

Reshaping aid geographical allocation

The role of immigration in Spanish Official Development Assistance

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Abstract. The intensification of the international migration flows sent by developing countries and received by developed countries is ‘reshaping’ the aid map of the 21st Century. However, to date the influence of immigration on the geographical distribution of aid has been little studied. This article proposes a general framework for analyzing the extent to which immigration flows affect the allocation of Official Development Assistance (ODA). We apply this model to the case of Spain (a country that, in a short time, became one of the top-ten bilateral donors and one of the main recipients of immigration in Europe) during the period 1998-2009 (prior to the current economic crisis, which has temporarily slowed down the immigration flows and drastically reduced the ODA budget). The estimations reveal that immigration is relevant both to the selection of aid-partners, and to the allocation of aid-quotas, thus ‘reshaping’ the geographical strategy of Spain’s public aid.

Key words. Aid geographical allocation, Official Development Assistance (ODA), international migrations, immigration, Spain.

Introduction

The allocation of international public aid should be coherent with the officially proclaimed international development agenda. Although few policy-makers would deny this assertion, the truth is that the debate on the ‘geopolitics of international aid’ has been in force since the beginning of the co-operation system. Just a decade after the launch of the first aid programs, leading economists such as the Nobel laureate Gunnar Myrdal warned that the only way to allocate resources in a purely philanthropic way was to give up the ‘bilateralism’ of the aid system and to delegate the management of the resources in a single multilateral agency (Myrdal 1956: 124). Indeed, if the international donor community shared the same ‘altruistic’ motivations, it would probably be enough to manage aid through a single multilateral agency.

Nevertheless, the prolific literature on the geographical distribution of Official Development Assistance (ODA) suggests that donors do not allocate aid for purely altruistic reasons, and neither are they particularly consistent with their international development commitments. In reality, aid is distributed in a fairly ‘eclectic’ way, so that developing countries with greater political, historical and cultural affinities with donors, as well as countries with greater economic and geo-strategic importance, receive more aid than other countries with similar — or greater— levels of need. As a result, this lack of coherency between the overall objective of aid (‘promoting international development’) and the criteria that guide the distribution of resources (a mix of altruistic and partisan motivations) cuts down the efficiency of aid and represents a ‘constituent defect’ which is difficult to eradicate.

Despite the strength of this debate, it is surprising that researches have paid limited attention to one of the most dynamic variables of the current globalization process: the migratory flows originated in developing countries and received by (developed) donor countries, which have been of great concern to the latter during the so-called ‘age of migration’ (Castles and Miller 2003). In this sense, we wonder whether the reception of immigrants from countries that are not linked historically to the donor are changing the definition of the traditional foreign policy priorities, thus affecting ODA policies, which can be used to support the donors’ immigration interests.

The case of Spain is particularly interesting, as immigration has been, since the 1990s, a phenomenon of great demographic and economic importance.¹ In a short time, Spain became one of the top-ten OECD donor countries and one of the main recipients of immigration in Europe (in 2010 the foreign population accounted for 12.3% of the total Spanish population

and half of these immigrants came from developing countries).² In response to this reception of immigrants, Spain added some of these ‘emigrating countries’ to her traditional list of aid-partners (mostly, countries with historical and cultural links with Spain such as Equatorial Guinea, the Philippines, Morocco and Latin American countries). Consequently, the Spanish aid map expanded as the number of ‘prioritised’ countries increased.

The aim of this paper is to analyze the extent to which the intensification of migration flows from developing countries to OECD donor countries can change the geographical allocation of foreign aid –a change that may be especially affecting those countries with large immigration populations, such as France, United Kingdom, Germany, USA and Spain. For this purpose, we propose a general framework of analysis, and we apply it to the Spanish ODA allocation case, in the period 1998-2009 (prior to the current economic crisis, which has temporarily slowed down the immigration flows and severely reduced the ODA budget). The paper is structured as follows: in the first section we briefly review the aid allocation literature and the (neglected) link with international migrations. The second section develops the analytical model of aid allocation and migrations. In the third section we apply this model to the specific case of Spain. Finally, we summarise the main conclusions of the analysis and propose economic policy criteria to integrate the aid-immigration relation in a more efficient geographic strategy of aid allocation.

1. The aid allocation literature and the (neglected) link with international migrations

The analysis of the aid geographical allocation started in the late 1960s with the aim of understanding and improving the distribution of the scarce international resources devoted to the progress of developing countries³. The early studies tried to establish the methodological

bases for the analysis of the variables that determine the donors' distributive patterns, thus developing the theoretical framework of the initially denominated *recipients' needs versus donor's interests approach*. Nevertheless, this dichotomy between a 'developmental' model of aid allocation and an 'instrumental' one did not fit in with the complex reality of the donors' decisions. This is the reason why most recent models assumed that donor Governments distribute their resources according to different variables –given a predetermined aid budget–. Three explanatory factors have been identified: *i)* the relative needs of recipient countries; *ii)* the economic and geo-strategic interests of donors; and *iii)* the recipient countries' capacity to efficiently use aid.

These 'integrated' models of aid allocation adopt the following general expression:

$$A_t = f(N_{jt}, I_{jt}, G_{jt}); \quad j = 1, \dots, J \quad [1]$$

where A_t is the donor's aid budget in period t ; N_j is a vector of variables that explains the level of necessity of the recipient country j ; I_j is a vector of variables that explains the donor's interests on the recipient country j ; and G_j is a vector of determining variables of aid effectiveness.

Despite the abundant empirical literature generated in the last five decades, few authors have developed theoretical models of aid geographical allocation. The seminal contribution of Dudley and Montmarquette (1976) adopted a microeconomic approach, considering the donor's aid as a good that is indirectly consumed by its citizens. The basic assumption is that '[...] people usually give because they expect to get something in return' (Dudley and Montmarquette 1976: 133). Thus, donors expect that aid-partner countries will support their

foreign policies, besides the altruistic ‘satisfaction’ they derive from helping developing countries. This approach gave rise to other theoretical models, such as the contributions of Trumball and Wall (1994), Wall (1995), Tarp *et al.* (1999), Feeny and McGillivray (2004) and Tezanos (2008b).

The early empirical studies used cross-section regression analysis (for example, Levitt 1968; Mckinlay and Little 1977; Maizels and Nissanke 1984), and later contributions adopted increasingly sophisticated econometric models with panel data sets and limited dependent variables (such as Tarp *et al.* 1999; Alesina and Weder 2002; Neumayer 2003; Berthélemy and Tichit 2004; Isopi and Mavrotas 2006; Berthélemy 2006; Tezanos 2008b; and Szent-Iványi 2012). Overall, the empirical studies have contributed to a better understanding of the patterns of aid giving of different bilateral and multilateral donors, who combine altruistic, instrumental and technical (efficiency) considerations. Although there are important differences among donors, the recent empirical studies offer seven consensual results that depict the pattern of aid allocation in the 21st Century (Tezanos 2008a: 26-27):

- i)* Foreign policy interests –both economic and geo-strategic– strongly influence the aid allocation decisions, although there has been an increasing ‘developmental’ concern since the adoption of the Millennium Development Goals (MDG).
- ii)* Middle income countries receive a ‘disproportionate’ amount of resources –relative to their ‘aid needs’– due to the donors’ economic and political interests, and the historical and cultural links. This trend has become less evident in recent years due to the emphasis of the MDG agenda on the poorest countries.
- iii)* Aid especially benefits small countries –the so-called ‘small countries bias’.

- iv) Bilateral donors give greater aid than multilateral ones to small and relatively more advanced developing countries, due to the donors' foreign policy interests –although northern European countries are an exception to this general rule.
- v) Some donors believe that the impact of aid depends upon the quality of governance and institutions of the recipient countries. In this way, donors try to link aid allocation and effectiveness, although in practice there are important differences among donors' approaches. This increasing emphasis on governance acts to the detriment of the allocations to the so-called 'difficult partnership countries', where aid is potentially less effective.
- vi) Donors allocate aid in a 'gregarious' way, which is a consequence of the lack of geographical coordination that generates the existence of aid under- and over-allocated countries –the so-called 'aid darlings' and 'aid orphans'.
- vii) At the same time that the MDG agenda invigorates the 'slogan' of poverty reduction, there is a resurgence of other considerations related to 'international security' that explains the high aid allocations to countries such as Afghanistan and Iraq.

Overall, despite this relatively long and rich debate, the literature has paid limited attention to the increasing importance of immigration as a determining factor of the geographical allocation of aid. However, in an early study on the historical trends of foreign aid, Hjertholm and White (2000) claimed that since the 1990s the criteria for bilateral allocation decision was shifting towards new objectives, such as mitigating the root causes of the heightened migration flows from developing countries to OECD countries. In this line, Xenogiani (2006) –in her review for the OECD on the relation between migrations and foreign aid– argued that aid was a widely used policy to fight the causes of migration in developing countries,

although ‘[...] overall the connections between aid, poverty reduction and migration reduction have not been proved empirically’ (Xenogiani 2006: 29).

In line with the general literature on aid allocation, researchers have identified three underlying –and not necessarily conflicting– policy motives for an increased aid support towards emigrating countries. Firstly, the ‘developmental motive’ of supporting the emigrating countries (understanding immigration flows as an additional indicator of the degree of aid need). Secondly, the ‘instrumental motive’ of supporting the donor’s migration management interests by preventing further emigration flows. And thirdly, the ‘political motive’ of paying attention to the increasing political influence of immigrants’ lobbies in the donor country and alleviating the internal tensions that arise from the entry of uncontrolled immigration.

Despite this general neglect of the international migration flows, three notable exceptions have specifically considered the role of immigration in the aid allocation decisions:

Lahiri and Raimondos-Moller (2000) developed a political-economic model of aid allocation based solely on the immigrants’ political influence on the donor country. The model is based on the ‘political contributions approach’ and it assumes that each national-immigrant group in the donor country lobbies the Government to allocate more aid to its country of origin, and the Government accepts political contributions from lobby groups.⁴ As the amount of these contributions is positively related to the number of people of each national-immigrant group, the model predicts that the greater the number of immigrants from a specific developing country, the greater the aid that the Government will allocate to this country.

Czaika (2005) used a political economic framework to model the influence of immigrants (living permanently in the donor country) and asylum seeker (immigrants without permanent residence permits) on the aid allocation pattern of Germany. Using an integrated model of aid allocation (such as the one expressed in equation [1]) for the period 1991-1999, he estimated a positive and significant impact of immigration in the German ODA allocation (with an elasticity of about 0.11). This papers concluded that immigrants ‘[...] play a decisive role in forming public opinion, and through this, in shaping the political aid allocation decision-making process of the donor country’ (Czaika 2005: 301).

