measures are more uncertain, like those of local equity participation, investments or technology transfer. This lack of data is not only due to the theoretical ambiguity. Offset contracts usually include “terms of confidentiality” and their voluntary opaque nature is encouraged by governmental officials unwilling to transfer technical or technological skills. Above all, offsets are usually part of a wider industrialization programme or investment aid

programme, therefore the effects of offsets practices are almost impossible to distinguish from other similar tools.

Despite the difficulties of analysing offsets and the lack of literature, these practices bear a strong similarity with Trade-Related Investment Measures (TRIMs). TRIMs are a set of governmental measures to attract and regulate foreign investment. Under these conditions, foreign investors are encouraged or obliged to invest according to certain national priorities. Like offsets measures, TRIMs affect the flow of goods and services and can therefore “restrict and distort trade” (WTO, 2013). The difference between offsets and TRIMs is that the first one has a narrow use because they are linked to government procurement. The theoretical literature dealing with TRIMs enriches our study and permit further in-depth analysis and conceptual development on offsets. Greenaway (1992)), Morrissey (2000, 2002) are a good example of the latter. The seventieth Offset Report to Congress (2013a) mentions that purchases, subcontracting, technology transfer and coproduction are the most privileged offset practices (in number of transactions and in value). Translated in TRIMs practices, these can be qualified of local content requirements, export-performance requirements and local equity requirements. Moreover, developing countries usually make use of these practices as trade-related investment measures for industrial policy purposes (Greenaway, 1992, pp. 142-143). It therefore seems possible to consider offset practices – at least some of them- as industrial policy tools embodied in a larger category of trade-related investment measures. It makes it therefore possible to analyse them in terms of the issues developed for this by Greenaway (1992) in particular.

According to Greenaway, TRIMs perform at least three functions: “to shape the allocation of resources in the host country [...], to ensure that the likelihood of benefits which the host government wishes to secure is greater than it otherwise would be” and “to redistribute the surpluses generated by FDI away from [the foreign supplier] and towards the residents of the host country” (Greenaway, 1992, p. 146). He refers to these governmental objectives as: “*resource allocation target*, the *insurance target*, and the *rent shifting target*” (*idem*).

The resource allocation target is the most important objective in any developmental or industrialisation policy. Offsets are used to steer mobile capital into specific locations and/or particular sectors, in accordance with host governmental policies or priorities. The theoretical corpus that supports this objective is related to infant industry argument, increasing returns argument, wage differential arguments (Irwin, 1996). Thus, offsets in the form of local content requirement are considered to be a measure aiming at increasing the industrialisation of a peripheral region in the country. Similarly, host governments might require local content in order to increase the employment rate in a sector or region, or to ensure the formation of human capital. Offsets, in form of export-performance requirements are a mechanism to reverse the import-export balance in a given sector and by this means to promote the country’s competitiveness in high-end specialisation, which requires growing technical and technological facilities. By these means, offsets, like TRIMs, are considered by host governments as essential for achieving results in specific allocation targets.

The insurance target finds its rationale in the contractual relationship between the parties involved. An offset is the result of a contract[‡] signed between three parties: the foreign supplier (usually a multinational company), the host government and a local beneficiary entity. Under this contract, the Multinational enterprise (MNE) commits to create new jobs, promote domestic exports, transfer technology and know-how, invest etc. However, in an uncertain world where suspicion prevails and where it is difficult to monitor and regulate the activities of MNE, host governments must ensure that offsets permit credible commitments for industrialisation policies and thus development. Offsets must be a guarantee that MNE permit to achieve goals linked to employment, production and exports that the host government could not have achieved otherwise. For example, offsets in the form of R&D requirements and/or local participation obligations might contribute to specific physical and human capital development. Offsets in the form of export-performance requirements, permit leveraging foreign exchange earnings usually scarce in developing countries. Through these mechanisms, offsets offer customised solutions for governments that are reluctant to leave the economy to market forces.

Multinational Enterprises usually benefit from a market dominant position and this gives them an oligopolistic power. In imperfect competition situation, this might create some abusive practices like: price discrimination, tax evasion, adjustment of the flow of internal funds to gain competitive advantage etc. These provide rents to the MNE. After the tendering process, only one enterprise is retained and becomes the sole supplier of goods and this offers the selected MNE a sort of monopoly in the host market. Since these are very important contracts, designated for the purchase of goods with a very long life cycle, the market potential will possibly be exhausted over the next 30 years. Thus, the governmental acquisition, in the long term, also increases the MNE net benefits. This rent is even more significant if the size of the market is big and if it is protected. Offsets offer a vehicle for altering the distribution of these rents and permits to host governments seeking to redistribute a portion of surpluses from MNEs to domestic residents.

