

## POLICY COHERENCE FOR DEVELOPEMENT: TRADE POLICIES<sup>1</sup>

Akiko Suwa-Eisenmann<sup>2</sup> et Thierry Verdier<sup>3</sup>

Décembre 2005

Docweb n° 0519

---

<sup>1</sup> Ce rapport a été écrit pour le Centre de Développement de l'OCDE, comme élément de réflexion dans son programme sur la cohérence des politiques, sous la direction de J. Dayton-Johnson.

<sup>2</sup> INRA, Paris-Jourdan

<sup>3</sup> PSE (UMR CNRS-EHESS-ENPC-ENS) et CEPR

# POLICY COHERENCE FOR DEVELOPEMENT: TRADE POLICIES

## **Résumé**

Cet article s'inscrit dans une réflexion générale sur la cohérence des politiques suivies par les pays du nord dans leurs relations avec les pays du sud. Il donne un état des lieux des interactions entre l'aide, l'investissement direct étranger et les politiques commerciales, du point de vue des pays en développement. La revue de littérature théorique et empirique tend à montrer une complémentarité entre l'échange de biens (et les politiques commerciales) et les investissements directs étrangers. Cependant, le risque est alors de se retrouver dans un système à deux vitesses, avec d'un côté les économies émergentes qui attireraient les biens et les capitaux, et de l'autre, les pays moins développés, notamment d'Afrique Sub-Saharienne. Par ailleurs, la littérature ne donne pas de résultat évident sur le lien entre l'aide et les flux d'échanges. Il existe cependant une présomption de complémentarité entre l'aide et des *politiques* commerciales qui iraient dans le sens d'une diminution des distorsions à l'intérieur des PVD.

**Mots-clés** : commerce, aide, investissement direct étranger, cohérence des politiques, développement.

## **Abstract**

The purpose of this paper is to provide a theoretical and empirical background overview of the interactions between aid and foreign direct investment (FDI) policies, and trade flows and policies, taking the perspective of outcomes from the point of view of the recipient developing country. A first element that seems quite robust is the identification of a complementarity between trade and FDI flows and policies. There are theoretical arguments for this and it appears as quite robust in the few empirical papers addressing directly this issue. An important policy implication is however the fact that there is a risk of a two-tier system: between emerging developing countries on the one hand, and less developed economies on the other. The literature so far does not provide straightforward and robust results regarding a complementarity between aid and trade flows. There is though a presumption of the possibility of a complementarity between aid and a policy that would reduce domestic distortions in the developing country (provision of a public good, domestic market reforms).

**Keywords** : trade, aid, foreign direct investment, policy coherence, development

# POLICY COHERENCE FOR DEVELOPEMENT: BACKGROUND PAPER FOR TRADE

(June 28, 2005)

Akiko Suwa-Eisenmann (INRA, Paris-Jourdan)

Thierry Verdier (Paris-Jourdan Sciences Economiques, EHESS, CEPR)<sup>1</sup>

## I. Introduction

The purpose of this paper is to provide a theoretical and empirical background overview of the interactions between aid and foreign direct investment (FDI) policies, and trade flows and policies, taking the perspective of outcomes from the point of view of the recipient or host developing country. The types of links that we wish to discuss is usefully summarized in the following figure:

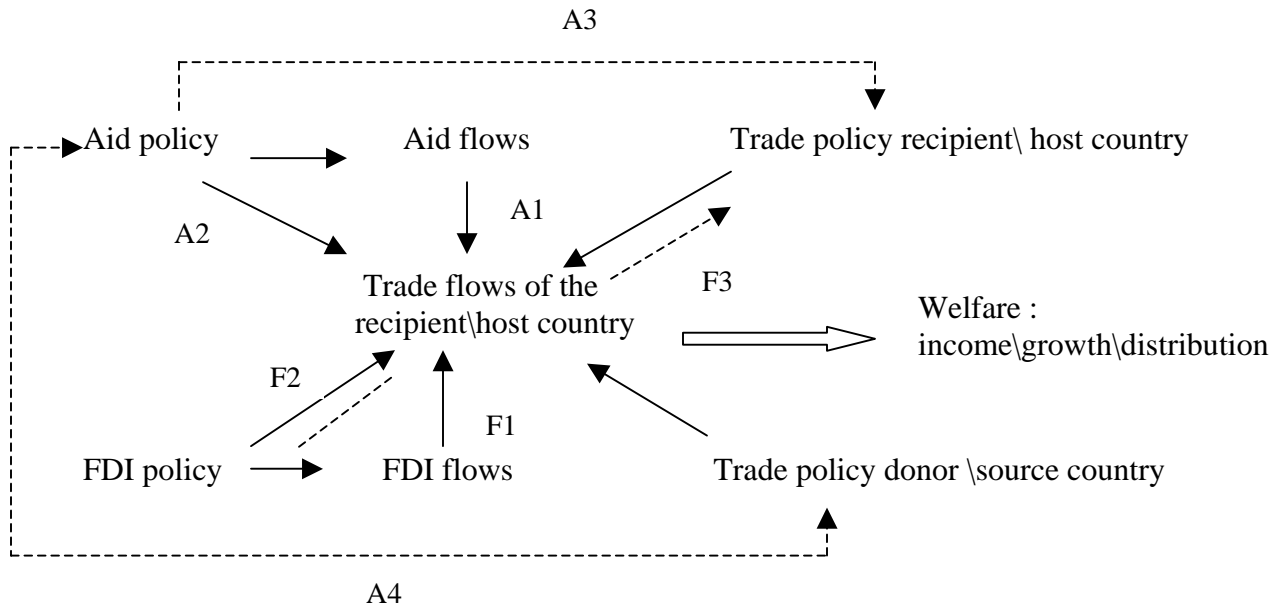


FIGURE 1. Aid, trade and FDI interactions

<sup>1</sup> Authors contact : thierry.verdier@ens.fr;akiko.suwa@ens.fr. Address : Ecole Normale Supérieure, 48 bd Jourdan, 75014 Paris, France

Start with the interactions between aid and trade. First, the linkage may relate aid and trade flows (A1 in Figure 1). It can also go from aid *policy* to trade *flow* (A2). A last possibility is an aid policy intending to influence trade policy in the South (A3). The same picture applies to the interactions between FDI and trade (F1, F2, F3). Last, based on these various linkages, an assessment can be made of the joint impact of aid/trade/FDI policies on the welfare of the South country.

Typically from a policy point of view we would like to understand whether Aid\FDI policy instruments (denoted as A or FDI) act as complements or substitutes with trade policy instruments (denoted as T for trade policy reform) on a target policy welfare objective (denoted as W) in the recipient\host economy. This target W(.) can be a static or dynamic long run aggregate welfare indicator like national real income or growth or it can be related to the degree of heterogeneity inside the recipient country (poverty inequality, distributive concerns). In mathematical terms, we would ideally want to obtain some information on the sign of the cross derivative:

$$\frac{\partial^2 W}{\partial T \partial A} \text{ or } \frac{\partial^2 W}{\partial T \partial FDI}$$

The typical channels through which we may expect such complementarities or substitutions is indicated by the arrows, from policy instruments to economic flows, generating in turn interactions between Aid\FDI flows and Trade flows. These interactions in turn are supposed to affect the welfare objective inside the country under consideration. Policies can also be directly linked when they reflect conditionality or additionality dimensions. As it turns out, the literature has often more focused on discussing the relationships between flows than between policies as measures of the former are more easily obtained than measures of the latter .

Before getting into the heart of the paper, two important policy dimensions need to be acknowledged. The first one concerns the definition and analytical content of what is a policy area like Trade policy, FDI policy or Aid policy. In practice, each of these policy areas is likely to be a finely grained multi-dimensional vector of policy instruments. For instance the trade policy vector may contain various instruments like trade tariffs and taxes, quantitative restrictions, rules of origins, protective administrative procedures (antidumping, countervailing duties, custom delays), trade restraints, or various domestic discriminatory policies (subsidies, barriers to entry, standards and regulations). Similarly, the FDI policy vector contains various types of subsidy instruments, tax exemption schemes, factor content arrangements and investment regulations, while the Aid policy vector typically includes an array of bilateral and multilateral aid instruments including conditional and tied aid, targeted versus general funds, safety nets, etc. While most of the literature surveyed generally considers an aggregate view of these policy vectors, it is important to keep in mind that from a policy perspective, each of these areas will be implemented by the interplay of the various instruments of these policy vectors. We will return more precisely to this in the conclusion.

The second element that needs to be acknowledged is the important political economy dimension related to these policy areas. Typically in most cases, without appropriate compensation, the implementation of Trade, FDI or Aid policy vectors generates gainers and losers within and across countries. These distributive impacts in turn stimulate rent seeking and rent sharing responses among groups or coalitions of agents. Clearly, these aspects are crucial to understand the internal and external political constraints within which policy coherence or incoherence can occur. While we will return briefly on this again in our conclusions for the implementation of the case studies analyses of the project, we however abstract from these dimensions in most of this present piece of work and therefore neither formally model the political decision-making process nor exhaustively review the political-economy literature related to these issues.

The plan of the paper is then organized along the following lines. The first part will discuss the interactions between aid flows\policies and trade flows\policies, focusing most particularly on the causal impact of aid on the recipient's welfare via the trade route (flows or instruments). The second part considers the same discussion for the case of FDI flows\policies on trade flows\policies, taking again the perspective of the welfare of the host economy. Each of these parts is in turn separated into two sub-parts. The first one presents an overview of the conceptual background and the theoretical literature related to the issue; the second sub-part surveys the empirical and institutional literature on the topic.

In the conclusion, we try to identify global conclusions that are suggested by the literature and to discuss the gaps that need to be filled out in order to get plausible policy recommendations.

## **II INTERACTIONS BETWEEN AID POLICY AND TRADE**

### **II. 1) Conceptual aspects on the interactions between Aid and Trade**

In this part we discuss the conceptual background that is suggested by the existing literature on Aid and Trade.

#### **II.1.a) The relationship between Aid flows and Trade flows**

A first approach to the discussion of the interaction between aid and trade is to consider the possible causal relationships between aid flows and trade flows (A1 in figure 1). Aid flows may affect trade flows either because of the general economic effects they induce in the recipient country, or because aid is directly tied to trade, or because it reinforces bilateral economic and political links (or a combination of all three).

The first plausible impact of "aid" on "trade" goes through the traditional macroeconomic view that aid supplements domestic saving, leading to increased investment which

contributes to higher rates of economic growth than would be possible without aid (White 1992). The induced growth implies a greater capacity of the recipient country to absorb foreign products including actually those originating from donors. Along this line, aid flows are likely, in the medium run, to generate more international trade flows in the recipient country. A related mechanism is the fact that aid is often associated with conditionality of structural economic reforms in the recipient country. When the reform targeted by aid is trade liberalization, the effect of aid on trade is direct. But it could also be indirect as long as reforms stimulate growth, which in turn may increase the import capacity of the recipient economy.

It should be noted however that this line of reasoning provides also good arguments for a negative rather than positive relationship between aid and trade. First it can be that aid has in fact a negligible macroeconomic effect due to fungibility (Heller 1975). Even if all aid is saved and invested, it may simply crowd out other domestic investment by increasing the price of investment goods. Also a similar result may apply if aid is tied to counterpart funds. In order to raise these funds, the recipient government may have to levy distortionary taxes and/or issue public debt, which can increase interest rates and crowd out private sector investment.

#### *Aid-dependency*

In the same macroeconomic tradition, the most celebrated argument of a relationship between aid and trade flows is probably the so-called “Dutch disease” and “aid dependency” effects in the recipient economy, illustrating the potential conflict between aid flows and the export competitiveness of the recipient country. The story is quite well known: aid flows will be used to finance expenditures on non-tradable goods and services. With the price of tradable goods given, there will be a relative price shift in favor of non-tradable sectors (a real appreciation of the exchange rate). The immediate effect is on the demand side, where more of the cheaper tradable (especially imports) will be demanded, leading to a deterioration of the external balance, which in turn will require more aid flows (“aid dependency” effect). At the same time, the real appreciation of the real exchange rate leads to an intersectoral resource transfer from the tradable to the non-tradable sector, causing a significant squeeze on the export producing sectors (“Dutch disease” effect). The impact of aid on trade flows of the recipient country occurs therefore in two steps. First, imports tend to increase in the short run while, in the medium run, domestic export capacity tends to decrease. If there is an intertemporal effect (like an intertemporal learning externality effect of exports on domestic productivity), the Dutch disease phenomenon may have long run negative implications for the trade flows of the recipient country. However, if the country has idle capacity, the income effect of aid might not translate in real appreciation as both tradable and non-tradable sectors might rise. Moreover, a LDC might even benefit from a real appreciation because of the low substitutability between domestic production and imported inputs (Nkusu, 2004). Still, if idle capacity originates from rigidity on the production side, such as, for instance, a price or wage indexation, it is not obvious that the tradable sector might gain in all cases from an aid transfer.

### *The tying of aid*

The most direct and obvious link between aid and trade is formal tying, where the provision of aid is dependent upon the recipient purchasing goods from the donor. As this is generally done by having aid in the form of goods procured by the donor, aid is itself trade (in the form of donor exports). Tied aid may also induce dynamic effects as they increase recipient exposure to donor export goods which in turn may encourage follow-up orders and expands future exports. Aid in this way is an instrument of trade policy (Morrissey 1991). Tying can also be informal and the result of political goodwill from the recipient to the donor, such that the recipient may feel more inclined, if not obliged, to buy donor's goods.

Again, tying may generate important allocative inefficiencies inside the recipient economy. As mentioned by Jepma (1991), exports under tied aid are often overpriced compared to prevailing world price, by between 10 to 40 %. When capital goods imports are priced so costly, this may retard growth and therefore the subsequent capacity of the country to trade with the rest of the world. In this case tied aid may have differential temporal impacts on trade flows: increase trade flows in the short run and reduce them in the long run.

Another possibility is aid-induced trade dependency. For instance, even when aid is not tied, it may fund project requiring the import of capital goods that are only produced in the source country. Another example is food aid. It has been argued that food aid by reducing local prices tends to distort the allocation of resources in recipient countries away from local food production. Overtime, this can exacerbate and prolong the very shortages it is intended to solve. The outcome can be prolonged trade dependence and trade flows from donor countries.