Moreover, Czaika and Mayer (2011) studied the influence of ‘refugee migration movements’ on the allocation of long-term aid and short-term (emergency) aid by 18 OECD donor countries in the period 1992-2003. They distinguished between three types of forced migrants: internally displaced persons that stay in their countries of origin, cross-border refugee that flee to neighbouring countries, and asylum seekers in OECD countries. Their estimates suggested that donors gave emergency aid to all types of forced migrants, but they predominantly allocated long-term aid to the sending-countries of asylum seekers. Overall this study suggested that ‘[...] bilateral aid allocation policies are primarily focused on countries of origin [which] indicates that the underlying interests of donor states seems to be more focused on migration prevention than on altruistic burden-sharing motives’ (Czaika and Mayer 2011: 468).

Finally, it should be mentioned that the opposite relation between aid and migrations (i.e. how the reception of aid may encourage the immigration flows to donor countries) have been even less studied. In this line, Berthélemy *et al.* (2009) tried to fill in this gap investigating the impact of aid on immigration. Assuming the existence of the so-called ‘hump-shaped pattern’

of migration (i.e. the inverse-U relation between *per capita* income in the sending countries and their propensity to migrate⁵), the estimation of a model of two simultaneous equations identified a bi-directional interaction between aid and migration. On one hand, bilateral aid influences migration by enhancing the information about labour market conditions in the destination country (the ‘attraction effect’). On the other hand, total aid correlates with migration through increasing wages in countries of origin (the ‘push effect’). These authors computed the *per capita* income threshold above which emigration and income become substitutes (approximately US \$7,300 in PPP 2000 prices) and they argue that for countries below this threshold additional aid –provided that it is effective in stimulating growth– will increase emigration flows.

2. A general model for understanding the influence of immigration in the aid geographical allocation decisions

We propose a general framework for analyzing the influence of immigrations flows in the geographical allocation of a donor country that follows the pioneer contribution of Dudley and Montmarquette (1976) by focusing the analysis on the economic behaviour of the decision-makers responsible for aid allocation. Our model conceives the aid geographical allocation as a *two-step decision process*, taking into account the censored nature of the dependent variable: given a predetermined annual amount of aid, in the first stage the donor Government chooses the group of partner countries that will receive bilateral aid; and, in the second stage, the donor determines the aid-quotas of each partner country.

(a) First decision stage: selection of aid-partner countries

We analyse the *selection stage* according to the following *attraction index*⁶:

$$\Lambda_{jt} = e^{\alpha_j} \cdot N_{jt}^{\beta} \cdot I_{jt}^{\delta} \cdot G_{jt}^{\varphi} \cdot H_{jt}^{\gamma} \cdot M_{jt}^{\psi}$$

$$0 \leq \alpha_j \leq 1; \quad 0 \leq \beta \leq 1; \quad 0 \leq \delta \leq 1; \quad 0 \leq \varphi \leq 1; \quad 0 \leq \theta \leq 1 \quad [2]$$

where Λ_{jt} measures the interest of the donor in a developing country j . N , I , G , H and M are, respectively, vectors of explanatory variables regarding the recipient countries' needs, the donor's interests, the determining factors of aid effectiveness, the allocation's path dependence (history) and the immigration flows received by the donor. Moreover, β , δ , φ , θ and ψ are sets of weights, all of them constrained within the interval $[0, 1]$ in order to reflect the possible existence of decreasing marginal returns⁷. The parameter α_j measures the fixed effects associated with each recipient country that are not determined by the explanatory variables.

Once the donor estimates the attraction indexes for each partner country, the following selection rule is applied:

$$D_{jt} = 1 \quad \text{if} \quad \Lambda_{jt} \geq A_t^g$$

$$D_{jt} = 0 \quad \text{if} \quad \Lambda_{jt} < A_t^g$$

$$\Pr(D_{jt} = 1) = \Pr(\Lambda_{jt} \geq A_t^g) = \Pr(\Lambda_{jt} - A_t^g \geq 0); \quad -\infty < g < \infty \quad [3]$$

where $D_{jt} = 1$ indicates that country j is chosen as a partner and A_t is the predetermined amount of bilateral ODA geographically allocable among J possible developing countries.

Recipient countries are ranked according to their respective scores on the attraction indexes, which determine their selection probabilities, so that those above the selection threshold A_t ⁹ are finally chosen as aid-partners. The result of choosing the j -country as a partner is thus interpreted as the difference in the utility obtained by the donor between giving and not giving aid to this country, being positive in the event of selection and zero or negative otherwise.

The parameter ϑ reflects the donor's *aversion/predisposition to disperse* its aid budget among the J eligible countries: if $\vartheta > 0$, there is *aversion* to dispersion (as ϑ tends to ∞ , the dispersion of the resources is penalised and the selection probability decreases); on the other hand, if $\vartheta < 0$, there is *predisposition* to dispersion (as ϑ tends to $-\infty$, both the dispersion of the resources and the probability of being chosen as an aid-partner increases). Also, if $\vartheta = 0$, the selection rule does not depend on the volume of aid.

Substituting [2] into [3] and using logarithms yields the following linear probability function:

$$\Pr(D_{jt} = 1) = \Pr(\alpha_j + \beta \ln N_{jt} + \delta \ln I_{jt} + \varphi \ln G_{jt} + \theta \ln H_{jt} + \psi \ln M_{jt} - \ln k - \vartheta \ln A_t \geq 0)$$

$$j = 1, 2, \dots, J$$

$$t = 1, \dots, T \quad [4]$$

Hence, we expect the following relations in the process of selecting aid-partners:

$$\frac{\partial \Pr(D_{jt} = 1)}{\partial N_{jt}} > 0; \quad \frac{\partial \Pr(D_{jt} = 1)}{\partial G_{jt}} > 0; \quad \frac{\partial \Pr(D_{jt} = 1)}{\partial I_{jt}} > 0;$$

$$\frac{\partial \Pr(D_{jt} = 1)}{\partial H_{jt}} > 0; \quad \frac{\partial \Pr(D_{jt} = 1)}{\partial M_{jt}} > 0 \quad [5]$$

The probability of being selected as an aid-partner depends on, simultaneously and positively, the developing country's relative level of need, the interest it has for the donor's foreign policy, the factors determining aid effectiveness, the allocation's path dependence, and the immigrations flows received by the donor.

(b) Second decision stage: allocation of aid-quotas

Once a subset of K -partner countries has been selected (being $K \leq J$), the donor Government decides the specific quotas of each country in the ODA budget:

$$a_{jt} = \frac{A_{jt}}{A_t} \leq 1 \quad [6]$$

where a_{jt} measures the share of the j -country in the donor's aid and A_t is the total amount of bilateral ODA geographically allocable among K -recipient economies: $A_t = \sum_{j=1}^K A_{jt}$.

We define the donor's objective function for aid allocation as follows:

$$\Phi_a = \sum_{j=1}^K \left(a_{jt}^{\alpha_j} \cdot N_{jt}^{\beta} \cdot I_{jt}^{\delta} \cdot G_{jt}^{\varphi} \cdot H_{jt}^{\theta} \cdot M_{jt}^{\psi} \right)$$

$$0 \leq \alpha_j \leq 1; \quad 0 \leq \beta \leq 1; \quad 0 \leq \delta \leq 1; \quad 0 \leq \varphi \leq 1; \quad 0 \leq \theta \leq 1; \quad 0 \leq \psi \leq 1 \quad [7]$$

where the variables are interpreted as in previous equations. Again, the parameters α_j , β , δ , φ , θ and Ψ are constrained within the interval $[0, 1]$ so as to indicate the possible existence of decreasing marginal returns.

The aim of the donor Government is to maximise the total utility derived from the aid allocations to K -partner countries, subject to the budget constraint (assuming that the whole aid budget is disbursed):

$$\text{s.t.} \quad \sum_{j=1}^K a_{jt} = 1 \quad [8]$$

This restriction implies that a marginal increase in the aid quota assigned to a specific partner country will decrease the share of at least one other country.

The *lagrangian* that results of maximizing [7] subject to [8] is:

$$\text{Max}_{a_{jt}} L = \sum_{j=1}^K \left(a_{jt}^{\alpha_j} \cdot N_{jt}^{\beta} \cdot I_{jt}^{\delta} \cdot G_{jt}^{\varphi} \cdot H_{jt}^{\theta} \cdot M_{jt}^{\Psi} \right) + \lambda \left(1 - \sum_{j=1}^K a_{jt} \right) \quad [9]$$

The first order conditions are:

$$\frac{\partial L}{\partial a_{jt}} = \alpha_j \cdot a_{jt}^{\alpha_j-1} \cdot N_{jt}^{\beta} \cdot I_{jt}^{\delta} \cdot G_{jt}^{\varphi} \cdot H_{jt}^{\theta} \cdot M_{jt}^{\Psi} - \lambda, \quad \text{and}$$

$$\frac{\partial L}{\partial \lambda} = 1 - \sum_{j=1}^K a_{jt} \quad [10]$$

Working out the value of a_{jt} we get the aid shares received by each developing country:

$$a_{jt} = \left(\frac{\lambda}{\alpha_j \cdot N_{jt}^\beta \cdot I_{jt}^\delta \cdot G_{jt}^\varphi \cdot H_{jt}^\theta \cdot M_{jt}^\psi} \right)^{\frac{1}{\alpha_j - 1}} = \left(\frac{\alpha_j \cdot N_{jt}^\beta \cdot I_{jt}^\delta \cdot G_{jt}^\varphi \cdot H_{jt}^\theta \cdot M_{jt}^\psi}{\lambda} \right)^{\frac{1}{1 - \alpha_j}} \quad [11]$$

Taking logarithms in equation [11] yields the linear function:

$$\ln a_{jt} = \alpha_j^* + \beta^* \ln N_{jt} + \delta^* \ln I_{jt} + \varphi^* \ln G_{jt} + \theta^* \ln H_{jt} + \psi^* \ln M_{jt}$$

$$j = 1, 2, \dots, K$$

$$t = 1, \dots, T \quad [12]$$

where:

$$\alpha_j^* = \frac{\ln\left(\frac{\alpha_j}{\lambda}\right)}{1 - \alpha_j}; \quad \beta^* = \frac{\beta}{1 - \alpha_j}; \quad \delta^* = \frac{\delta}{1 - \alpha_j}; \quad \varphi^* = \frac{\varphi}{1 - \alpha_j}; \quad \theta^* = \frac{\theta}{1 - \alpha_j}; \quad \psi^* = \frac{\psi}{1 - \alpha_j}$$

The expected relations in the allocation of the aid-quotas are:

$$\frac{\partial a_{jt}}{\partial N_{jt}} > 0; \quad \frac{\partial a_{jt}}{\partial I_{jt}} > 0; \quad \frac{\partial a_{jt}}{\partial G_{jt}} > 0; \quad \frac{\partial a_{jt}}{\partial H_{jt}} > 0; \quad \frac{\partial a_{jt}}{\partial M_{jt}} > 0 \quad [13]$$

To sum up, the whole process of aid allocation is structured in two consecutive decisions – given a predetermined aid budget–, which clearly consider the potential influence of

immigration flows: firstly, the donor Government chooses the group of aid-partner countries based on the ‘attraction’ that each country exerts over him (thus computing the selection probabilities described in equation [4]). Secondly, for those countries previously selected, the donor Government distributes the aid budget across the group of partner countries (applying the aid-quotas defined in equation [12]). This specification allows us to estimate separately both decisions and to consider a different set of explanatory variables in each decision stage⁸.

