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Abstract

The current literature on forced migration offers only limited knowledge of how each of the different consequences of war, such as damage to property and casualties to family members, and the services provided to the refugees in the host country, affect the difficult choices that refugees subsequently must make as to when and where to migrate once again. This paper contributes to the literature on forced migration by studying the effects of armed violence in the country that has given rise to the largest number of refugees in the world in the last decade, namely Syria, on those various migration-related decisions. The study is based on all three waves (2013, 2014 and 2015) of a survey conducted of Syrian refugees in Turkey, the country with the largest number of Syrian refugees. The study first examines the various impacts of war (property damage, casualties, sleeping disorders) on the refugees by gender, age, education, income and other characteristics. More importantly, it then investigates the consequences of these different impacts of war as well as the duration of the refugee's stay in Turkey, the quality of services provided to these refugees and the individual characteristics of the refugees on various alternative choices about the timing and destination of future migration by refugees using a logit model. The results show that (1) the longer and greater the level of violence in the country of origin, and the longer the time spent outside of Syria, the lower the likelihood of the choice to return to the country of origin; (2). the longer the time the refugee has spent in Turkey, the higher is the probability of permanent settlement in another European country; and (3) the more and higher quality of services provided to the refugees, the more likely they are to remain in Turkey While females are more likely to want to return to Syria, men and especially those with greater education, higher income and personal networks are more likely to want to relocate somewhere in Europe or elsewhere.

Keywords: refugees, forced migration, labor market, employment, immigration, logit model, civil war, Syria, Turkey.

JEL Codes: F22, J10, J15, R23, C25, N45

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I Introduction

The world is facing the highest levels of forced displacement since World War II. Currently, more than 65 million people are forcibly displaced by various conflicts around the world as refugees and internally displaced persons (IDPs) due to violence, war and civil war, human rights violations, and genocide.[1] Although its experience is quite recent, Syria is the country with by far the largest numbers of forcibly displaced persons. The earlier experience of Afghan and other refugees has shown that such displacements can last for three or more decades. In addition to refugees seeking asylum outside their homeland, there also 6.6 million IDPs within Syria, many of these having been displaced many times as a result of changing tides in the civil war between the Syrian government and the many different kinds of rebels, ISIS fighters from various countries and from time to time interventions by Russians, Kurds, and others The Syrian crisis is now the world's biggest humanitarian crisis, with more than 4.9 million registered refugees and more than 7 million IDPs.

The internal conflict in Syria since it started in early spring of 2011 has forced millions of people to seek asylum in countries in the region, mostly in Turkey, Iraq, Jordan, Lebanon, Libya, and Egypt. Table 1 gives the distribution of the registered Syrian refugees as of Jun 2016. Currently, of the 4.9 million Syrians registered as refugees outside Syria, 2.74 million are in Turkey (or 56.65 of the total), 1.05 million in Lebanon, 0.66 million in Jordan, 0.25 million in Iraq, 0.12 million in Egypt, and 0.03 million in Libya. In addition, more than 1.15 million Syrians have registered for asylum in European counties. Figure 1 provides a map of both Syria and Turkey identifying key locations for the origin and destination of the refugees from Syria to Turkey. More than half of these migrants are women and children, who face social upheaval and gender discrimination and abuse, and are forced to live in conditions that no human being should have to endure, both in their home country and in the countries to which they have lived (AFAD, 2014).

The on-going civil war in the country has already caused over 450,000 deaths, reducing life expectancy for those in Syria from 70 to 56, and well over 11 million Syrians to flee their homes, in many cases leaving with but their clothing and often with serious injuries. The civil war in Syria has had devastating effects not only for Syria, but also for Turkey, Lebanon, and

[1] UNHCR (2015), World at War: Global Trends, Forced Displacement in 2014.

more recently a number of other EU countries due to refugee inflows either directly or in most cases indirectly from Turkey. The economic cost of the Syrian war with its spillover into Turkey, Lebanon, Jordan, Iraq, and Egypt is estimated as $35 billion by the beginning of 2016 and climbing rapidly.[2]

Even more depressing, there seems little prospect that the Syrian refugee crisis is going to diminish any time soon, with President Assaad unwilling to leave and the opposition unable to agree on any alternative. Despite repeated efforts, the UN Security Council has failed to find a peaceful solution. The best periods are ones of temporary ceasefires in a few parts of Syria that temporarily allow international aid agencies to get food and water or medicine into at least a few of the many starving and wounded Syrians (Kirisci and Ferris, 2015).

Moreover, despite initial pledges of other countries to open up to Syrian refugees, various unfortunate events in some of these countries have set off anti-refugee fears in the destination countries. This has led to sharp conflicts among European countries on the sharing of the refugee burden, even threatening the break-up of the European Union itself. The backlash against acceptance of Syrian migrants has even become an issue in countries like the United States which have accepted very few of these refugees. Clearly, the continuing tolerance for Syrian refugees in the largest host countries is reaching limits, and bringing threats of harm to and discrimination against these poor refugees.[3] The problem of care for these refugees is made even worse by the fact that, according to UNHCR (2016), in the face of rising numbers of refugees, the funding from the United Nations and other agencies for such care has been falling. As a result, the funding is said to be able to cover only 30 percent of even the minimal needs of the refugees in terms of food, tents, water and toilet facilities.[4]

[2] World Bank, MENA Quarterly Economic Brief, January 2016: The Economic Effects of War and Peace.

[3] Kirisci and Ferris (2015, p. 5) cite an opinion poll of the Turkish population held in October 2014 saying that "more than 62 percent of those surveyed supported the idea that Syrian refugees were involved in criminal behavior", an attitude however contrasting sharply with what local authorities and security officials have said about it. These authors also point to the fact that ethnic differences between Syrian Kurds and Arabs among these migrants has complicated relations between the Turkish Kurds and the Turkish government, inducing many Turkish Kurds to break away from the ruling party to support a pro-Kurdish party (p.9).

[4] For example, recognizing that undue burdens placed on local communities resulting from supplying them with services and displacements of local workers in local labor markets, the UNHCR orchestrated a program in which special funds would be provided to the local communities hosting the refugees to keep them "resilient". Yet, at present, the percentage of such funds requested that has been received for this purpose is reported to be only about 10 percent (UNHCR, 2016).

Quite naturally, the problems in caring for the refugees have varied somewhat across refugee-receiving countries. Language differences and hence access of children to education have been less serious in Lebanon and Jordan which are also Arabic-speaking than in Turkey. Yet, in Lebanon due to the greater dispersion of refugees, it has been more difficult to reach them, and as a consequence to provide them with access to health services (UNHCR 2016).

Because of the facts (1) that Turkey is host to by far the largest number of Syrian refugees (as well as the total number of refugees) and (2) that, early on, it assigned the refugee crisis to AFAD (Turkey's Disaster and Emergency Management Agency), an agency with considerable experience in managing those Turkish citizens that had been displaced by earthquakes, and which has devoted considerable resources to data collection among the Syrian refugees, our analysis is focused on Syrian refugees in Turkey,.

The timing for Turkey's handling of the refugee crisis was also quite fortuitous, given that the country in general and AFAD in particular had already had the experience of hosting hundreds of thousands of Turkish refugees from Bulgaria in 1989, and Kurds from Iraq during and after the Gulf War and US invasion of Iraq. Turkey, had also already been serving as the doorway for asylum seekers in Europe for refugees from many other countries. It had also been trying to modify its laws with respect to migrants so as to be compatible with the standards of the European Union with which Turkey had long been trying to affiliate (Iduygu 2015). Indeed, in April 2013 the Turkish Parliament passed "The Law on Foreigners and International Protection" for integrating migrants and treating asylum seekers and irregular migrants in accordance with international norms. In October 2014, by which time the number of Syrian refugees in the country had exploded, it put into force a "Temporary Protection" regime. This regime outlined the rights and responsibilities of these refugees as well as the services to which they are entitled, whether or not registered. AFAD coordinates the provision of these services from a large number of agencies and national and international NGOs.

At first, i.e., in 2011-2012, the Syrian refugees were regarded as temporary and therefore the assistance was largely limited to food, medical services, tents, water and security and located in camps near the Syrian border. Over time, however, and especially after the additional bursts of Syrian refugees arriving between 2013 and 2015, more have been located in more urban environments and further away from the border, but still under AFAD and UNHCR supervision. As the prospects for their early return to Syria have fallen, more and more Turkish citizens and

service providers, have come to think of them as long-time refugees. Some have even begun to doubt that Syria will ever be able to continue as a single nation state (Icduygu, 2015, Kirisci and Ferris 2015, p. 11). This has led to increasing concerns for Turkish language training for schooling and jobs and hence higher costs of service provision to the refugees, but also to take advantage of some highly educated professonals among the refugees by allowing the migrants to work legally and eventually to become citizens and vote. By and large, the World Bank and other evaluators of the various Syrian refugee programs have judged it to be more successful than the others. Particularly appreciated has been the Turkish TP legislation and related services allowing professionals and others to work. Some of those who managed to bring some of their wealth with them have been able to set up businesses. Among other effects of this has been that these entrepreneurs have found ways to substantially increase exports from Turkey to Syria (World Bank Group 2015).

A major advantage of Syrian refugees in Turkey as the group to be examined for relating the different types and forms of violence to which Syrians had been subjected and the extent of support provided to the refugees to their plans for future repatriation or further migration is the fact that AFAD has conducted three different rounds (in 2013, 2014 and 2015) of a very useful and seemingly unique Survey of Syrian refugees in Turkey. The AFAD survey of the Syrian refugees in Turkey has been applied both inside of and outside of the camps, making it possible to compare differences in their effects between these two types of location. In view of the heterogeneity of the Syrian refugees in Turkey with respect to age education, location, income and wealth, damage done to their family, and to their property in Syria, the findings based on this data should allow us to capture a great deal in the way of heterogeneity among these different groups of Syrian refugees in Turkey with respect to when, where and why they expect to move. Indeed we hypothesize that there should be significant differences in such responses across individual refugees with rather different backgrounds.

While there have also been surveys of Syrian refugees in both Jordan (e.g. Doocy et al (2015) and Lebanon (Jefee-Balloul et al ,2014; Benage et al. ,2015; and Hassan et al ,2016), these have been largely confined to health, and relatedly to access to health services. They have not collected data relevant to the central issues of this paper about the prospects and possible timing of further migration.

The remainder of the study is organized as follows. Section II presents a brief survey of the literature on Conflict or Forced Migration, identifying those areas in which this study is intended to contribute. Section III presents some additional historical background of the Syrian internal conflict war and its consequences, identifies some of the main actors involved in management of Syrian refugees in Turkey and some of the main influences on the determinants of success in such management. Section IV describes the data and presents descriptive statistics on survey respondents. Section V provides an assessment of the impacts of war on individual respondents based on their responses to survey questions. Section VI introduces the logit models used for estimation various migration choices. Section VII presents the empirical results of the migration choice models. Section VIII provides our conclusion which, because of the large and ever-growing number of refugees, and the costs of caring for them, includes a comparison of the estimated benefit-costs of conflict resolution in Syria relative to the costs to hosting these refugees in the countries of destination.