### *Reverse causality*

As is widely recognized by several authors (see the survey in Lloyd, McGillivray, Morrissey and Osei (1998)), the causality between aid flows and trade flows can obviously go also the other way around. While this paper is concerned with the causality link from aid to trade, it is perhaps useful, as a reminder, to mention the main argument for the reverse causality. Trade can affect aid allocation in different ways. Aid allocation in the donor country can be influenced by various lobby and business groups, which may be associated to particular trade interests. Or trade can further lead to aid if donors give preferences in the allocation of their aid to countries with which they have the greatest commercial ties. The donor might want to reward the recipient for the purchase of his export goods or it might want to consolidate or expand its market in the country in which the expectations of an aid- induced trade-dependency is highest. Conversely, the causal relationship can be negative if the donor rather uses aid to promote exports ties in those countries, which currently have less commercial links.

## **II.1 b) How do Aid flows interact with trade policy in the recipient country ?**

In the previous section, we discuss plausible channels of interactions between aid and trade flows. What about the interactions directly between instruments? Given that the route from aid instruments and aid flows seems to be quite direct, in order to suggest answers to that

question, we may then directly consider the question of interactions between aid flows/policies and trade policies of the donor or the recipient country (A3, A4 in Figure 1). We start first in this section to review what theory has to tell us on the interactions between foreign aid and trade policies in the recipient country and their consequences for the recipient's welfare as defined by the aggregate measure of national real income. The next section will investigate the links between aid and the donor's trade policies.

### *The transfer paradox*

The conceptual background underlying these dimensions is directly related to the theory of income transfers in international trade theory. As a matter of fact, the study of how a transfer of real resources from one country to another affects both the donor and the recipient country is now part of a well-established tradition in international economics. As is well known since the Keynes-Ohlin controversy on the German reparation payments after World War I and the clarification of Samuelson (1952), beyond its direct income effect, an international transfer between two countries is likely to have important terms-of-trade effects between the donor and the recipient countries, the sign of which depending on the relative size of the marginal propensities to consume in the two economies. The so-called "orthodox" view is that there should be a deterioration of the donor's terms-of-trade as each country is supposed to have a larger domestic marginal propensity to consume its exportable good (Keynes 1929). Subsequently, significant work has been done to consider the "anti-orthodox" view that an income transfer improves the donor's country terms of trade (see Jones (1970), Chipman (1974), Jones (1975), Li and Mayer (1990)).

A major issue about income transfers is how they affect the welfare levels of the donor and the recipient countries. One aspect, which has received considerable attention in the literature, is the discussion of the conditions under which an international transfer is immiserizing for the recipient country (the so-called "transfer paradox"). As is well known from Leontief (1936), Samuelson (1947) and Mundell (1960), in a two-country world with free trade and no distortions, immiserizing transfers from abroad cannot arise when markets are stable<sup>2</sup>. Related however to the issue of the interactions between aid instruments and trade policies, the possibility of welfare worsening transfers in the recipient country become a possibility when one departs from the distortion-free world<sup>3</sup>.

A first possibility is to consider a multilateral world economy and to enlarge the set of countries to more than the two economies participating in the transfer process. Several contributions showed the possibility of perverse outcomes of international transfers in a three countries/agents context (see Gale (1974), Chichilnsiky (1980), Brecher and Bhagwati (1981), Yano (1983)). However, Bhagwati, Brecher and Hatta (1983) in their integrating analysis with a theory of distortions and welfare, demonstrate that the transfer paradox

---

<sup>2</sup> Stability means that in global markets, an excess demand for a particular good leads to increase of the price of this good in order to restore the initial competitive equilibrium

<sup>3</sup> see also for more details the survey in Brakman and Marrewijk (1988)



cannot arise in a three-agents framework if the recipient and the donor countries uniformly impose an optimal tariff policy jointly against the non participant country. This last result is interesting in that it suggests a certain degree of complementarity between foreign aid and regional trade policy in order to avoid perverse welfare outcomes in the recipient economy.

A second situation is when the transfer from abroad takes place in the presence of (exogenously given) domestic distortions, of which trade policy in the recipient or the donor countries is an important case. As shown in Ohyama (1974), Brecher and Bhagwati (1982) and more generally in Bhagwati, Brecher and Hatta (1985), exogenous price distortions such as tax-cum-subsidy policies, can lead to the “transfer paradox” and the recipient country loosing from the aid transfer. The intuition for instance, in the case of a recipient’s tariff policy is quite easy to grasp. The basic mechanism of an immiserizing transfer comes from the fact that, after the transfer, the recipient country faces a deterioration of its terms-of-trade. Such deterioration leads to increased production and reduced consumption of the recipient’s importable. Under a domestic tariff policy however, this commodity is already “over produced” and “under consumed”. The change in relative international prices therefore leads to the additional effect of exacerbating the existing “over production” and “under consumption” of the importable good. This extra cost may be enough to ensure a decline in welfare of the aid-receiving country<sup>4</sup>. When this occurs, the preceding discussion suggests that the recipient’s trade liberalization policy acts as a complement to the foreign aid instrument. As a matter of fact, an increase in the transfer from abroad needs to be accompanied by a reduction of the recipient’s tariff policy to minimize the possibility of a transfer paradox in the recipient country<sup>5</sup>.

Probably the most interesting situation arises when the transfer itself creates domestic distortions. The classical example of such distortion-induced transfer is of course aid tying. The welfare analysis of this situation has been extensively studied in the literature. (Ohyama (1974), Brecher and Bhagwati (1982), Kemp and Kojima (1985), Schweinberger (1990). Tajoli (1999). Hence for instance, in the case of a small open economy, Brecher and Bhagwati (1982) consider the situation where aid is accompanied by “production additionality requirements”. One such example is for instance the case of food aid where the donor may require that domestic food production be stepped up if food aid is given. In such a case, production is shifted away from its efficient allocation and the recipient country may end up impoverished after the transfer. When however the additionality requirement is that

---

<sup>4</sup> As noted in this literature, an important necessary condition for the transfer paradox to occur in such a context is the existence of inferiority in national consumption in the donor country of the recipient’s importable. While this may initially appear as a rather pathological situation, two remarks are worth mentioning to make the case empirically plausible. First, some products (like food items) may well be inferior for individual consumers, implying that inferiority at the national level cannot be automatically dismissed. Furthermore, even when each good is normal at the individual level, national consumption may well exhibit inferiority when there is a certain pattern of individual heterogeneity.

<sup>5</sup> More specifically, the recipient cannot be impoverished if the tariff rate is adjusted to hold imports or exports to its pre-aid level. (Ohyama 1974).

local imports be increased by the amount of the aid provided, the use of an appropriate import policy to match this requirement prevents immiserization of the recipient country.

The welfare analysis of tied aid in the context of a two-country world has been extended by Kemp and Kojima (1985). More specifically, they consider the situation where the tying of aid takes the form of a forced expenditure pattern on the recipient government. It has to spend a certain fraction of the transfer on the importable good. In such a case, if the government's marginal propensity to spend associated to the tying is larger than the marginal propensity of private agents in the recipient country, a deterioration of the terms of trade of the recipient country may be strong enough to induce a transfer paradox. Interestingly, this can occur without existence of inferiority in national consumption patterns<sup>6</sup>.

An interesting contribution emphasizing the importance of the form of trade policy in its interaction with foreign aid is Lahiri and Raimondos-Moller (1995). They consider the effect of aid when the recipient country imposes a quantitative restriction on the importable good. A first interesting result is the fact that an increase in the level of foreign aid that is untied unambiguously benefits the recipient country. This result is to be contrasted with the one under tariff or price distortions and due to the fact that with quantitative restrictions, a transfer has no effect on the wastage caused by the pre-existing distortions. Under a tariff restriction, a deterioration of the terms of trade of the recipient country can reduce domestic imports, which are already too small compared to the first best level, therefore increasing further the wastage of the pre-existing tariff distortion. This introduces the possibility of a transfer paradox. With a quantitative restriction however, as long as the restriction remains binding after the transfer from abroad, imports will not change and consequently no additional wastage will be generated by the transfer. As, in a two-country stable world economy, the terms of trade effect can never by itself overcome the direct income effect of a transfer, no possibility of immiserizing untied transfer can be realized when the recipient country uses trade quantitative restrictions.

Lahiri and Raimondos-Moller (1995) then also consider tied aid that ties the recipient country to increase the imports of the commodity, which is subject to quantitative restrictions. As such a transfer is associated with a reduction in a pre-existing distortion, it can be immediately seen that it is world welfare improving. Moreover when the quantitative restriction is an import quota at a level less than the optimum quota level, aid, which is tied to more imports, clearly makes also the recipient better off. More generally, a condition to prevent impoverishment of the recipient country in such a situation is the fact that the price

---

<sup>6</sup> Schweinberger (1990) consider an alternative tying rule, which constrains the spending of the income by the private sector of the economy. This type of rationing creates a wedge between domestic and foreign consumer prices and thus opens again the possibility of a transfer paradox. However this type of constraint also requires that the domestic consumer price in the recipient country be lower than the consumer price in the donor country, a situation that is clearly unsustainable under free trade.

elasticity of the donor's export supply function to be high enough. Indeed in such a case, the rise in the price of the recipient's importable necessary for the donor to be able to supply the additional demand of the recipient (because of the tied transfer) is relatively small. The secondary effects of the transfer via changes in the terms of trade will be limited and this ensures that the recipient benefits from this sort of tied aid.

In many cases, foreign aid to LDCs is used to finance public consumption and public inputs in the recipient country. This particular aid tying process can also in itself generate endogenous distortion effects. Again changes in the terms of trade between donor and recipient, open the possibility of an effect on trade flows and the transfer paradox (Hatzipanayotou and Michael (1995))<sup>7</sup>. A recent interesting contribution along a similar line is Schweinberger (2002) who considers the effect of foreign aid in the context of an economy with a public good whose labor costs are financed from tariff revenue levied on the private importable good. Two interrelated distortions are present in such an economy: the production of the public good is under supplied (because of lack of information or political economy reasons) and second, there is a trade policy distortion implemented for budgetary reasons. Tied aid in the form of an increase in the stock of the specific capital used in the public good sector is then likely to raise the recipient welfare because it reduces the twin distortions. First, it increases the production of the public good. If consumption of the importable good is complementary to consumption of the public good, then this transfer from abroad may in turn stimulate imports flows, hence relaxing the initial tariff ridden distortion and the financing of the production of the public good.

Given the importance of the terms-of-trade effects induced by foreign aid, most of the transfer literature has been essentially focused on the two-country world case. Some attention however has also been devoted to the impact of tied aid in the context of a small open economy in which therefore the terms of trade remain fixed by definition. The seminal contribution in this respect is Johnson (1967a) who showed that an exogenous increase in the stock of a domestic resource (as for instance aid tied to this resource) may bring a welfare loss in a tariff ridden small open economy if it exacerbates the overproduction of the tariff protected import competing industry. Recently this analysis was extended by Yano and Nugent (1999), emphasizing the importance of "non-traded goods" effects, meaning an expansion of the non-traded sector entailed by foreign aid. In particular they underline again the possibility of an immiserizing transfer if non-traded goods are net substitute to the tariff ridden importable goods. In such a case, the decline in the relative price of the non-traded good resulting from the aid-induced expansion of the non-traded sector, tends to reduce the "already too low" level of imports of the recipient economy leading therefore to increased distortions in the economy. Yano and Nugent (1999) then go on presenting empirical evidence suggesting that their "non traded" good effect seems to be more important than the

---

<sup>7</sup> More precisely, Hatzipanayotou and Michael (1995) show that when the imported and public good are net complements and that the consumer's marginal willingness to pay for the public good is larger than its unit cost of production (something which may be expected to hold in LDCs in which the level of public goods is quite small), then a small aid transfer can reduce the welfare of the recipient country.

standard Johnson effect in generating the possibility of a welfare worsening impact of foreign aid in small open economies. Schweinberger (2002) extends their analysis by showing how different assumptions about the mobility or immobility of factors across industries effect the sign and magnitude of the Johnson and the non-traded goods effects. This channel of potentially harmful effects of tied aid on trade flows and recipients' welfare is to be contrasted with the usual "Dutch disease" effect and real appreciation of the exchange rate generally mentioned in the macro literature.

## **II. 1c) Aid versus Trade: aid flows interacting with the donor's trade policy**

The previous discussion focused on the interactions between foreign aid and the recipient's trade policy. This section reviews the conceptual background on the interaction between foreign aid and the donor's trade policy. More specifically, we consider the frequently debated issue of "Aid versus Trade", namely what is the best way to help a recipient country : foreign assistance or exports access to the donor's markets ? Formally, one needs to compare the worth of exports to the donor's market with that of an equal amount of foreign assistance on a recipient country. The first seminal attempt along those lines is Johnson (1967b), whose analysis was then extended and discussed in Thirwall (1976) and Yassin (1982). We follow here the analysis of Mosley (1985).

When comparing "Trade to Aid", three types of economic effects have to be taken into account. First, there are the direct economic effects, namely how a dollar of aid compares to a dollar of foreign exchange earned by exporting. Second, one needs to consider the indirect effects on the recipient's economy (in particular on the public sector, the supply of savings and changes in domestic prices affecting the private sector of the economy). Finally, there are more general political economy considerations related to the intrinsic worth of "self – sufficiency".

### *Direct effects*

Start first with the direct economic effects. If aid is offered as a pure gift without any tying constraint, then it places additional resources for investment directly in the hands of the recipient's government, and so it saves the recipient country the excess cost of import substitution (i.e. the cost of making at home the goods which aid makes it possible to import). Following Johnson (1967b), the value of an amount of aid  $A$  is therefore equal to  $(I+c)A$ , where  $c$  is the excess cost of import substitution. Exports on their side do not provide additional resources for investment directly. They do so only indirectly to the extent that they offer the possibility of transforming domestic resources into goods more cheaply than domestic production, saving therefore the excess cost of import substitution. The value of an amount  $X$  of exports to the economy is therefore  $cX$  and the relative worth of exports compared to foreign pure aid can be expressed as the following ratio  $cX/(I+c)A$ . From this, it follows that the value of exports can never exceed the value of an equal amount of pure aid. At the margin, foreign aid is always worth more than trade (Johnson 1967b).