However, this redistribution is less transparent than if, within the scope of the primary contract, parties have simply negotiated on the reduction of the purchase price or a transfer associated for example with a cash grant. The transfers of new technologies and know-how or the gains associated with export-performance requirements are less visible and quantifiable. Therefore, their effects on the local economy are also less visible and quantifiable. This probably suits both parties. In the best-case scenario, offsets help extracting higher benefits for the local economy and allow the MNE to promote local supply networks and expand its market share. In a more pessimistic scenario, offset obligations allow the MNE to shift the burden on the taxpayer. Because of the asymmetry in information, the MNE is the only one to know the real cost of goods it provides and of offsets it offers. The MNE can therefore transfer the costs of offsets on the price of the goods it supplies to the host government. Besides, the offset benefits in the

[‡] Usually an offset consists in more than one contract. Basically there is a framework contract between the multinational and the host government that mentions the total amount of offsets to which the MNE obliges itself. Following this umbrella agreement, other contracts between the MNE and the local recipient are signed (Moatti, 1994).

short-term are more visible and more easily quantifiable than the costs they generate in the long term. This offers support for governmental spending.

It is implicitly assumed by any government requiring offsets that these are appropriate measures to counter market allocation schemes because, according to the authorities, they are efficient instruments to strengthen the industrial policy and achieve developmental objectives. Offsets are an efficient means to mitigate the market power of MNEs and they permit to gain “insurance” with regard to particular commitments. The last two objectives are then complementary and support the resource allocation objective. It is assumed, by definition, “that the minimum requirements are an efficient instrument to export promotion; that local content requirements are an efficient employment promotion; that local equity requirements are an efficient instrument of technology transfer [...] and so on” (Greenaway, 1992, pp. 148-149). Further study needs to be done to be able to assess the efficiency of offsets, in all their forms.

IV The effectiveness of offset policies

From a trade policy perspective, offsets are a protectionist tool because they distort competition and create obstacles to the free movement of goods and services. Nevertheless, the neoclassical economic theory justifies this kind of practices if there is an initial distortion on the market (or market failure) and if offsets are an *adequate* measure to correct this distortion and increase national welfare (Corden, 1980; Bhagwati, 1989)[§]. Offsets are therefore a second-best solution and they lose their *raison d'être* in all cases when it is possible and advantageous to eliminate the existing distortions or to counteract the information asymmetry. Otherwise, if we accept that the offsets are the creation of an imperfect world and they are here to stay in order to eliminate the adverse consequences (imperfections) of existing policies, then the principle of optimal intervention offers a structured theoretical framework to analyse offsets.

According to the international trade theory, the efficiency of an industrial or commercial intervention must be established after an economic analysis based on the principle of optimal intervention. This principle was developed by Meade (1955) and clearly demonstrated by Bhagwati and Ramaswani (1963). According to the theory of optimal intervention (or the theory of second-best), in the presence of distortions, the welfare of an economy can be improved if public authorities select the most appropriate mechanism for intervention. For example, to protect an infant industry, several tools can be considered: barriers to entry, production subsidies, technical, administrative or other regulations. However, an economic analysis based on the principle of optimal intervention permit to identify what is the most efficient tool, that is to say the intervention generating the least amount of negative externalities. For example, the economics literature has shown that the protection of an infant

[§] Many theorists have contributed to the post-war developments in the theory of commercial policy and gave their insights on which should be the best policy intervention in the case of domestic or foreign distortion (see the works of James Meade, Harry Johnson, Max Corden, Jagdish Bhagwati etc.).

industry by production subsidies is more desirable than that provided by tariffs and quotas, as the latter distorts consumption (Melitz, 2005, p. 2). Nevertheless, if production subsidies are not feasible, governmental authorities must consider tariffs or quotas. According to circumstances, the one that brings less distortions and yields higher welfare outcomes will be retained on the basis of second-best solution. If this second-best measure is not available, then a third-best solution will be considered but it will bring even more distortions and less welfare than the second-best tool.