II. Literature on Conflict Migration

The existing literature on conflict-driven or forced migration offers only limited knowledge concerning the effects of the consequences of conflicts that have emerged around the world on migrants' intentions about their further migration intentions, such as to return to their homeland, to stay in their present location as refugees or to migrate to alternative locations. Especially when such conflicts in the country of origin are long-lasting as they have been in recent decades in Afghanistan, Iraq, and Syria, such conflict- driven civilian migrants have to make several hard choices among such alternatives, some of which are very risky and uncertain. We hypothesize that these choices are likely to be affected by the physical and non-physical damage caused by the conflict, living conditions of refugees, and demographic and social-economic characteristics of the refugees. By the same token, both the countries currently hosting these refugees and those to which they might migrate need to know how to plan for these migrants, as would the United Nations or the countries of origin should they choose to return to those countries of origin.

Existing literature on international migration focuses two quite different types of migration, namely labor migration and forced migration, the latter, as indicated above, being the subject of this paper. Krugman and Bhagwati (1976), Greenwood (1985), and Bauer and Zimmermann (1995) provide surveys of the economic theory and empirical evidence pertaining to international migration from the labor economics perspective. Most of the literature on forced migration is based on aggregate (mostly state- level) data. These studies are commonly referred as large-n studies. Most of the previous large-n studies using aggregate country level data have demonstrated that both economic factors (gross domestic product (GDP) per capita, GDP growth rate, unemployment, income distribution, economic discrimination, energy consumption), geographic and environmental (natural disasters, climate change, etc.), and conflict -related factors (war and civil war, internal conflicts, genocide, civil rights, etc.) have been important determinants of migration decisions. Essentially, these large-n studies have been used to draw inferences about individual decisions on whether to migrate or stay, arguing that people can make rational choices even under the extremely violent conditions of war (Davenport et al., 2003; Moore and Shellman 2004, 2006,2007; Neumayer, 2005; Melander and Öberg 2006, 2007; Shellman and Moore, 2007; Edwards 2009, Song, 2012; Verwimp and Maystadt, 2015).[5] Large-n studies with their choice-centered approach made a significant contribution to the literature by laying a theoretical foundation for the forced migration analysis.

The few studies on forced migration that use individual level data have made use of some of the same explanatory variables used in the aggregate studies, such as the level of violence, economic, social, political, and physical aspects of the environment, and individual characteristics such as gender, age, education, income, etc. (Among these few studies are Massey, 2005, 2010 on Nepal; Engel and Ibáñez, 2007; Ibáñez and Vélez, 2008 on Colombia; Czaika and Kis-Katos, 2009 on Aceh Province in Indonesia; Alvarado and Massey, 2010 on migration from several countries of Latin America to the United States; Bohra-Mishra and Massey, 2011and Adhikari, 2013) again both on Nepal.[6] An alternative approach for investigating factors behind forced migration is the case study is that of Steele (2009) which puts much more emphasis on the need for security.

[5] See Clark (1989) for a review of variables found to have power in predicting refugee flows.
[6] Verwimp and Brück (2009) provide a nice review of some of the micro-level studies on forced migration.

Even these studies using individual level data have generally not been able to go much deeper in explaining conflict migration than the studies using aggregate. In the case of Czaika and Kis-Katos (2009) this is in part because the data was actually only at the village level in other cases, the explanation is that the measures used were largely the same such as an overall measure of violence in the place of origin or the impact of human capital as in much of the labor migration literature. One interesting exception is that of Vogler and Rotte (2000) who demonstrated the relevance of the individual's social networks in decisions to migrate to Germany (a highly developed country in which both human capital and social networks could be very useful economically). Another is Massey et al (2010) which was better able to capture the time duration effects (relevant also to the Syrian case) in that in the shorter run an individual's access to human capital and infrastructure would reduce outmigration but over time the indirect effect of these factors on economic networks and market access would increase outmigration.

Existing studies on conflict- related migration examine either (a) the movement of refugees internationally (e.g., Schmeidl, 1997; Apodaca, 1998; Neumayer, 2005; Iqbal, 2007; Melander and Oberg 2006, 2007; Shellman and Stewart, 2007; Shellman and Moore, 2007; Edwards 2009, Song, 2012, among others) or (b) solely the internal displacements (e.g, Schultz, 1971; Morrison, 1993; Morrison and Perez Lafaurie 1994; Ibáñez and Vélez, 2008; Adhikari, 2013). Studies examining both internal and international displacement are relatively scarce (Davenport et al. 2003; Melander and Öberg 2007; Moore and Shellman 2004; Bohra-Mishra and Massey, 2011). By contrast, our study goes beyond these studies by investigating the determinants of not only forced international migration but also further decisions about the timing and direction of subsequent migration to elsewhere in Turkey to another country (in Europe or elsewhere).or back to the country of origin

Previous literature on level of violence and migrations have quite thoroughly made use measures of the level of violence on conflict migration and some have even captured nonlinearities in such effects, e.g., with possible thresholds below which more violence would not increase displacement (proportional or absolute), above which it would increase it, but then again another threshold above which displacement would be discouraged (e.g., Stanley, 1987; Zolberg, 1989; Zolberg, et al., 1989; Weiner, 1992, 1996; Schmeidl, 1997; Morrison and May, 1994; Cohen and Deng, 1998; Ball et al., 2002; Davenport et al. 2003; Moore and Shellman 2004, 2006, 2007; Melander and Oberg, 2006; Edwards 2009; Melander, et al., 2009). Yet,

seldom do such studies distinguish between the impacts of casualties and those of direct damage to homes or psychological effects as we do in this study by taking advantage of the three different waves, 2013, 2014 and 2015 of the AFAD Surveys.

III. The Syrian Conflict, Syrian Refugees in Turkey and Their Management

The Arab Spring events began in Tunisia in 2011 but soon spread to Egypt, Yemen, Bahrain, Morocco, Syria, Yemen and Libya, what started as peaceful demonstrations in Syria turned into violent repression and then greater militancy in return in late 2011, violence spreading around the country in certain locations over time. The present section attempts (1) to describe the time path and loci of conflict in Syria and trace the impacts of this violence on migration into Turkey and (2) then, because of the rapid growth in Syrian refugees in Turkey to well over 2 million, to identify some of the main groups involved in management of these temporary migrants and their influence on the character of their treatment.

A. Time Path of Conflict in Syria and Conflict- Driven Migration into Turkey

When the Arab Spring uprisings came to Syria, Syria's population was in general very young. Roughly 35% of the total population was under 15 years of age, and the median age was only 22. Its gross domestic product (GDP) per capita was in the middle-income category, $3,289 US per person in 2012 (World Bank, 2013). Syria's main exports were agricultural products and oil. 17% of Syria's work force were employed in agriculture, 16% in industry, and 67% in the services sector.

Precise assessment of the destruction due to war is not easy, especially since most information on this comes only through only the partial observations of the various humanitarian organizations in the country. Assessment of the physical damage to property[7] is especially partial and incomplete. While there is more objective data on casualties of the war by date and province of Syria, even this data is incomplete and the estimates vary from one source to another.

But since these counts on casualties from the war in Syria are more available from different sources, they can be checked and cross-checked, yielding the numbers of verified casualties inside Syria from the conflict by month from March 2011 to March 2016 shown in Figure 2. Note that there have been several upward spikes in these deaths, the largest between May 2012

[7] However, see Marx (2016) for an assessment of the building damage based on remote sensing approach using Landstat images.

and August 2012, another in July and August 2013, still others November 2013 to January 2014, between January 2015 and April 2015 and finally between September 2015 and January 2016. The single most violent month was August, 2012 which was largely the result of fighting (including an intense air bombing campaign) in Aleppo, Syria's largest city and its former commercial capital.

The second important jump in casualties in Syria came in the summer of 2013 when the north-western city of Idlib fell to Islamist groups led by al-Nusra, in the process ramping upward the number of deaths. The largest upward jump in fatalities from war occurred in September 2015 and immediately thereafter when Russian troops entered Syria and Russian war planes began intensive bombing.

Figure 3 shown the overall cumulative numbers of verified casualties derived from the monthly data in Figure 2. Figure 4 shows the cumulative numbers of casualties in the Syrian war broken down by region of origin in Syria, the two most affected regions being Aleppo Province and the area surrounding Damascus (but not including Central Damascus where the Syrian government and its armed forces are concentrated). The higher figures for these two regions are also the result of these regions being the most heavily populated.

The reader should be alerted to the fact that the number of verified deaths due to the conflict in Syria is a substantial undercount of the actual number of deaths. Indeed, the real number of war casualties is believed to be about three times as high as the verified number of war casualties.

Table 2 provides information on the total numbers of Syrian refugees in Turkey at the end of 2011, and then again at the end of each subsequent year and then again in June 2016, and their disaggregation into two groups, those living inside of and outside of camp settlements. Over time the number living outside these camps was growing much more rapidly than those in the camps.

Figure 5 makes use of the figures on numbers of refugees in Table 2 to show the rapid accumulation in Syrian refugees in Turkey. Not surprisingly, the upward kinks in these curves correspond roughly to those in casualties reflected in Figures 3 and 4. Figure 5 also highlights the extent to which the growth in numbers of refugees since mid-2013 has largely been outside the camps. There were some Syrian refugees before mid- 2011 but those were unregistered.

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B. Management of the Syrian Refugees in Turkey

Support for international refugees in Turkey has come from a variety of sources. Relative to other countries, however, Turkish government has been the dominant source of support for refugees and asylum seekers. Drumgold (2015, p.133) has attributed this to the top-down culture of the Ottoman Empire, which dominated the area of modern Turkey for so many years. The dominance of state institutions and activities in handling refugees and so many social problems was reflected in an especially small number of Civil Society Organizations (CSOs) in Turkey until the late 1990s. Since then, however, she has noted significant increases in the number of CSOs and in the extent of their activities, after the huge earthquake of August 17, 1999 (which displaced many thousands of Turkish citizens), and again after the passage of the the Turkish Associations Law in 2004 and the Foundations Law in 2008 which removed restrictions on the establishment of welfare-oriented CSOs. Nevertheless, most of the CSOs, such as the Turkish Red Crescent Society have operated in collaboration with International agencies such as the United Nations High Commission for Refugees (UNHCR), and coordinated with the leading Turkish governmental agencies, the aforementioned AFAD and more recently both the General Directorate for Migration Management (GDMM) and also the less governmental Association for Asylum Seekers and Migrants (ASAM). The latter has been increasingly important as a result of the support it has received from the European Union, US, UK and UNHCR. Drumgold (2015, p. 115) also attributes much of the success of Turkish management of Syrian refugees to close cooperation between the national government agencies like AFAD with local governments such as governorates and municipalities, often also in collaboration with an international agency like the World Food Program and The Turkish Red Crescent.

Although still not that important, the CSOs involved in managing and serving the Syrian refugees in Turkey vary considerably from relatively academic and research organizations like the Ankara-based International Middle East Peace Research (MPR), the more ethnicity oriented Imkander established in 2009 to help Circassian refugees from former Russian territories in the region and more religious based organizations like the IHH, KYM and Cansuyu all founded since the late1990s.

Several factors have contributed to the rather remarkable improvement in Turkish management of in-migrants over time and its impressive ability to handle the massive inflow of Syrian refugees. One is experience, having in previous years having had to deal with large

numbers of Iraqi and Afghan refugees. Second and more importantly has been the influence exerted on Turkey from the European Union as a result of Turkey's long expressed interest in gaining accession to the EU. [8]Finally, the fact that so many of the activities have been undertaken jointly between the government agencies, international NGOs but with generous financing from the UNHCR, European Union, and individual Western governments, has instilled that sense of hospitality and welcome extended to Turkey's many guests from Syria.

The United Nations and EU and other international donors and coordinated by AFAD and ASAM have all contributed to an admirable ethic in the efforts to support the Syrian refugees by treating them as "guests" deserving hospitality and support based on their unfortunate displacement from their homes and in many cases with losses of life among family members.

