



TRADABLE REFUGEE-ADMISSION QUOTAS, MATCHING AND THE NEW EUROPEAN AGENDA FOR MIGRATION

JESÚS FERNÁNDEZ-HUERTAS MORAGA¹ AND
HILLEL RAPOPORT²



Introduction

“Migration is a shared responsibility of all Member States and all Member States are called now to contribute to tackling this historical challenge” - Federica Mogherini, 13th of May 2015 (Vice-President of the European Commission).

In the past decade, the European Union has experienced a refugee crisis that has recently blown up into a humanitarian catastrophe. The UNHCR estimates that about 1,700 people died at Europe’s southern borders and reports almost 40,000 crossings over the Mediterranean Sea in 2015 alone. Thousands of refugees are accumulating on its shores (Lampedusa, Malta, Sicily) and land borders (Greece, Bulgaria), fleeing civil war (in Libya or Syria), armed conflict or oppression (e.g., Eritrea). Even if these numbers are small in comparison to those of refugees hosted by States of first asylum such as Lebanon, Jordan or Turkey, this puts pressure on countries of first arrival, with thousands of persons then migrating into the EU-Schengen space and beyond. At the same time, the existing European asylum policy is overwhelmingly judged as inappropriate and is criticized not just because of its inability to address the challenges posed by the volume of refugee flows, but also due to the many legal deficiencies, political inconsistencies and economic inefficiencies that characterize the current asylum system. At a legal and political level, the “Common European Asylum System” (CEAS), launched in 1999, is coming increasingly under fire.

¹ Universidad Autónoma de Madrid and IZA.

² Paris School of Economics, Université Paris 1 Panthéon-Sorbonne; Migration Policy Center, European University Institute and CESifo.

For one thing, the so-called “Dublin-system” (implemented since 1997) whereby an asylum seeker is mainly under the responsibility of the country of first-entry, is increasingly widely regarded as ill-conceived (e.g., De Bruycker et al. 2010). Under this system, an asylum seeker who entered the EU in Greece, for instance, and got arrested for illegal staying in Belgium, for example, could be transferred back to Greece. Such a system creates disincentives for the Greek government to effectively implement the CEAS norms. Furthermore, the Dublin system prevents asylum seekers from choosing their country of asylum within the European Union, creating incentives for them to circumvent legal restrictions to mobility before their asylum claims have been examined. A second major issue with the current system is that of responsibility sharing. Indeed, the current system places (at least in theory) a disproportionate burden on the countries of first entry (such as Malta, Greece or Italy) that are responsible for many asylum seekers due to their geographic position.

Over the last 30 years, multiple proposals have been made in order to address the issue of responsibility-sharing for refugees and asylum seekers across EU Member States (ICMPD 2014). Naturally, the priority of implementing the various proposals on the European agenda has varied with the intensity of migration pressure on Europe’s Southern borders. Accordingly, in the past decades national authorities in Denmark, Germany, and Austria, as well as bodies of the European Union (e.g., Eurasyum, the European Refugee Fund) presented different approaches to designing an optimal scheme of responsibility sharing. Most of these proposals include economic (GDP, unemployment rate), demographic (population size), and geographic dimensions (national area in square km).

Under this general process, many attempts at improving the system have been initiated. For instance, in 1994 Germany proposed a distribution key that weights GDP, size of the national territory, and size of the population equally by one third, identifying France, Sweden, Greece, and Germany as the countries that take on the most responsibility and Spain, Portugal and some Baltic and Eastern European countries as the ones who lack sufficient involvement. Surprisingly, under the German

distribution key of 1994, Italy would be an underperformer today; meaning that in 2013 Italy accepted too few refugees relative to its economic, demographic and geographic size (ICMPD 2014). On the EU side, efforts were directed towards a further harmonization of asylum law, the creation of the European Asylum Support Office (EASO), the continuation of EU funding through the new Fund for Asylum, Migration and Integration, and finally the relocation of refugees across receiving countries. However, it is fair to say that progress in practice has been rather limited (Hatton, 2011, 2012, 2013; Thielemann et al. 2010).