The principle of optimal intervention can therefore be extended to the analysis of any intervention, once the objectives of the economic policy are known. This principle can also be extended to offsets. Since offsets embrace a wide range of instruments that governments deploy in the goal to develop their economy with the help of MNE, for simplicity reasons only three offsets requirements are studied.

1. Offsets in form of Local Content Requirements (LCRs)

Local content requirements oblige multinationals to procure a certain proportion of intermediate inputs domestically. This proportion may be specified in value (especially for heterogeneous goods) or in quantity (for homogenous goods) (De Melo et Grether, 1997, p. 514). This indicates that imported goods are partly made of inputs sources from abroad and partly from inputs made up locally. This feature distinguishes the mechanism of local content from a tariff because, although it influences the price of the final good, the price has the specificity of integrating two components: the price of domestic and foreign inputs. Consequently, the mechanism of local content, like other types of non-tariff barriers, has less obvious economic effects. This is partly due to its lack of transparency and due to the multiple repercussions it can have on the economy. The effects of LCRs are therefore uncertain compared to a tariff that has the direct effect to reduce imports from their level of free trade.

Countries which mandate LCRs, require the MNE to produce a maximum of added-value on their territory. This influences the distribution of productive activities between MNE foreign subsidiaries, including shifts of some competitive parts production between countries^{**}. LCRs may therefore create distortion in the resource allocation at a global scale (Lee, 2002, p.33). Nevertheless, the economic effect of LCRs is difficult to evaluate because they might have opposite effects depending “the way in which content is defined; the nature of the production process; the structure of the domestic market; and wage differentials between the host and source country” (Greenaway, 1992, p. 149). In some instances, LCRs may accrue the MNE presence in the domestic market and stimulate the integration of local enterprises in the value chain of the MNE, in other words, its objective is to reduce domestic dependence on imported technologies.

^{**} Each country has different institutional and more or less developed technological, scientific and productive capabilities. This impacts on the spatial deployments of a MNE value-chain (Lee, 2002, pp. 35-39).

According to Greenaway (1992) the most acceptable rationale for LCRs is the infant-industry protection. Developing countries usually protect their local suppliers in order to benefit from dynamic learning externalities while developed countries use LCRs to shield their industry from intensified international competition. In both cases, LCRs are considered to increase domestic production levels above their free-market levels and due to dynamic learning effects, increase national welfare. Similar policy instruments to LCRs are considered production subsidies, tariffs, quotas or voluntary exports restrictions. The Mill-Bastable Test^{††} reveals that, under some initial hypotheses^{‡‡} on costs, there are two possibilities satisfying the first-order conditions for welfare maximization: laissez-faire and production subsidies. If the benefits of learning are higher than the fixed costs, the subsidization alternative is more attractive than the lack of intervention. The subsidy as any other protection tool is not always optimal if the period necessary for the learning curve to exceed the fixed costs is considered to be too long. Nevertheless, the subsidy is not the best policy instrument if through the learning process it needs to be adjusted or changed which is generally the case because over the learning time the level of protection must be decreased. According to Melitz (2005) in presence of adjustment costs and uncertainty concerning the learning curve, a quota yields higher welfare outcomes and must be privileged over a subsidy or a tariff. The advantage with the quota is automatically adjusted downward with the learning process. If the quota right is assumed to be auctioned and collected by governments, the voluntary export restraint (VER) is inferior to a quota because no revenue is collected. VERs have the particularity to transfer rents from restrictions to foreigners but it is an appropriate policy tool in case of political pressure for protection (Feenstra et Lewis, 1991). Thus, the planner's choice of a policy instrument "depends on the industry's learning potential, the speed of learning, and the degree of substitutability between domestic and foreign goods" (Melitz, 2005, p. 178).

As mentioned above, RCL increases the cost of the final good but to a lesser extent than a tariff or a quota. By definition, this increase in costs is supported by the MNE, unless the MNE anticipates and includes it in the price negotiated on the primary contract. Nevertheless, it is difficult to assume that the terms and conditions of the offset contract influence the initial price of the primary agreement because there is no proof if. And if so, then to what extend? The *efficiency* superiority of offsets in form of RCL on subsidies is difficult to show. If offsets affect the price of the primary contract, they affect negatively the welfare of the purchasing entity but they benefit to all other entities which receive offsets consequently to this purchase. For now, abstraction will be made of the relationship between both contracts and offset will be considered as an independent obligation that aims at providing more protection to certain domestic suppliers. Thus, compared to an equivalent tariff (or a quota), RCL is more *efficient* because an import tariff (or a quota) results in one price while the RCL concerns penalise only certain imported inputs and allows therefore others to continue to purchase the imported goods at their opportunity cost (De Melo et Grether, 1997, p. 516). In this case, it is obvious that the RCL is more efficient than a tariff, because once the offset obligation fulfilled, the initial distortion on product prices disappears.