The only shortcoming noted by Drumgold (2015) in this collaboration between government, CSOs and international agencies in handling the refugees was between some of the international agencies and some of the Turkish CSOs attributable to the limited foreign language capabilities of the Turkish CSOs.. While some journalistic accounts have quite naturally pointed to possible concerns on the part of Turks for the effects of the large number of Syrian refugees on their housing rentals and job opportunities (Erdogan 2014 and Kirisici 2015), a much more deleterious influence has been the media. From time the media have made much of some conflicts among Syrians themselves, disputes of Syrians with local shopkeepers, unwanted social influences which have had the effect of putting the behavior of Syrians in a largely undeserved bad light (Drumgold 2015). This unfortunate type of media coverage was reported to have declined somewhat after the Turkish government offered training to the media on coverage of Syrians.

Given the large numbers of Syrian refugees, the many cases in which they are located far from places where the health care, food, and language training for the refugees are supplied and where employment opportunities exist, some Syrians have complained of their shortcomings in services to which they can access. This is especially so recently due to the admitted shortfalls in

[8] Especially important has been a series of bilateral migration agreements that Turkey has been induced to sign with individual European and other countries. A second was the creation at the EU's insistence of the special agency the General Directorate for Migration Management (GDMM) to help manage the Syrian migrants in particular which Turkey has done quite effectively. Third has been EU guidance on the character of how migrants should be treated, namely as "guests" to be treated with kindness and taking into consideration the property and human losses of life that they and their families have suffered.

available international funding pointed out by the UNHCR and AFAD. The most frequent complaint by the Syrian refugees is with respect to unemployment and lack of access to employment. Other shortcomings reported though less frequently by Syrian refugees in Turkey have been inadequate shelter and access to language training. Biehl (2015) has attributed much of the problems between Syrian refugees and their Turkish hosts to differences in views about the duration of their stay in Turkey. Turks view their stay as only temporary and thus make little effort to foster relationships with them, but the Syrians themselves remain very uncertain about how long they will be in Turkey, and point to the fact that it is usually the new arrivals who have less information about how to get access to shelter, food and other services.

IV. Data on Syrian Refugees from the AFAD Surveys and Descriptive Statistics

Next we turn to information about the AFAD Surveys of Syrian refugees in Turkey and what they reveal about the refugees. While each of the three rounds of the AFAD survey included some questions specific to that round, each also included common questions (demographics, living conditions, war experiences, etc. on which we focus in this study. Some results from Wave 1 of the survey were published in AFAD (2014) and some from Wave 2 in AFAD (2016). Wave 1 was the result of an extensive profiling survey on Syrian refugees living in Turkey carried out between June 23, 2013 and July 7, 2013. Its primary focus was "needs assessment" and included 2,700 households and 15,153 individuals. Wave 2 of the survey was carried out by AFAD during September 1-10, 2014 and was the outcome of the multi-agency initiative, involving both Turkish authorities and the UN agencies (the World Health Organization (WHO) and UNICEF) but under the leadership of AFAD. That survey focused on the health and nutrition status of Syrian children and their mothers and included 1,214 households and 7,794 individuals. Wave 3 of the AFAD survey emerged from a joint initiative with the WHO and focused on health conditions and risk factors for non-communicable diseases. This round of the survey collected data from 5,760 adults during December 7-25, 2015 but for the relation between war effects and migration from only 640 households. Since the questions on war effects and migration were mainly based on the household, our analysis is at the household level. When all three waves are combined, the total number of respondent households reaches 4,433.

A. Population and Sampling Design

Each of the three waves of the surveys used the same approach in obtaining samples that were most representative of the refugees. As Syrian refugees were living in more than 10 large cities, obtaining a representative sample needed a unique approach. Selection of the samples were performed by the AFAD based on its previous experience, without having to fall back on the commonly used "snowball sampling" approach. All three surveys used multistage random sampling methodology. At the top level, both in camp and out-of-camp settlements sample sizes were determined based on the proportion of refugees in each settlement. At the second stage, 9 to 10 cities were selected in which Syrians refugees were most concentrated (accounting for a minimum of 80% of the total refugees in Turkey). Application of this method was facilitated by the fact that almost all such refugees were registered with the Turkish authorities. Its application equalized the chance that a non-camp refugee would be included in the sample regardless of the population density of the community in which that refugee was living. While this multi-stage random sampling method was applied in each round to select the refugees living outside the camp settlements, simple random sampling was used to select the refugees from the camp settlements.

An illustration of how the out- of- camp multi-stage random sampling was applied can be seen with the help of Figure 6 for the province of Gaziantep (which is located very near the Syrian border). Communities were classified as high, medium, and low in refugee density, based on estimated numbers of refugees in each area by local AFAD offices. Then, a random sample of neighborhoods was selected, wherein each neighborhood was assigned a sample size in proportion to its size relative to that of all Syrian refugees in that area. Neighborhood mukhtars (headmen) were also consulted to obtain a list of Syrian households from which ten households in the neighborhood were randomly selected. A hypothetical illustration is given for Gaziantep province in Figure 6.

Assuming that the hypothetical refugee population estimates for the high, medium, and low concentration areas were as follows:

- High concentration areas: 100,000 refugees
- Medium concentration areas: 50,000 refugees

- Low concentration areas: 10,000 refugees

the numbers of regions randomly selected for the sample were 2 from the high concentration areas, 3 from the medium concentration ones, and 2 from the low concentration areas. These are determined in proportion to the refugee population estimates.

Assuming also that the top-level province sample was 750 households, the random chosen households would be obtained as follows:

- 500 surveys in high concentration areas (250 survey in each of the two randomly selected high concentration areas)
- 200 surveys in medium concentration areas (66 or 67 survey in each of the three randomly selected medium concentration areas)
- 50 surveys in low concentration areas (25 survey in each of the two randomly selected low concentration areas)

B. Geographic distribution of samples

Combining all three waves of the surveys 13 provinces were covered according to the size of their refugee populations. These provinces are Adana, Adıyaman, Gaziantep, Hatay, İstanbul, Kahramanmaraş, Kilis, Konya, Malatya, Mardin, Mersin, Osmaniye, and Şanlıurfa. These provinces had been hosting at least 80% percent of all Syrian refugees living in Turkey at time of the surveys.

Table 3 gives the number of sample households in each province in each round of the survey, as well as overall. While Wave 3 of the survey was indeed carried out in 10 of the 13 provinces, the conflict-related questions were addressed to the refugees in only 7 of these provinces, and therefore those sampled households in the other three provinces were excluded from the part of our analysis dealing with migration decisions. As can easily be seen from the table, 28.6%, 21.2%, and 10.2% of the sample were from Şanlıurfa, Gaziantep, and Hatay, respectively, reflecting the concentrations of the refugees when the surveys were carried out.

Figure 7 shows the geographic distribution of the samples by province on the map of Turkey, revealing that the three provinces with the highest densities of Syrian refugees were located on the border with Syria. This geographic distribution of the sample is also consistent with the refugee population in Turkey, except for İstanbul which became a high refugee concentration province only after 2014. Since only two waves of the survey were done after the

August 2014 and the most recent of these was somewhat smaller than the others, the sample does not represent very accurately the current distribution, but does reflect the historical evolution of the refugee distribution by province.

C. Demographic Characteristics

As indicated above, while each individual round of the survey included questions specific to the focus of that survey, it also contained questions common to all three rounds on the demographic, war conflict, further migration and other characteristics of the respondents on which we focus in this paper.

1. Age and gender characteristics

Given our focus on the possible relation between the experience of households with violence in Syria and subsequent further decisions with respect to migration and the aforementioned fact that some of the relevant questions were directed to the household and not the individual, we limit our attention to household heads or other decision-making individuals at the household level. Hence, only the survey responses of those 18 years and over are included, totaling 4433 over the three rounds of the survey. Table 4 show the breakdown of that total sample by gender and age. Of those 4433 household respondents, 3,356 (75.7%) are men and 1,077 (24.3%) are women. The table also shows the breakdown of survey respondents by both gender and age group (in percent). As a result of excluding individuals below 18, this sample is far from representative of the population of Syria which as noted above is very young with median age of 22. Comparing males and females in the table as well as in Figure 8 (that is based on this table), it can be seen that the female sample contains larger percentages of both younger (age 18-29) and older (60 and over) individuals than does the male sample, but that the male sample contains larger percentages of middle aged individuals than the female sample. The average age of the survey respondents stands at 39.8 years, that for male respondents being 40.2 years and that for female respondents 38.3 years.

Table 5 presents the educational levels, ranging from illiterate to bachelor or graduate level, in the full sample, as well as separately for each gender and each of the four age groups. Note that 16.8% of the respondents are illiterate and have not received any education, but at the

other extreme 11.8 % have received education through the BA or higher levels. Within age groups one sees rather clearly that the younger age groups are generally better educated than the oldest age group and that this is especially noticeable for females. For example, illiteracy among males rises only from 12.6% for those 18-29 years of age to 31% for those 60 and over, whereas that same rate for females rises from only 11.4% in the youngest age group to 77.4% for those over 60. A significant 27.1% of the women respondents have not received any education and less than 15% of them have gone beyond elementary school.

2. Marital status

Wave 3 of the survey conducted in 2015 provides the most complete and up-to-date information on marital status of the 5760 respondent Syrian refugees aged 18 to 69. Table 6 presents the marital status of the survey respondents in that year by gender and age group. Note that the proportion of the individuals who have never married stands at 13.5%, but significantly higher (20.7%) for males than for females (8.3%). Not surprisingly, these rates are much higher for those in the youngest (18-29) age group, being 18.3 % for women and 54.6% for men. Table 6 also shows that 80.5% of the Syrian refugees are married, slightly higher for women than for men. Both divorce and cohabitation are rare among the sample respondents. Notably 9.1% of the females are widows as opposed to only 0.4 percent for males, and that even among relatively young females relatively high percentages are widows (3.9% of those 18-29, 6.9% of those 30-44 and 17.5% of those 45-59). AFAD (2014, 2016) reports that a significant number of these lost spouses of female refugees was due to the war in Syria.

D. Household Income and Employment

Next, we turn to the more economic characteristics of the Syrian refugees in the sample, especially employment and income, which are often considered to be the primary determinants of migration as indicated in many of the studies cited in Section II above.

Although all three waves of the surveys obtained information on the employment status of refugees, once again Wave 3 of the survey (2015) is more representative of the current refugee population. It obtained information on the occupational status of adults aged 18-69 based over the previous 12 months.

Table 7 gives the employment status of 5618 sample respondents in this wave of the survey, once again broken down by gender and the same four age groups. When both genders are included together as in the bottom section of the table, 49.5% of the refugees (mostly women) stated that they were homemakers. This is followed by non-government employees (21.4%), unemployed (able to work) (15.4%), 4.2% unemployed but unable to work due to a disability or debilitating illness, students (3.5%), and government employees (2.5%). There were also small percentages classifying themselves as retired (1.2%), self-employed (1.8%), non-paid (0.3%), and unclassified worker (0.3%).