Aid though is never pure and always has a tied component related to the purchase of goods in the donor economy. In that case, if  $r$  is the ratio of the price of goods supplied by aid to the

best competitive price obtainable on free markets, the relative worth of exports becomes:  $[cX/(1+c)A] \cdot r$ . In that case, the value of exports can exceed the value of aid when  $cr > 1+c$  which will only hold for relatively high values of  $c$  and  $r$ , that is, for countries “far enough” from world markets (costly imports) *and* receiving relatively efficient aid (small degree of tying). It can also be argued that much aid is not given on pure grant terms but as soft loans below the market rate. If  $F$  is the nominal amount of foreign assistance and  $g$  is the aid component of assistance, the relative worth of exports becomes  $[cX/(1+c)Fg] \cdot r$  and the condition for trade to dominate aid becomes  $cr > c(1+g)$ . As argued by Thirwall (1976) and Mosley (1985) it is still the case that  $c$  and  $r$  would have to be quite high and  $g$  relatively low to make such an inequality true. For instance, for an excess cost of import substitution of 50% ( $c = 1/2$ ) and no aid tying ( $r = 1$ ), trade would dominate aid only if the ratio of aid to assistance falls below 0.3, suggesting as Thirwall (1976) says that aid is very likely to dominate export market access as a policy helping the recipient economy.

### *Indirect effects*

Exports revenues and aid income have of course also indirect economic effects into the recipient country . In particular, they may influence the propensity to save (and thereby the growth rate of the recipient country); they may also affect relative prices (in particular the real exchange rate as is suggested for instance by the “Dutch disease” effects ); they may also influence public sector spending patterns. Clearly, if the nature of these side effects is different for exports revenues and aid income, then they will certainly affect the relative worth of trade compared to aid. Given that these effects take also time to realize, one must acknowledge that they materialize over a number of period T. In that case, the new formula is written as :

$$\frac{\sum_{t=1}^T [(rcX) s_x + p_{xt}]}{\sum_{t=1}^T [(1+c)Fg] s_a + p_{at}}$$

in which  $s_x$  and  $s_a$  are respectively the propensities to save out of exports and out of aid, and  $p_{xt}$  and  $p_{at}$  are respectively the values of the indirect effects out of exports and out of aid, in period t. When one takes plausible values of r ( $r = 50\%$  in Thirwall (1976)), aid component  $g$  ( $g = 60\%$  in OECD (1986)) and an excess cost of import substitution  $c$  ( $c = 50\%$ , Little, Scitovsky and Scott (1970)), then even for a propensity to save at say  $s_x = s_a = 0.6$ , export inflows X will exceed the effects of an aid inflows  $Fg$  of equivalent dollar value when the combined indirect effects of aid on the recipient economy  $\sum_{t=1}^T p_{at}$  is less than 0.4 of the

indirect effects  $\sum_{t=1}^T p_{xt}$  of exports on the recipient private sector. While the estimates of these side effects are quite primitive, this simple example tells us that it is not anymore obvious that aid dominates trade for all possible parameter configurations.

The last effect to take into account reflects general political economy considerations on the relative merits of trade versus aid. for the recipient country. If, for self-sufficiency reasons, the recipient economy attaches an intrinsic weight  $w > 1$  to the value of a dollar earned by

exporting in relation to the value of a dollar earned as overseas aid, then the previous formula needs to be amended to reflect that concern and the value of aid is obviously diminished relative to trade.

*Aid or market access?*

While the previous approach is useful to derive a simple rule-based comparison of the relative worth of export revenues relative to foreign assistance for the recipient country, from a policy point of view, it fails to place however the discussion in a full cost-benefit context from the perspective of the donor country. Kemp and Shimomura (1991) discuss this dimension in a fully specified 2 country-2 goods general equilibrium trade set up. Formally, they consider the following problem. Considering a situation in which both countries impose effective but sub optimal taxes on trade, which instrument should the home country use to secure a given increase in welfare of the foreign country: a lump sum transfer or an adjustment of its border tax? While a precise answer depends on the initial pattern of trade taxes implemented by the two countries, Kemp and Shimomura show that in general it is optimal for home country to adjust both instruments at the same time (suggesting a certain degree of complementarity between Aid and trade policies).

The general Johnson presumption that aid is unambiguously better than trade to assist a recipient country has also been challenged by Adam and O'Connell (2004). Taking an explicitly dynamic perspective and emphasizing the role of learning-by-doing externalities, they show that the balance in such a context shifts decisively in favor of market access rather than aid. Their starting point is the observation that, other things equal, aid reduces export competitiveness in the recipient country by an appreciation of the real exchange rate (a variant of the classical Dutch Disease phenomenon, Van Wijnbergen (1985)). Hence a dollar of donor resources transferred to the recipient via the donor's own import liberalization is better for the recipient's exports than a dollar transferred via grants. When there are externalities to exporting not internalized by an export subsidy, a shift from aid to trade by increasing the recipient's productivity in his export sector may actually make both parties better off. The authors extend then their basic theoretical setting to a more fully articulated dynamic CGE model of a stylized African economy and examine the effects of a shift at the margin from aid to tariff preferences. They calibrate the externality spillover parameter such that the optimal subsidy fully internalizing the spillover effect corresponds to the average countervailing duty of 11,5% imposed on LDCs by the United States between 1980 and 1985. For such values of the dynamic externality, they show that "trade" is superior to "aid" in terms of welfare for both economies. Allowing for capital accumulation in the model magnifies the relative knowledge externality effect of "trade" rather than "aid". On the other hand, when the recipient country can only finance infrastructures and public capital accumulation through distortionary taxation, "aid" regains some interest because of its direct effect on the public budget.

**II. 1 d) "Aid for Trade": complementarity between aid and trade liberalization**

While there has been quite a lot of policy discussion on the importance of aid flows as a way to facilitate trade (the so-called Trade Facilitation Issues) and market access by LDCs, little analytical work has been dealing formally with these issues. One interesting exception is Lahiri et al. (2000). They take a standard 2 country-2 goods trade model in which countries can decide strategically their optimal trade policies (the usual tariff war argument which could be generalized to more sensible political economy arguments). Additionally, one country can make an international transfer (foreign aid) to the other one, which is free to accept or refuse that aid level. Given that aid is only given and received if it increases welfare in both countries, there cannot be any transfer paradox and therefore, without altruism, the only value of aid for the donor comes from the strategic spillover effects it has on the choice of trade instruments between the two countries.

An interesting result of the analysis is the fact that when the level of aid is decided before the level of tariffs, foreign aid may induce the recipient country to a more open trade policy and therefore give to the donor an incentive to give aid in the first place. The intuition is related to standard ideas in optimal tax policies. The optimal trade policy of the recipient is designed such that its marginal cost in terms of deadweight loss on domestic production and consumption is equal to its marginal benefit, which is inducing a shift in the terms of trade to its advantage. Now, it is well known that a transfer may, under certain circumstances, induce a terms-of-trade effect in favor of the recipient country. In such situations, as the terms of trade have already been moved in the right direction, the marginal benefit for the recipient country to use trade policies to affect additionally its terms-of-trade is reduced and a more open trade policy is chosen by that economy, at any level of the trade policy of the other (donor) economy. In other words, transfers do, in part, the work that optimal trade taxes do: they affect world prices and are, in some respects, a substitute for them. As a result, foreign aid may shift down the tariff reaction function of the recipient economy, providing a strategic value for the donor economy.

Whether trade flows between the two economies are increased, depends then on the optimal response of the donor country to less protectionism in the recipient country. Interestingly, in such a setting aid tied to reduced protection in the recipient country may be Pareto-improving for both economies, as it can be viewed as a commitment device towards trade liberalization. "Aid for trade", in such a case, implements a better world economy resource allocation in a way which is both credible and politically feasible.

## **II 2) Empirical aspects of the interaction between Aid and Trade.**

In this part, we discuss what the empirical literature has to say on the interactions between aid flows and trade flows and most particularly on the causal links from aid flows/policies to trade flows/policies in both the recipient and the donor countries.

### **II 2. a) From aid flows to trade flows**

A growing literature investigates empirically the link between aid and trade flows (A1 in figure 1). Most of the papers are studying the determinants of aid allocation, that is, a causality going from trade to aid.<sup>8</sup> A few papers are studying the reverse effect from aid to trade (see Morrissey, 1993). One motivation of these papers is to assess the efficiency of tied aid, that is aid whose utilization is chosen by the donor, and generally takes the form of increased imports of services or goods from the donor. A special case is mixed credits (a mix of commercial export credit, concessional loans and pure grants). Food aid is also a type of tied aid (see below). Other intermediary types include aid loans, soft loans, partial grants and concessional export credits. All in all, 48% of bilateral EU aid is tied on average.

Some papers use gravity model, with bilateral exports as a dependent variable and bilateral aid as an explaining variable (Nilsson(1997) for EU countries ; Wagner (2003) for a larger sample of 20 donors and 109 recipients). Wagner estimates an equation that takes into account the possibility that the amount of aid is 0 for some (donor, recipient) pairs, on a repeated cross-section for 5 years during 1970-1990 :

$$\ln X_{dr} = \ln \Gamma_{dr} + 0.163 \ln (\max \{1, A_{dr}\}) + 1.75 [A_{dr} = 0] + \varepsilon_{dr}$$

where  $X_{dr}$  is the exports from the donor to the recipient,  $A_{dr}$  is the amount of aid given by  $d$  to  $r$ ,  $\Gamma_{dr}$  is a linear function of the usual variables in a gravity model such as the GDP of donor and recipient, distance and dummies for a common language, remoteness of the donor and of the recipient. Wagner controls for immeasurable common factors, by introducing in the gravity equation the residual of a preliminary regression on imports from the recipient to the donor. He finds an elasticity of 0.163: increasing aid to a country by 10% increases the donor exports to the recipient by 1.63%. This elasticity translates into an average of 1.85 cents of exports generated per additional dollar of aid. The effect is mostly contemporaneous.

Nilsson, on a sample restricted to EU countries during 1975-92, finds that \$1 of aid generates \$ 2.6 of exports from donor to recipient. The average estimate hides huge discrepancy, from \$0.67 for Denmark to \$3.85 for France. All in all, the impact on exports is greater, the larger the donor country. The effect of aid on exports is mostly due to bilateral aid (as opposed to multilateral aid, for which the coefficient on exports is negative and significant for Denmark, Italy and France).

---

<sup>8</sup> These determinants are either responding to recipient needs (humanitarian motives) or to donors' interests (McKinley and Little, 1979). The donor might be willing to extend its political influence (aid will for instance incite the recipient country to join the donor's position in UN voting), comfort a military ally or increase its market share for exports. Dudley and Montmarquette (1976) build a structural model where aid enters in the utility function of the donor country and test it in a cross section of LDCs in 1970 considering one donor at a time (hence, a small number of observations). Most papers though deal with reduced form estimations, a good example with multiple donors/multiple recipients/multiple years (1980-1999) being Berthelemy and Tichit (2002). They find that aid will go to countries attracting FDI (from ROW in general) and linked by strong bilateral trade with the donor.



## II.2. b) Aid and trade : what is the causality?

As it is clear, the causality between aid flows and trade flows can go both ways and it seems important to assess the main direction of causality. In this respect, a small group of papers are using Granger-causality tests (Lloyd et al. 2000., Arvin et al. 2000). They find that the direction of the causality depends on the pair of (donor, recipient) countries. On a sample of ODA commitments between 4 EU donors and 26 African recipients over 1969-1995, Lloyd et al. find that trade determines aid for only 15 pairs out of 87 (that is 17 percent), aid determines trade for 13 percent of the sample and the causality runs both ways for 7 percent. Therefore, it is hard to get a clear picture of the link between aid and trade, even for a given donor. France could be the only exception as for a larger share of recipients (7 out of 20), the causality runs from aid to trade.

As a consequence of this time-series heterogeneity, the aid and trade relationship should be examined on data pre-tested in order to identify sub-panels according to the direction of causality and not, as is usually the case, on general pooled panel data. When the causality goes from aid to trade, Lloyd et al (2001) find that the effect is first *negative* and becomes positive after two years. When considering changes in *shares* (respectively, the share of a recipient's aid from a donor and the share of a recipient's imports from a donor, there seems to be indeed a positive effect of an increase in the share of aid on the share of imports. The negative effect of aid flow on trade flow in level is completely ignored if the estimation is performed on the whole sample, regardless of preliminary Granger causality tests. That means that a positive impact of aid to trade is a spurious result that appears if the estimation coefficients are constrained to be the same for all pairs of countries.

When the causality goes from trade to aid, the effect of a change in trade level on aid is not significantly different from zero when other variables are controlled for. On the contrary, a change in import *share* seems to have a positive impact on the share of aid : donors give more aid to recipients that buy proportionately more imports from the donor, reflecting the strategic motive in aid allocation. This last result is also found on the total sample, suggesting that it is a robust finding

## II.2. c) Food aid<sup>9</sup>

A case of tied aid that has received special attention in the empirical literature is food aid. The definition of food aid is an « international sourcing of concessional resources in the form of or for the provision of food.” (Barett and Maxwell, forthcoming). Food aid comes in various types : program aid, emergency aid, or project aid, such as food for work or supplementary feeding programs for children and pregnant women. Food aid has been much criticized. It is a second best instrument, quite expensive, even compared to other forms of

---

<sup>9</sup> This section draws on Barett and Maxwell (forthcoming), chap. 4.

aid, because of high agricultural prices on EU and US markets, a rising share of processed goods in food aid, that favors agro-business and the existence of monopolistic competition for shipping food.

The most important distinction, with respect to trade is between aid in kind or through money transfers. The first type can be either distributed directly or monetized (and sold on local markets). The second type of aid entails buying food either on local markets or in a third-country (triangular purchase).

The FAO ensures that food aid respects the Usual Marketing Requirements (UMR). These are commitments to maintain a normal level of commercial food imports. The philosophy behind the UMR is that food aid must be an « Aid that would not otherwise be forthcoming in cash and food that would not otherwise be purchased » (Maxwell and Singer 1979).<sup>10</sup>

The UMR is based on the assumption that the marginal propensity to consume out of in kind aid is higher than out of money transfers. Empirical evidence suggest that it is not the case and that food aid adds to the recipient food consumption roughly at the same rate as cash transfers, the order of magnitude being around 30 to 60 percent of the food aid shipped. This has to do with Engle curve and income effect (the rise in income does not translate entirely in demand for food). However, this might change over time and thus, the impact of food aid on trade must be studied in a dynamic perspective. This is done in Barrett and al (1999) who use a vector autoregression approach fitted on US cereal program food aid sent to 18 developing countries during 1961 and 1995. They find that in the short run, commercial imports of the recipient country decreases indeed (-30 percent of food aid), but in the long run, a J-curve takes place and after 5 years, commercial imports resume. This rise in imports benefits third countries' imports more than the donor country. Possible explanation to this long-term rise come from induced shifts in consumer tastes, income effects and reduced transaction costs caused by the development of distribution channels.<sup>11</sup> However, there is a considerable difference in magnitude between aid, production and trade : the mean aid volume in Barrett's sample is only 9% of mean production and 17% of commercial imports. Therefore, even if the conditional expectation of food aid's effect on commercial imports does follow a J-curve, it cannot be said that food aid drives recipient country trade pattern.