^{††} The Mill-Bastable test compares the benefits from protection to the costs it generates.

^{‡‡} See Corden's (1980) chapter 3.

LCR is more *effective* than a subsidy or a tariff to protect local suppliers because it concerns only some specific imported inputs while a subsidy or a tariff extends to all domestic producers (Grossman , 1981). In this case, an import quota is even more reliable than any other mechanism to protect local suppliers. It is even more *effective* than a LCR because the domestic market becomes no longer contestable and local suppliers benefit from a monopoly situation. However, the effectiveness, in this case, is not synonymous with efficiency because the import quota heavily penalises buyers of the final good. Despite its proven effectiveness, the quota creates a monopolistic market followed by many efficiency costs. In the case of the RCL, the direct cost (rising prices of inputs) is supported by the MNE and this increase in costs is higher than in the case of a tariff or of a subsidy. Thus, from the point of view of an overall economic well-being, it is less efficient. The conclusion is different if the phenomenon is analysed from the perspective of the importing country, and as the LCR has an effect of rent transfer from MNE to the final consumer, it is more efficient than a tariff or subsidy.

If MNE agrees to provide goods despite such unfavourable constraints and risks losing a maximum of rents, there must be some counterbalancing incentives elsewhere. LCR can only benefit to the local market if the MNE is interested in complying with this obligation. To insure a win-win strategy, the MNE must obtain some benefits. They may be related to the nature of the local market (protection of the local market^{§§}, tax holidays etc.), to its proper supply strategy, to the characteristics of the offset contract (possibility to replace local supplier or change projects), to secure future market access, etc. Once these considerations are taken into account, the cost/benefit analysis of an offset policy instrument becomes more difficult. The overall impact must be calculated throughout the duration of the contract and even after its termination.

In comparison with other policy tools, and offset agreement has a predetermined design lifetime, on average 7 years (Bureau of Industry and Security - U.S. Department of Commerce 2013c, p. x). If the domestic subsidiary is not able to increase its competitiveness over the duration of the contract, the distortion disappears *de facto* without bringing benefits to the national economy. The MNE, after completing its offset obligation, turns back to its foreign supplier. If, in the end of said duration, the local company is not competitive enough to maintain its capability, it will go bankrupt and this may cause a loss of knowledge and skills (if not transferred to other sectors). Government may nevertheless continue to “protect” the domestic infant industry over time as learning progresses.

LCR provides greater protection to local suppliers but only over a relatively short period of time. This is not necessarily a problem. The RCL, in the end of the offset period can be replaced by any other protective policy instrument. However, there is a strong presumption that RCL is reducing welfare due to high levels of final goods protection, that are usually associated with local content protection (Greenaway, 1992, p. 151). In this case, RCL is likely to be more expensive than any other alternative policy instrument.

^{§§} The MNE that is obliged to buy more expensive domestic inputs often requires a downstream protection. In other words, the MNE need to be protected from foreign competition in the local market for its final goods. However, this condition is automatic for an offset agreement.

2. Offsets in the form of Export-Performance Requirements (EPRs)

An EPR obliges the foreign supplier to export a certain fraction of domestic output (Rodrik, 1987, p. 633). The MNE subject to an EPR is required to integrate local suppliers in the distribution chain, at least in the short term. If this is not possible, the MNE is asked to find outlets for local production elsewhere. Thus, EPRs “orient [domestic] production towards world markets and oblige [local] firms to prepare people to compete more effectively in a world of globalised production and to seek new export opportunities” (Gibbs, 2007, p. 44). Depending on host country’s policy, EPR “can also aim at improving equity, by channelling investment to poorer regions or disadvantaged segments of the population, or by ensuring universal provision of key services, such as electricity, water and sanitation” (*idem*). Similar goals, however, may be achieved through other forms of offsets, focused on development. Generally, governments aim through these practices at protecting domestic firms, restricting the monopolistic power of MNE, increasing domestic employment and improving trade balance for host country (Chao et Yu, 1994; Wei et Liu, 2001).