There are also notable differences in the relative importance of these different employment status categories by age and gender. With respect to age and therefore comparing the different age group rows in the bottom section of the table, note that as age increases, the proportion of the refugees who classified themselves as unemployed but unable to work for work increased exponentially. Only 0.7% of those aged 18 to 29 classified themselves in this way, but 1.9% of those aged 30 to 44 did so, 7.3% of those aged 45 to 59, and 29.0% of those in the 60-69 age group did so. The proportion of refugees who are "unemployed but able to work" also increases with age (11.9% of those aged 18 to 29,13.3% of those aged 30 to 44, 23.8% of those aged 45 to 59, but then a slightly lower 21.5% of those aged 60-69. The proportion of those who stated they worked as a non-government employee in the last 12 months was 24.8% for the 18-29 age group, 25.8% for the 30-44 age group, but only12.6% for the 45-59 age group, and 3.3% for the 60-69 age group. Not surprisingly the percentage of respondents classifying themselves as students declines sharply with age.

Note also the large differences in employment status between males and females. For example, 44.3% of the men refugees stated that they worked as non-government employees in the last 12 months, and 32.0% of the men that they were unemployed but able to work. In contrast, among the females, the percentages identifying themselves as non-government employee and unemployed but unable to work were only 4.9% and 3.5%, respectively. By contrast, some 84.4% of the females but only 0.9% of the males classified themselves as homemakers.

Comparing males and females across age groups, it can be seen that the gap between males and females as students is greatest for those at young age group 19-29 (13% for males but only 6.4 % for females). "Unemployed but fit for work" rises with age for males but falls sharply with

age for females. So too does the occupational status "Retiree" rise sharply by age for males but hardly at all for females. By contrast, the decline with age for those who say they are Civil Servants is very similar for males and females.

Table 8 presents the responses from Wave 3 of the AFAD Survey (2015) for average household income of the Syrian refugees in each of the ten provinces indicated over the past 12 months. In this case, only 3679 out of 5760 sampled refugees responded to the question on income. The survey questionnaire allowed responses both in terms of Syrian Pounds or Turkish Lira (TL). The figures presented in Table 8 are reported in all three currencies (Syrian pounds (SP), followed by Turkish lira (TL) and finally US dollars ($US), the latter converted from Turkish lira to US dollars at the official exchange rates of May 12, 2016.s.

As can be seen from the last column in the table and Figure 9, mean reported household income per month in 2015 among sample respondents was $366 US (1089 TL, and 3679 Syrian pounds). Considering that household income consists of joint earnings of working age adults (aged from 18 years to 69 years) and average household size is 3.5 persons, the average income earned by an adult person per month would have been $104.57 US (or $3.49 US per day) (311.15 TL per month, 10.37 TL per day). These figures are slightly below the poverty line in Turkey (of about 11 TL per day) but above the hunger line (of around 4 TL per day) set for Turkey for the year 2016. The figures are, however, well above the "$1 a day" international hunger line. However, given the purchasing power parity disadvantage in Turkey, "$1 a day" should not be applied in this case.

Table 8 also shows the variations in these average household incomes in each of the currencies by province and gender. There are significant discrepancies among the provinces with respect to average monthly household income. The highest income group among the refugees is for those in Gaziantep where the average monthly household income was 2,192 TL ($737 US). Next highest were the refugees in İstanbul with 1,226 TL ($412 US). The reason why the income levels are higher in Gaziantep and İstanbul than elsewhere is likely the availability better job opportunities in these provinces. Adana, Mersin, and Kahramanmaraş are also among the provinces where the refugees had an average monthly household income of over 1,000 TL. The two provinces where the monthly household income was the lowest are Osmaniye and Kilis. The refugees in Osmaniye earned on average in the last year a monthly household income of 773 TL

(260 USD) on average, and those in Kilis only 641 TL (216 USD), implying that the refugees in Gaziantep had household incomes averaging three times as much as those in Kilis.

Also from Table 8 it can be seen that there are important differences in average monthly household incomes between the households headed by men and those headed by women in 2015. While the average income of the households headed by men in the last 12 months was about 1,109 TL (373 USD) , this average for households headed by women was 1,069 TL (359 USD).. This is a difference of only 3.6%. But these differences seem to be quite different in different provinces. In Adana, for example, the income of the households headed by men was 1,233 TL (414 USD) whereas it was 630 TL (212 USD) for households headed by women. By contrast, the households headed by women earned more than those headed by men in Ankara. In Ankara, the income of the households headed by women was 943 TL (317 USD) whereas it was 859 TL (289 USD) for those headed by men. While the households headed by men earned more than those headed by women during the course of the last year in Adana, Hatay, Kahramanmaraş, Kilis, Mersin, Osmaniye, and Şanlıurfa; the reverse was true for those in Ankara, Gaziantep and Istanbul.

E. Syrian Provinces of Origin

Next, and as a prelude to our subsequent effort to relate the effects of violence in Syria to the circumstances of the refugees in Turkey and subsequently to their intentions of future migration from or within Turkey, in Table 9 we show the distribution across the 2015 sample of individuals by the Syrian governorate of origin for male household heads, female household heads, and both together. While this information is also available from the other rounds of the AFAD Surveys, once again we concentrate on the results from Round 3 of the Survey because it is most up to date. Clearly, the variation across the governorates of origin is very substantial. Some 58.6% of the total had come from Aleppo governorate whereas less than 1% had come from either Rif Dimashq or Daraa and only 0.2% from the all three remaining governorates (As-Suwada , Quneira and Tartus).

These differences are due to primarily to three factors, (1) the level of violence in that governorate, (2) the size of its population and (3) its proximity and accessibility to the Turkish border (relative to those of Lebanon and Jordan, the primary alternatives, see Figure 1 and Figure

10). Figure 10 provides a map of Syria showing the percentages of Syrian refugees in Turkey from each governorate. The large percentage from Aleppo is attributable to all three of these factors. Aleppo is second only to Rif Damashq in number of casualties, Aleppo is the country's largest city, and is located in the North of the country bordering Turkey and far from Lebanon and especially Jordan. Rif Damshq, although higher in casualties is much closer to Lebanon and Jordan and one would have to go through much more dangerous terrain to get to Turkey than most of the other high casualty governorates. At the lower end of the scale of governorates of origin for Syrian refugees in Turkey are not highly populated and located in the South and thus much closer to Jordan and also Lebanon. Idlib is the governorate of origin with the second highest percentage of the Syrian refugees in Turkey (8.0%). With a population of 1.4 million people, it is smaller than Aleppo (with 4.6 million) but is even closer to the Turkish border than Aleppo. Homs, Latakia and Al Raqqa have also had a great deal of destruction and violence and are located in the North, making Turkey the most feasible destination for those refugees fleeing these governorates as well, but their population sizes are somewhat smaller. These numbers and our explanation for them are largely consistent with the earlier findings reported in AFAD (2014, 2016) where a majority of Syrian refugees stated that the reason for seeking asylum in Turkey was accessibility and easy transportation.

V. War Experiences and the Impact of War

A few questions, such as the damage status of home, availability of any shelter in Syria, number of deaths in the family due to conflict, intention to return home, intention to migrate to other locations, planned place to migrate, psychological impacts of war, time of leaving Syria, income when living in Syria, etc., were also included in questionnaires of the AFAD survey waves. Not all three waves included the same questions, but most of these were common to all three waves. These questions reveal war experiences of the refugees and the individual impact of the war. The also allow us to analyze conflict-related migration decisions and their determinants. In this section, we present some information on the demographic characteristics of the Syrians.

A. Time duration as a refugee in Turkey

Although all three waves of the AFAD Survey asked the respondents about the length of time they had lived in Turkey as a refugee, to better reflect current conditions, we restrict our

attention once again to the Wave 3 results. The duration of time that a refugee has spent in Turkey, of course, may reflect different things and hence may have different implications in terms of its effects on future behavior of interest, such as on the subsequent decisions to migrate either back to Syria or elsewhere. As more time passes, refugees may become more integrated to the host country, gain greater access to the health and educational systems and become better informed about all aspects of the legal and social environment in their region in Turkey, and more importantly may be better able to find a job. On the other hand, as the length of time extends after leaving home country, the damage in the refugee's home province may have increased, enlarging the physical and psychological effects of the war at the individual level, making refugees more separated from their homeland. This may either induce further migration decisions on the part of the refugees or it at least reduce their willingness to return.

Table 10 and Figure 11 present the time duration as refugees in Turkey of all household heads in 2015 by gender. The average duration of time the refugees had lived in Turkey as of 2015 was 21 months and as shown in the last row of the table was virtually the same for males and females. Considering that the Syrian Crisis broke out only in March 2011 and the survey date was 2015, this 21 months duration in Turkey is quite remarkable and reflects the mass inflow of refugees that took place in mid-2012.

Table 10 also shows that in July 2015 20.6% of the Syrian refugees had been in Turkey for less than 6 months, 15% for 7 to 12 months, and 12% for 13 to 18 months. Notably, 19.3% of the the refugees had lived in Turkey for 19 to 24 months. When these four categories are considered as a whole, we see that 67%, i.e., two thirds, of the refugees had lived in Turkey for two years or less. Only the remaining 33% had been living as refugees for more than two years. Specifically, at that time 6.4% had lived in Turkey for 25 to 30 months, 15.1% for 31 to 36 months, 3.1% for 37 to 42 months, and 6.1% for 43 to 48 months. The proportion of the Syrians refugees who had been in Turkey for 48 months or more, i.e., for at least four years, was 2.0%.

B. Month of leaving Syria

As noted in Section II above, many studies on conflict-related migration[9] have documented that the level of violence is one of the most important determinants of mass migration by refugees. The level of violence and mass migration can affect subsequent decisions of the refugees both directly by the contemporary violence conditions and indirectly by their various specific impacts at on the individual. In the Syrian conflict war case, the level of violence can be measured by the verified deaths due to war (as reported by Humanitarian Tracker) and presented in Figure 2. All three waves of the AFAD Survey have recorded the month in which the refugee left Syria. In Table 11 and Figure 12 we report the percentage of respondents by month of leaving Syria for each home province for the period April 2011-December 2015. The breakdown of the departure time by province can also be used to identify the level of violence in the various governorates of Syria. Table 11 shows that 62.7% percent of refugees in Turkey left their home province between June 2012 and March 2013. The figures shown in Figure 2 also indicate that 43% of verified war casualties occurred during this period, suggesting that the level of violence was indeed one of the root causes of the refugee flow. The Pearson correlation coefficient between the verified casualties reported in Figure 2 and the percentage by month of leaving Syria reported in Table 11 is 71%, indicating a close relationship between the timing of violence and that of migration.

The percentage of refugees leaving Syria by month show that highest numbers of people left Syria in July 2012 (9.0% of the total), in October 2012 (8.1%), January 2013 (9.6%), and April 2013 (6.7%). The high level of migration in July 2012 was largely due the high violence in, and migration from, Lattakia and Rif-Dimashq in that month, that in October 2012 was largely due the high violence in and migration from Al-Hasakah and Damascus, that in January 2013 was largely due the high violence in and migration from Hama, Homs and Idlib, and that in April 2013 was largely due the high violence in, and migration from, Al-Hasakah, Al-Raqqah, Damascus, and Rif-Dimashq.

The number of people leaving their home province in a particular month should be a good indicator of violence in that month or in the days prior to it. Figure 12 and Table 11 show that the

[9] See, e.g,, Stanley (1987), Zolberg (1989), Zolberg *et al*. (1989), Weiner (1992, 1996), Schmeidl (1997), Morrison and May (1994), Cohen and Deng (1998), Ball *et al*. (2002), Davenport *et al*. (2003), Moore and Shellman (2004, 2006, 2007), Melander and Öberg (2006), Edwards (2009), and Melander *et al*. (2009).

largest number of people left Aleppo in July and October of 2012, and April of 2013[10], Al-Hasakah in October 2012 and April 2013, Al-Raqqah in March and April 2013, Damascus in October 2012 and April 2013, Deir ez-Zor in November and December of 2012. Likewise the largest numbers leaving Hama, Homs and Idlib were in January 2013, Lattakia in July and August 2012, and Rif-Dimashq in July 2012, and March and April, 2013. Figure 12 shows that, based on the all three waves of the surveys, most refugees in Turkey left their home province in the one year period between July 2012 and June 2013, the majority of whom originated from Aleppo, Idlib, Lattakia, and Hama.