The relevance of UMR might be discussed from the point of view of the developing country. In fact, if food aid could substitute for commercial imports, it would ease the balance of

---

<sup>10</sup> In practice, the UMR sets a limit to food aid, which is the average imports for the recipient country of the commodity over the preceding five years. The UMR is waived for NGOs and for emergency aid.

<sup>11</sup> Food aid, according to Barrett and Maxwell, is akin to « a free sample marketing campaign ». They cite anecdotal evidence, of the United States encouraging the shift from rice to wheat, or from soft wheat to hard wheat in which North America has a comparative advantage. Genetically modified food aid provides another example. In 2002, Mozambique and Zimbabwe accepted eventually GM food aid from the US under certain conditions (food must be milled before shipping) but Zambia turned it down because it feared of being denied market access for its own products in Europe.

payments constraint and free resources for imports of investment goods, for example. It would then be equivalent to an untied financial aid, which might be a more efficient instrument. « There is a certain inconsistency in proposals which talk about food aid as providing balance-of-payments support while insisting that developing countries cannot be helped to pay for the food imports they are forced to make commercially. » (Maxwell and Singer, 1979).

What would be needed is a clear picture of imports and exports of the recipient countries (with the donor as well as with third countries). A first step in this direction is an OECD study (2004a), that suggests that the effect of aid depends on the modalities of delivery : grant or loan, program, project or emergency, bilateral or multilateral, and on the type of the product (cereal, pulse, or oils and fats).<sup>12</sup>

All in all, the relationship between aid and trade flows depends of the pair of (donor, recipient) countries and may change over time. The papers stress also the difference between a marginal effect of aid to trade that appears for some donor/recipient pair, and an average effect that would probably not be caught, because of the discrepancy between aid and trade volumes.

To summarize, the literature on aid and trade flows suggests that the bulk of the impact of aid on trade and even the direction of the causality are driven by factors related to a specific (donor,recipient) pair. This finding justifies the use of case studies, that would scrutinize the non-economic factor (institutions, historical ties) that could explain the specificity of the relationship and its likely impact on trade via aid. Another result of the general empirical studies is the importance of sectoral structure of the recipient country, between tradables (distinguished between exportable and import-competing goods) and non-tradables, the evolution of their relative price, the extent of factor mobility between the two sectors. Last, the overall macro environment of the recipient country matters, as the transfer paradox illustrates how aid can interfere with balance of payments and fiscal constraints. A important feature of aid on that respect is if is spent on traded vs. non-traded goods (say health or education expenditures), and how it is domestically distributed among various groups of the population. From a practical point of view, because of the difference in magnitude between aid and trade in many countries, the significance of the impact of aid on trade is likely to depend on the type of calculation : marginal vs. mean effect, in level or in share.

## **II.2) d) Aid for trade: trade facilitation and tariff compensation scheme**

---

<sup>12</sup>However, the methodology used in the OECD study is not without flaws: commercial net imports, domestic production and consumption of the recipient country are estimated separately, without taking into account the simultaneity of the three equations variables nor a possible endogeneity of aid).

We turn now to trade facilitation, that is aid meant to alleviate the cost of suppressing the barriers to trade.

The first type of aid for trade is compensating schemes, or monetary transfers proportional to the losses incurred by the recipient country during the trade liberalization process. One could say that it is the case of structural adjustment funds, with are often conditioned on indicators of trade liberalization. However, these loans take place during an economic crisis and their conditionality extends beyond trade issues to macro stabilization, budgetary issues and the reform of the financial system.

Some regional trade agreements include compensating transfers. It was the case of EU's structural funds. Another example are the MEDA funds that the EU put in place in the direction of Mediterranean countries who joined a common Free Trade Area (the Barcelona Partnership). Mediterranean countries were expected to face a sharp loss in tariff revenues, following the suppression of their duties on European industrial imports. This loss might be significant for some countries like Tunisia, which sources 70% of the imports in the EU and where tariff duties represent over 20% of total fiscal revenue. In response, MEDA commitments for the Mediterranean countries amounted in 1995-2001 to 1805 million euros out of which 59% were directed to alleviate the macroeconomic and social cost of trade liberalization (balance of payments support and social safety net) and 40% allocated to private sector development (vocational training, business centers and guarantees for loans by small and medium enterprises).

As the evaluation of structural funds on the convergence of members of a Regional agreements is beyond the scope of this paper, we focus the rest of the discussion on trade-related technical assistance.

Trade facilitation activities cover two main categories :<sup>13</sup>

- Trade policy and regulations : support to aid recipients' effective participation in multilateral trade negotiations, analysis and implementation of multilateral trade agreements, trade policy mainstreaming and technical standards, trade facilitation including tariff structures and customs regimes, support to regional agreements and human resources development in trade
- Trade development : business development, access to trade finance, trade promotion in some sectors

Until the creation of the WTO, GATT technical assistance took largely the form of trade policy courses. The bulk of trade-related assistance was provided through bilateral cooperation. In 1996 an Integrated Framework for Trade-Related Technical Assistance to Least-Developed Countries (the IF) was launched. The IF brings together six international

---

<sup>13</sup> Activities to enhance the infrastructure necessary for trade, such as transport, storage, communications or energy are excluded.

agencies<sup>14</sup> to collaborate with bilateral donors to ensure greater coherence in the provision of trade-related technical assistance. The core of the IF is the provision of diagnosis report which includes an action matrix. The latter states the various tasks offered to external funding with a priority ranking. The action matrix is established at least theoretically after discussion with local stakeholders coordinated by a Focal Point (usually in the Ministry of Trade). Another initiative is the Joint Integrated Technical Assistance Programme (JITAP), launched by the WTO, UNCTAD and the ITC to selected Least-Developed and other African countries.<sup>15</sup> In 2001, the Doha Development Agenda Global Trust Fund was launched and increased trade assistance activities, and again in 2003, while the IF and JITAP were revamped and expanded (table 1). Aid to trade and policy regulations increased in Africa in 2003, at the same level as Asian countries. Trade development activities increased in Africa and America, mostly through regional programs (figures 1a-1b).

**Table 1**  
**Commitments of Trade-Related assistance by donor 2002-2003**

	2002			2003		
	Trade and regulations	policy and development	Contributions to multilateral providers	Trade policy and regulations	Trade development	Contributions to multilateral providers
Bilateral	273.8	842.8	32.8	388.6	1071	39.7
Multilateral	391.7	476.6	3.4	594.8	690.9	5.3
Total	665.5	1319.4	36.2	983.4	1761.9	45

Source: WTO/OECD 2004

Note:

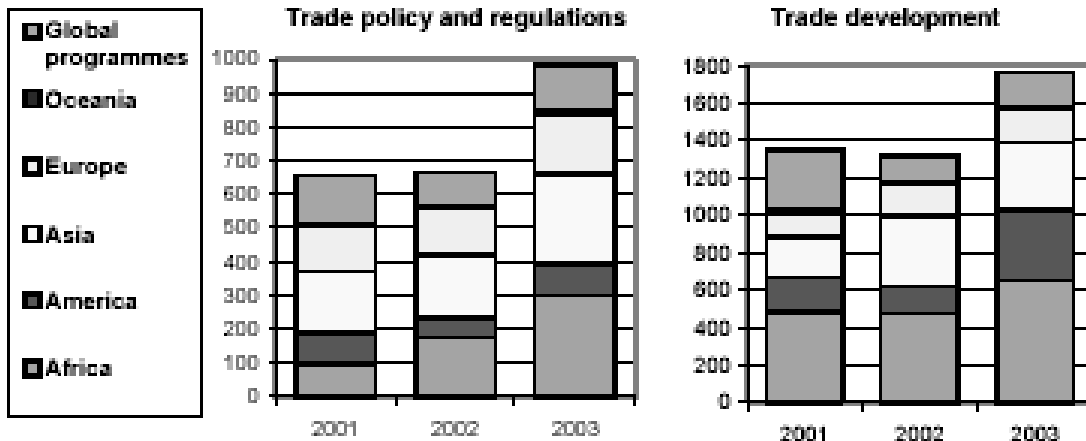
USD millions

Contributions to multilateral providers include contributions to WTO, IF, ITC and JITAP.

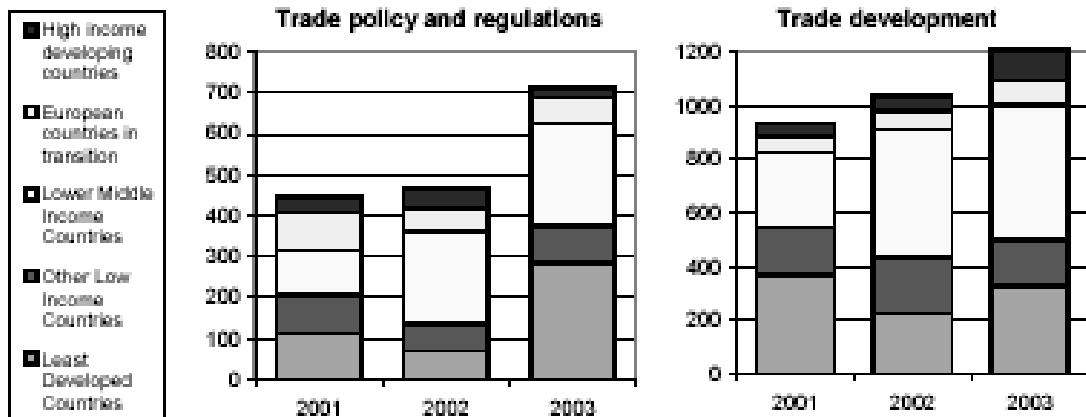
<sup>14</sup> These are UNCTAD, ITC, UNDP, WTO, IMF and the World Bank. The International Trade Centre (ITC) is a joint venture of the WTO and UNCTAD. The IF received USD 19 million in pledges through 2003 of which around USD 10 millions were disbursed through 2003.

<sup>15</sup> The JITAP is more a « results-oriented » program than the IF. By September 2003, the JPTA had received USD 12.6 millions in its Common Trust Fund.

**Figure 1a**  
**Distribution of TRATA/CB by region and main category**  
 (USD million)



**Figure 1b**  
**Distribution of TRATA/CB by income group and main category**  
 (USD million)



Source: WTO/OECD report 2004 (charts 1 and 2)

Note figure 1b: Calculated on country allocable amounts. Regional and global programs are excluded from the chart.

Trade-related assistance has faced many critiques. According to Prowse (2002), trade-related assistance “has been delivered frequently randomly, indiscriminately and more often than not on a stand-alone basis”. She points to the lack of coordination between multilateral agencies involved in capacity building, such as the IMF, ITC, UNCTAD, UNDP, the World Bank and

the WTO, not to mention other specialized agencies (BIS, FAO, ISO, UNIDO, WCO, WIPO), regional and bilateral bodies. Within the WTO, the implementation of the Special and Differential treatment, by which a LDC (least-developed country) might be given longer transition periods for the implementation of GATT/WTO obligations and maintain some trade restrictions or subsidies, is handled by each relevant WTO committee. For instance, the Committee on Sanitary and Phytosanitary Standards will implement an assistance program independently from the committee on Intellectual Property Law. A consequence of this fragmentation of aid is that it is often short-lived and is not integrated in a global development strategy of the country.

The Integrated Framework initiative, which was hoped to overcome these issues, is still mostly donors' driven and lack local ownership. Reasons might be that the process involves Geneva-based representatives more than local governments; and the local coordinator of the IF process (the "Focal Point") is the ministry of trade which most often retains less political power than other Ministries such as Planning or Finance (and Customs). A more profound reason comes from conflicting rationales of trade-related assistance (Shaffer, 2005) between: facilitating trade liberalization and the implementation of WTO agreements; or supporting trade-related aspects of development, including the capacity to re-negotiate WTO rules from a development perspective. As of today, the emphasis is clearly on the former. An implicit proof might be the fact that the first domain in which the WTO designed trade assistance activities was on Singapore Issues, among them intellectual property rights, which might not be a first-rank concern for the Least-developed countries. There was even a temptation to link the continuation of trade assistance to the conclusion of the Doha negotiating round.

The fragmentation of trade-related assistance does not help to give an overall assessment of its impact on trade, not to say growth. The methodology used in the few studies that are available is to estimate the costs of trade transactions and simulate the impact of a decrease in these costs. At our knowledge, there is no study that evaluates directly the impact of trade assistance in the reduction of the trade transaction costs.

Table 2, taken from an OECD report (2003), gives some estimates of trade transaction costs. These are ranging from 1 to 15 percent of traded goods' value. The computations are mostly based on business surveys and make some assumptions on the opportunity cost (in monetary terms) of time delay or inventory holding. Trade transaction costs seem higher for agricultural products (due to additional sanitary and phytosanitary inspections). They are higher for LDCs but considerable variation in border waiting times exists particularly for countries with a per capita income of less than USD 9000 (figure 2).

Two routes have been taken based on these evaluations of trade transaction costs:

- (i) Introducing trade transaction costs in a gravity model of bilateral trade, along with usual variables such as tariffs or distance. Examples are provided by Wilson, Mann and Otsuki (2003) first for APEC then for a larger sample of 30 developed countries and 45 developing countries.

- (ii) Introducing trade transaction costs in a CGE model (Hertel, 2004). Trade facilitation is introduced as a technical progress in trading activities that reduces the cost of trading (indirect effect) and can entail a reduction in logistics duties paid to the public sector (direct effect) (Fox, Francois, Londono, 2003, Walkenhorst and Yasui, (OECD 2003)– see table 3, taken from the latter study -.