3. Case of study: Spain

Equations [4] and [12] establish a general framework for studying the influence of international migrations in a donor’s aid allocation decisions. We now apply this general model to the specific case of Spain. For this purpose we firstly review the studies on the geographical allocation of Spanish aid. After that, we identify the ‘determining factors’ of the Spanish aid allocation and explain the estimation procedure. And, finally, we present the main results of the estimation.

(a) Studies on the geographical allocation of Spanish aid

Spain’s ODA has been unusually concentrated on middle-income countries due to its special orientation towards Latin America and North Africa (the Spanish former-colonies). Despite this unusual geographical specialization, only three pieces of research have particularly studied this donor’s pattern of aid giving (Sánchez Alcázar 1999; Alonso 1999; and Tezanos 2008b). Other studies have compared the allocation patterns of different donors, using ‘standard’ models of analysis –applying the same general model to different bilateral and multilateral

donors–, although few of them have specifically looked into the case of Spain (such as Alesina and Weder 2002; Berthélemy and Tichit 2004; and Isopi and Mavrotas 2006).⁹

Overall, these studies characterised an ‘eclectic’ pattern of Spanish aid allocation that combines both recipient needs and foreign policy interests, but prioritizing its particular economic and cultural links with its former-colonies. The Spanish pattern of aid giving shows some similarities with those of the USA, Japan and France –which are also strongly determined by their preferences towards their respective geographical interests– and differs greatly from those of the Scandinavian countries, the Netherlands and Canada –which are, to a larger extent, oriented towards the developing countries with the greatest needs.

(b) Determining factors for Spanish aid allocation

Spain’s aid allocation decisions depends on several variables that, for reasons of simplicity, we group into five explanatory factors: *i*) recipient countries’ needs, *ii*) Spain’s foreign policy interests, *iii*) aid effectiveness determinants, *iv*) allocation’s path dependence, and *v*) immigration flows received by Spain.

Regarding the recipient countries’ relative needs, the Spanish *Aid Law* (1998) established that the main objective of aid is to contribute to the ‘eradication of world poverty, in all its manifestations’ (1st article) and, therefore, aid should be allocated to the ‘less economically and socially developed countries’ (5th article).

With regard to foreign policy interests, the Spanish *Aid Law* clearly establishes that the geographical priorities are ‘Latin American countries, the Arab countries of North Africa and

Middle East, as well as other less developed countries that maintain special historical and cultural links with Spain' (6th article). These historical links are determined by a series of cultural and institutional affinities, such as language, religion and legislative tradition; factors that Spain has considered facilitate more effective co-operation relations.

Furthermore, Spain may be stimulating its trade and investment interests through the allocation of aid to its main economic partners. In fact, this was the original aim of the Development Assistance Fund (FAD), which was set up in 1976 in order to foster the exports of Spanish enterprises by means of tied concessional loans to developing countries.

Regarding the determining factors of aid effectiveness, the international community has increasingly reached a consensus on the significance of the recipient countries' political and institutional environment in the development process and the effectiveness of aid¹⁰. Good governance has since 1989 been one of the main concerns of the DAC, which points out the existence of a '[...] vital connection between open, democratic and accountable political systems, individual rights and the effective and equitable operation of economic systems'¹¹. In particular, Spanish aid should promote good policies, as it is expressly ratified in the *Aid Law*.

With regard to the aid's path dependence, the 'inertial effect' exerted by previous allocations has several explanations:

- Donors tend to co-operate with a steady group of partner countries so as to minimise aid administration costs (because adding new partners means incurring additional expenses). Moreover, the donor's management may benefit from 'learning economies', based on previous experiences of assisting the same group of countries, which lead to increased

administrative efficiency levels. Spain's effort to acquire greater administrative capacity in its 'priority countries' determines, to some extent, these countries' future probabilities of being aid recipients –and, in the end, their permanence in the list of priorities¹².

- The donor is responsible for providing its partners with stable assistance in order to generate long-term sustainable development processes –provided that the terms of co-operation are fulfilled–. In this way, Spain is emphasizing the use of program aid (instead of short-term projects) and new aid instruments (such as global funds, budget support and sector wide approaches), which have longer-term perspectives.
- The inertia is led by previous experiences where aid was shown to be particularly effective.
- Long-running political commitments between Spain and recipients have an outstanding importance in the allocation process and contribute to an additional factor of stability, as it is especially complicated to retract resources from a long-running aid-partner.

As regards the immigration flows received by Spain and sent by developing countries, the Spanish aid response to immigration flows may be supporting the three different motivations previously explained ('developmental motive', 'instrumental motive' and 'political motive')¹³. In this way, new demand factors (greater importance of the aid needs of those countries that are sending migrants to Spain) and supply factors (Spain's own instrumental and political interests, as aid donor and immigrant recipient country) are taking shape, and affecting the pattern of aid giving.

The importance of immigration to Spanish ODA policy was reflected in the Aid Plan, which included among its 11 sector priorities a specific sector devoted to migration and development. The Plan's point of departure was that '[...] the fight against poverty is an end in itself, its cause not immediately related to migration, and a conviction that migration must be

the upshot of a free decision, a personal option, and not of need' (MAEC, 2009: 23). From this premise, the Plan stated that the general objective of this sector was '[...] to promote the positive effects between migration and development', and it never mentioned the interest of Spain to control the immigration flows. Consequently, Spanish ODA disbursements should not be linked –at least officially– to the immigration policy.

In the case of Sub-Saharan Africa, the link between the Spanish aid policy and the immigration policy has been particularly explicit in recent years. Thus, the two *Africa Plans* approved to date (for the periods 2006–2008 and 2009–2012) defined the Spanish foreign policy towards this region, including the aid policy. The first Plan identified 27 African countries as particularly relevant to Spain; 10 of these countries were also especially important for Spain in terms of the intensity of the immigration flows.¹⁴ The second Africa Plan reduced to 25 the number of priority countries, but did not alter the inclusion of those Sub-Saharan countries that were sending migrants to Spain.

(c) Econometric procedure

The estimation of the Spanish aid allocation pattern requires us to tackle the *censored nature* of ODA allocations (i.e. the exclusion of some developing countries from Spanish assistance implies that aid is partially continuous with positive probability mass at the value of zero). In this sense, aid flows can be represented by the selection of a *threshold* –which is a *latent variable*– where the donor starts to disburse positive amounts of aid (see the *attraction index* defined in equation [2]). If the observations for $a_{jt} = 0$ were excluded from the sample, the estimates will be biased and inconsistent, as would be the case of an *ordinary least square* estimation. This is the reason why *limited dependent variable regression models* do not omit

these null observations, allowing the ‘latent’ decision of excluding those countries that lie under the threshold level to be analyzed¹⁵. Thus, the present analysis uses a two-part model for the estimation.

We estimate the *aid selection stage* defined in equation [4] by means of the following regression function with a binary dependent variable and a panel data set¹⁶:

$$\Pr(D_{jt} = 1) = \alpha_j + \beta \ln N_{jt} + \delta \ln I_{jt} + \varphi \ln G_{jt} + \theta \ln H_{jt} + \psi \ln M_{jt} + u_{jt} \quad [14]$$

where $\alpha_j, \beta, \delta, \varphi, \theta$ and ψ are the parameters to estimate.

We estimate the *aid share stage* defined in equation [12] by means of the following dynamic panel data regression function:

$$a_{jt}^* | (D_{jt} = 1) = \alpha' + \alpha'_j + \beta' \ln N_{jt} + \delta' \ln I_{jt} + \varphi' \ln G_{jt} + \theta' \ln H_{jt} + u_{jt} \quad [15]$$

$$\begin{aligned} a_{jt} &= a_{jt}^* && \rightarrow && \text{if} && D_{jt} = 1 \\ a_{jt} &= 0 && \rightarrow && 0 && \text{otherwise} \end{aligned}$$

where the variables are defined as in previous equations and $a_{i,j}^*$ represents the potential aid endowments.

Furthermore, the model of the second decision stage includes an explanatory variable that is not strictly exogenous (i.e. it is correlated with past or actual realizations of the error term). Consequently, the assumptions of the classic regression model are not satisfied, which leads to biased estimations. This is the case of the aid inertia variable (the lag of the dependent

variable), which implies a problem of *endogeneity*. The way to solve this problem is to apply consistent estimation methods that take into account fixed-effects and endogenous independent variables. Instrumental variable models, which replace non-strictly exogenous variables by strictly exogenous instrumental variables, are generally used in these cases; the instruments are correlated with the explanatory variables and turn out to be orthogonal to the error term. Dynamic regression models with panel data are estimated by the generalised method of moments (GMM), proposed by Arellano and Bond (1991) as a particular case of instrumental variable models. The advantage of the GMM is the use of internal instruments that may include lagged values of the non-exogenous regressors, leading to an improvement of the estimation results.

We use the system GMM proposed by Arellano and Bover (1995), and Blundell and Bond (1998), instead of the difference GMM initially proposed by Arellano and Bond (1991). The latter transforms the model by doing first differences to remove unobserved fixed-country specific effects, and instruments the non-strictly exogenous explanatory variables by a moment condition's matrix. On the other hand, the system GMM makes up two equations: the original equation in levels and the first-difference equation; this system, free from correlated fixed effects, allows us to use more instruments and, consequently, improves the efficiency of the estimation¹⁷. Until now, the system GMM has not been applied to analyze aid geographical allocation patterns.