The Guidelines adopted by the European Council on 27 June 2014 underline that “the Union needs an efficient and well-managed migration, asylum and borders policy, guided by the Treaty principles of solidarity and fair sharing of responsibility, in accordance with article 80 of the Treaty on the Functioning of the European Union and its effective implementation” (guideline 5) and that “The Union’s commitment to international protection requires a strong European asylum policy based on solidarity and responsibility” (guideline 7; European Council 2014). This has not been the case so far: out of the 625,000 asylum applications filed in 2014, almost half were placed in Germany (>200,000) and Sweden (>88,000), whereas France, Italy, and the UK together only registered about 160,000 applications. Many Eastern European countries and the Baltic States in particular exhibit very low numbers of applications and admissions. This pattern existed even before the tremendous increase in applications in 2013 and 2014 (numbers have doubled since then). Between 2000 and 2012 the EU received on average around 300,000 asylum claims per year (Figure 1), about one third of the total registered in the world. Over three quarters (79 percent) of the stock of asylum seekers in the EU in 2012 accumulated in only six destinations countries:

Figure 1

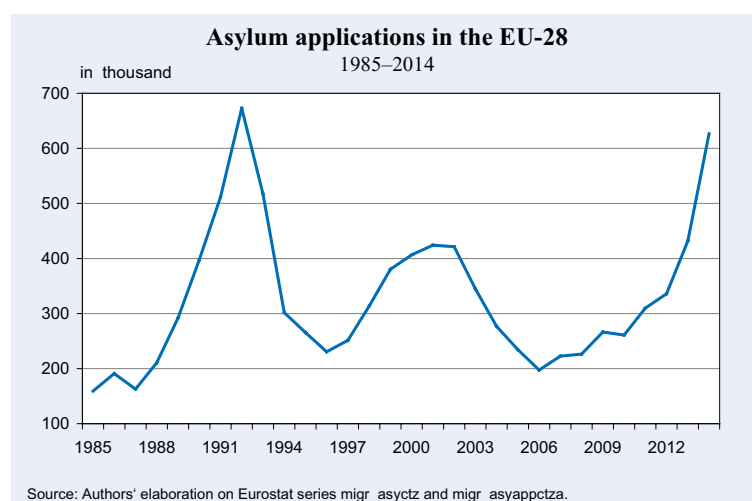
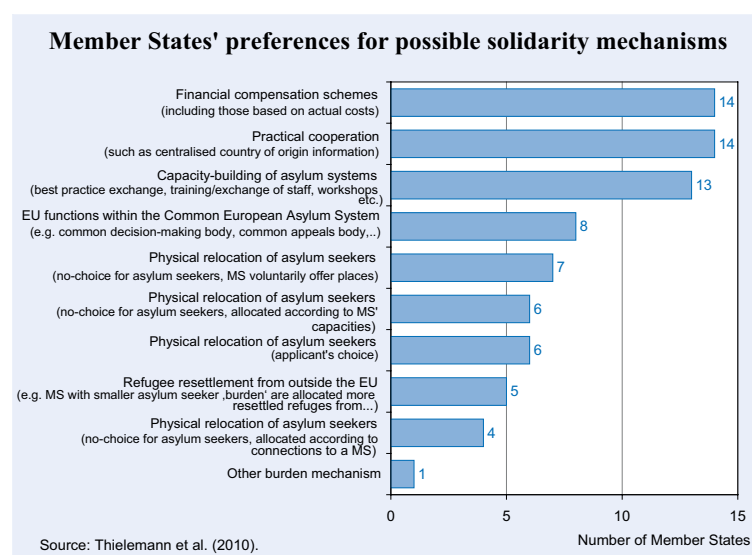


Figure 2



Germany, France, Greece, Austria, the UK and Sweden. A similar picture emerges from the 2012 numbers on refugees in Europe. 87 percent of the 1.3 million refugees in the EU are hosted by Germany, France, the UK, Sweden, Italy and Austria and 44 percent of them reside in Germany alone.

Based on surveys asking Member States about their preferences regarding their preferred solidarity mechanisms (Figure 2), Thielemann et al. (2010) called for (1) harmonization of the costs (and conditions) for hosting asylum-seekers, (2) a financial compensation for over-burdened countries, and (3) a voluntary movement of asylum seekers from more to less affected states, avoiding costly forced movements as far as possible. As

we shall see, these recommendations are totally consistent with our proposals.

The current system of EU asylum policy has failed. The increasing intensity of heated debates between strong advocates and resilient opponents of a new distribution key for refugee admissions shows that the current system is not a system of shared responsibility and solidarity. In fact, under any of the distribution keys proposed in recent decades, there would be less disparity between Member States than is the case today (ICMPD 2014). The current tragic circumstances create a political momentum for overhauling the Dublin system.