Wilson, Mann and Otsuki (2004) derive their measures of trade facilitation from business cross-country surveys and build four indicators on port efficiency, customs environment (hidden barriers or bribes), regulatory environment (corruption) and services sector infrastructure (speed and cost of internet access and its contribution to reduce inventory). These indicators are highly correlated between them and with the level of income per capita. The gravity model does not control for the endogeneity of trade costs, and shows that indeed a higher trade facilitation index has a positive impact on bilateral trade, especially the service sector, infrastructure and the regulatory environment. A total elimination of the 8.5% average tariff would be equivalent for the importer country to a 15.6% improvement of port efficiency, a 17% improvement of the regulatory environment and a 6.6% improvement in services sector infrastructure (resp. for the exporter, 5.2%, 2.5% and 7.8%) and a 10% improvement of customs (for the importer).

When the sample is restricted to South-North trade, variables of the North as importer, such as tariffs, are not significant. Thus, the regression would suggest that tariffs are not an impediment to South-North trade. The high coefficient on regulatory environment in the exporting country (from the South) points to possible large gains following an improvement in the area. In South-South trade, tariffs are significant and service infrastructure is important for both directions of trade. The estimates of the gravity model are then used for simulation. If *below-average* countries are put at a level *halfway to the average* for the entire set of countries, the volume of trade will increase by 9.7% (USD 377 billion). However, the gain will be small for MENA, Sub-Saharan African and Latin American exports compared to South Asian, because they have less access to the OECD markets (see figure 3a and 3b, from Wilson et al. 2004)

The CGE simulations in Walkenhorst and Yasui (2003) take into account a loss in logistic duties (and corruption) following trade facilitation. Thus, the positive impact is attenuated by an adjustment in the government sector. They also model a diversity in trade transaction costs due to sectors and firms heterogeneity. They show that an overall and uniform reduction of trade transaction cost by 1% of the value of world trade would entail a gain of USD 38 billion. Reducing border waiting times accounts for 80% of the gain. Most of the gain will go to OECD countries (69%) and to a lesser extent the Asia-Pacific Region. MENA and LAC region will each get 5% of the benefit and Sub-Saharan Africa a mere 2%. If the improvement in trade facilitation results in closing the gap to best practice (that is, the lower the initial level, the larger the improvement), non-OECD countries receive 63% of the gain in trade (table 4). In turn, these gains in trade result in an improvement in a welfare improvement of 0.13% of GDP worldwide. This figure can rise to 0.85% of GDP for Sub-



Saharan Africa for the scenario with a differential improvement in trade transaction costs. However, again, no result on growth or income distribution is reported

**Table 2**  
**Selected Studies reporting estimates of transaction costs**  
**(Source: OECD, 2003, table 1)**

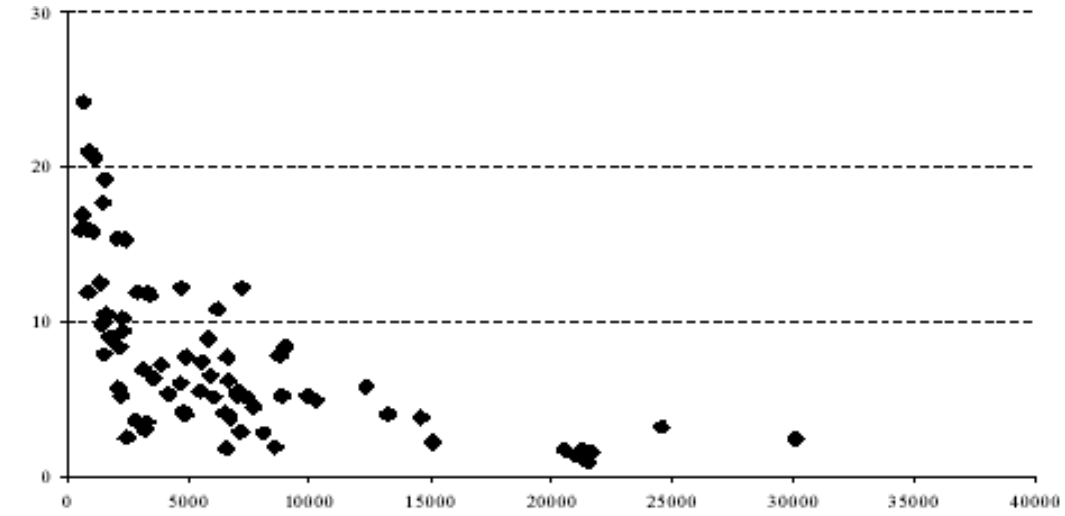
Study	Country/ Region	Import/ Export	Direct costs		Indirect costs		Note
			Scope	Costs (%) <sup>a</sup>	Scope	Costs (%) <sup>a</sup> **	
US-NCITD (1971)	USA	Average of imp. & exp. costs	Documentation, finance & insurance, carrier; and forward/broker	7.5%		Based on business survey.	
SWEPRO (1985)	Sweden	Average of imp. & exp. costs	Documentation costs	4%		Estimated figures based on information from customs and business.	
Ernst & Whinney (1987a,b)	Intra-EC	Imp. & exp. costs combined	Customs compliance costs	1.5%	Delays for road haulers & lost business	Reservations have been expressed on the survey on lost business & road haulers. Indirect costs calculated by Secretariat.	
EC (1989)	Intra-EC	Imp. & exp. costs combined	Documentation costs	3.5-15%		Methodology unclear.	
UNCTAD (1994)	World		Costs for finance, customs; business information; transport & telecom	7-10%		Uses US-NCITD (1971), EC (1998) and other information sources. Coverage of direct and indirect costs.	
METI (1998)	Japan	Imp. costs only	Costs for border procedures	0.5-2.4%		Based on a survey of Japanese manufacturing and trade companies.	
Haralambides & Londoño- Kent (2002)	Between USA & Mexico	Imp. & exp. costs combined	Costs for handling, inspection, etc. for a) southbound, b) northbound	a) 0.8-2.1% b) 0.6-1.1%	Time delay	Costs of time delay calculated based on Hummels (2001). a) 1.6-4.0% b) 0.1-0.5%	
JETRO (2002)	Japan	Imp. costs only	Costs for import and port- related procedures a) EDI-use; b) non-EDI-use	a) 0.5-0.8% b) 1.2%		Figures calculated by Secretariat.	

<sup>a</sup>) Due to differences in methodology as well as differing time periods during which particular studies were carried out, the estimates are not directly comparable. In particular, TTCs have been reduced over time in many countries as a result of trade facilitation efforts and technological progress, so that comparisons of TTC across time will tend to be misleading. Hence the purpose of the table is to report on different approaches that have been pursued and not to evaluate particular studies and their findings against each other.

<sup>b</sup>) Percentage in terms of traded goods' value.

Source: OECD Secretariat.

**Figure 2**  
**Country-average of number of days of import clearance time in relation to per-capita GDP**  
(USD, purchasing power parity)  
(Source: OECD, 2003, figure 2)



Source: OECD Secretariat.

**Table 3**  
**CGE based studies of the benefits of trade facilitation**  
 Source OECD, 2003, table 5

Study	Base year	Model characteristics		Regional coverage	Scenario specification		Annual income gains *	
		Competition	Dynamics		Sector coverage	Reduction in trade value	(in USD billion)	(% of GDP) **
Dee (1998)	1992	Imperfect	Dynamic	APEC	All goods and transport services	Uniform a) 5% b) 10%	a) 216 b) 442	a) 1.1 b) 2.3
APEC (1999)	1996	Perfect	Dynamic	APEC	All goods	By country group a) 1% & 2% b) 2% & 3%	a) 45.8 b) 64	a) 0.25 b) 0.4
Hertel, Waldmsley & Itakara (2001)	1995-2020	Perfect	Dynamic	Japan & Singapore	All goods	By goods sector 0.21-3.5%	6.6 (Japan) & 0.17 (Singapore)	0.16 (Japan) & 0.29 (Singapore)
UNCTAD (2001)	1997	Perfect	Static	Developed countries	a) Trade services b) Air & sea transport	Uniform 1%	a) 47.9 b) 6.1 c) 117.9	a) 0.22 b) 0.04 c) 0.54
APEC (2002)	1997	Perfect	Static	Intra-APEC trade	c) All services All goods	a) 5% *** (uniform) b) 2.9-7.7% *** (by country group)	a) 154.0 b) 100.9-203.5	a) 0.98 b) 0.64-1.30
Fox, Francois & Londoño-Kent (2003)	1997	Perfect	Static	Bilateral USA & Mexico trade	Goods shipped by truck	1% (northbound) & 5% (southbound)	1.4 (US) & 1.8 (Mex)	0.02 (US) & 0.47 (Mex)
Francois, van Meijl & van Tongeren (2003)	1997	Imperfect	Dynamic	World	All goods	Uniform a) 1.5% b) 3%	a) 72.3 b) 150.9	a) 0.25 b) 0.52
OECD (2003)	1997	Perfect	Static	World	All goods and services	Uniform 1%	76.4	0.26

\*) Due to methodological differences, the estimates are not directly comparable. See the individual studies for details.

\*\*) Calculated from GDP data if not available in the particular study.

\*\*\*) Reduction in trade transaction costs.

Source : OECD Secretariat.

For the least-developed countries, such as Sub-Saharan African countries, the potential benefit of trade facilitation program (or, at least, of a reduction in trade transaction costs) seems to be contingent on an improvement of their market access.<sup>16</sup> Industrialized countries have designed preferential schemes to facilitate access to their markets for developing countries, such as the GSP (generalized system of preferences) or more recently, the Everything but Arms initiative of the EU and the African Growth Opportunity Act of the United States. However, recent studies point to an under-utilization of these preferences (Brenton 2003, UNCTAD 2003, Candau et al. 2004) for various reasons: the extent of the coverage of products (especially for agriculture and textile), the costs of implementing the requirements (administrative costs, rules of origin, sanitary and phytosanitary norms) and possibly, the fact that some of these preferential market access are contingent to the developing country's performance (GSP) and temporary (GSP and AGOA).

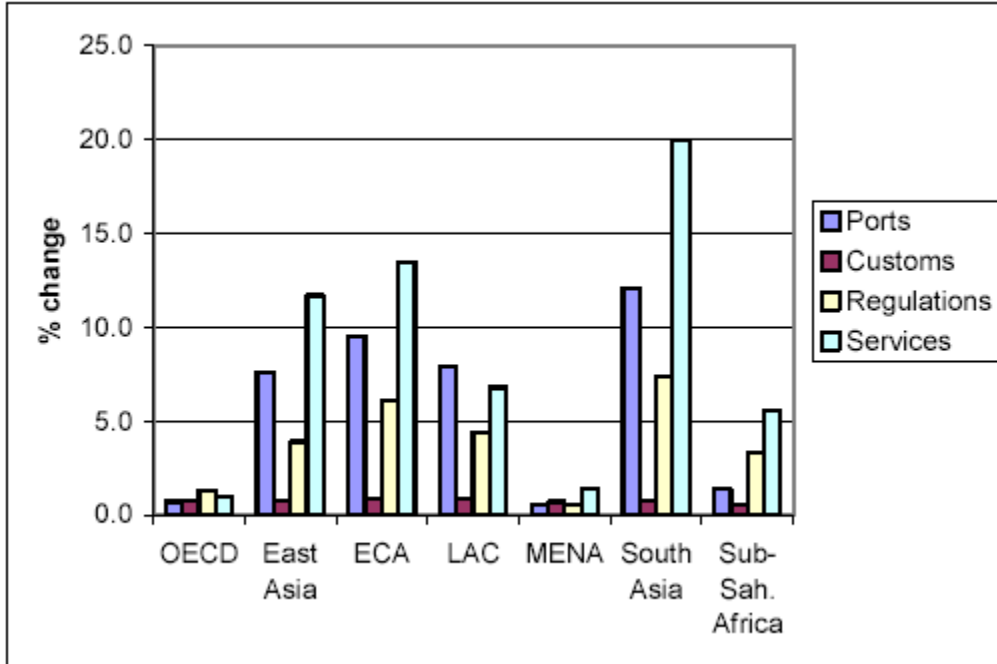
To summarize, while there have been attempts to estimate the nature of trade transaction costs and the effect of their reduction on trade flows, to our knowledge, no study so far has tried to evaluate directly the impact of trade assistance aid in the reduction of the trade transaction costs. This is a significant gap in the literature. Case studies related to the OECD project on policy coherence might help to bridge the gap, by gathering data at a country level. Possible indicators would be the cost of shipping (or delay) at different years, or the number of days at customs, hopefully before and after the implementation of an IF or JTAP.

In the absence of a complete evaluation of the trade facilitation activities on trade flows and development outcomes, the existing papers tend to hope that a reduction in trade transaction costs will have a significant effect provided that developing countries have sufficient market access in the North. Such argument might point to a possible complementarity between aid and market access policies in the North. We will return briefly to this issue in the conclusion.

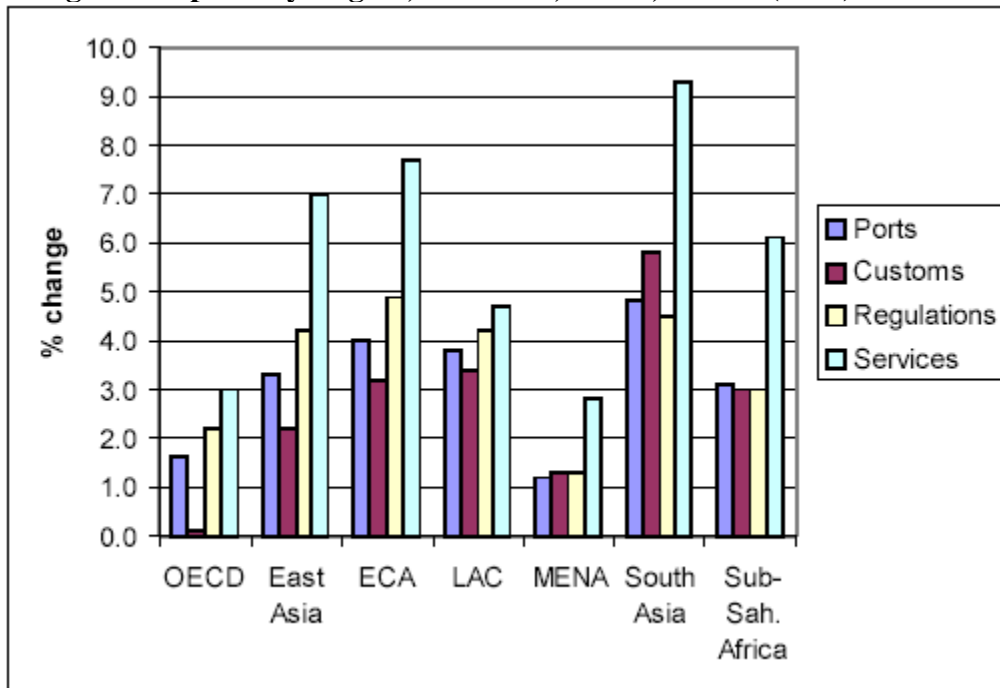
---

<sup>16</sup> Anecdotal evidence points also to contradicting objectives in trade-related assistance versus market access policies. Bogart and Trzeciak-Duval mention that the EU announced on February 2004 an Action plan on Commodities to favour diversification in exports from the developing countries. However, the EU restricted on the other hand, market access for some of the commodities targeted by the action plan such as sugar and rice (Bogart et al., 2004, p.12).