The model is estimated by the econometric software STATA, with four additional commands that optimise the estimation¹⁸: *i*) White's standard errors, which are robust to arbitrary heteroskedasticity for the same country¹⁹; *ii*) small sample correction for the covariance matrix estimation; *iii*) restriction of the matrix of instruments, creating an instrument for each

variable and lag distance, rather than an instrument for each period, variable and lag distance, so, in small sample sizes, it reduces the bias that stems from the fact that the number of instruments approaches (or exceeds) the number of observations,; and *iv*) two-step estimations, applying Windmeijer's finite samples correction in order to eliminate standard errors biases. Finally, in order to check the validity of the instruments matrix in levels, we carry out the Sargan and Hansen hypothesis tests, as well as the Arellano-Bond test for autocorrelation of the idiosyncratic effect (if this kind of autocorrelation exists, the use of lagged values as instruments will be invalidated).

(d) Measurement of the dependent variable: Spanish bilateral ODA

We analyze the *bilateral resources* classified by the DAC as *Official Development Assistance* (ODA). As Spain does not report on commitments, the study uses gross aid disbursements. Moreover, *emergency aid* is subtracted from the ODA disbursements because it is assumed to be disbursed to countries under emergency situations in an 'additive' way –i.e. in addition to the resources that were already allocated to them–, its geographical distribution being independent of the previously resolved one.

With regard to *debt relief actions*, these multilateral programs impose a specific plan of execution, where individual donors cannot exert direct influence on the geographical orientations²⁰. However, debt forgiveness are not strictly *exogenous* from each bilateral donor's process of allocating aid, as donors could bring forward the amount of resources previously assigned to the countries favoured by debt cancellations. In fact, multilateral debt programs specify detailed time schedules for the relief flows, which are often negotiated in international forums before bilateral donors decide the allocation of their own resources.

Despite this fact, the Spanish allocation has occasionally been affected by major debt actions²¹, partially because debt reliefs are managed by the Ministry of Finance independently of the Ministry of Foreign Affairs and Co-operation. This highly independent management implies a lack of coordination between both Ministries, which consequently makes it difficult to anticipate the eventual aid allocation to those countries that benefit from debt relief. Thus, we subtract debt actions from the ODA disbursement as we consider that the resulting amount is a better approximation of the resources finally allocated by aid decision-makers.

Once the Spanish ODA gross disbursements are obtained —netted of emergency aid and debt reliefs— the dependent variable of the *aid-partners selection stage* is computed by means of a dummy variable that classifies developing countries into two possible categories: ‘ $D = 1$: selected partner country’ and ‘ $D = 0$: otherwise’. The classification rule is the existence of a ‘significant’ disbursement of aid. As McGillivray and Oczkowski (1992) first pointed out, it is convenient to use a ‘minimum threshold’ of aid receipts to compensate for the limited impact of highly scattered aid allocations that result in a certain number of recipients with particularly low shares. While choosing a specific threshold level can, ultimately, be an arbitrary procedure, it is especially convenient in the case of Spanish ODA, given the high level of geographical dispersion. Therefore, the first-step estimation considers a partner country only if it receives, at least, a 1% share of Spain’s ODA. Otherwise, the *logit* regression would be seriously unbalanced, with a greater share of category 1 (i.e. the number of selected countries is greatly superior to the number of non-selected ones²²), over-estimating the probabilities of being selected²³.

We measure the dependent variable of the *aid share stage* as each partner country’s quota in the predetermined annual amount of Spanish aid. This definition in percentage terms has two

relevant virtues: it eliminates the bias introduced by the comparison of figures coming from different years, as it is possible to use gross disbursements data in current dollars; and it avoids bias that stems from the fact that the Spanish aid budget steadily increased until 2008.

(e) Measurement of the explanatory variables

The selection of the explanatory variables follows three criteria: first, it includes those variables that best capture the peculiarities of Spanish ODA policy; second, it is guided by the literature review of previous studies on aid allocation; and third, from a more practical perspective, it tries to both maximise the data available for developing countries (avoiding in this way a sample selection bias due to a non-random omission of data), and to avoid informative redundancy (that may cause multicollinearity problems). **Table 1** lists the variables included in the analysis and **Appendix 1** shows the descriptive statistics.

i) Recipients' countries needs

We use the *per capita GDP* as an indicator of the average economic welfare of the recipient societies. This allows us to test the existence of a 'progressive distributional criterion'.

We include recipient countries' *population* sizes in order to test the sensitivity towards the most populated countries. Given the special interest of Spain in its former colonies (the majority of which were, except Mexico, Philippines and Colombia, countries of fewer than 45 million inhabitants in 2009), it tests the existence of a *small countries bias* (i.e. whether the population coefficient is smaller than 1).

Other aspects of social wellbeing –apart from the *per capita* income levels– are approximated by means of the *life expectancy at birth*. This variable is both less correlated with *per capita* income than other synthetic indicators (such as the Physical Quality of Life Index and the Human Development Index), therefore reducing the risk of multicollinearity, and is widely available among developing countries, thus reducing the risk of a non-random sample selection bias. Moreover, sharp reductions over time in the life expectancy may reflect an increase in the country's need for aid due to the negative effects of conflicts, natural disasters or diseases.

We use the *share of each recipient country in global ODA* (i.e. total aid disbursed by multilateral and bilateral donors), excluding Spain, in order to test the level of coordination among donors. In this respect, there are two possible scenarios: On one hand, a negative relation between the Spanish allocation and the rest of the donors' allocations shall reflect certain level of coordination, avoiding infra and supra-allocations in specific countries. If this were the case, it will be reasonable to consider that the Spanish *middle-income country orientation* is driven by a specialization pattern in Latin America, 'agreed' within an international coordination scheme. On the other hand, a positive relation shall reflect the existence of the so-called 'bandwagon effect'. As Dudley and Montmarquette (1976) first explained, this behaviour implies that the donor's perception of the impact of its aid on a specific developing country is positively influenced by the volume of aid that this country attracts from other donors.

ii) Spain's foreign policy interests

The importance of *special historical and cultural links* is tested by means of a dummy variable, with two categories: $Col = 1$ if the country was part of the Spanish colonial Empire, and $Col = 0$ otherwise.

We evaluate the trade interests by means of the *share of each developing country in Spanish exports*, and we measure investment interests by the *net stock of Spanish investment* in each developing country, accumulated since 1993. It should be pointed out that, given that a small part of the ODA consists of ‘tied loans’, there is a potential risk of simultaneity between exports and aid disbursements. Nevertheless, exports are lagged one year, which reduces the risk of simultaneity, since tied aid stimulates, mainly, current year exports.

iii) Determining factors of aid effectiveness

In order to approximate the partner countries’ commitment to *good governance*, we use the Worldwide Governance Indicators developed by Kaufmann *et al.* (2012). In particular, we use the variable of *control of corruption*, so the coefficient of this variable is expected to be positive, reflecting Spanish support for the least corrupt countries.

Furthermore, recipient economies’ *absorptive capacities* are included in the model so as to take into account the productive constraints of additional aid allocations and the existence of decreasing marginal returns on aid. We proxy this concept by means of the ratio of the total ODA –bilateral and multilateral– received by the country to its GNI (*ODA/GNI ratio*), which is widely available among developing countries and offers a reasonable measure of the recipient economy’s aid-dependency level²⁴.

iv) Aid's path dependence

We include the *previous year ODA-quota* in both decision stages in order to capture the path dependence of the geographical allocations, assuming that previous disbursements positively influence both the probability of being 're-selected' as an aid-partner, and the final amount received.

v) Immigration flows

Immigration flows are measured by the *share of foreign population (by nationality) in relation to the total Spanish population* (Eurostat 2012).

It should be borne in mind that, despite the fact that Spain has been receiving immigrants from over 130 different developing countries during the period 1998-2009, the immigrant population is concentrated on a limited number of countries. Thus the top-ten developing countries sending migrants to Spain accounted for 77.5% of total immigrants from developing countries (see **Appendix 2**). In particular, two facts are worth noting: on the one hand, Morocco, Ecuador, Colombia and Bolivia are –by far– the most important countries in terms of immigrants living in Spain. And, on the other hand, only three of the top-ten countries during these 11 years do not have historical links with Spain: China, India and Algeria (and, among them, only Chinese have consistently been a large immigrant community in Spain during the whole period).

(f) Model specification, sample and period of analysis

As equations [4] and [12] specify, we transform the model in a linear function by means of the natural logarithm, thus facilitating the interpretation of the coefficients in terms of elasticities and reducing the heteroskedasticity among observations²⁵.

In order to access the information available to Spanish aid decision-makers in a realistic way, we specify the explanatory variables with different time lags (**Table 1**). The lengths of the lags depend on the time-delay that takes place in the provision of international statistics²⁶: decision-makers faced a two-year information lag in the case of *per capita* incomes, population levels, life expectancy and absorptive capacities. Immigration flows, aid disbursements, and Spanish exports and investments are lagged one year. This lag structure also reduces the potential simultaneity bias between the aid allocation and the explanatory variables.

Table 1 here

The analysis includes the 163 developing countries referred to by the successive DAC lists of ODA recipients. Of these countries, 129 received Spanish ODA for at least one year. 30 countries were eventually excluded from the analysis due to a lack of information.²⁷ The period of analysis runs from 1998 to 2009, excluding both the first ‘gestation’ stage of the Spanish aid system (so as to focus the study on a time when it was already consolidated) and the current economic crisis (which has temporarily slowed down the immigration flows and drastically reduced the ODA budget).²⁸ For those variables with one- or two-year lags, the information starts from 1997 or 1996, respectively.

(g) Main results: the role of immigration in the Spanish pattern of aid allocation

The selection of Spain's aid-partner countries (*first decision stage*) has been rather 'eclectic': it paid attention to Spanish foreign policy interests (especially immigration interests and post-colonial links), and showed a strong inertial motion and a 'gregarious' behaviour (**Table 2**). However, the selection neglected other factors related to the effectiveness of aid and the relative needs of the recipients –giving priority, in fact, to the smallest countries.

Table 2 here

The *OR* column shows the *odds ratio* of being selected as a partner country (i.e. the ratio between the probability of being selected and the probability of not being selected) when one of the explanatory variables of the model increases one unit, *ceteris paribus*²⁹. The highest odds ratio is associated with the *aid's path dependence*, which imprints a character of 'persistence' in the selection process in such a way that a 1% increase in the Spanish ODA quota allocated the previous year to a developing country multiplies by 4.1 its odds of being re-selected as a partner. This path dependence of Spanish aid is strongly linked to the inclination towards the ex-colonial countries, which is further reinforced by the strong specialization of Spanish NGOs in these same countries.