Previous research evaluates EPRs from two different perspectives. The first group analyses the *raison d’être* of these policy interventions due to some relevant pre-existing distortions in the host-country market, such as trade protection or imperfect competition (Rodrik, 1987; (Chao et Yu, 1994, 1998). The main goal of these studies is to examine if on the second-best basis, the policy of EPR is welfare improving or welfare-worsening for the host-country. Rodrik (1987) suggests that in the presence of a tariff-protection, the EPR leads to welfare improvement because it reduces the inflow of foreign capital and cause labour migration into the domestic firm. Consequently, this dampens the output of the overproduced (protected sector’s) importable goods, reduces payments to foreign capital and shifts profits from MNE towards domestically owned firms. Rodrik (1987, p. 634) also mentions that EPRs policies generally concern local firms characterised by oligopolistic interaction with MNE subsidiaries such as: transportation equipment, chemicals, machinery. This is another form of distortion that creates on its own second-best world need for evaluating EPR. If the MNE (or its subsidiary) is producing in the host country and competing with the local firm in that market, an export-requirement will create a shift in profits towards domestic competitors, who will obtain a larger market share at home. The effect on aggregate domestic welfare is nevertheless ambiguous. The EPR is welfare-improving only if the local firm’s output increases or depends on the local firm’s reaction function. If the local firm decides to increase its output, there will be a positive welfare impact created by a greater increase in domestic profits coupled with a negative effect through consumers’ surplus loss (in the Cournot competition case). There is a large academic literature on profit-shifting via commercial policies that reinforces this conclusion (Dixit, 1984; Eaton et Grossman, 1986; Baldwin et Krugman, 1988).

Contrary to Rodrik’s conclusion, Chao and Yu’s model (1994) reveals a welfare reducing impact of EPR in case of a quota. This is explained by higher price-induced payments to foreign capital. The differential in welfare effects with a tariff is due to the fact that under a quota, the volume of imports is fixed, and hence the linkage between the resource allocation

and the domestic welfare disappears. Thus, under a quota, the foreign firm which is forced to export a part of its output, increases the price of domestic importable and hence reduce welfare. In a later research, Chao and Yu (1998) show that a temporary EPR policy improves trade balance in the short-term and leads to an inflation in the non-tradable goods prices in the long-term. Consequently, this leads to an improvement in inter-temporal welfare.

The second group of literature analyses EPRs from an MNE standpoint. It suggests that MNE real decisions about location of production and trade depend on host-countries characteristics (i.e. market size, labour force). A typical example is when a MNE brings capital or skilled-labour-intensive parts to be assembled in a low-wage country plant into the final output which is latter shipped back to the parent (headquarter) country. This model where different MNE affiliates are specialised according to the local advantages of the host country is referred to as vertically integrated foreign direct investment (FDI). It implies that in the presence of a liberal trade environment there is an international division of labour at the firm level. Growing research literature provided insights on the effects of trade barriers on investment decisions. Here are to mention the works of Helpman and Krugman (1985), Markusen and Venables (1998), Dunning (1999). However, EPR policies were not exhaustively explored in this literature, they are either exogenous or simply omitted (see Wei et Liu, 2001).

As noted, EPR are the result of or are combined with other protection measures. The *effectiveness* of an EPR policy intervention is justifiable only on second-best basis because they are almost always dominated by alternative policies that achieve more efficiently trade liberalisation and therefore increase welfare. In practice, for economic or political reasons, the first best policies might not be available. The resource-allocation and welfare effects of EPR import but also output restrictions and they imply to some extent foreign ownership or repatriation of dividends (Robinson, 1983 in Rodrik, 1987, p. 637).

ERP alternative policies might be export subsidies or production taxes on the product of the MNE which are sold in the host-market country. Greenaway (1992, p. 153) assumes that EPR “could still be superior to the export subsidy because the former only applies to the increment on exports, whilst the latter is applicable to total exports”. It is related to a lower increase in domestic price that affect to a lesser degree the consumers surplus. Contrary to Greenaway conclusion, Liu and Wei’s (2001) results show that EPRs are less desirable than a production tax. The latter one has the advantage to offer new tax revenues to the host government while it creates an extra cost for the MNE to enter the local market. An EPR, on the other hand, may serve the foreign supplier’s interest by increasing its export capacity because they are usually linked to fiscal incentives and hinder domestic enterprises’ competitiveness, as they benefit from a monopoly position over a short period of time. Nevertheless, imposing a production tax on MNE’s might be impossible due to the WTO legislations and harmful for any future FDI because it is an obvious example of discrimination towards MNEs.