**Figure 3a**  
**Changes in Exports by Region, in Wilson, Mann, Otsuki (2004)**



**Figure 3b**  
**Changes in Imports by Region, in Wilson, Mann, Otsuki (2004)**



**Table 4 Scenario results on income effects of trade facilitation**  
(millions USD and percent of total)  
Source OECD, 2003

	Uniformity	Country diversity
<b>World-wide income gains</b>	<b>38454</b>	<b>41844</b>
- due to direct cost reduction	6041	7689
- due to indirect cost reduction	32413	34155
<b>OECD</b>	<b>69%</b>	<b>37%</b>
OECD Asia-Pacific	8%	7%
OECD Europe	43%	17%
OECD North America	18%	13%
<b>Non-OECD</b>	<b>31%</b>	<b>63%</b>
Former Soviet Union	2%	7%
Middle East & North Africa	5%	11%
Latin America & Caribbean	5%	13%
Non-OECD Asia-Pacific	16%	24%
Sub-saharan Africa	2%	7%
Rest of World	1%	1%

### III INTERACTIONS BETWEEN FDI AND TRADE

#### III. 1) Conceptual aspects on the interactions from FDI to Trade

Let us now discuss the conceptual background that is suggested by the existing literature on FDI multinationalization and Trade.

##### III.1.a) Standard trade theory and factor mobility: FDI flows and trade flows

A first approach to discuss the links between foreign direct investment FDI flows and trade flows is to consider FDI as simply a factor movement between two countries and to see how this affects trade volumes between these economies (F1 in figure 1).

In the standard Heckscher-Ohlin model of trade with 2 countries, 2 factors and 2 goods, the traditional view is that factor mobility (and in particular capital mobility or FDI) is a perfect

substitute to goods mobility. In other words factors movements are a substitute to international trade in commodities. The first formal exposition of this idea is credited to Mundell (1957) who noted that in the presence of tariffs, the relatively low priced factor in each country will be that country's abundant factor. Factor mobility in response to these international factor prices differences would thus lead to the elimination of trade via the elimination of the factor proportion basis for trade. Perfect factor mobility would produce an international equilibrium in which factor prices and commodity prices are identical to those characterizing a free trade equilibrium with factor immobility. According to this view factor movements and commodity trade are substitutes in both a welfare sense and a volume of trade sense and in particular more FDI flows should be associated to less trade flows.

In an important contribution Markusen (1983), extends the analysis of Mundell to show a number of situations in which factor movements (and FDI in particular) and trade in commodities are in fact complements in the sense that an increase in factor movements between two economies leads to an increase in commodity trade flows. The basic idea is to consider the following set of assumptions:

- a) Countries have identical relative factor endowments
- b) Countries have identical technologies
- c) Countries have identical homothetic preferences
- d) Production is characterized by constant returns to scale
- e) Production is characterized by perfect competition
- f) There are no domestic distortions in either country.

Under these assumptions, two countries have no reason to trade with each other. Relaxing only assumption (a) provides the standard Heckscher-Ohlin motive for trade in commodities. Markusen (1983) showed that retaining (a) but relaxing any of the other assumptions (b), (d), (e) or (f) provides a reason for a complementarity between factor movement and trade in commodities. The basic intuition is that in all of these cases, at the initial trading equilibrium with no factor mobility, there is no factor price equalization with a country having the relatively high factor price for the factor used intensively in the production of its export sector. Thus factor mobility must lead to an inflow of the factor used intensively in the production of the export good. This in turn adds a factor proportion basis for trade and an increase in the volume of trade between the two economies.

Taken together, these different models suggest the general idea that trade flows in goods and FDI flows are substitute in only a restricted set of circumstances and most likely to be complements when technologies differ across countries, when there are external or agglomeration economies of scale, when firms compete in oligopolistic fashion and when there are local product of factor market distortions.

### **III.1.b) Standard Trade theory: interactions between FDI and trade policies**

While the previous contributions discuss the question of the correlations between trade in commodity and factor movements, they do not directly address the question of the



interactions between FDI and trade policy instruments and their welfare impacts on the host country. An early contribution which could provide some direction to this question is Johnson (1967b) who showed that an exogenous increase in the stock of a domestic resource, as for instance capital may bring a welfare loss in a tariff ridden small open economy if it exacerbates the overproduction of the tariff protected import competing industry. Clearly if additionally, there is a discrepancy between domestic product and national income because the increase in the capital stock is due to foreign owned capital (FDI), then it is even more likely that national welfare may decrease due to an inflow of FDI in a small tariff ridden open economy.

The relationship between trade policy and FDI flows is further investigated in Brecher and Diaz-Alejandro (1977), Markusen and Melvin (1979) and Brecher and Bhagwati (1981), who note that a tariff-generated FDI may reduce the real income of the host country or even reduce the real income of the world as a whole. The intuition is simple. Tariffs imply that a reduction of imports at constant terms of trade reduces national income by a reduction of the volume of trade that the country has. If tariff-generated FDI has the Mundell effect of reducing trade, this tends to reduce income in the absence of a favorable terms-of-trade change. This result shows therefore situations where a tariff reduction in the host economy, tends to increase the welfare gain associated to FDI flows. Looking at instruments, this suggests that trade liberalization policy may complement a FDI policy promoting capital movements between countries.

Bhagwati and Brecher (1980) and Brecher and Bhagwati (1981) show that free trade may be inferior to subsidized trade or no trade for a large country when this economy has a domestic factor of production which is foreign-owned (like FDI capital). This comes because of the discrepancy between a differential volume of trade or a differential pattern of trade phenomenon between the economy as perceived in aggregate (domestic and foreign owned factors) and the economy as perceived from the national point of view (domestic factors only).

All this line of research suggests that, trade liberalization (and even subsidization in some cases) in the host country may be at the margin complement to FDI liberalization from the welfare point of view of the host country as it decreases the likelihood of the Johnson\Bhagwati-Brecher phenomenon when there is a FDI inflow.

### **III.1.c) New Trade Theory and Multinationals. FDI flows and Trade flows.**

The early 1980s saw the beginning of the industrial organization approach to trade which incorporated increasing returns to scale and imperfect competition into the general equilibrium model of trade. Along that that line of research, two branches discuss the relationship between trade and FDI. The first one describes multinational and FDI activities as “vertical FDI ” in the sense that single plant firms fragment the production process into stages based on factor intensities and locate activities according to international differences in factor prices (Helpman (1984), (1985), Helpman and Krugman (1985)). According to this line of research, multinational activity will arise between countries which differ in terms of

factor endowments. The second branch considers “horizontal FDI” and emphasizes the role of firm level and plant level economies of scale as well as trade costs between countries (see Brainard 1993, Markusen and Venables (1998), (2000)). Contrary to the “vertical FDI” model, the “horizontal FDI” model predicts that, given moderate to high trade costs, multinational activity arises between similar countries in size and relative factor endowments. Markusen ((1997), (2001)), integrated these two branches of the literature into what is now known as the “capital-knowledge” approach, emphasizing the role of skill intensive knowledge-based assets that can be fragmented from production and can be joint public inputs into multiple production facilities.

What does this new approach tell us about the complementarity or the substitutability between FDI flows and Trade flows? Clearly, affiliate production and trade flows should be substitutes in the “horizontal” approach to the multinational, though the relationship can become subtler when there are both intermediate and final goods within the firm. It is also reasonable to say that affiliate production is complementary to trade in the “vertical” approach. Markusen and Maskus (2002) draw out the implications of how FDI liberalization affect trade flows. The type of FDI which is stimulated (and therefore the impact on trade flows between two countries) depends on the differences between country size, relative skill endowments and the level of trade costs. More precisely; when countries are similar in size and relative factor endowments and trade costs are moderate to high, FDI liberalization tends to stimulate “horizontal FDI” and to reduce exports from the source country to the host country. On the other hand, when countries differ in relative factor endowments and in size, and that trade costs are low, then FDI liberalization is likely to stimulate “vertical FDI” and to promote trade flows (exports of intermediates from the source to the host country, exports of assembled products from the host country as an export-platform back to the source country or another third destination).

### **III.1.d) New Trade Theory: interactions between FDI and trade policies**

Markusen (1997) provides an interesting variation of the same argument, but this time concentrating directly on the relationship between trade and investment liberalization from the point of view of a small host\developing economy facing a large source\developed country. This is actually one of the very few papers explicitly considering the degree of complementarity or substitutability between two policy instruments rather than the relationship between trade and FDI flows (the policy outcomes).

While precise results are derived from numerical simulations and therefore depend on the precise configuration of parameters, three general results tend to emerge from the analysis. First, investment liberalization and trade liberalization do not seem to be substitute in that they often have opposite effects on important variables (like sectoral outputs, factor rewards, etc...). Second, together they have quite different effects than either alone. For instance, FDI liberalization alone may lead to “horizontal FDI” while coupled with trade liberalization, it may rather promote “vertical FDI”. In a welfare sense, trade and investment liberalization appear as complements. Finally from a distributive point of view, trade and investment liberalization together may avoid the curse of Stolper-Samuelson, in the sense that the real

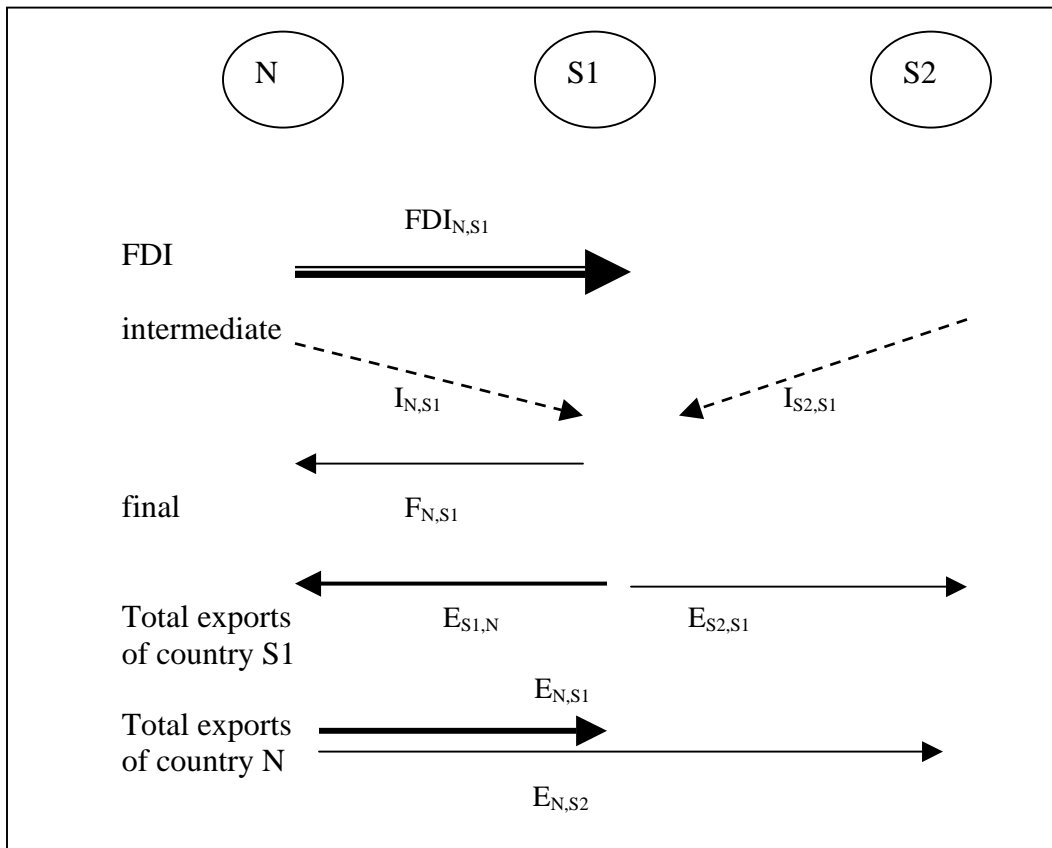
incomes of all factors can rise in full liberalization, even though the relative price of one factor may fall.

### III.2) Empirical analyses of FDI and trade

Many empirical studies have examined the relationship between trade and FDI. As with the aid and trade relationship, the outcomes are quite mixed. The difficulty arises because the empirical works have to take into account different stages of production, intra-firm and inter-firm trade, as well as the effect on third countries and need therefore data at a very disaggregated level (see figure 1).

**Figure 4**

#### Testing the FDI – trade relationship



The first studies look at the impact of FDI on exports from the point of view of the source country, that is, in figure 4,  $FDI_{N,S1}$  versus  $E_{N,S1}$  and find that trade and investment are

complements. Lipsey and Weiss (1981) found for instance a positive effect of US firms' foreign production on US exports.

The picture changes however, when one introduces the different stages of production and disaggregates overall exports between flows of intermediate and finished goods. Lipsey and Weiss (1984) introduced this information. They find a strong complementarity relationship with respect to affiliate production and exports of intermediate goods, but no significant relationship with respect to finished goods affiliate production and exports. Belderbos and Sleuwaegen (1998) find evidence of substitution between foreign production and trade at the firm level when firms are threatened by import protection (or VERs) in the destination market. This "tariff jumping" investment substitutes for trade, as they show for Japanese electronic firms in Europe during 1986-1988. On the other hand, Japanese firms that acquired EC firms or invested in distribution subsidiaries exported relatively more to Europe. Blonigen (2001) looks at the data at the product level, on Japanese automobile and automobile parts exported to or produced in the United States and identify large substitution effects in consumer goods between US based affiliate and Japanese exports. On the contrary, increased demand of imported inputs in vertical relationship stems complementarity.