The second variable with the highest odds ratio is the *Spanish colonial past*. The interpretation of this coefficient in the case of two-category dummy variables is relatively simple: for two developing countries with identical values in the set of explanatory variables, but with different post-colonial links, it shows the difference between their probabilities of being selected partners. According to the estimation, the odds ratio for a former colony is 3.7 times greater than for a country without this historical link, a result that stems from the fact

that only 66 of the 240 observations of the colonial past included in the panel data set (20 ex-colonies analyzed over 12 years³⁰) did not significantly participate in Spanish ODA.

Thirdly, the selection of aid-partners is directly related to the share of each developing country in the aid disbursed by other bilateral and multilateral donors. Thus, a 1% increment in the share of global aid duplicates the odds of a particular country being selected as a partner. This result confirms that Spain is influenced by a ‘bandwagon effect’, which suggests that the regions where donors share strong geo-strategic interests (mainly the Middle East and the largest developing countries) are, in turn, regions of interest for Spain.³¹ Ultimately, a positive coefficient of this variable reflects a lack of coordination with the rest of the donors in the definition of their ‘intervention areas’ –which may reinforce the existence of aid darling and orphan countries.

Fourthly, the selection process is significantly influenced by *immigration flows*. Approximately, a 1% increase in the immigrant population from a particular country is associated with an 18% increase in the probability of being selected as a Spanish aid-partner. This result stems from the importance of the historical links in the selection process; thus the majority of immigrants come from ex-colonial countries (Latin America and Morocco, mainly). This result is also due to the intensification of migration flows sent by countries without historical links with Spain, which received increasing amounts of Spanish ODA, as in the case of China, Algeria, Senegal and Brazil (countries with significant receptions of Spanish ODA in 36 of the 48 considered observations).

Moreover, the estimation reveals that Spain did not systematically consider in its selection process other criteria relative to the needs of the recipient countries, neither other aspects of

aid effectiveness –at least with the expected sign. Thus, the only statistically significant recipients' needs variable is the population size, with an estimated odds ratio smaller than one, which implies that a 1% increase in a developing country's population is associated with a 33% decrease in the odds of being selected as a Spanish aid-partner. This reveals the existence of a *small countries bias*, which is the result of the attention given to countries with special historical links with Spain –primarily countries with relatively small population sizes– and the lack of attention given to some of the biggest developing countries, such as India, Bangladesh, Pakistan and Nigeria.

The *control of corruption* variable is statistically significant, but has an opposite sign than expected: Spain seems to favour the selection of countries with the worst records of corruption³². As a result, the majority of developing countries with the best performance in control of corruption received marginal amounts of Spanish ODA. Moreover, it should be noted that Spain's ex-colonial countries have relatively low performance in terms of corruption: on average, in the period 1998–2009, the value of the control of corruption index for these countries (excluding Chile) is -0.469, which is a lower value than that of other developing countries without post-colonial links with Spain (-0.432).³³

In terms of the *goodness-of-fit* of the model, the χ^2 test of overall significance rejects the hypothesis that all the variables exert a simultaneously null effect in the selection. Moreover, the model correctly classifies 92.5% of the cases, offering a reasonable fit that allows us to trust the accuracy of the estimates.³⁴ In fact, when we drop the immigration variable, the accuracy of the model drops to 90% –a greater decline than the one obtained when we drop the colonial variable–, which confirms the importance of immigration flows in the selection process.

The analysis of the *second decision stage* reveals that the allocation of Spain's ODA-quotas was neither purely 'altruistic' (**Table 3**). In this sense, the distribution has not especially favoured those countries with the highest relative needs; on the contrary, the allocation has been regressive due to the Spanish 'specialization' in middle-income countries. Moreover, immigration flows have been highly influential, as more aid is given to those countries that send immigrants to Spain. The allocation pattern also confirms both the inertial and the bandwagon effects detected in the first decision stage.

Table 3 here

The absence of a progressive pattern of Spanish ODA distribution is reflected in the coefficient of the life expectancy variable: a 1% increase in this indicator is associated with a 0.73% increase in the aid-quota. This result is due to two main reasons: the traditional specialization of Spanish in Latin America (and, consequently, in middle-income countries), where people enjoy longer life expectancy than in the rest of the developing world;³⁵ and a biased distribution towards those developing countries outside the Americas with the highest levels of development. For example, of the 15 countries with the highest shares of Spanish ODA, all, with the exception of Bolivia, have life expectancies greater than 68 years, including those non-Latin American countries (such as Morocco, China, Turkey, Indonesia, Bosnia-Herzegovina and Algeria). By contrast, the countries that sporadically received small amounts of Spanish aid are precisely those with the lowest life expectancies (mainly Sub-Saharan countries).

Moreover, *immigration flows* have a significant influence on the distribution of Spanish ODA. A 1% increase in the immigrant population of a particular developing country implies an increase of about 0.05% of Spanish ODA disbursed to this country. Therefore, Spain gives a strong priority to the selection of migrants sending countries as aid-partners, and eventually translates this priority allocating them slightly greater aid-quotas. Again, this result is linked to the Spanish specialization in Latin America –the source of the majority of its immigration flows. Especially outstanding are the cases of Peru, Honduras, Bolivia, Ecuador, Colombia, Venezuela and the Dominican Republic; all of them receive large amounts of Spanish ODA and have significant numbers of immigrants living in Spain (see **Appendix 2**). However, this pattern is not confined to Latin America; countries like China, Morocco, Algeria and Senegal also receive large amounts of aid and send large numbers of immigrants to Spain.

Furthermore, the distribution of Spanish ODA has been affected by the ‘bandwagon effect’: a 1% increase in the *aid received from other donors* increases, on average, 0.23% the Spanish aid-quota. This is despite the particular Spanish pattern of aid allocation, which is focused on ex-colonial, middle-income countries. In fact, this ‘herding’ behaviour stems from the allocations to countries outside Latin America, where Spain has coincided with the donor community in the disbursement of large amounts of aid to China, Indonesia, Serbia, Montenegro, Iraq and Mozambique. This trend coincided with a period of strong expansion of the Spanish ODA budget that allowed to increase the number of partner countries (at the expense of the resources’ dispersion), to the point that Spain has disbursed ODA to an average of 107 developing countries per year (out of 163 possible recipient countries according to the DAC list).

The allocation of Spanish ODA has also a significant inertial movement: a 1% increase in the previous year aid share involves an additional increase of 0.2% in the current year. This result may stem from Spain's interest in maintaining (and enhancing) co-operation with its key partners, either to minimise the administrative costs of aid, to provide stable resources that facilitate a sustainable source of resources, to emphasise those previous experiences that were particularly effective, or to avoid 'delicate' diplomatic conflicts as a consequences of retracting resources from long-running aid-partners. However, importantly, many of these considerations are inconsistent with the increasing geographical fragmentation of Spanish aid that stems from an increasing number of countries receiving marginal resources, which in turn raises the management costs of aid.³⁶

With respect to the model's goodness-of-fit, the overall *F test* is flatly rejected. Moreover, the Sargan and Hansen tests for joint validity of the instrument are not rejected, as it is the case for the Arellano-Bond test for autocorrelation in the idiosyncratic disturbance term. Hence the results of these post-estimation tests support the validity of the estimations.

Also, the estimation offers reasonable adjustments, rendering a limited number of outliers. A careful examination of the outliers yields three conclusions³⁷: First, there is a marked divergence between the priorities of aid-loans (which are managed by the Ministry of Industry) and other bilateral ODA, which 'blurs' the distribution map of Spanish ODA. Second, most of the outliers correspond to cases of 'over-allocation' (compared to the historical pattern of distribution identified by the model), which results in an upward bias of the estimations; therefore, the regressive allocation pattern previously explained is reinforced by the number of outliers among those countries with the highest life expectancies, such as Honduras, Morocco, Turkey, Algeria, Serbia and Montenegro, Tunisia, Philippines and

Vietnam—all of them with life expectancies greater than 69.5 years—. And third, a striking fact is that most of the outlier countries have been eventually ‘prioritised’ by the successive Aid Plans, thus ‘formalizing’ the deviations from the Spanish historical geographic strategy.

4. Conclusions

Although the ‘eclecticism’ of the geographical distribution of aid seems to remain the same, donors’ priorities have actually evolved, ‘reshaping’ the aid map of the 21st Century. One of the most relevant phenomena is the intensification of the migration flows sent by developing countries and received by OECD countries. However, to date the influence of immigration on the geographical allocation of aid has been little studied, despite being one of the most dynamic variables of the globalization process and an issue of great concern for developed countries. In this sense, the reception of immigrants from countries that are not historically linked to the donor changes the definition of the traditional foreign policy priorities. Thus new aid-demand factors (greater importance of the development needs of those countries that are sending migrants) and aid-supply factors (donors own political interests as aid donors and immigrant recipient countries) are taking shape and affecting the pattern of aid giving. This new pattern is particularly interesting for OECD countries with important immigration populations, like France, United Kingdom, Germany, USA and Spain.

The case of Spain is particularly interesting in studying this problem, as immigration has been, since the 1990s, a phenomenon of great importance. In a short time, Spain became one of the top-ten DAC donor countries and one of the main recipients of immigration in Europe. As a consequence, Spain started to disburse ODA to new ‘migrants sending countries’ (mainly Sub-Saharan), which were added to the traditional list of aid-partners that share

historical and cultural links with Spain (Equatorial Guinea, the Philippines, Morocco and Latin American countries). Furthermore, over time, Spain has included among its aid priorities a specific sector devoted to migration and development. Spain also added some of these emigrating countries to its geographical priorities, thus ‘officially’ integrating them into the resource planning and evaluation cycle. However, this implied an increase in the number of prioritised countries and in the number of aid recipient countries (on average, 107 countries per year).

We study the influence of immigration in the Spanish ODA allocation by means of a two-stage decision-making model: in the first stage, Spain selects her aid-partner countries and, in the second stage, Spain decides the share of aid to allocate to each partner country. The estimation of the model rules out –as expected– the existence of a purely ‘altruistic’ pattern of aid allocation; on the contrary, Spain’s aid map is rather ‘eclectic’. As **Figure 1** summarises, the allocation is not guided, in general terms, by humanitarian criteria or efficiency reasons. Instead, the distribution is determined by other foreign policy interests (post-colonial links and, more recently, immigration interests), the aid’s path dependence and the ‘bandwagon effect’ that stems from the insufficient geographical coordination among donors.