The distribution key: a useful first step

In its Communication “A European Agenda on Migration” of the 13th of May 2015, the European Commission (2015) stated that one of the main weaknesses in the current refugee policy is: “the lack of mutual trust between Member States, notably as a result of the continued fragmentation of the asylum system”. The Commission demands greater responsibility-sharing, proposes a revision of the Dublin system in 2016 and proposes to adopt immediately (by June 2015) its recommendations for a European resettlement and relocation scheme proposed on May 27 2015. The European scheme for relocation and resettlement is designed as a voluntary system of refugee allocation that follows a specific distribution key. The key takes into account the population size of a country (with a weight of 40 percent), its GDP (40 percent), unemployment rate (ten percent), and the number of spontaneous asylum applications and resettled refugees per million inhabitants between 2010 and 2014 (ten percent).³ The scheme will consist of a single European pledge of 20,000 resettlements (for Syrian refugees currently in refugee-camps in Syria’s neighboring countries – see Table 1) and the relocation of 40,000 asylum seekers currently in Greece and Italy and who arrived after April 15 to be relocated in other EU countries who will receive 6,000 Euros for each person relocated. It is worth noting that the financial compensation to Member States is well below the average direct cost per relocated refugee as evaluated by a European Commission (2010) report setting the direct

³ The Commissions’ proposed distribution key comes closest to the key proposed by the Expert Council of German Foundations on Integration and Migration (SVR) and the German Stiftung Wissenschaft und Politik (SWP) in 2013 to find criteria for the allocation of refugees across regions (*Länder*) within Germany. The SWP model considers economic strength as measured in GDP (40 percent), population size (40 percent), geographic area (ten percent) and the unemployment rate (ten percent).

Table 1

European Commission resettlement scheme (2015)	
Member State	EC resettlement scheme (%)
Austria	2,22
Belgium	2,45
Bulgaria	1,08
Croatia	1,58
Cyprus	0,34
Czech Republic	2,63
Denmark	1,73
Estonia	1,63
Finland	1,46
France	11,87
Germany	15,43
Greece	1,61
Hungary	1,53
Ireland	1,36
Italy	9,94
Latvia	1,10
Lithuania	1,03
Luxembourg	0,74
Malta	0,60
Netherlands	3,66
Poland	4,81
Portugal	3,52
Romania	3,29
Slovakia	1,60
Slovenia	1,03
Spain	7,75
Sweden	2,46
United Kingdom	11,54

Source: European Commission (2015).

cost at 8,000 euros (of which screening and travel costs were evaluated at 1,000 euros and the rest is accommodation and other support costs). It is also worth noting that even 8,000 euros seems way below the true cost of hosting refugees – including all economic, social and political costs – as discussed below.

Improving solidarity and responsibility sharing within the EU first requires a proper assessment of the burden carried and the opportunity created for each Member State. Indeed, a number of attempts have already been made to assess the current extent of financial burden sharing between EU countries with respect to EU asylum policy. Most prominently, Thielemann et al. (2010) estimate the total amount to be distributed in 2008–2013 by the European Refugee Fund as representing only 14 percent of the total asylum costs for the EU-27 for the

single year 2007. These costs include reception, accommodation, administrative procedures, deportation, integration measures, and so on. They do not, however, include the economic costs and benefits (e.g., the immigration surplus, net fiscal contribution) of refugees, nor the perceived social and political costs often associated with their integration. Such costs, however, are not commensurate with the direct costs detailed above, and are the salient ones in terms of political decision-making. As we discuss below, the true costs (and benefits) of hosting refugees can only be revealed through a market mechanism akin to the tradable quotas systems proposed here.

Tradability: revealing the true cost of refugee admission

The definition of a distribution key allocating refugee-admission quotas among Member States is a matter of equity (or fairness) in responsibility/burden sharing. However, there is no reason to believe that the proposed distribution key could be efficient, in other words that it allows for allocating refugees to destinations in a way that minimizes the total cost of such resettlement/relocation. In fact, the distribution key is based on an implicit “capacity” argument, rather than on an “ability” one. Minimizing total cost implies obtaining information on the costs and benefits of hosting refugees/relocating asylum seekers in each potential destination. However, destination countries have little incentives to reveal such information if they know it may affect the distribution key. This is why setting an initial quota based on simple observable factors is merely a first step which, although being a welcome one, cannot suffice to determine an efficient allocation.