C. Reason for migrating

Table 12 presents what the Syrian refugees of each gender said were their main reasons for leaving Syria in the first two waves of the Survey.[11] The vast majority of the refugees (indeed, 93.3% of them) stated that they fled for security reasons. Moreover, the reason for leaving Syria does not vary much between males and females or between the two survey years. Minor exceptions were (a) slight increases in the percentages who also stated "Economic" (a rise from 15.1 % in Wave 1 to 19.0% in Wave 2), (b) "Medical/health" (an increase from 4.7% to 7%) and (c) "Other" (an increase from 1.1% to 5.1%) as their main reasons for leaving Syria. These increases were offset by a slight decrease in those stating "Political View" as an important reason for leaving Syria (in this case from 11.7% to 8.4%). Of these, the increase in Medical/health as a reason for leaving Syria could be related to the violence (perhaps injuries sustained) and perhaps more importantly to the almost total breakdown of the public services including health in the governorates of Aleppo, Idlib, Homs, Al-Raqqah, and Rif Dimashq in 2014.

Waves 1 and 2 of the AFAD surveys also asked the Syrian refugees in Turkey about their future plans for migrating to another location or returning to Syria. In Table 13, we present the results of the plans for re-migration to another location and return to Syria by gender and survey wave. In both waves, the most common response of all respondents was "not sure", indicating continuing uncertainty. Among females the highest response was "Return to Syria", and among the sample as a whole this response was on the rise from 20.1% in 2013 to 27.2% in 2014. The

[10] Indeed, one-year period from July 2012 to June 2013 was very violent in Aleppo, leading to high levels of migration from this province.
[11] The reasons for leaving Syria were not asked in Wave 3.

table also reveals very sharp declines in plans to migrate to another camp either in the same province or another province of Turkey but also fairly sharp increases in plans of moving both to "Another Province in Turkey" (from 8.2% in Wave 1 to 23.3% in Wave 2) and to a lesser extent to "Another Country" (from 9.5% to 12.2%). The alternative candidates for later migration from their present locations in Turkey could be interpreted as indicating that many of the "not sure" responses could be about where to migrate, rather than about whether or not to migrate.

There are also important gender differences in planning to move to another province in Turkey (21.1% for women but only 9.7% for men), and from one camp to another (8.4% for men but 13.4% for women), to move to an Out of camp Settlement in Turkey (10.3% for men, but only 2.8% for women) and finally to Another Refugee Camp in Another Province (16.1% for men but only 7.7% for women).

The Syrian refugees in Turkey are most densely situated in the provinces bordering with Syria. By living close to the border, they are generally able to re-enter and re-exit Syria quite frequently. Table 14 presents findings from all three waves of the AFAD survey on the reasons for these periodic returns to Syria. The results show that the most important reason for doing so is to visit relatives and friends. Over the three-year period covered by the three waves of the survey, 46.8% of the refugees stated this as their reason, followed by checking home/property, other reasons, and trading, with 27.7%, 26.0%, and 7.7%, respectively. Trade is the least significant reason for re-entry to Syria. In general, there is little difference between males and females in these respects.[12]

Where differences in these reasons for cross border movements by the Syrian refugees in Table 14 are quite apparent, however, is across years. A higher proportion of refugees said that they re-enter and re-exit for visit reasons in the Wave 2 and Wave 3 surveys than in Wave 1. Indeed, in Wave 1, only 38.6% of the respondents stated that they re-enter for visiting relatives and friends, whereas in the Wave 2 and Wave 3 Surveys these percentages rose to 60.2% and 53.6%, respectively. While 34.8% of the refugees stated that they re-entered for checking home/property in Wave 1, these percentages fell to 25.3% in the Wave 2 survey and 8.7% in the Wave 3 survey. This decline in re-entry for checking home/property could be because the

[12] In our informal interviews, AFAD province managers stated the refugees carry merchandise in both directions. The carry heaters, fans, and food items from Turkey and sell in Syria, while they bring merchandise such as cigarettes on which Turkey imposes high customs when imported formally. This two-way trading activity helps some refugees survive the war.

refugees may already have been informed that most of the homes in their home provinces were largely destroyed. An alternative explanation is that it might have been due to security issues, in crossing the border would have been deemed too dangerous. But, since crossing for visiting friends was rising over the period, the latter explanation seems less likely. We also observe that refugees were less frequently re-entering Syria for "trade" reasons in the Wave 2 and Wave 3 surveys. Specifically, 10.6% of the refugees stated "trade" to be their re-entry reason in the Wave 1 survey, while only 4.0% and 3.8% of them stated trade to be the reason in the Wave 2 and Wave 3 surveys, respectively, quite possibly indicating diminishing trading opportunities due the increased violence, security, and destruction of Syrian cities. But this could also be due to better employment and trading opportunities within Turkey.

One of the most important questions for both host countries like Turkey and the refugees themselves is "when" and "under what conditions" would refugees be willing and able to return to their home country. All three waves of the AFAD surveys included questions on this. The information on both the conditions expected for return and the time at which (if ever) the family would want to return is summarized in Table 15. Note that more than half of the refugees (64.6%) plan to return when the conflict in Syria ends. The differences between males and females in this respect are again rather small. Specifically, 63.5% of the men and 67.9% of the women refugees stated they would to return to Syria when the conflict ends.

Once again, however, we see considerable change in this respect over time. The proportion of refugees who stated they would return to Syria when the conflict ends increased from 59.3% in Wave 1 to 73.2% in Wave 2 before declining to 69.8% in Wave 3. On the other hand, while 20.7% of the refugees in Wave 1 stated that they would plan to migrate back to Syria "when the government in Syria changes" by Wave 3 only 10.7% gave this response. Another tell-tale change in responses is the decline from 9.4% in Wave 1 to 5.7% in Wave 3 for the response "return when the conflicts in my home city end". Still another rather unfortunate change over time is the increase in the response of "Never" returning from 6% in Wave 1 to 9.3% in Wave 3. Clearly, these last two changes in plans about returning to Syria would seem related to the increasing casualties due to the war and possibly also to the accumulated losses of, and damages to, homes and property (to which we turn next).

D. War Damage to Housing

Destruction of housing could be another important determinant of migration decisions, especially in the protracted conflict situation in Syria. Fortunately, all three waves of the AFAD surveys asked about the status of the homes of the Syrian refugees and the relevant information is summarized in Table 16. Overall, across waves, an average of 36% of the refugees state that their homes have "collapsed", an average of 14.4% state them to be "heavily damaged", and a further 13.3% state them to be "partially damaged". Moreover, an average of 22.5% of the refugees state that they do not know the status of their homes. Only an average of 13.9% of the refugees report that their homes are "not damaged".

However, since the average over the three waves (starting in 2013) may not accurately reflect the current status, the information from the Wave 3 survey carried out in late 2015 may be a better indicator of the current status than the average over the three surveys. Figure 13 presents percentage of homes "collapsed" and "collapsed" plus "heavily damaged" by the survey waves. In the Wave 3 survey, 51.8% of all refugees stated that their homes are completely "collapsed" while another 12.3% them stated their homes to be "heavily damaged" and 10.2% stated them to be "partially damaged". Combining the "collapsed" and "heavily damaged" categories, one has to conclude that 64.1% of all the Syrian refugees in Turkey essentially have no place to return to in their home country, and an additional 10.2% of them have homes which they cannot be sure they could be lived in. That is a rather tragic situation in that, as of Dec 2015, at least 3 out of every 4 refugees could not be sure that they would have a home in which they could live if they returned. These percentages increased even between 2014 and 2015, perhaps reflecting the increased bombing by Russia beginning in the last half of 2015.

An advantage of a survey- based study like this one is the possibility of evaluating war impacts at the individual level. Indeed, the three waves of the AFAD surveys include several questions that allow us to make an assessment of the war's impact on the individual. Among the relevant questions on this are those on: deaths in the family due to war and, if so, the number of deaths; whether the family would have any shelter in Syria in case they were to return there; the number of family members with sleeping disorders; the number of family members needing psychological support; whether the family's home has been damaged due to war; whether the

family is planning to re-migrate; whether the family can produce any product; and whether any family member is searching for a job in Turkey.

Table 17 presents a summary of the information on the afore-mentioned items from each wave of the AFAD Survey. One of these is the proportion the Syrian refugees whose family members died in the war. There are significant numbers of families, indeed more than 1 out of every three, with at least one family member who has died in the Syrian civil war. Note also that this percent increased rather sharply from 30% in Wave 2 (October 2014) to 37.5% of refugees in Wave 3 (December 2015). Note also the relatively high and somewhat rising percentages of refugees saying that they have family members needing physiological support and suffering from sleeping disorders.

Table 17 also contains the answers to still another question about damage to their homes back in Syria that was asked in all three waves of the Survey. This one is about whether shelter in their home governorate would be available to them if they returned to Syria. Quite consistent with the answers to the similar questions reported in Table 15, we observe that, when averaged over all three waves of the survey only 33.2% of the Syrian refugees said that they think that they will have a shelter when they return to Syria. On the other hand, the percentage who stated shelter would not be available is 58.6% in Wave 1, 66.9% in Wave 2, and a striking 100% in Wave 3. The increased trend in shelter unavailability is also indicator of the damage of the war in Syria to housing, which tragically left almost all refugees with no place to live in their homeland.

When they leave their home country and enter their host country, refugees are at first typically unemployed and often run down whatever assets they may have brought with them relatively quickly. One way to cope with tragic conditions such as this is for the host country to allow refugees to work in the host country.[13] Each of the three waves of the survey included a question on whether the Syrian refugees want to participate in the labor market in Turkey. More specifically, the refugees were asked if they had searched for a job in Turkey. The responses to

[13] At the beginning, Turkish laws did not have procedures for allowing the refugees to formally work in Turkey. Yet, as the need for this became recognized, on April 16, 2016, the Turkish government passed a regulation defining formal employment conditions and procedures for the refugees to formally participate in the Turkish labor market. The employment of refugees in Turkey before April 16, 2016 was informal, but it is known that many refugees had managed to work informally. Indeed, AFAD (2016) reported that about 50% of the men refugees were working informally in September, 2014.

this question are given in Table 17. We note that a significantly large percentage of the survey respondents (household heads) said that they had searched for a job. Averaged over all three surveys, 67% of all refugees in the stated that they had searched for a job. While these figures point to a sharp decrease from a high of 83.2% in the percent saying that they had searched for a job in Wave 2 to 53.4% in Wave 3. The declining percentage in Wave 3 is probably due to the fact that about 50% of the men refugees were already working in the Wave 3 survey period (see, AFAD, 2016), and may not have felt the need to continue looking.

Since the Wave 1 and Wave 2 AFAD surveys asked the refugees whether they plan to move another place with three responses, "yes", "no", and "do not know", Table 17 summarizes the responses. These show that 18.5% of the refugees stated they plan to migrate to another place in Wave 1 but that by Wave 2, this percentage had fallen to 15.9%, clearly not as high but still quite a significant signal of intention to migrate. Most of the refugees responded that they did not plan to move another place, with 71.2% in Wave 1 and 74.1% in Wave 2. Small (9.3% in Wave 1 and 3.4% in Wave 2) percentages of refugees responded "do not know" to this question, reflecting understandable uncertainty on the part of the refugees.