Figure 1 here

In particular, the main novelty of this study is the confirmation of the importance of immigration in the delimitation of the *world map* of Spain’s ODA. Developing countries with large populations living in Spain are more likely to be aid-partners (with an odds ratio of 1.18) and receive higher levels of ODA (with an elasticity coefficient of approximately 0.05%). Thus immigration flows are determinant in both decision stages (selection of aid-

partners and allocation of aid-quotas), as it is the case of only other two variables (share of global ODA and previous Spanish ODA allocation, see **Figure 1**). This result relates to the importance that Spain places on historical ties, as the majority of the immigrants come from countries with ‘post-colonial’ links (mainly, Latin America and Morocco). Additionally, this result corresponds to the intensification of migration flows stemming from developing countries that are not historically linked to Spain, which have received increasing shares of Spanish ODA, as in the case of China, Algeria, Senegal and Brazil.

Overall, the consideration of immigration flows in the geographical distribution of Spanish ODA may be appropriate if this serves as an additional indicator of the degree of aid need, thus allowing allocations to be modulated among the already prioritised partner countries. Yet, if Spain wants to progress in the definition of a truly ‘strategic’ aid allocation map so to boost the impact of its interventions, first, the consideration of the immigration variable should be limited to the group of countries previously identified as priority partners, and second, the Government should not ‘force’ the incorporation of new priorities, as this may open the ‘Pandora’s box’ of constant expansion of the Spanish ODA map –in itself insufficiently ‘strategic’– and exacerbate the problems of resources’ fragmentation.

5. References

- Alesina, A. y Weder, B. (2002) ‘Do Corrupt Governments Receive Less Foreign Aid?’, *American Economic Review* **92**(4): 1126-1137.
- Alonso, J.A. (1999) ‘Especialización sectorial y geográfica de la ayuda española’, *Revista de Información Comercial Española* 778: 119–142.
- Arellano, M. and Bond, S. (1991) ‘Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations’, *Review of Economic Studies* 58: 277-97.

- Arellano, M. and Bover, O. (1995) 'Another look at the instrumental variable estimation of error-components models', *Journal of Econometrics* 68: 29-51.
- Baltagi, B.H. (2001) *Econometric analysis of panel data*, New York: John Wiley and Sons.
- Berthélemy, J.C. (2006) 'Bilateral Donors' Interest vs. Recipients' Development Motives in Aid Allocation: Do All Donors Behave the Same?', *Review of Development Economics* 10(2): 179–194.
- Berthélemy, J.C. and Tichit, A. (2004) 'Bilateral donor's aid allocation decisions. A three-dimensional panel analysis', *International Review of Economics & Finance* 13(3): 253-274.
- Berthélemy, J.C., Beuran, M. and Maurel, M. (2009) 'Aid and Migration: Substitutes or Complements?', *World Development* 37(10): 1589–1599.
- Blundell, R. and Bond, S. (1998) 'Initial conditions and moment restrictions in dynamic panel data models', *Journal of Econometrics* 87: 115-43.
- Castles, S. and Miller, M.J. (2003) *The Age of Migration: International Population Movements in the Modern World*, New York: Palgrave Macmillan.
- Cebrián, M. (2009) 'Los determinantes de los flujos migratorios internacionales: el caso español, 1995-2007', *PRINCIPIOS, Estudios de Economía Política* 14: 49-70.
- Central Intelligence Agency (CIA) (2012) *The World Fact Book*, available at <https://www.cia.gov/library/publications/the-world-factbook> (12 April, 2012).
- Czaika, M. (2005) 'Aid allocation and asylum migration in the 1990s', *Applied Economics Quarterly* 51(3): 289-303.
- Czaika, M. and Mayer, A. (2011) 'Refugee Movements and Aid Responsiveness of Bilateral Donors', *Journal of Development Studies* 47(3): 455-474.
- Development Assistance Committee (DAC) (2012) *International Development Statistics online databases*, OECD, available at <http://www.oecd.org/dac/stats/idsonline.htm> (15 May, 2012).
- Dudley, L. and Montmarquette, C. (1976) 'A model of the supply of bilateral foreign aid', *American Economic Review* 66(1): 132–142.
- Eurostat (2012) *Population by sex, age group and citizenship*, European Commission, available at <http://ec.europa.eu/eurostat> (15 May, 2012).

- Feeny, S., and McGillivray, M. (2004) 'Modelling inter-temporal aid allocation: a new application with an emphasis on Papua New Guinea', *Oxford Development Studies* **32**(1): 101-118.
- Hjertholm, P. and White, H. (2000) 'Foreign aid in historical perspective: background and trends' in F. Tarp and P. Hjertholm, eds., *Foreign Aid and Development. Lessons Learnt and Directions for the Future*, 80–102, London: Routledge.
- Hsiao, C. (2003) *Analysis of panel data*, New York: Cambridge University Press.
- Hsiao, C., Pesaran, M.H. and Tahmiscioglu, A.K. (1999) 'Bayes estimation of short-run coefficients in dynamic panel data models', in C. Hsiao, K. Lahiri, L.F. Lee and M.H. Pesaran, eds., *Analysis of panels and limited dependent variables: A volume in honour of G.S. Maddala*. (268-296), Cambridge MA: Cambridge University Press.
- Isopi, A. and Mavrotas, G. (2006) 'Aid allocation and aid effectiveness: an empirical analysis' *UNU-WIDER Discussion paper*, 2006/07.
- Itzigsohn, J. (2000) 'Immigration and the boundaries of citizenship: The Institutions of Immigrants' Political Transnationalism', *International Migration Review* **34**(4): 1126-1154.
- Kaufmann, D., Kraay, A. and Mastruzzi, M. (2012) *The Worldwide Governance Indicators (WGI) project*, available at <http://info.worldbank.org/governance/wgi/index.asp> (5 May, 2012).
- Kiviet, J. (1995) 'On bias, inconsistency, and efficiency of various estimators in dynamic panel data models', *Journal of Econometrics* **68**(1): 53-78.
- Lahiri, S. and Raimondos-Møller, P. (2000) 'Lobbying by ethnic groups and aid allocation', *The Economic Journal* **12**(9): 879–900.
- Landolt, P. (2008) 'The transnational geographies of immigrant politics: Insights from a Comparative Study of Migrant Grassroots Organizing', *The Sociological Quarterly* **49**: 53–77.
- Larrú, J.M. (2011) 'Más ¿es mejor? Reflexiones en torno a la calidad de la ayuda al desarrollo española', *Revista de Economía Mundial* **28**: 205-246.
- Levitt, M.S. (1968) 'The allocation of economic aid in practice' *The Manchester School of Economics and Social Studies* **36**(2): 131–147.
- Maizels, A. and Nissanke, M.K. (1984) 'Motivations for aid to developing countries', *World Development* **12**(9): 879–900.

- Martin, P.L. and Taylor, J.E. (1996) 'The anatomy of a migration hump', in J.E. Taylor, ed., *Development Strategy, Employment, and Migration: Insights from Models*, 43-62, Paris: OECD Development Centre.
- McGillivray, M. (2004) 'Descriptive and prescriptive analyses of aid allocation: Approaches, issues, and consequences', *International Review of Economics & Finance*, 13 (3): 275-292.
- McGillivray, M. and Oczkowski, E. (1992) 'A two-part sample selection model of British bilateral aid allocation', *Applied Economics* 24: 1311-1319.
- Mckinlay, R.D. and Little, R. (1977) 'A foreign policy model of US bilateral aid allocation', *World Politics*, XXX(1): 58-86.
- Ministry of Foreign Affairs and Co-Operation (MAEC) (2009) *Master Plan of the Spanish Co-operation 2009-2012*, available at http://www.maec.es/es/MenuPpal/CooperacionInternacional/Publicacionesydocumentacion/Documentos/lineasmaestras09-12_En.pdf
- Ministry of Industry, Tourism and Trade (2012) *DATAINVEX: Estadísticas de inversión española en el exterior*, available at <http://datainvex.comercio.es> (5 May, 2012).
- Myrdal, G. (1956) *An International Economy: Problems and prospects*, London: Routledge.
- Neumayer, E. (2003) *The pattern of aid giving: the impact of good governance on development assistance*, London: Routledge.
- Portes, A. (1996) 'Transnational Communities: Their Emergence and Significance in the Contemporary World System', in R. P. Korzeniewicz and W. C. Smith, eds., *Latin America in the World Economy*, 151-168, Westport, CT: Greenwood Press.
- Roodman, D. (2009) 'How to do xtabond2: An introduction to difference and system GMM in Stata', *The STATA Journal*, 9(1), 86-136.
- Sánchez Alcázar, E.J. (1999) 'Modelos de distribución de la ayuda: el caso español', in J.A. Alonso and P. Mosley, eds., *La eficacia de la cooperación internacional al desarrollo: evaluación de la ayuda*, 307-324, Madrid: Civitas.
- Szent-Iványi, B. (2012) 'Aid allocation of the emerging Central and Eastern European donors', *Journal of International Relations and Development*, 15: 65-89.

- Tarp, F. (2010) 'Aid, Growth, and Development', in G. Mavrotas, ed., *Foreign Aid for Development. Issues, Challenges, and the New Agenda*. Oxford, UK: Oxford University Press.
- Tarp, F., Bach, C.F., Hansen, H. and Baunsgaard, S. (1999) 'Danish aid policy. Theory and empirical evidence', in K.L. Gupta, ed., *Foreign aid: new perspectives*, 149-69, Massachusetts, USA: Kluwer Academic Publishers.
- Tezanos, S. (2008a) 'Modelos teóricos y empíricos de asignación geográfica de la ayuda al desarrollo', *Principios, Estudios de Economía Política*, 10: 5-41.
- Tezanos, S. (2008b) 'Aiding middle-income countries? The case of Spain', *Oxford Development Studies*, **36**(4): 409-438.
- Tezanos, S. (2008c) *Cooperación para el desarrollo. Asignación geográfica de la ayuda española*, Madrid: Biblioteca Nueva.
- Tezanos, S. (2010) 'Ayuda y crecimiento: una relación en disputa', *Revista de Economía Mundial*, 26: 237-59.
- Trumbull, W.N. and Wall, H.J. (1994) 'Estimating aid-allocation criteria with panel data', *The Economic Journal* 104: 876-882.
- United Nations (2012) *Comtrade*, available at <http://comtrade.un.org> (5 May, 2012).
- Wall, H.J. (1995) 'The allocation of official development assistance', *Journal of Policy Modelling*, **13**(3): 307-14.
- Ward, M.D. and Gleditsch, K.S. (2007) *An introduction to spatial regression models in the social sciences*, University of Washington, available at <https://web.duke.edu/methods/pdfs/SRMbook.pdf>
- World Bank (2012) *World DataBank*, available at <http://databank.worldbank.org/data/home.aspx> (5 May, 2012).
- Xenogiani, T. (2006) 'Migration Policy and its Interactions with Aid, Trade, and Foreign Direct Investment Policies: A Background Paper', OECD Development Centre, Working Paper 249.