The mechanism we propose in Fernández-Huertas Moraga and Rapoport (2014, 2015) is not demanding in terms of informational requirements since the revelation of the opportunity costs of refugee admission (that is, of countries’ comparative advantage in hosting refugees) is precisely one of its main objectives. The true costs are unknown ex-ante, but can be revealed over time through the market, which is an approach that has been widely used in other fields. There is a vast literature on tradable quotas, starting with the seminal contribution of Coase (1960). The literature has mainly concerned applications related to cap-and-trade systems to reduce pollution levels and the creation of a market for tradable emission permits is still proposed as one of the most promising instruments for addressing climate change challeng-

es (Stavins 2011). Hahn and Stavins (2010a,b) discuss the pros and cons of tradable quotas and try to explain why they are so popular among politicians. The main reason they put forward is the ability of such schemes to achieve efficiency and cost-effectiveness, even in the presence of well-known problems such as market power and political bargaining. While in practice tradable quotas have not been used except for environmental policy, they have also been proposed as a potential solution to a variety of externality situations such as budget deficit reduction (Casella 1999) or fertility controls (De la Croix and Gosseries 2007).

Our model (Fernández-Huertas Moraga and Rapoport 2014, 2015) is based on the premise that providing protection to refugees and to asylum seekers with valid claims is an international public good. Given this, free riding is likely to occur – that is, each EU country would like the protection to be provided by other Member States, resulting in an overall under-provision of protection. Formally, countries will take in refugees to the point where the marginal cost of accepting an additional refugee would outweigh the benefit of hosting him or her, not taking into account that other countries care about providing international protection. Optimally, Member States would take into account the overall benefit of providing care to refugees across all EU states instead of only their own. As we shall see, this optimal solution can be replicated by creating a market for tradable refugee quotas.

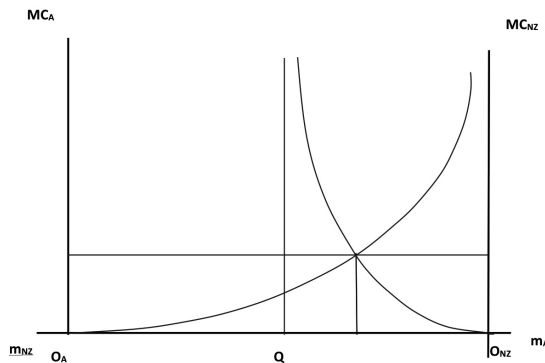
Three points must be emphasized. First, this would be a non-traditional market in the sense that participation would be restricted, at least initially, to EU governments. Second, the market would not apply to all refugees or asylum seekers at the doors of the EU, but only to a predetermined number that Member States would need to agree upon. Third, the system presupposes that the initial distribution of quotas must also be agreed upon at the EU level through some commonly accepted “burden-sharing” rules or, to use the recent and more politically correct terminology, a commonly accepted distribution key.

A simple example with two destination countries can illustrate how such a market could work. Suppose that Australia and New Zealand agree on hosting a given quantity of (climate-change) refugees from Kiribati, denoted by the distance OA – ONZ in Figure 3. They also agree initially on a distribution key such that Australia will host Q refugees, while New Zealand takes in the complementary number. Figure 3 also depicts the mar-

ginal net perceived costs of both countries on the vertical axis, with Australia counting refugees from left to right – so that the net marginal cost increases in the number of refugees received - and New Zealand counting them in the opposite direction. If a market for tradable quotas opened between both countries, they would reach an equilibrium quota price at the intersection of both marginal cost curves. At the price marked by this intersection, Australia is willing to receive financial compensation for taking more refugees than its initial quota, while New Zealand is willing to pay for not having to host them.

Figure 3

A market for tradable refugee-admission quotas



Source: The authors.

Unlike the market for tradable emission quotas, the market for refugee admission quotas is more complex, as refugees are heterogeneous in terms of education, age, family status, etc., which can make them more or less desirable from the viewpoint of receiving countries. Not less importantly, in contrast to pollution particles, refugees have preferences over their locations. This creates room for further efficiency gains by taking into account refugees' and Member States' preferences – hence the matching mechanism detailed below.