Table 18 goes into greater detail on two of these questions, showing the numbers of family members who have been killed in the war and who suffer from sleeping disorders. y. Note that by the end of 2015 (Wave 3 survey), 19.4% of the refugees had 1 war- caused death in the family, 7.5% had two such deaths, 2.2% had 3 deaths, 0.6% had 4 deaths, 1.6% had 5 deaths, 0.3% have 6 deaths, and that by the end of 2014 (from the Wave 2 AFAD Survey) 1.1% had 10 such deaths, 0.4% had 15 such deaths in the family, and over 1% had between 20 and 50 war-caused deaths in the family.. Not surprisingly, because of the enduring character of the war in Syria, these reports on numbers of deaths in the family have been rising over time across these waves. For instance, 14.5% of the refugees had one death in their family in Wave 1 but in Wave 3 that percentage had risen to 19.4%.

Similarly, from the more detailed data on family members with sleeping disorders in Table 18, one can see that by the end of 2014 (Wave 2 survey), 8.0% of the refugee families had one family member with a sleeping disorder, 18.2% had two family members, 2.5% had three family members, 3.3% had four family members, 2.1% had five family members, 0.6% had six family

members, 0.7% had seven family members, and another 0.7% had eight family members with a sleeping disorder. Once again, there is an increasing trend in the number of family members with sleeping disorders. Indeed, while 13.1% of the refugees had two persons with sleeping disorders in Wave 1, 18.2% of them had two persons with sleeping disorder in Wave 3. Note also that the percentage of families with one person having sleeping disorder declined from Wave 1 to Wave 2, but the percentage of families with more than one person having sleeping disorder increased from Wave 1 to Wave 2.

VI. Methodology for Testing Migration Decisions

A. General Objectives

Previous studies discussed in Section II have contributed significantly to our understanding of migration decisions in both conflict and non-conflict environments. In the case of non-conflict migration, the explanations offered are usually based on rational choices, based on economic theory and economic considerations such as the per capita income in countries of both origin and destination, as well as income distribution, and unemployment. On the other hand, conflict-driven migration is usually seen to be the result of violence and variations therein, as well as intervening factors (such as obstacles or facilitators) including such environmental conditions as the ruggedness of mountain ranges in the country of origin, border controls, and the existence of migration networks. Empirical tests of these large-n cross-country or cross-region studies have usually provided evidence in favor of rationalist explanations.[14] These studies, however, assume that the impact of these conflict-relates and intervening factors are uniformly the same on all conflict-affected individuals. Yet, as pointed out by Edwards (2009), individuals tend to vary very considerably from one to another in how they subjectively assess the risks arising from the conflict environment and their degree of attachment and connectedness to homelands. For this reason, there is likely to be a large number individual level variables that will exert influence on anyone's decision to migrate. As Jeffers (2012, p. 1) rather stressfully put it "…people seeking asylum and with refugees [have a] huge range of emotions behind them; anger, fear, anxiety, jubilation, hope, guilt and mistrust are just a few of the more obvious ones". Only with individual level data, is it possible to test and investigate impacts of war on conflict-related

[14] See the studies discussed in Section II, e.g., Schultz, 1971; Morrison, 1993; Morrison and Perez Lafaurie 1994; Schmeidl, 1997; Apodaca, 1998; Neumayer, 2005; Iqbal, 2007; Melander and Öberg 2006, 2007; Shellman and Stewart, 2007; Shellman and Moore, 2007; Ibáñez and Vélez, 2008; Edwards, 2009, and Song, 2012, among others.

migration. The survey data used in this study allows us to investigate the impact of these individual causal factors on the initial decision to migrate away from conflict and to where to migrate, as well as new decisions, such as if and when to return to the country of origin or to re-migrate further to other countries from the initial host country.

The literature on forced migration is in general agreement on violence, or more generally any kind of war, as being the prime face cause of (or factor behind) forced migration. However, not all conflict-affected individuals perceive the same level or risk in a given conflict environment, and not all of them are affected to the same degree by the same level of violence. Individual war experiences do vary due to many individual characteristics. Socio-economic and demographic characteristics of the individuals, e.g., income, gender, wealth, age, family size, family networks, political views, ethnicity, religion, etc., can affect the extent to which any given individual will be exposed to and affected by the violence, and thereby also their sensitivity to such exposure, and their migration decisions (Adhikari, 2013).

Based on these arguments, this paper hypothesizes that the various migration decisions, including both return migration, and further re-migration within and beyond Turkey decisions are all likely to be linked to the individual's experience with war. We argue that conflict migration decisions are likely to be affected not only by the subjective risks and how they are perceived, but also by the actual and objective impacts of war, such as casualties to family members and damage to property, availability of shelter, employment status, existence and size of the social network, and access to migration networks. There are also other intervening factors such as the role of geography and transportation network, their location in the host country and both the quality and character of any services which they may receive and their access to employment. Individuals may also develop coping strategies both in their home country and in the countries to which they have fled. Social and/or political network connections may help the individual in developing of these coping strategies and access to migration networks may help the individual to escape to a new location. All these factors may therefore contribute to decisions on returning home and further re-migration to other countries.

Previous empirical studies at the individual level have been limited in number and have obtained somewhat inconsistent evidence on the role of these additional intervening factors.[15] Yet, although it was not possible to obtain data on all these factors, the survey data used in this study offers information directly or indirectly on quite a few of these factors, especially on many characteristics of individual referees and the way and extent to which they have been impacted by war and served by various services in the host country, Turkey. As a result, this study is able to empirically examine the effects of more such factors on refugee decisions than many other studies. These are all effects that cannot be examined using only aggregate data as in so much of the existing literature.

B. More Specific Objectives

This study examines four types of intentional decisions for which the data is available from the three wave AFAD Survey, as identified and explained in Sections IV and V above. The dependent variables for the migration decisions are binary variables taking on a value of 1, if the respondents stated affirmative for the question, and 0, if the response is non-affirmative. In order to examine the effect of various demographic, socio-economic, and conflict-related variables, we use logit models to estimate the effects of the various explanatory variables on each of the binary dependent variables.

The study considers four dependent variables. The *first* dependent variable we examine is the intention to return (RETURN) which takes a value of 1 if the respondents stated they would return to Syria by an affirmative answer to each of the following alternative choices, (i) as soon as possible, (ii) when the conflict in Syria ends, (iii) when the conflict in my home city ends, and (iv) when the government of Syria changes.[16] The RETURN variable takes a value of 0, if the respondent does not give a positive answer to any of those four choices. The *second* dependent variable we examine is an indicator of migrating to *another* location (MIGRATE). This variable takes a value of 1 if the respondent stated he (she) is planning to migrate, and a value of 0, otherwise. So, the MIGRATE variable is an indicator of any type of migration, internal or international. The *third* dependent variable used in the study is an indicator of more specific migration decision, namely to return to the home country "as soon as possible" (RTNASAP).

[15] See some of the studies examined in Section II (for the micro studies, e.g., Massey, 2005, 2010; Engel and Ibáñez, 2007; Ibáñez and Vélez, 2008; Czaika and Kis-Katos, 2009; Alvarado and Massey, 2010; Bohra-Mishra and Massey, 2011; Adhikari, 2013)

[16] Empirical results are robust to taking response to each option as the dependent variable and ignoring the responses to other options. These results are available from the authors upon request.

Although this variable has a specific time dimension, the length of that time dimension is not strictly set. RTNASAP takes a value 1 if the respondent states he (she) will return to Syria "as soon as possible" and 0 otherwise. The *fourth* (and last) dependent variable examined in the study is another more specific migration indicator, namely the decision to migrate internationally (MIGRATEINT). This variable may also be considered as an indicator of re-migration, since the respondents are already refugees living in Turkey. This variable is defined so as to take a value of 1 if the respondent says he (she) is planning to migrate to another country and 0 otherwise.

The study considers several of the aforementioned demographic, socio-economic, and conflict- related variables for which information is available from the AFAD surveys as factors affecting the return and migration decisions. One of these is gender. We hypothesize that women will have a higher probability of return (RTNASAP) and lower probability of MIGRATEINT compared to men. The second demographic variable we consider is education (EDUCATION) distinguishing between illiterate, literate, primary school, elementary school, high school, and bachelor or graduate as the individual categories or levels of education. The probability of MIGRATEINT is expected to increase with education. This is because refugees with higher education should be better able to reach migration networks, as they are better informed, more likely to speak a foreign language, and more likely to have higher expectations of finding a job in the destination country. The impact of education on return decisions has (to our knowledge at least) not been studied before, but we expect it to have a negative impact since more educated people are more likely to dislike highly authoritarian regimes like that in Syria, more capable of assessing the future unrest in the country and continuing impacts of the war due to destruction.

For the key socio-economic variable, we consider household income (INCOME) while living in Syria before migrating to Turkey. Although income is an economic measure believed to reflect economic wellbeing, it may also measure social class (such as low, middle and upper) and the likelihood of access to social networks, especially in developing and low income countries. The INCOME variable we use is monthly and measured in Syrian pounds and is classified into 6 classes, 0-10000, 10001-20000, 20001-30000, 30001-40000, 40001-50000, and 50001+.

Given the importance of conflict to our study of conflict migration, we make use of several of the conflict-related variables identified above and available in the AFAD Surveys of Syrian refugees. All of them represent war experiences and the impact of war on the individual refugee.

Together at least, these variables should capture rather well the variation in the impacts of war across individuals in the sample. Thus, the study should be able to assess the direct and indirect impacts of the conflict on individuals, instead of only a general measure of violence on all individuals. The first conflict-related variable used is the availability of shelter (SHELTER), should the refugee return to Syria. SHELTER is a binary variable, taking a value of 1 if the respondents state availability of shelter in the home country, and 0 if the shelter is not available. We hypothesize that this variable will affect both the return migration measure RTNASAP and the international migration decision (MIGRATEINT) of the conflict-affected refugees. Unavailability of shelter in their home country is expected to discourage the refugees from returning, reduce the probability of return, and increase the probability of staying in the current host country location. Shelter status may also affect re-migration decisions, encouraging refugees to migrate the other countries if the refugee is not able to live a satisfying life, however that should be defined from the perspective of the refugee.

The paper uses two other closely related war impact variables intended to capture the effect of war damage on the return and re-migration decisions of refugees. The *first* additional damage measure we use is the damage to homes (DAMAGE), which represents property damage. The DAMAGE variable is constructed from the survey question by assigning a value of 1 if the refugee stated his(her) home to be "collapsed", "heavily damaged", or "partially damaged", and a value of 0, if the refugee stated his home "not damaged". While the DAMAGE variable may be correlated with the SHELTER variable, a significant difference between them exists, because some refugees whose homes are damaged may still have shelter available via various means, such as by sharing relatives' homes, etc. Analogous to SHELTER, the DAMAGE variable should be expected to affect both the return and re-migration decisions. Although, it may work via different channels, it should reduce the probability of return and increase the probability of migration or re-migration. However, there well may exist some uncertainty about its impact on the re-migration decision since re-migration may largely depend on conditions in the current host country and other intervening factors, such as the border controls, geography and services offered to the refugees.