TABLES

Table 1. Variables and sources of the model

Variable	Code	Estimation stage	Type of variable	Number of lags	Source
Dummy: Spanish aid-partner.	<i>D</i>	SS	Dependent variable	0	DAC (2012)
Share of Spanish ODA gross disbursements.	<i>a</i>	QS	Dependent variable	0	DAC (2012)
GDP <i>per capita</i> (USA constant dollars 2000, PPP).	<i>GDPpc_{t-2}</i>	SS, QS	RN	2	World Bank (2012)
Population.	<i>POP_{t-2}</i>	SS, QS	RN	2	World Bank (2012)
Life expectancy at birth.	<i>LE_{t-2}</i>	SS, QS	RN	2	World Bank (2012)
Share of global ODA (excluding Spanish aid).	<i>OTHERS_{t-1}</i>	SS, QS	RN	1	DAC (2012)
Foreign population living in Spain by nationality.	<i>IMM_{t-1}</i>	SS, QS	IMM	1	Eurostat (2012)
Colonial <i>dummy</i> .	<i>COL</i>	SS, QS	DI	0	CIA (2012)
Share of Spanish exports.	<i>EXP_{t-1}</i>	SS, QS	DI	1	United Nations (2012)
Cumulative net <i>stock</i> of Spanish foreign investment.	<i>FDI_{t-1}</i>	SS, QS	DI	1	Ministry of Industry, Tourism and Trade (2012)
Control of corruption.	<i>CORRUP</i>	SS, QS	AE	0	Kaufmann <i>et al.</i> (2012)
Absorptive capacity (ODA/GDP).	<i>AC_{t-2}</i>	SS, QS	AE	2	World Bank (2012)
Share of Spanish ODA _{<i>t-1</i>} gross disbursements.	<i>a_{t-1}</i>	SS, QS	H	1	DAC (2012)

Notes: SS: selection stage; QS: aid-quotas stage; RN: recipients' needs; DI: donor's interests; AE: aid effectiveness determinants; H: aid's path dependence; IMM: immigration.

Table 2. Estimation of the Spanish selection of aid-partner countries. 1998–2009

<i>D</i>	<i>OR</i>	Std. errors	<i>z</i>	P> <i>z</i>	[95% conf. interval]	
<i>GDPpc_{t-2}</i>	1.064657	0.3784648	0.18	0.860	0.530425	2.136954
<i>POP_{t-2}</i>	0.6670493	0.1376982	-1.96	0.050	0.4450875	0.9997019
<i>LE_{t-2}</i>	1.205785	1.614145	0.14	0.889	0.0874569	16.62439
<i>OTHERS_{t-1}</i>	2.038657	0.4581982	3.17	0.002	1.312298	3.167058
<i>IMM_{t-1}</i>	1.178656	0.1014283	1.91	0.056	0.9957211	1.3952
<i>EXP_{t-1}</i>	1.250838	0.2117769	1.32	0.186	0.8976059	1.743076
<i>FDI_{t-1}</i>	1.033996	0.1109717	0.31	0.755	0.8378482	1.276064
<i>CORRUP</i>	0.6094942	0.1698022	-1.78	0.076	0.353044	1.052229
<i>AC_{t-2}</i>	1.051638	0.3998638	0.13	0.895	0.4991308	2.215737
<i>a_{t-1}</i>	4.126577	0.7297288	8.02	0.000	2.917875	5.835974
<i>COL</i>	3.742935	1.971884	2.51	0.012	1.332832	10.51113

Insig ² u	-1.041476	0.991629	-2.985033	0.9020808
sigma u	0.5940819	0.2945544	0.2248062	1.569945
Rho	0.0968851	0.0867659	0.0151292	0.4283058

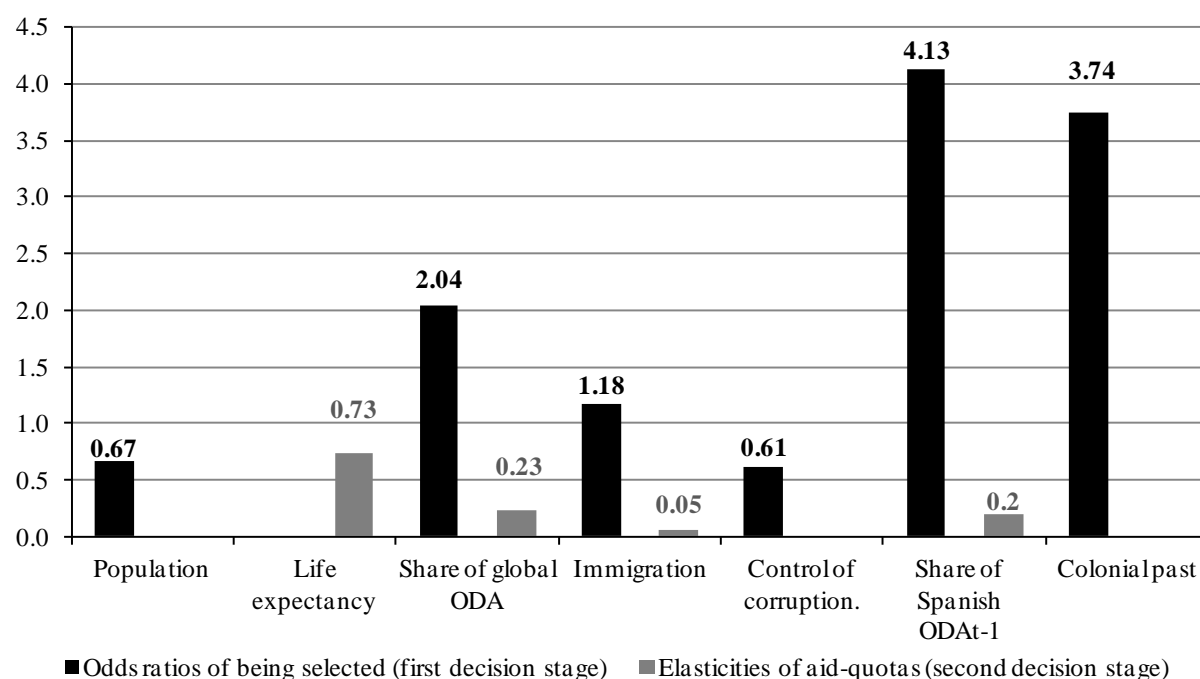
Random-effects logistic regression
Group variable: N
Random effects $u_i \sim \text{Gaussian}$
LR χ^2 (11) = 200.74
Log likelihood = -261.3158
White's (heteroskedasticity-adjusted) robust errors.

Number of obs. = 1,390
Number of groups = 132
Obs. per group: min. = 1, avg. = 10.5, max. = 11
Prob > chi2 = 0.0000

Table 3. Estimation of the Spanish pattern of ODA geographical allocation. 1998–2009

a	Coef.	Correct. std. errors	t	$P> t $	[95% conf. interval]	
$GDP_{pc_{t-2}}$	0.0259614	0.1194636	0.220	0.829	-0.2139884	0.2659112
POP_{t-2}	-0.0446827	0.0821196	-0.540	0.589	-0.2096247	0.1202593
LE_{t-2}	0.7289740	0.3372153	2.160	0.035	0.0516572	1.4062910
$OTHERS_{t-1}$	0.2346576	0.0543654	4.320	0.000	0.1254613	0.3438538
IMM_{t-1}	0.0545268	0.0250449	2.180	0.034	0.0042227	0.1048309
EXP_{t-1}	-0.0185247	0.0461315	-0.400	0.690	-0.1111826	0.0741332
IED_{t-1}	-0.0028590	0.0468040	-0.060	0.952	-0.0968677	0.0911496
$CORRUP$	-0.0844611	0.0819464	-1.030	0.308	-0.2490553	0.0801330
AC_{t-2}	-0.0120470	0.1465973	-0.080	0.935	-0.3064963	0.2824023
a_{t-1}	0.2001240	0.0645848	3.100	0.003	0.0704016	0.3298464
COL	0.1988951	0.1524892	1.300	0.198	-0.1073886	0.5051787
Post-estimation tests (p-values)						
F (22, 50) = 0.000						
Sargan = 0.235						
Hansen = 0.625						
Arellano-Bond AR(1) = 0.003						
Arellano-Bond AR(2) = 0.592						
Sample:	Number of observations = 301			Number of groups (countries) = 50		
	Number of periods: 11 (1998-2009)					
	Obs. per group: min. = 1			average = 6.02		max. = 11
	Number of instruments = 34					
Instrumented variables: a_{t-1} (endogenous variable), 2 lags.						
Panel data regressions, system GMM, two-step estimations, White's (heteroskedasticity-adjusted) robust errors, Windmeijer correction for finite samples, and instrument matrix collapsed. We include time <i>dummies</i> in all regressions (not reported).						

Figure 1. How much the ‘odds ratio’ and the ‘aid quota’ increase when a partner country increases 1% its...?