In a dynamic perspective, Bergsten et al. (1978) find an initial complementarity, which turns to substitution as the host country becomes competitive, and turns into an export platform. Their analysis introduces the effects on third countries (in the figure,  $E_{S2,S1}$ ). Trade between affiliates (say, in countries S1 and S2) might eventually replace trade between the home country and the affiliate in S1.

Integrating both the different stages of production and the third country effect, Svensson (1996) on Swedish data shows that exports from the source country of intermediate goods increase ( $I_{N,S1}$ ) and exports of final goods decrease ( $F_{NS1}$ ), the net effect being close to zero and negative when third country effect (the replacement of the exports from the North to the third country  $E_{N,S2}$  by exports from the host country  $E_{S1,S2}$ ) is taken into account.

For a developing country point of view, the relevant question will be on the impact of an inward FDI on developing country's exports and imports. Putting it again in the terms of Figure 4, that would require having data on *gross* exports and *imports* between the source and the host countries, and restricting the sample to North-South FDI.

Fontagné and Pajot (1997 and 1999) take a first step in this direction, by distinguishing inward and outward FDIs on the one hand, and exports and imports on the other. They show that the effects are clearly not symmetric for a given country. However, the samples are made of industrialized countries (11 European countries, US, Japan and EU12), but for one of the "partner countries" which accounts for the rest of the world. Actually, they work with two datasets, one disaggregated at the industry level for France only, and the other taking FDI as a whole for 14 declaring countries facing 15 partners over the years 1984-1993. Their regression takes the form :

$$T_{ij} = T( GDP_i, GDP_j, \Delta GDP_{ij}, Y_i, Y_j, \Delta Y_{ij}, DIST_{ij}, REG_{ij}, PROD_i, FDI_{ji}, FDI_{ji} )$$

with  $GDP_i$  GDP of country  $i$ ,  $\Delta GDP_{ij}$  the difference in GDP between the two countries,  $Y_i$  income per capita in country  $i$ ,  $\Delta Y_{ij}$  difference in per capita income,  $DIST_{ij}$  distance,  $REG_{ij}$  dummy indicating a regional trade agreement,  $PROD_i$  average industry productivity,  $FDI_{ji}$  inward FDI,  $FDI_{ij}$  outward FDI.

**Table 5.**  
**FDI and trade**  
**Effects of a 1 USD FDI flow on bilateral trade (in US dollars)**

	exports to partner country	imports from partner country	trade surplus with partner country
<u>France : Effects of FDI on bilateral trade flows, 15 manufacturing industries (1984-1994)</u>			
1 \$ FDI outflow to partner country	0.59	0.24	0.35
1\$ FDI inflow from partner country	0.22	0.34	-0.12
net effect of FDI balance on bilateral trade			0.23
<u>France ; Effects of FDI on bilateral trade flows, all sectors (1984-1994)</u>			
1 \$ FDI outflow to partner country	2.28	1.85	0.43
1\$ FDI inflow from partner country	3.52	4.34	-0.82
net effect of FDI balance on bilateral trade			-0.39
<u>Pooled data (14 declaring countries, facing 15 partners, 1 sector, 1984-1993)</u>			
	Exports	Imports	
1 \$ FDI outflow to partner country	0.43	2.025	
1\$ FDI inflow from partner country	2.166	0.311	

Source :  
Fontagné and Pajot (1997)

Note :  
The last two lines of the table (first column) read as : a 1% inward FDI induces 2 \$ imports and 40 cents exports by the host country.  
All sectors : 15 manufacturing industries+3 energy industries+agriculture

Results are summarized in table 5. A \$ 1 FDI outflow from France generates 24 cents of imports from the host country. However, the trade balance is in favor of France, with a net export of \$ 1.85 \$. The result is robust to the introduction of productivity effect (“economies of scale”) or to considering all sectors. On the larger dataset, an FDI outflow of USD 1 generates 31 cents of imports. But again, the foreign investment creates net exports of the source country of USD 1.85. There is then a complementarity between FDI and trade for the source country, and a substitution for the host country. This analysis ignores potential benefits on productivity arising from importing inputs that might be sophisticated enough to entail technology transfers.

A proper testing of the FDI-trade relationship is difficult, in a way similar to the aid and trade relationship, because of problems of simultaneity (endogeneity of FDI in the trade equation) and direction of the causality. Moreover, theory predicts that firms’ heterogeneity matters in the relationship. If FDI is vertical, multinational firms split their stages of production in various locations, which is likely to enhance trade. If FDI is horizontal, multinational firms produce final goods in multiple locations, which is likely to substitute for trade. Unfortunately, there is no way to distinguish horizontal and vertical FDI in the data.

Amiti and Wakelin (2003) address these problems in an interesting way. They start from Markusen’s model (1997) and derive testable implications on the complementarity or substitution of trade and FDI depending on the size of the countries, the difference in factor (skill) endowments and trade costs. They estimate a gravity model of bilateral exports, which are a function of trade and investment costs. The latter are an index of various impediments to investment (government restrictions on foreign companies, immigration rules, restrictions on raising capital and anti-trust laws).<sup>17</sup> Amiti and Wakelin take into account both trade costs and investment costs in the country of origin and the country of destination of exports, as well as interaction terms of investment costs with the difference in size between the two countries and the difference in skill endowments. The interaction terms are meant to capture the non-linearity in the relation between trade and FDI liberalization.

The model is estimated for each year from 1986 to 1994, on a sample of 36 countries (including 13 developing countries). Of particular interest are the partial derivatives of exports relative of investment cost in the origin and destination country (reproduced here for 1994):

$$\frac{\partial \ln X_{ij}}{\partial \ln IC_j} = -5.15 + 0.13 \ln DY_{ijt} - 0.27 \ln DSKILL_{ijt} + 0.81 \ln TC_{jt}$$

---

<sup>17</sup> The investment cost is an index which is the simple average of scores taken in the World Economic Forum surveys on foreign investor controls, immigration laws, cross-border ventures, hiring practice, anti-trust laws, state of justice, state of capital markets, protection of intellectual property rights. The index ranges from 0 to 100 with higher value indicating higher investment impediments

for the investment cost in the destination country of the trade flow,  
and

$$\frac{\partial \ln X_{ij}}{\partial \ln IC_i} = -7.47 + 0.40 \ln DY_{ijt} + 0.816 \ln TC_{it}$$

for the investment cost in the origin country,

where  $X_{ij}$  is the export of manufactured goods from country  $i$  to country  $j$ ,  $DY_{ijt}$  is the difference in real GDP,  $DSKILL_{ijt}$  the absolute difference in relative skill endowments,  $TC_i$  is the trade cost in country  $i$  defined as an index ranging from 0 to 100, constructed from the World Competitiveness Report, where companies are asked whether national protectionism prevent foreign goods from being imported.<sup>18</sup>

An investment liberalization in country  $j$  stimulates exports to country  $j$  when origin and destination countries differ in relative skill labor endowments (the coefficient on  $\ln IC_j^* \ln DSKILL_{ij}$  is negative) but reduces exports when trade costs are high (the coefficient on  $\ln IC_j^* \ln TC_j$  is positive). Therefore, an investment liberalization in the North should enhance exports from developing countries in the North (as long as trade costs are not too high).

On the other hand, if country  $i$  reduces its investment cost, the difference in skill between the two countries does not matter on trade flows and the trade cost variable switches sign from being negative in the early years to positive after 1991. The interactive terms between investment cost and country size ( $\ln DY_{ij}^* \ln IC$ ) has an unexpected positive sign. Amiti and Wakelin relate that finding with the presence of national firms that are likely to be big exporters and are replaced by MNEs with the fall of investment costs.

To summarize, Amiti and Wakelin find that when factor endowments are different in the two countries and trade costs are low, vertical FDI will occur that will enhance intra-firm trade and increase exports, provided that the difference in country size is not too large. On the contrary, when the two countries are similar in factor endowments and trade costs are high, it is more likely that there will be horizontal FDI that will substitute for exports. Using data from 1994, Amiti and Wakelin show that 70% of their sample exhibits a negative derivative

for  $\frac{\partial \ln X_{ij}}{\partial \ln IC_j}$ , that is a complementarity between investment liberalization and trade. The

average elasticity is  $-0.15$  in 1994, down from the 1986 level of  $-0.53$ . As country characteristics and trade costs change over time, the impact of investment liberalization on trade is not constant either. The implication for a developing country would be that investment liberalization should accompany trade liberalization, in order to magnify the complementarity between trade and investments. The difference in factor endowments will enhance the complementarity.

---

<sup>18</sup> The index ranges from 0 to 100, with higher value representing higher barriers.

All in all, the empirical literature on the impact of FDI on trade suggests that in the case of developing countries, there would be a complementarity. However, the result is specific to the type of FDI (horizontal or vertical), the stage of production concerned by the FDI inflow (intermediate or final) and the potential technological spillovers associated with it. Third countries effects seem important as well as the evolution over time. All these parameters are difficult to gather, but it might be feasible for some case studies.

#### **IV. Conclusion.**

To conclude, we want to provide some implications of this survey for the case study analyses implemented in the project. We wish to discuss three aspects. First, we summarize the main conclusions of the current literature, emphasizing more specifically the strength and limitations of cross-country analyses. Then, taking a more sensible policy perspective, we consider the issue of the interactions of more finely grained policy instruments within our three broad policy areas: Trade, FDI and Aid policies. This will logically lead us to our last aspect, namely the implications for the conduct of case study investigations.

What have we learned from this review of the literature? A first element that seems quite robust is the identification of a complementarity between trade and FDI flows and policies. There are theoretical arguments for this and it appears as quite robust in the few empirical papers addressing directly this issue. An important policy implication is however the fact that there is a risk of a two-tier system: emerging developing countries (East Asian, South Asian and China) may attract both investment and trade flows while other less developed economies (in Sub-Saharan Africa) would not.

On the other hand, the literature so far does not provide straightforward and robust results regarding a complementarity between aid and trade flows. There is though a presumption of the possibility of a complementarity between aid and a policy that would reduce domestic distortions in the developing country (provision of a public good, domestic market reforms). On the classical debate of Aid versus Trade, the theoretical arguments would go for Aid, a more direct instrument, rather than market access. The balance might change though if countervailing terms of trade effect are significant (immiserizing Aid) and if there is the possibility of learning through exports (productivity gain for exporting firms that might spillover to non-exporting firms), something that seems relevant for a stylized African economy and remains to be verified on real cases. The reasoning however is only on marginal effects.

The empirical cross country literature, while suggesting interesting insights of some complementarities across policy areas like Trade, FDI and Aid policies, faces however a number of important limitations that may be overcome by more detailed case study analyses. The first one is the fact that most complementarity results are based on measures of flows rather on measures of the policy instruments. This is problematic as many different unobserved factors may affect the relationship between instruments and observed flows.



A second issue is related to the fact that these analyses do not take into account how institutional details may affect the pattern of complementarities across policy areas in a given country. Again, this may appear as quite crucial from a policy implementation point of view.

In the same vein, cross-country analyses give an aggregative view of the policy areas under investigation. First they do not distinguish between various instruments within a given policy area (Trade, FDI or Aid) and therefore give at best an average view of the impact of these instruments and their interactions. Second, they are somehow ill-suited to understand the impact of lagged effects and interactions as often the identification power of the regressions comes more from the inter-country variability dimension than the time variability dimension. Finally they also consider the impact policy areas at the aggregate level of countries without therefore discussing the distributive implications within these countries. This precludes therefore the consideration of political economy dimensions, which again from a policy point of view may be quite important to keep in mind.

Country case study analyses can overcome some of the aggregation problems faced by most cross-country case studies. In particular an important aspect concerns the disaggregation process of various policy instruments. Indeed, policy areas like trade, FDI and Aid policies are in fact multidimensional policy vectors. More formally, for a given case study country  $i$ , policy vectors could be defined as:  $[T_{rdkt}]$ ,  $[F_{rdkt}]$  and  $[A_{rdkt}]$  where T, F and A corresponds respectively to Trade, FDI and Aid policy areas,  $r$  referring to the recipient or host country,  $d$  referring to a donor or source country interacting with  $i$ ,  $k$  referring to a particular policy instrument and  $t$  referring to a time period.

A first aspect of the disaggregation process of the policy vector  $Z \in \{T,F,A\}$  is between various policy instruments. This may have important implications in the sense that it brings into light the issue of substitutability or complementarity between two policy instruments within and across policy areas. First, two different instruments  $Z_k$  and  $Z_{k'}$  within the same policy area  $Z \in \{T,F,A\}$  may indeed have differential impacts when interacting with another policy area  $W \in \{T,F,A\}$ . Think for instance of the case of tariffs versus quantitative restrictions within the trade policy vector T. It is well known that they may have different impacts on the economy. It is then quite likely that they may therefore have also different interactions with another policy vector like F (FDI) or A (Aid).

Second, two instruments  $Z_k$  and  $W_{k'}$  in two different policy vectors  $Z \in \{T,F,A\}$  and  $W \in \{T,F,A\}$  may also generate different forms of complementarities or substituabilities than two other instruments  $Z_{k''}$  and  $W_{k''}$  in their respective policy areas. Disentangling these finely grained forms of interactions and complementarities between policy instruments across policy areas goes beyond analyses based on average values of policy areas and it may be quite important for effective policy implementation.

The disaggregation process of the policy vectors along the source/donor country dimension  $Z_d$  and  $Z_{d'}$  is another important dimension. It should naturally bring into light the question of

the coherence and complementarity of policy areas of these source/donor countries  $d$  and  $d'$ . When this level of investigation can also be disaggregated at the level of policy instruments, it may also reveal how for a given source/donor country  $d$ , different instruments  $k$  within or across policy areas interact with those of another source/donor country  $d'$ .

Finally the time dimension  $t$  is obviously important to exploit as much as possible the dynamics of interactions across policy areas and understand the nature of lags and delays that may appear in a given country  $i$ .