Taking preferences into account: matching

The creation of a suitable matching process has been proposed in the economic literature to optimize various processes whereby items offered by certain providers have to be assigned to agents, such as university admissions (Roth 1985) and even kidney donors to patients in need (Roth, Sonmez and Unver 2004). In this context, the problem is to assign indivisible items (rights for a

refugee or an asylum seeker to enter a given destination country, or “visas”) to agents (refugees or asylum-seekers) taking into account their preferences, as well as destination countries' preferences over the type of refugees they host.

Refugees' preferences

From a theoretical point of view, the problem is analogous to assigning houses to tenants with existing rights, studied, among others, by Abdulkadiroglu and Sonmez (1999). The solution proposed by Abdulkadiroglu and Sonmez is the use of the top-trading cycle mechanism:

1. Each refugee/asylum seeker ranks all potential destination countries, specifying those to which he/she would not want to go at all.
2. An ordering of refugees and asylum seekers is randomly chosen from a given distribution of orderings.
3. For any given ranking of countries made by the refugees and ordering of refugees, the outcome is obtained using the following algorithm: assign the first refugee (from the ordering obtained in step 2) her top choice, the second refugee her top choice, and so on, until someone requests a visa for a country whose quota (resulting from the market) is filled. Assign that refugee her second choice, and so on, until all quotas are filled.

The top trading cycles mechanism has been shown to be individually rational, as it assures every refugee a visa that is at least as good as the possibility of staying in her first-asylum country or her refugee camp. It is also incentive-compatible (no refugee has an incentive to misrepresent her preferences whatever the strategies others use) and Pareto-efficient in the sense that it guarantees that two refugees will not find it beneficial to switch places (destinations).

It turns out that the addition of the matching mechanism to the market for tradable refugee-admission quotas (TRAQs) described in the previous section does not alter its efficiency properties as long as it is properly designed. If participating countries were to be compensated on the basis of the number of refugees and asylum seekers they bid for in the market, they would have an incentive to bid for a large quota, and subsequently discourage refugees and asylum seekers from going there. This way, they would be compensated by the market in addition to not actually incurring the cost of hosting the refugees and asylum seekers, who would use the

matching mechanism not to go to an undesirable destination. To avoid this perverse incentive, the solution is to compensate countries based on the actual numbers of refugees and asylum seekers they host, rather than on those they bid for.

This amounts to forcing destination countries to pay the market price for the unfilled part of their quotas. This is a penalty that countries would have to pay for not being able to attract as many refugees and asylum seekers through the matching mechanism as they would bid for in the market. This acts as a disciplining device, insuring that countries do not have incentives to become unattractive from the point of view of refugees and asylum seekers. In practice, the EU could be in charge of collecting this penalty in the case of any off-equilibrium behaviour.

In terms of enforcement, the penalty would generate incentives for countries to abide by their agreements and actually host the number of refugees they accept to host in theory. Of course, collecting the penalty would be an additional enforcement issue, but we do not think it different from the enforcement problems associated with the collection of other payments at the EU level.

Member states' preferences

Receiving countries also have preferences with respect to the type of refugees or asylum seekers they host. There are a number of dimensions that affect the expected cost of refugees from the viewpoint of receiving countries: skills and education, age, gender, language spoken, religion, etc. For some of these characteristics (e.g., education), countries' preferences are likely to be homogenous, while for others (e.g., language), they are heterogeneous. In the first case, taking countries' preferences into account will have no effect on the type of refugees they receive. It is only if countries' preferences are heterogeneous – that is, there is horizontal differentiation – that the expression of their preferences can affect the type of refugees they receive, making it closer to their preferred type and helping to make the whole mechanism even more cost-effective.

There are at least two ways to introduce countries' preferences into the model. The first and less interesting way would imply creating one market for each type of refugee and asylum seeker that exists. For example, if countries only had preferences between refugees and asylum seekers, the EU would only need to create a market for

refugee quotas and a market for asylum seekers' quotas. A second possibility, described in the previous section, is to group refugees and asylum seekers into the same market, even if they are heterogeneous. This methodology can be extended to the case where there are many different types of refugees or asylum seekers over which countries can have preferences in terms of, for example, their language, their nationality or their skill level.

Adding a matching mechanism that assigns both destinations to their preferred refugees and refugees to their preferred destinations to the market for TRAQs has no effect on the efficiency properties of the market. Marginal cost equalization across migrant types and across countries would still obtain, but at a lower level. The cost-reduction depends on how heterogeneous countries are in their preferences: the more heterogeneous they are, the higher the cost-reduction.