Note: the figure only shows those variables that are statistically significant at 10% level (see Tables 1 and 2)

APPENDIXES

Appendix 1. Descriptive statistics

Variables	Obs.	Mean	Std. Dev.	Min.	Max.
<i>D</i>	1812	0.19	0.40	0	1
<i>a</i>	1812	0.69	1.38	0	10.58
<i>GDPpc</i>	1832	5,173.79	5,122.41	160.16	31,308.94
<i>POP</i>	1862	37,700,000.00	145,000,000.00	40,130.00	1,330,000,000.00
<i>LE</i>	1723	63.77	9.95	32.03	79.83
<i>OTHERS</i>	1812	0.73	1.13	0.00	21.71
<i>IMM</i>	1592	12,233.43	52,757.47	0	718,347.00
<i>EXP</i>	1850	0.11	0.26	0.00	1.94
<i>FDI</i>	1862	584.33	3,336.03	-54.14	38,328.50
<i>CORRUP</i>	1862	-0.44	0.66	-2.49	1.56
<i>AC</i>	1674	7.66	11.39	-2.92	185.85
<i>COL</i>	1862	0.15	0.36	0	1

Appendix 2. Top-ten developing countries sending migrants to Spain (1998-2009)

	1998		1999		2000		2001		2002		2003	
1	Morocco	111,100	Morocco	115,063	Morocco	153,223	Morocco	197,232	Morocco	242,600	Ecuador	320,717
2	Peru	21,233	Peru	19,730	Peru	24,412	Ecuador	118,180	Ecuador	204,780	Morocco	311,410
3	Dominican Rep.	20,381	Argentina	18,276	Colombia	22,504	Colombia	74,386	Colombia	150,726	Colombia	201,063
4	Argentina	17,188	Dominican Rep.	17,514	Dominican Rep.	22,185	Peru	29,842	Argentina	44,751	Argentina	89,934
5	Philippines	11,357	<i>China</i>	<i>12,284</i>	Argentina	20,740	Argentina	27,562	Peru	35,312	Peru	45,947
6	<i>China</i>	<i>10,056</i>	Colombia	11,629	Ecuador	18,209	Dominican Rep.	26,681	Dominican Rep.	29,850	<i>China</i>	<i>42,095</i>
7	Colombia	8,412	Venezuela	8,835	<i>China</i>	<i>17,022</i>	<i>China</i>	<i>23,400</i>	<i>China</i>	<i>29,709</i>	Dominican Rep.	36,394
8	<i>India</i>	<i>6,790</i>	Philippines	8,521	Venezuela	10,771	<i>Algeria</i>	<i>15,362</i>	<i>Algeria</i>	<i>22,821</i>	<i>Algeria</i>	<i>29,829</i>
9	Brazil	6,263	Brazil	7,227	Brazil	9,921	Brazil	14,614	Brazil	18,716	Brazil	25,695
10	Venezuela	6,188	Algeria	6,599	Philippines	9,744	Venezuela	14,101	Venezuela	17,562	Venezuela	24,418

	2004		2005		2006		2007		2008		2009	
1	Ecuador	434,567	Morocco	461,544	Morocco	542,969	Morocco	592,274	Morocco	649,818	Morocco	718,347
2	Morocco	384,192	Ecuador	449,145	Ecuador	459,993	Ecuador	433,032	Ecuador	423,451	Ecuador	421,597
3	Colombia	227,373	Colombia	245,608	Colombia	266,548	Colombia	265,878	Colombia	282,937	Colombia	296,795
4	Argentina	119,537	Argentina	138,706	Argentina	155,680	Bolivia	204,264	Bolivia	241,850	Bolivia	230,797
5	Peru	62,711	Bolivia	88,445	Bolivia	130,064	Argentina	143,573	Argentina	146,471	<i>China</i>	<i>147,539</i>
6	<i>China</i>	<i>57,094</i>	China	79,164	<i>China</i>	<i>100,608</i>	<i>China</i>	<i>107,899</i>	<i>China</i>	<i>125,008</i>	Argentina	142,328
7	Bolivia	47,819	Peru	77,105	Peru	93,028	Peru	105,318	Peru	121,228	Peru	139,236
8	Dominican Rep.	43,825	Dominican Rep.	51,528	Brazil	70,663	Brazil	91,955	Brazil	116,308	Brazil	126,236
9	<i>Algeria</i>	<i>36,016</i>	Brazil	49,076	Dominican Rep.	60,353	Dominican Rep.	66,203	Dominican Rep.	77,566	Dominican Rep.	88,139
10	Venezuela	35,370	Venezuela	44,513	Venezuela	53,401	Venezuela	52,441	Paraguay	67,241	Paraguay	81,584

Note: highlighted in italics, developing countries that do not have historical links with Spain.

¹ The main explanatory factors of Spain's immigration have been rapid economic growth between 1993 and 2008 (which required to incorporate new workers within the context of an expanding labour market), the cultural and linguistic affinities with Latin America, the mild climate, the geographical proximity with Africa and the wage gap between Spain and the immigrating countries (Cebrián 2009).

² In Europe, only four smaller countries (Estonia, Latvia, Cyprus and Luxembourg) have higher rates of immigrant population than Spain (Eurostat 2012).

³ See the literature reviews of Tarp *et al.* (1999), McGillivray (2004) and Tezanos (2008a).

⁴ The assumption on the 'migrant lobbyism' in the country of reception has been extensively studied. Several studies have documented different forms of transnational linkages between immigrants and their countries of origin, including the creation of alliances with other movements across national boundaries (such as nongovernmental organizations, political parties, etc.) in order to strengthen the support to their countries of origin. Three good examples are the studies of Portes (1996), Itzigsohn (2000) and Landolt (2008).

⁵ As Martin and Taylor (1996) first explained, growth does not necessarily reduce countries' incentives to emigrate if there is a 'hump-shaped pattern' of migration, which implies that in relatively poor countries an increase in *per capita* income will be associated with higher emigration by allowing poor emigrants to afford the costs associated with migration.

⁶ The use of a 'selection threshold' follows the approach of Tarp *et al.* (1999).

⁷ The existence of decreasing marginal returns guarantees that the donor will not concentrate all its resources on one recipient: the one with the highest score in the attraction index.

⁸ There is not an *a priori* reason for the parameters of these two equations to be the same.

⁹ See Tezanos (2008b) for a detailed review of the studies that have analyzed the Spanish pattern of aid giving.

¹⁰ See, among others, the reviews on aid effectiveness of Tarp (2010) and Tezanos (2010).

¹¹ Policy statement by DAC aid ministers and heads of aid agencies on development co-operation in the 1990s, available at http://www.oecd.org/LongAbstract/0,2546,en_2649_34435_2755285_119814_1_1_1,00.html

¹² Spain has in situ technical co-operation offices and country co-operation plans in most of these countries.

¹³ However, if there is a 'hump-shaped pattern' of migration and the donor's aid policies are effective in promoting development in the emigrating societies, only middle-income countries will decrease emigration flows. In the case of Spain, given the marked concentration of aid on middle-income countries, it is reasonable to

assume that, in aggregated terms, greater income levels in the recipient countries will reduce their propensity to emigrate.

¹⁴ The 10 countries included in the first Africa Plan that have the largest immigrant communities in Spain are Senegal, Nigeria, Gambia, Equatorial Guinea, Mali, Ghana, Mauritania, Guinea, Guinea Bissau and Cameroon.

¹⁵ Three alternative econometric models have been previously used in aid allocation analysis: the Tobit model, the sample selection model and the two-part model. Neumayer (2003) offers a good review of the econometrics of these models within the context of aid allocation analysis.

¹⁶ Specifically, we estimate equation [4] by means of a *logit* regression model. We use the Hausman test in order to choose between fixed or random-effects. As the test does not reject the null hypothesis, we use the random-effects estimator (which is consistent and efficient, whereas the fixed-effects estimator is only consistent).

¹⁷ Simulation exercises by Kiviet (1995), Blundell and Bond (1998) and Hsiao *et al.* (1999) show that the estimators obtained by the difference GMM are biased on finite samples.

¹⁸ We use STATA's 'xtabond2' command developed by Roodman (2009).

¹⁹ We assume that observations are independent between countries, but the errors of one country are not necessarily independent over time. This specification implies that we do not consider spatial correlation in the model (ie. we treat cross-country observations as unrelated), mainly because –as Ward and Gleditsch (2007) pointed out– consistent spatial estimators are not easily available for panel regressions. Nevertheless, as Baltagi (2001) and Hsiao (2003) noted, panel regressions are less vulnerable to spatial correlation than cross-section regressions due to the combination of longitudinal (time) and horizontal (countries) data.

²⁰ Spain takes part in the Heavily Indebted Poor Countries (HIPC) Initiative, the Inter-American Development Bank debt relief initiative, and the negotiations of the Paris Club.

²¹ Especially notable were the following debts relief: Nicaragua, in 2001 and 2004; Madagascar, the Republic of Congo and Honduras, in 2005; Iraq, in 2005, 2006 and 2008; Nigeria, in 2006; Guatemala, in 2006, 2007 and 2008. These debt reliefs raised these countries among the main recipients of Spanish ODA.

²² Only 23% of the observations have zero aid values.

²³ Different threshold values change the probability of being selected as an aid-partner. However, they do not considerably affect the magnitudes and signs of the estimated parameters, so the model remains consistent. We also run the model with higher thresholds, obtaining similar significant estimated coefficients, although with higher probabilities of selection and a slightly worse fit of the probability model (measured by the percentage of correctly classified cases).

²⁴ High rates of ODA/GNI may stem from a ‘bandwagon effect’ among donors’ allocation; however, this variable, in the case of Spanish aid is not significantly correlated with the ODA received by the rest of the donors, ruling out the existence of a simultaneity problem.

²⁵ The only exception is the control of corruption variable, which is expressed in its original units (running from -2.5 to +2.5), since it is not amenable to reasonable interpretations in terms of elasticities.

²⁶ In fact, the Aid Plan explicitly points out that less developed countries will be identified by means of development indicators.

²⁷ Nevertheless, the 30 missing countries exhibit very different socio-demographic and economic profiles, a fact which limits the existence of a sample selection bias. They are countries in conflict or post-conflict situations (Somalia), territories whose independence has not been formally recognised (Palestine and Western Sahara), countries which lack statistical information (Cuba, Kosovo, North Korea, East Timor, Myanmar and Zimbabwe) and islands and regions with fewer than one million inhabitants which have received very limited attention from Spanish assistance.

²⁸ The analysis is focused on the period when the immigrations flows were more intense, thus the estimations may be overestimated in comparison with the whole period of Spanish aid.

²⁹ Formally, when variable x_i increases one-unit, *ceteris paribus*, the odds ratio is multiplied by a factor equal to e^{x_i} .

³⁰ Cuba is not included in the analysis due to the lack of information.

³¹ Such is the case of countries like Egypt, China, India and Indonesia, which –except for India– have been Spanish aid-partners throughout the 11 years analysed.

³² The study of Larrú (2011) also detected Spain’s tendency to give aid to countries with problems of Government corruption.

³³ We exclude Chile from this calculation because this country did not reach the level of significant participation in Spanish aid in any year, and because her positive results in terms of control of corruption upward biases the average of the group.

³⁴ Results available upon request.

³⁵ However, Tezanos (2008c: chap. 2) proved that the Spanish aid allocation within the group of ex-colonial countries is especially progressive.

³⁶ In fact, in the period 1998–2009, on average, the aggregated aid of the 23 countries with the highest aid-shares accounted for 75% of Spain’s ODA. Consequently, the other 83 partner countries shared between them the remaining 25% of resources.

³⁷ Result available upon request.