The *second* additional war impact variable considered in the paper is DEATH relating to deaths of family members. This variable takes a value of 1, if the respondents stated one or more family members had died due to war, and a value of 0, if no family member died. The DEATH

variable is likely to have a significant impact on the family since some of respondents actually lost their spouse and children in the violent civil war in Syria whereas others did not. We expect the effect of DEATH on the return probability to be negative. Similar to the DAMAGE variable, we would expect it to increase the probability of migration and re-migration, but most likely to reduce RTNASAP. As for DAMAGE, its impact on the re-migration MIGRATEINT may well depend heavily on the intervening factors relating to conditions in the current host country and how easy it is to re-migrate to other countries.

The last conflict-related variable we investigate is the duration of time passed after leaving the home country, i.e., the time lived as a refugee in the current host country (RFGTIME). Protracted conflicts are more likely to push refugees to move forward and not to return. The conflict protraction may have several different individual-level impacts, ranging from incurring more damage to losing the individual's connection with his (her) social network in the home country. Conflict duration and length of time as refugees outside their homeland will tend to distract them from returning and motivate them to migrate to places with economic conditions that could give them a chance to start a new life. Again, some ambiguity exists on the effect of the RFGTIME variable on the re-migration decision due to the same intervening factors discussed above. The variable RFGTIME is defined using one year intervals with classes defined as 1-12 months, 13-24 months, 25-36 months, 37-48 months, and 49-60 months. These one-year time intervals by which RFGTIME is classified is deemed preferable to the use of an integer time variable since changes in migration and return decisions need not be accurately observed in monthly intervals. We do, however, use an integer time variable defined as number of months lived as refugee (RFGMONTHS) as an alternative when it gives a better fit in terms of the Bayesian Information Criterion (BIC).

For intervening variables relevant to the location and services provided to the Syrian refugees in Turkey, we include (1) a dummy variable for IN-CAMP defined as 1 if the refugee is located in a camp and = 0 if located outside of a camp (generally in cities), (2) and categoric measures of the the existence and quality of the following services: WATER AND HYGIENE, HEALTH SERVICE AND SECURITY, each one of which is measured a 1-5 Likert scale.

We estimate four sets of logit regressions for each of the four dependent variables discussed above. Each regression is specified with the all the independent variables explained above and estimated using the maximum likelihood method. We also examine two sets of

reduced regression models for the RETURN and MIGRATEINT dependent variables using general to specific modelling. In changing from the general to the more specific model, we omit independent variables starting with highest *p*-values until and select the best model based on the Bayesian Information Criterion (BIC). The Huber-White sandwich estimator is used in order obtain robust standard errors of the estimates.

In order to evaluate the effects of the covariates on the choice or intentional probabilities, we use both predictive margins (adjusted predictions) and average marginal effects. Predictive margins are calculated at given values of the variable and using the sample values of all other values to calculate the responses (predictions). The predictive margin is then obtained as the average of all predictions.

Average marginal effects can be considered as the partial derivative of the logistic function with respect to a covariate of interest. If the covariate is continuous, it measures the instantaneous rate of change in the predicted probabilities. For categorical variables, however, the average marginal effect measures the change in the predicted probability when the covariate is switched to the category of interest. Analogous to the predictive margins, other covariates take their sample values and they all change in the response probabilities averaged over all the sample points to obtain the average marginal effect.

Standard errors of the predictive margins and average marginal effects are estimated using a robust estimation method that considers non-fixed covariates as being sampled. The method allows for heteroskedasticity or other violations of standard distributional assumptions and allows for correlation among the observations.

VII. Empirical Results

This section presents the analysis of the Syrian refugees' decisions on return, return as soon as possible, migrate to another place, and migrate to another country. We note that the migration decision is indeed a re-migration decision since the respondents have already fled from Syria to Turkey. The analysis in Sections IV and V showed that most of the variables relating to the demographic characteristics, war experiences, and the impact of the war might be interrelated. In order to see whether these variables are in fact inter-related, we first perform tests

of independence on the categorical variables relating to demographic, war experience, and war impacts.

Table 19 presents the results of these independence tests for the pairs of variables examined in Sections IV and V. For each such pair, the table reports several different tests of independence, namely, the Pearson Chi-Square test, the likelihood ratio (LR) test, the linear-by-linear association (LLA) test, Cramer's Phi test, Cramer's V test, and the contingency coefficient (CC). Each of these is reported in a different column of the table. Based on the results reported in Table 19, we can strongly reject the hypothesis of independence in most cases. Only for the variable pairs Psychological Effect-Survey Year, Migration Plan-Shelter Existence, and Migration Plan-Gender, do we not reject the null of independence, uniformly by all tests. Moreover, except for the Migration Target-Deaths variable pair for which the independence is rejected in only a single test, the LLA test, for all other pairs all the tests for independence uniformly reject independence.

As described in Section IV, the data used in the analysis come from three different waves of the AFAD Survey undertaken in the years 2013, 2014, and 2015. In order to determine whether the dependencies between the variable pairs are robust to the different survey waves, we carry out the independence tests once again for the variable pairs conditional on the survey wave, i.e., Wave 1, Wave 2, and Wave 3. These conditional dependency test results are presented in Table 20. As Table 20 shows, the independence tests are quite robust to survey wave. Once again, independence is rejected for most variable pairs for all survey waves for which the relevant data exists. There are, however, some exceptions, specifically those for the following variable pairs: Migration Target-Education, Migration Target-Deaths, Migration Plan-Education, Migration Plan-Home Damage, Migration Plan-Shelter Existence, Return Condition-Gender, and Return Condition-Home Damage. For these variables the test results vary either across survey waves or from the case in which the waves are combined, pointing out that the survey waves have some heterogeneity.[17]

The evidence in Tables 19 and 20 is strong enough to suggest the use of a multivariate regression analysis, since most factors related to the return and migration decisions are

[17] Table 20 also shows that independence via the LLA test is generally not rejected when survey waves are considered separately, but that it is rejected when each of the other independence tests are used. This means that the associations between the variable pairs are nonlinear.

interdependent. Summary statistics for the regression variables are given in Table 21.[18] The averages show that proportion of refugees stating their intent to return to Syria is 87.8% while those stating the intent to re-migrate varies from 1.6% for MIGRATEINT to 15.1% for MIGRATE. Although most of the dependent variables show significant variance, the variability of some of the independent variables is much lower, in several cases with standard deviations only one-third is large as the means.

Table 22 presents the parameter estimates obtained from the logit model from the general model when all covariates are included in the regression. The results also include for each explanatory variable, the standard errors and significance levels, and for each regression, some fit statistics, i.e., log likelihood (log *L*), the Akaike Information Criterion (AIC), and the Bayesian Information Criterion (BIC). For the variables INCOME, EDUCATION, and RDGTIME, each of which has multiple categories representing the different levels of these variables, there are many cases in which the parameter estimates are not statistically significant. However, in most of these cases at least one category of the independent variable has significant test statistic, except perhaps in the middle ranges of the variables. Overall, however, it appears that those who had low incomes in Syria are more likely to respond RETURN and especially RTNASAP whereas those with high incomes are likely to want both to return as soon as possible (RTNASAP) and to migrate internationally (MIGRATEINT). As the level of education rises, the probability of RETURN tends to fall and the probability of MIGRATE tends to rise, but in both cases fairly weakly. GENDER (representing female gender) raises the probability of RETURN but not of RTNASAP. The refugees are less likely to return if they would not have access to shelter back in Syria (SHELTER). The effects of damage to their home back in Syria (DAMAGE) vary in direction across the four alternatives but are not statistically significant. The damage effect that is closest to being significant is that on the probability of international migration. The effect of deaths in the family is more clear-cut; it reduces the probability of returning but increases the probability of international migration. The parameter estimates for the RFGTIME variable shows that, as the time lived as refugee increases, the return probabilities decrease sharply and the international migration probabilities increase.

[18] The descriptive statistics for some variables were already given in Sections IV and V and therefore are not included in Table 21.

Recall, however, that we suggested that there could be some important intervening variables related to the circumstances in which the Syrian refugees live in Turkey, their host country. To that end, therefore, we deem it also relevant to capture the impact of the type of living environment (whether inside of camp or outside of camp with a dummy variable In Camp), and the quality of services (Water and Hygiene, Health Service and Security) on the decisions of the refugees. Excluding variables which were previously found to have insignificant effects like education (and also income and damage in the case of RETURN) but now including these four new measures, we turn the results in Table 23 for the determinants of the decisions to return to Syria (RETURN) or to migrate (MIGRATEINT).

From the first column for RETURN, it can be seen that women are more likely to want to return than men, but among all refugees the likelihood of returning is significantly lowered by lack of a shelter to return to, death of a relative and very strongly and at an increasing rate by the number of months as a refugee (RFGTIME). Note also that in column (3) in which time as a refugee is measured as a continuous variable (RFGMONTHS) and its square to capture nonlinearities the results are very similar. Yet in column (4) where these quality-of-service to the refugees measures are added, the effects of lack of shelter and death of a relative are greatly weakened. Notably also, being in a camp (presumably the least pleasant but locationally the closest to Syria) has a significant positive effect on RETURN but Health Service and Security have significant negative effects on RETURN.

Correspondingly, in Columns (2) and (6) of the table are the results for MIGRATEINT without, and then with, the service variables included. Note that the direction of effects of death of a relative and time as a refugee are now positive and significant, opposite to those on RETURN. As in the previous tables, both being in the highest income category and Damage have highly significant positive effects on the intent to migrate out toward Europe and beyond. From column (6) IN-CAMP has significant negative effect on MIGRATEINT (opposite to that on RETURN), and the quality of Service measures HEALTH SERVICE and SECURITY have negative effects of similar magnitude and significance to those on RETURN. This latter similarity implies that high quality of sevice provided to the refugees is likely to keep the refugees in Turkey, implying the possibility that doing well by the refugees via high quality services may well have the effects of extending over time the costs to Turkey and/or funding institutions for taking care of the refugees. In any case the results presented in Table 23 provide

rather strong support for the hypothesized impacts of the covariates; GENDER, INCOME, RFGTIME, DAMAGE, DEATHS, and RFGMONTHS. Taken together, the INCOME level has no significant effect on the return decision, but a very high-income level does increase the probability of international migration. Time living as a refugee significantly reduces the probability of return to Syria and significantly increases the probability of international migration. The existence of deaths due to war significantly and positively affects the probability of international migration but negatively and significantly affects the probability of return to Syria. The damaged home status variable only enters the MIGRATEINT equation and has a significant positive impact on the probability of international migration. High quality of services to refugees (providing housing in towns or cities, and health and security services) reduces the likelihood of both types of migration.

Our evaluation of the impact of the covariates would be more easily interpretable if they were based on predictive margins and average marginal effects, rather than the estimates of the coefficients themselves, since one also has to take into consideration the units of measurement of the explanatory variables. Estimates of the predictive margins are given in Table 24 for the fully specified models (akin to that in Table 22) and in Table 25 for the selected (reduced) models (akin to that of Table 23). As can easily be seen, the signs and significance of these match those of the coefficient estimates in Tables 22 and 23.

For example, consistent with the increasingly negative effects of RFGTIME on RETURN in Table 22, it has decreasingly positive effects on RETURN in Table 24 and also in column (1) of Table 25. The same pattern is apparent for its influence on MIGRATE and RTASAP in columns (2) and (3) of Table 24. Its impact on MIGRATEINT in Table 24, however, is somewhat less clear. Likewise, the same pattern of women being more likely to return but not to migrate internationally is evident in Table 24 as in the earlier tables. So too are the effects of SHELTER, DEATH and EDUCATION similar on the different dependent variables in Table 24 to what they were in the previous tables. While IN-CAMP has the same positive effect on RETURN in Table 25 as in Table 23, it has a positive effect (rather than the negative effect it had in Table 23) on MIGRATEINT. Since the quality of service measures are treated as continuous variables, these cannot be included in the estimates of predictive margins in Tables 24 and 25.