There is also a general presumption that EPR have desirable rent shifting effects. That is clearly explained in Rodrik’s (1987, pp. 649-650) paper:

“A different argument might be relevant to understand why such requirements are imposed on foreign subsidiaries alone when exports are viewed as inherently desirable. These foreign-owned firms are likely to have access to extensive marketing and distribution channels from which their local rivals are effectively excluded. In such cases, export-performance requirements might appear as a much less onerous restriction on foreign subsidiaries than on local firms. And if in the process some profit shifting toward domestic firms also takes place, few but the MNCs will complain.”

This explains host governments pragmatic approach to export-promotion requirements. On the one hand, EPR policy ensures that the desired objectives in terms of exports will be met and on the other hand, it helps to transfer rents.

3. Offsets in the form of Local Equity Requirements (LERs)

Many governments in developing countries have used limitations on the participation of foreign capital or restrictions linked to investments in certain activities in the 80s (e.g. China, India, Indonesia, Malaysia, Mexico and other countries). Today, however, numerous trade agreements reduce their impact and force developing countries to abandon this instrument (see United Nations, 2003). The offsets linked to government procurement are to this day an opportunity to establish minimum requirements for local equity participation.

In order to establish the effectiveness of LERs, it is firstly necessary to define the target that developing countries aim at achieving through LERs. Besides capital injection, LERs are a mechanism to acquire new technology, know-how, management skills and other inputs. LER policy makes also possible to integrate local enterprises in the value chain of MNE, including access to their worldwide distribution and marketing networks. The LER may be used to increase the international price and quality competitiveness of local companies and, through spillovers, benefits to the country's global economic performance. Thus, this mechanism permits to achieve several objectives which are not necessarily independent from one another. However, in order to establish the efficiency of offset practices in form of LER is necessarily to make a distinction between these different goals.

The first question to be answered is whether LER are an appropriate instrument to allow the transfer of technology and know-how. As stated by Jarkovik and Spatareanu (2008, p. 195): “[o]ne of the original motivations for the existence of ownership sharing conditions was the belief that local participation in foreign investment projects reveals their proprietary technology and thus brings benefits to domestic firms by facilitating technology diffusion”. The main reason for this is that virtually all technologies contain a part of tacit knowledge and their propagation in the host economy is difficult to control through the terms of a contract. This argument has incited many governments to introduce restrictions on foreign ownership and force multinational enterprises to enter into partnership agreements with local companies. Many studies have shown however, that the diffusion of technology and know-how and therefore the expected positive externalities are neither guaranteed nor automatic and free (Blomström et Sjöholm , 1999; Javorcik et Spatareanu, 2008). In addition, the magnitude of

externalities may vary according to the targeted industry but also to the characteristics of its upstream and downstream industries.

Since the MNEs are unable to limit knowledge dissemination, they seek to reduce this risk by transferring less advanced technologies or simply by refusing to invest in local units. Being the sole owner of its domestic subsidiaries, the parent company has a greater control over their use of funds, thus over their profit, and it has a greater incentive to transfer them more sophisticated technology and know-how (see Ramachandran, 1993). The other reason impacting the outcome of technological diffusion is that the presence of a MNE generates two conflicting effects. On the one hand, MNE transfers to their local subsidiaries new technology and know-how and this, by the demonstration effect, can be transferred to other local firms in the same sector (horizontal externalities). On the other hand, the arrival of a multinational in the local market disrupts the existing equilibrium and pushes local enterprises to protect their market share and profits. This may create positive externalities by generating more competition and increasing the productivity of domestic firms. If local enterprises are not prepared to face MNE's severe competition, it is more likely that the local production volume will shrink^{***}. For upstream industries, an increase in the global production volume in the targeted industry will be beneficial, either through the benefits from economies of scale or through the diffusion of technology and know-how. It is in the MNE's interest to transfer knowledge to the upstream industries because this will increase their performance in the supply of intermediate goods. MNE's presence also boosts upstream industries' productivity.

Positive spillovers attended from technology transfer also depend on the absorption capacity of the host country and the technological gap between MNE and domestic enterprise. However, scientific studies led to this day show contradictory results concerning this issue. According to Kokko et al. (1996), horizontal spillovers can only take place if there is not a great technological backwardness of domestic firms. On other hand, Blalock & Gertler (2008), show that the greater is the technology gap, the more important is the transfer of technology and knowledge spillovers. These contradictory results demonstrate that LERs efficiency and effectiveness to achieve technology transfer and benefit from its spillovers are difficult to establish because they depend on numerous factors that are external to the agreement.