Conclusion

The recent proposal by the EU Commission to introduce a distribution key for refugees and asylum seekers is a welcome concrete measure to give solidarity and responsibility sharing in the field of asylum a practical content. It is akin to the distribution of initial quotas. We propose to extend this policy proposal in two directions. First, we propose to implement a matching mechanism to take refugees' and host countries' preferences into account. In doing so, the matching mechanism will contribute to lower the expected cost of hosting refugees for host countries and will improve refugees' long-term integration prospects. Second, we propose that the initial quotas allocated through the distribution key could be traded in a market for refugee-admission visas. The two proposed components are linked in the sense that the matching mechanism makes it possible to design a sanction scheme ensuring that receiving countries will have incentives to be attractive from the perspective of refugees and asylum seekers, that is, to offer them good treatment and conditions.

References

- Abdulkadiroglu, A. and T. Sonmez (1999), "House Allocation with Existing Tenants", *Journal of Economic Theory* 88, 233–260.
- Casella, A. (1999), "Tradable Deficit Permits. Efficient Implementation of the Stability Pact", *Economic Policy* 29, 323–347.
- Coase, R. (1960), "The Problem of Social Cost", *Journal of Law and Economics* 3, 1–44.

De Bruycker P., Jaillard M., Maiani F., Vevstad V., Jakuleviciene L., Bieksa L., de Bauche L., Jaumotte J., Sarolea S., Hailbronner K. (2010), *Setting up a Common European Asylum System: Report on the application of existing instruments and proposal for the new system*, Luxembourg, Publications Office of the European Union.

De la Croix, D. and A. Gosseries (2007), "Procreation, Migration, and Tradable Quotas", in R. Clark, A. Mason and N. Ogawa, eds., *Population Aging, Intergenerational Transfers and the Macroeconomy*, Edward Elgar Publishing, 227–49.

European Commission (2010), *Study on the Feasibility of Establishing a Mechanism for the Relocation of Beneficiaries of International Protection*, JLT/2009/ERFX/PR/1005, Copenhagen: Directorate General of Home Affairs.

European Commission (2015), *A European Agenda on Migration*, Brussels, 13.5.2015, COM(2015) 240 final.

European Council (2014), *Conclusions concerning the area of Freedom, Security and Justice and some related horizontal issues*, 2014/C 240/05.

Fernandez-Huertas Moraga, J. and H. Rapoport (2014), "Tradable Immigration Quotas", *Journal of Public Economics* 115, 94–108.

Fernandez-Huertas Moraga, J. and H. Rapoport (2015), "Tradable Refugee-admission Quotas and EU Asylum Policy", *CESifo Economic Studies*, forthcoming.

Hahn, R. W. and R. N. Stavins (2010a), "The Effect of Allowance Allocations on Cap-and-Trade System Performance", *The Journal of Law and Economics*, forthcoming.

Hahn, R. W. and R. N. Stavins (2010b), Why cap-and-trade should (and does) have appeal to politicians, <http://www.voxeu.org/article/why-cap-and-trade-should-and-does-have-appeal-politicians>.

Hatton, T. J. (2011), *Seeking Asylum. Trends and Policies in the OECD*, Centre for Economic Policy Research (CEPR), London, UK.

Hatton, T.J. (2012): "Asylum Policy in the EU: the case for deeper integration", *Norface Migration Discussion Paper* No. 2012-16.

Hatton, T.J. (2013): "The Slump and Immigration Policy in Europe", *The Australian National University Centre for Economic Policy Research Discussion Paper* No. 686.

ICMPD (2014), An Effective Asylum Responsibility-Sharing Mechanism, *ICMPD Asylum Programme for Member States – Thematic Paper* October.

Roth, A. E. (1985): "The College Admissions Problem is not Equivalent to the Marriage Problem", *Journal of Economic Theory* 36, 277-288

Roth, A., T. Sonmez and U. Unver (2004), "Kidney exchange", *Quarterly Journal of Economics* 119 (2), 457–88.

Stavins, R. N. (2011), "The Problem of the Commons: Still Unsettled after 100 Years", *American Economic Review* 101, 81–108.

Thielemann, E., R. Williams, C. Boswell and Matrix Insight Ltd. (2010), "What system of burden-sharing between Member States for the reception of asylum seekers?", *Directorate General for Internal Policies, Policy Department C: Citizens' Rights and Constitutional Affairs, Civil Liberties, Justice and Home Affairs*, European Parliament, Brussels.