Given this, three interesting issues can be more closely investigated within country case studies. The first one concerns a more precise characterization of the local determinants of the complementarity relations between the policy areas (Trade, FDI and Aid). In particular, country case studies may allow more focus on how other domestic market distortions (like labor or capital markets distortions) and local governance problems (corruption, local capture and politics) may interfere with these policy areas and the implementation of particular instruments within each area. A second dimension is related to distributive and political economy issues. Typically, one may expect from some case studies a more disaggregated view of the impact and interactions of the various policy areas. Understanding then the winners and losers of particular interactions can be important to determine the political feasibility of implementation of policy reforms. Finally, it would be nice to detect from country case studies how the interaction impacts across policy areas diffuse over time within the economy and how they may be affected by temporary or permanent shocks. The general issue in this respect is to identify the importance of lags and delays and the role of expectations of future policy changes in the interactions across policy areas/instruments.

## References

- Amiti M. and K. Wakelin, (2003), Investment liberalization and International Trade, *Journal of International Economics*, 61, 101-126.
- Adam C. and S. O Connell (2004), Aid versus Trade Revisited: Donor and Recipient Policies in the Presence of Learning-by-Doing, *Economic Journal*, 114, 150-175.
- Arvin, M., Cater, B. and S. Choudry, (2000), A causality analysis of untied foreign assistance and export performance: the case of Germany, *Applied Economic Letters*, 7:315-319.
- Barett, C., Mohapatra, S. and D.Snyder, (1999), The Dynamic Effects of US food aid, *Economic Inquiry*, 37(4): 647-656.
- Barett C. and D.G.Maxwell, *Food Aid After Fifty Years: Recasting Its Role*, forthcoming, London: Routledge.
- Belderbos, R. and Sleuwagen, L., (1998) Tariff Jumping FDI and export substitution : Japanese electronics firms in Europe. *Journal of International Economics*, 54(2), 429-448.
- Bergstern, C.F., T. Horst and T.H.Moran (1978), *American Multinationals and American Interests*, The Brooking Institution, Washington, D.C.
- Berthélemy, J.C. and A. Tichit, (2002), *Bilateral Donors' Aid Allocation*, Wider Discussion Paper 2002/123.
- Bhagwati J. and Brecher R., (1980), National Welfare in the Open Economy in the Presence of Foreign Owned Factors of Production, *Journal of International Economics*, pp. 103-115.
- Bhagwati J., Brecher R. and Hatta (1983), The Generalized Theory of Transfers and Welfare: Bilateral Transfers in a Multilateral World, *American Economic Review*, 73, 57-76.
- Bhagwati J., Brecher R. and Hatta (1985), The Generalized Theory of Transfers and Welfare: Exogenous (Policy-imposed) and Endogenous (Transfer-induced) Distortions. *Quarterly Journal of Economics* 3, 697-714.
- Bloningen, B.A. (2001). In search of substitution between foreign production and exports. *Journal of International Economics* 53(1), 81-104.
- Bogart S. and A. Trzeciak-Duval, (2004), "Aid for Trade – Trade for Development II" presented at 5th SUSTRA Workshop, Paris, IFRI, June.
- Brainard L. (1993), An Empirical Assessment of the Factor Proportions Explanation of Multinational Sales, NBER wp n° 4583.

Brakmann S. and C. van Marrewijk, (1998), *The Economics of International Transfers*, Cambridge University Press, Cambridge United Kingdom.

Brecher R. and J. Bhagwati (1981), *Foreign Ownership and the Theory of Trade and Welfare*, *Journal of Political Economy*, 89, 497-511.

Brecher R. and Bhagwati J. (1982), *Immiserizing Transfers from Abroad*, *Journal of International Economics*, 13, 353-364.

Brecher R. and C. Diaz-Alejandro (1977), *Tariffs, Foreign Capital and Immiserizing Growth*, *Journal of International Economics*, 7, 317-322.

Brenton, P. (2003), *Integrating the Least-Developed Countries into the World Trading System : the Current Impact of EU Preferences under Everything But Arms*, World Bank Working Paper.

Candau, F., Fontagné, L. and Jean, S. (2004), *The utilisation rate of preferences in the EU*, paper presented at the 7<sup>th</sup> GTAP conference, Washington DC.

Chipman J. (1974), *The Transfer Problem Once Again*, in G. Horvich and P. Samuelson (eds.), *Trade Stability and Macroeconomics* (Academic Press, New York)

Chichilnisky G., (1980), *Basic Goods, the Effect of Commodity Transfers and the International Economic Order*, *Journal of Development Economics*, 7, 505-519.

Dudley, L. and C. Montmarquette (1976), *A Model of the Supply of Bilateral Foreign Aid*, *The American Economic Review*, 66(1), 132-142.

Fontagné, L. and Pajot, M. (1997), *How Foreign Direct Investment Affects International Trade and Competitiveness: an Empirical Assessment*, CEPII document de travail 97-17.

Fontagné, L. and Pajot, M.(1999), *Foreign direct investment and international trade: complements or substitutes? STI working paper*, DSTI/DOC(99)3, OECD.

Fox, A.K., J.Francois, and P.Londono-Kent, (2003), *Measuring Border Crossing Costs and their Impact on Trade Flows : The United States-Mexican Trucking Case*”, Paper presented at the 6<sup>th</sup> conference on global economic analysis, Den Haag, Netherlands.

Gale D.(1974), *Exchange Equilibrium and Coalition: An Example*, *Journal of Mathematical Economics*, 1, 63-66.

Hatzipanayotou P. and M.S. Michael (1995), *Foreign Aid and Public Goods*, *Journal of Development Economics* , 47, 455-467.

Heller P. (1975), A Model of Public Fiscal Behavior in Developing Countries: Aid, Investment and Taxation, *American Economic Review*, 65, 313-327.

Helpman E. (1984), A Simple Theory of International Trade with Multinational Corporations, *Journal of Political Economy*, 92, 451-472.

Helpman E. (1985), Multinational Corporations and Trade Structure, *Review of Economic Studies*, 52, 443-458.

Helpman E. and P. Krugman (1985), *Market Structure and Foreign Trade*; MIT.

Jepma C. (1991), *E-wide Untying*, International Foundation for Development Economics and Department of Economics, University of Gronigen.

Johnson H. (1967a), The Possibility of Income Losses from Increased Efficiency or Factor Accumulation in the Presence of Tariffs, *Economic Journal*, 77, 151-154.

Johnson H., (1967b), *Economic Policies Toward Less Developed Countries*, London Allen and Unwin.

Jones R., (1970), The Transfer Problem Revisited, *Economica* 37, 178-184.

Jones R., (1975), Presumption about the Transfer Problem, *Journal of International Economics*, 5, 263-274.

Kemp M. and S. Kojima (1985), Tied Aid and The Paradoxes of Donor-enrichment and Recipient-impoverishment, *International Economic Review*, 26, 721-729.

Kemp M. and K. Shimomura (1991), "Trade" or "Aid"?, in A. Takayama, M. Ohyama, H. Ohata (eds.) *Trade; Policy and International Adjustment*, Academic Press. Tokyo.

Keynes J.M.(1929), The German Transfer Problem, *Economic Journal* 39, 1-7.

Lahiri S. and Raimondos-Moller P.(1995), The Welfare Effect ;of Aid under Quantitative Trade Restrictions, *Journal of International Economics* 39, 297-315.

Lahiri S., Raimondos-Moller P., Wong K and A.Woodland (2000), *Optimal Foreign Aid and Tariffs*, Mimeo.

Leontief W. (1936), Note on the Pure Theory of Capital Transfer, in : *Explorations in Economics: Notes and Essay contributed in Honour of F.W. Taussig*(McGraw Hill New York), 84-92.

Li J. and W. Mayer (1990), The Transfer Problem with Supply Effects: Presumptions for Terms of Trade Changes, *Canadian Journal of Economics* 23, 896-907.

Lipsey, R.E. and M.Y. Weiss (1981), Foreign Production and exports in manufacturing industries, *Review of Economics and Statistics*, 63, 488-494.

Lipsey, R.E. and M.Y. Weiss (1984), Foreign Production and exports of individual firms, *Review of Economics and Statistics*, 66, 304-308.

Little, I.M.D, T.Scitovsky and M.FG. Scott (1970) *Industry and Trade in some developing countries*, Oxford, Oxford University Press for the OECD.

Lloyd, T., Mc Gillivray M., Morrissey O. and R. Osei (1998), Investigating the Relationship between Aid and Trade Flows, *CREDIT WP. n° 98\10*.

Lloyd T., McGillivray, M., Morrissey, O. and R.Osei, (2000), Does Aid Create Trade ? An Investigation for European Donors and African Recipients, *The European Journal of Development Research*, 12(1):107-123.

Lloyd, T., M., Morrissey, O. and R.Osei, (2001), Problems with Pooling in Panel Data Analysis for Developing Countries : the Case of Aid and Trade relationships, *Credit Research Paper*, 01/14, University of Nottingham.

McKinley R.D. and R.Little, (1979), The US Aid Relationship : A test of the Recipient Need and Donor Interest Models, *Political Studies*, XXVII(2) : 236-250.

Markusen J. and J. Melvin (1979), Tariffs, Capital Mobility and Foreign Ownership , *Journal of International Economics*, 9, 395-410.

Markusen J. (1984), Multinationals, Multi-Plant Economies, and the Gains from Trade, *Journal of International Economics*, 16, 205-226.

Markusen J. (1997) Trade versus Investment liberalization, *NBER n° 6231*.

Markusen J. (2001), *Multinational Firms and the Theory of International Trade*, Cambridge , MIT Press.

Markusen J. and K. Maskus (2002) , *General Equilibrium Approaches to the Multinational Firm: A Review of Theory and Evidence*, in Harrigan J. (ed), *Handbook of Empirical International Trade* , MIT Press Cambridge.

Markusen J. and T. Venables (1998), Multinational Firms and New Trade Theory , *Journal of International Economics*, 46 (2), 183-203.

Markusen J. and T. Venables (2000), The Theory of Endowment, Intra-Industry and Multinational Trade, *Journal of International Economics*, 52(2), 209-234.

Maxwell S.J. and H.W. Singer, (1979), Food aid to Developing countries : a survey, World Development, 7 : 225-247

McKinley , R.D. and R.Little, (1979), The US Aid Relationship : A Test of the Recipient Need and the Donor Interest Model, Political Studies, 27(2) : 236-50.

Mosley P. (1985), Trade and Aid, in D. Greenaway (ed) Economic Development and International Trade, London Mc Millan.

Morrissey O.(1991), An Evaluation of the Economic Effects of Aid and Trade Provision, Journal of Economic Studies, 28, 104-129.

Morrissey, O. (1993), The Mixing of Aid and Trade Policies, The World Economy, vol.15, pp. 69-84.

Mundell R. (1957), International Trade and Factor Mobility, American Economic Review, 47, 321-335.

Mundell R.,(1960), The Pure Theory of International Trade, American Economic Review, 67-110.

Nilsson, L. (1997), EU and Donor Exports: the Case of the EU countries, Essays on North-South Trade. Lund: Lund Economic Studies, 70, chap 3

OECD (1986), Twenty-five years of development cooperation: a review, Paris, OECD

OECD, P.Walkenhorst and T. Yasui, (2003), Quantitative assessment of the benefits of trade facilitation, TD/TC/WP(2003)31/FINAL.

OECD, (2004a), Export competition issues related to food aid. Main report, COM/AGR/TD/WP(2003)48/REV1, October.

OECD, (2004b), Development Co-operation Report, Statistical annex, [www.oecd.org/dac/stats/dac/dcrannex](http://www.oecd.org/dac/stats/dac/dcrannex)

Ohyama M.(1974), Tariffs and The Transfer Paradox, Keio Economic Studies 11, 29-45.

A.Panagariya (2003),“ Aid through Trade : An Effective Option ? ”, mimeo, August.

Prowse S. (2002), The Role of International and National Agencies in Trade-related Capacity Building, 1235-1261.

Samuelson P.A., (1947), Foundations of Economic Analysis (Harvard University Press, Cambridge, MA).

Samuelson P.A., (1952), The Transfer Problem and Transport Costs : The Terms of Trade when Trade Impediments are Absent, *Economic Journal* 62, 278-289.

Schweinberger A.G. (1990), On the Welfare Effects of Tied Aid, *International Economic Review*, 31, 457-462.

Schweinberger A.G.(2002) Foreign Aid, Tariffs and Non-traded Private or Public Goods, *Journal of Development Economics*, 69, 255-275.

Shaffer G., (2005), Can WTO Technical Assistance and Capacity Building Serve Developing Countries ?, mimeo.

Svensson; R. (1996). Effects of overseas production on home country exports : evidence based on Swedish multinationals. *Westwirtschaftliches Archiv* 132(2), 304-329.

Tajoli L., (1999), The Impact of Tied Aid on Trade Flows between Donor and Recipient Countries, *Journal of International Trade and Economic Development*, 8:4, 373-388.

Thirwall A.P., (1976), When is Trade More Valuable than Aid?, *Journal of Development Studies*, 12, 35-41.

UNCTAD (2003), Trade preference for LDCs: an Early Assessment of Benefits and Possible Improvements, United Nations, New York and Geneva.

Van Wijnbergen S. (1985), Aid, Export Promotion and the Real Exchange Rate: An African Dilemma, CEPR WP n° 88.

Wagner, D.,(2003), Aid and Trade – an Empirical Study, *Journal of the Japanese and International Economies*, 17: 153-173.

J.S. Wilson, C.Mann and T.Otsuki, (2003), Trade Facilitation and Economic Development: Measuring the Impact, World Bank Policy Research Working Paper 2998, World Bank : Washington, D.C.

J.S. Wilson, C.Mann and T.Otsuki, (2004), Assessing the Potential Benefit of Trade Facilitation : a Global Perspective, World Bank Policy Research Working Paper 3224, World Bank : Washington, D.C.

White H. (1992), The Macroeconomic Impact of Development Aid : A Critical Survey, *Journal of Development Studies*; 28, 163-240.

WTO, INTERNATIONAL TRADE STATISTICS 2004, Appendix tables,  
[http://www.wto.org/english/res\\_e/statis\\_e/its2004\\_e/its04\\_appendix\\_e.htm](http://www.wto.org/english/res_e/statis_e/its2004_e/its04_appendix_e.htm)

WTO/OECD, Joint WTO/OECD report on trade-related assistance and capacity building



Yano M.(1983), The Welfare Aspect of the Transfer Problem, *Journal of International Economics*, 15, 277-689.

Yano M. and J. Nugent (1999), Aid, Nontraded Goods, and the Transfer Paradox in Small Countries, *American Economic Review*, 89, 431-449.

Yassin I.H.(1982), When is Trade More Valuable than Aid ? Revisited, *World Development* 10, 161-166.