Host governments may also aim at optimally integrating domestic enterprises in the value chain of the MNE through LERs policies. In this case, it is considered to be an effective tool to achieve this objective if the joint venture (or the sub-contracting agreement in certain cases) continues after the end of the offset agreement. According to R. Miller et al (1997, p. 29), the relationship between actors in a joint venture is usually fragile, difficult to negotiate, and if negotiated time, difficult to maintain in the long term. The authors identify the reasons that make these agreements often give unsatisfactory results especially in developing countries.

^{***} Many empirical studies show that the negative effects of competition outweigh the positive effects of knowledge spillovers (see Javorcik et Spatareanu, 2008).

The success of a joint venture depends nevertheless on its voluntary character, in opposition to a binding approach based on mandatory mechanisms. If equity ownership is perceived by investors as a positive inducement to take advantage of the host-country comparative advantage, there are more chances for it to subsist (United Nations, 2003, pp. 203-205). Also, if the MNE had an anterior industrial or commercial relationship with the local subsidiary, an offset agreement can only strengthen and improve it.

Another underlying aim of a LER is to increase local enterprises' competitiveness (in price or quality) and consequently to increase their exports. Nevertheless, according to Greenaway (Greenaway, 1992, p. 154), EPRs seem to be a more effective tool for these purposes.

In conclusion, it might be deduced that the allocative effects of LERs, due to their direct economic effects, are difficult to identify and their indirect consequences for the host country might be ambiguous. Often, the resource allocation objectives that host governments search to achieve with a LER policy are similar to EPR or to local content requirements, including the insurance target, and the rent shifting target. LER contribute to transfer some specific MNE advantages, such as proprietary knowledge and technologies, management and organization of the supply chain. These elements, although difficult to quantify, constitute important assets for the MNE. In oligopolistic market structures, they create rents. At a global level, the diversion of MNE rents correspond to a diversion of rents from countries to countries; which usually corresponds to transfers from countries with higher tax rates to countries with lower tax rates. In the long term, the MNEs might transfer the most of their profits to low-tax countries, to the detriment of the parent countries.

As stated by Greenaway (1992, p. 155), contrary to the rule of local content en EPR, there is no economic policy tool alternative to local equity requirements to achieve the same goals with less cost for the society. In addition, LER economic analysis is difficult because its allocative effects are unclear since it often interacts with other economic policy measures. Nevertheless, if the host government goal is to protect an infant industry or to increase local revenues, a LER might be a second-best tool. It is also generally, an efficient and effective measure to initiate a transfer of rents.

V Conclusion

The aim of this paper is double. Firstly, it is to contribute to the academic literature on offset practices. The globalisation and the negotiation at different levels and in different areas to further liberalisation have clearly not prevented from spreading and flourishing. Although this paper focuses more on the incentives that developing countries might have to require offsets, it should be emphasised that these practices are also part of the "collection" of developed countries. Given the spread of offset practices, MNE do not consider them as simple constraints and use them to increase their commercial presence in targeted markets. There is a strong political will to control and limit the use of offsets, but since their legitimacy as an industrial and commercial policy tool have not been fundamentally challenged, offset practices will persist.

An analytical framework for offsets was drawn based on the developments produced by the neo-classical economic theory for TRIMs. Such a comparison can be performed due to the conceptual link between both. The main analytical implication states that offsets legitimacy and consequently further discussion on the legal basis for their request depends on offset practices ability to increase the well-being of a country. This legitimacy is necessarily fragile because from a neo-classical economic policy viewpoint, the increase in aggregate economic wealth produced by offsets is always inferior to the one produced in free-trade. Similar to other protectionist measures, major theoretical argument for offsets is the infant industry argument. The offset measure is an obvious modern variation of a protection tool that helps allocating resources in a better way, transferring rents and guaranteeing the best results for these goals. Nevertheless, the main question is to find out to what extent, in the presence of market failures linked with imperfect and asymmetric information, policy makers should consider offset policy measures to eliminate market distortions. The use of offset certainly contributes to increase market distortions but in the name of pragmatism and national interests, it should not be excluded as an economic policy tool. More research is needed to find out which form of offset is more convenient to reach a specific goal.

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