The predictive margin results given in Table 24 for the full models and in Table 25 for the reduced models reveal strikingly high probabilities of RETURN for individuals with all the

characteristics indicated with the single exception of those who have spent more than three years as a refugee. With that single exception, most probabilities concentrated between 0.88 and 0.92. For MIGRATE most predictive margins are concentrated between 0.18 and 0.24, for RTNASAP between 0.02 and 0.04 and for MIGRATEINT, between 0.16 to 0.25. With a very few exceptions all these predictive margins are significant at the 1% significance level.

We turn next to the average marginal effects. The estimates of the average marginal effects of all the same explanatory variables (with the exception of one of the pairs in GENDER, SHELTER and DAMAGE) are presented in Table 26. As before, notice that it is only at the extreme lows and highs of the education and income variables where the coefficients are statistically significant.

Similarly, Table 27 presents the estimates of the average marginal effects for RETURN and MIGRATEINT according to the roughly the same restricted specifications for the predictive margin estimates presented in Table 25. The specifications of Model 1 for RETURN in the two tables are identical, utilizing the four different dummy variables for different intervals of time as a refugee in Turkey. Yet, to reduce the number of explanatory variables in the specifications, in the remaining columns of Table 27, refugee time in Turkey is captured more simply in months by RFGMONTHS. The pattern of its effect, however, remains the same, positive on International Migration in models (2) (5) and (6) but negative on RETURN in Models (3) and (4). Focusing once again on the intervening influence of location and service provision in Turkey, notice that the impact of IN-CAMP is positive on RETURN but negative on MIGRATEINT, but the effects of both Health Service quality and Security are negative on both these variables as indicated in Models (4) and (6).

One of the striking findings of this study relates to the variable time spent as a refugee after leaving Syria. As discussed in Section VI, this variable has several dimensions and its effect depends on intervening factors. Our results show that this variable is one of the most important variables that increases the probability of international migration significantly and reduces the probability of return drastically. Figure 14 plots the predictive margin estimates of return probability for time lived as refugee based on Model (1) of Table 25. Figure 15 plots predictive margin estimates of international migration probability for different numbers of months spent in Turkey after leaving Syria based on a variant of Model (5) in this table in which RFGMONTHS

and its square are used to reflect the rather extreme nonlinearity in its effect. Figure 14 shows that return probabilities fall from 0.90 to 0.20 in less than 48 months, implying that as the Syrian war is now entering its seventh year, the probability of those refugees outside Syria of returning to Syria is now less than 20%. Figure 15 shows that the time also raises probability of international re-migration decisions quite significantly. After 60 months leaving Syria, the probability of international migration (which has been increasing continuously), will have doubled relative to what it as at the beginning. Also, as can be seen by comparing the coefficients of RFGMONTHS in columns (3) and (4) for RETURN, and in columns (5) and (6) for MIGRATEINT in Table 27, the corresponding estimates are quite robust to the inclusion of the intervening variables IN-CAMP and the quality of services provided to the refugees.

VIII Conclusion

This study presents the results of an analysis of the war experiences and war impacts at the individual level on the Syrian refugees living in Turkey based on three waves of the rather remarkable AFAD Survey. Moreover, to our knowledge, it is the first such study to relate these war impacts to refugee decisions about returning to their country of origin and migrating elsewhere. To reach such findings, the study includes among the determinants of individual-level migration decisions subsequent to conflict, not only the relatively standard human capital, income, and other demographic characteristics, but also conflict- related variables and their effects in the form of casualties to family members, damage to property, the duration of time lived as a refugee, and availability of shelter back in Syria.

The results show that both the extent and duration of the violence in Syria and the duration of time as a refugee in Turkey raise the probability that a refugee will consider permanent settlement in another country and reduce the probability of return to Syria.

Within these general findings are also some interesting special patterns and differences. Refugees who would not have a shelter in their home country if they were to return home, are less likely to return to Syria and more likely to remain where they are or re-migrate. Refugees who have experienced more death or property and other damage due to war have a lower probability of returning to Syria and a higher probability of international migration. Among the differences noted are (1) that, women refugees are more likely to return back to Syria than males,

and (2) that those with higher incomes, education, skills, and better access to migration networks are more likely to migrate out of Turkey to Europe and elsewhere.

Recent changes in the Syrian refugees' decisions to move from Turkey to other destinations, particularly to European countries, show that there is a time threshold, which when exceeded, the refugees lose any hope for return to Syria and search for permanent settlement elsewhere. There may also be a threshold level of violence-caused damage that can trigger decisions for permanent settlement in other countries. Notably, while the highest level of violence occurred in September 2012, only after 2014 did Syrian refugees in large numbers begin to leave Turkey even at the high risk of drowning in a capsized boat in the Mediterranean or being stopped at border points further along the land route to a preferred destination.

The continuing violence in Syria especially in the large city of Aleppo and its environs, the tragic losses that have been inflicted on the medics and humanitarian suppliers of food and other supplies to that city, and recent tragic events in Turkey, even after the time that was covered in the most recent round of the AFAD Surveys, serve to further underscore the likelihood of further violence-caused migration, desperation on the part of the refugees, aid workers and host populations. Still another dimension of costs to the Syrian refugees of the conflict that may already be on the rise is mental health,[19] This implies that the already high social and economic costs to virtually all parties involved will be increasing for some time to come.

That which has been learned so far from this research has important implications for not only the refugees themselves but also for policies of both the host country for the refugees (in this case Turkey) and the European and other countries to which the refugees might like to move, and the advantages that could be gained from increased international efforts to limit the violence in Syria and return the country to a less autocratic and repressive self-rule. Much of the credit for this should as a result go to the AFAD and the lengths that it has gone to to undertake three rounds of such a useful survey of Syrian refugees in Turkey. The costs and benefits of the continuing Syrian crisis extend well beyond those to the Syrians in Syria and the many thousands of lives lost there and to the Syrian refugees in Turkey, Jordan, Lebanon and elsewhere. For example what are the effects on the host populations?

[19] Arslan et al (2015) have noted an increase of drugs in Hatay, Turkey, near the Syrian border, especially amphetamines often used by people who are extremely depressed.

As had been pointed out in earlier literature, fortunately the effects of forced migration on host country labor markets may be easier to evaluate than of voluntary migration since it may allow the analyst to avoid having to deal with selection issues in choosing to migrate and the direction of that migration. Ruiz and Vargas-Silva (2013, 2015) and Ozden and Wagner (2014) have shown that the effects of forced migration on the host country labor market for nationals may not be as negative as one would think. This is because the exogenous inflow of workers has the effect of lowering labor costs, increasing output of labor- intensive products which in turn increases income and the demand for labor. While most such research has been limited to Asia and Africa, Del Carpio and Wagner (2015) have recently investigated the effects of Syrian refugees on the market for Turkish workers. To do so they have combined locational information concerning the number of Syrian refugees by subregion within Turkey as well as on their governorates of origin from one round of the AFAD Surveys (and hence their distance to each of 26 subregions in Turkey) with information on each of these 26 different subregions from the Turkish Household Labor Force Surveys for 2011 and 2014. They use distance from Syrian location of origin to the largest city in each of these subregions in Turkey as an instrument to help them identify causal effects on Turkish labor markets. Notably, their results show varying effects. On the one hand, they show that the influx of Syrians has led to considerable displacement of poorly educated, low-skilled, female part-time workers, especially in agriculture. On the other hand, however, it has encouraged additional production and income and occupational upgrading of Turkish workers. While more should probably be done in the way of controlling for the characteristics of the Syrian workers, including the circumstance in which they are living (e.g., in Camp or not and the services they are receiving) in quantifying these effects on labor markets, even more important would be to examine the effects of forced migration of the Syrians on various product markets, such as for housing, food, clothing, and medical care. It would also be useful to examine the effects of those Syrians departing to Europe on the local labor markets in Turkey. Clearly, therefore, more research is urgently needed, on effects on other aspects of the Turkish economy, and comparisons with the experience in Lebanon and Jordan as well.

Even on the somewhat narrower scope of the present paper, more research is needed on understanding the threshold effect for refugees to change their decisions for protracted conflicts. Using country-level aggregate data, Moore and Shellman (2004) show that the presence of

foreign troops in a country can be a significant predictor of forced migration outflows. In the Syrian case, the arrival of Russian troops into Syria and intense Russian airstrikes seem to have triggered a flee decision by the refugees residing in Turkey towards European countries. These and other incursions by military strikes by different warring factions and intruders may have led to a tipping point, after which refugees lost all hope of return. Syria is now perceived to be enduring even greater violence, with even greater fragmentation among groups within the country, and perhaps also even greater repression of its citizens by the government which in turn is confronted by ever-increasing numbers of separatist and other opposition groups. A further wave of the AFAD Survey in the near future could help clarify this situation.

At the same time the increasing outflow of Syrian refugees in Turkey to various European countries introduces a selection bias in the refugees selected for the sample. It would be highly desirable in that context to be able to sample those already departed refugees. In view of the relatively limited number of individual characteristics controlled for in the present analysis, and the possible relevance of several currently unobserved but potentially important characteristics would be to include in the surveys questions about the religiosity of the individual refugees. It would also be desirable to include in any future rounds of the AFAD Survey some key social preferences such as time preference, willingness to bear risk, occupational aspirations and more details about health status. These are all factors which surveys are capable of capturing. Even without the ability to include more controls, the analysis of these issues could be greatly improved if portions of the samples collected could involve the same people in different rounds of the survey so that individual fixed effects could be utilized to control for a myriad of the currently unobserved characteristics.

In all this tragedy, one should not overlook such factors that have kept the refugee situation from being worse than it already is. In particular, one should consider also the very socially responsible action that the Turkish government has taken in formally allowing at least some Syrian refugees in Turkey to work. It would be highly desirable to include in future AFAD or related surveys much more about the jobs they do find and the earnings they receive, the time and costs of getting to those jobs and the extent to which language or other kinds of training they may be receiving may have been contributing to their success in this regard.

Especially from the point of view of the agencies providing the support and the cost-benefit of supplying various kinds of such support, it would be highly desirable to include in

these surveys measures of the specific services provided to see how they affect the future plans of the refugees relative to return or further migrate, and the costs of these different services. If this kind of data could be put together, one could have the basis of examining at least crude estimates of the various costs of violence to Syrians in Syria[20], to Syrians in Turkey, and the costs to the relief agencies and the Turkish government in supplying those services, and perhaps also the opportunity costs to Turkish citizens for the land and other services diverted to the camps, housing and other services for the refugees. These actual costs of the conflict and of treating its consequences could then be summed and used to compare with the possible costs to the international community (especially the United Nations) that might be required to return Syria to peace and a much less authoritarian and repressive government.

[20] One should not forget that it is the Syrians who have remained in Syria who have borne the greatest portion of the costs of the war. Notably, Choi and Marktanner (2016) have calculated this cost over the period of the war to date to be over $13,000 per person of about 7.5 times the average annual per capita income of 2010.

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TABLES

Table 1: Registered Syrian refugees by Host Country (Jun 2016)

Country	Refugees	%
Turkey	2743947	56.65
Lebanon	1048275	21.64
Jordan	655217	13.53
Iraq	246589	5.09
Egypt	120491	2.49
Libya	29275	0.60
Total	4843794	100.00

Source: United Nations High Commissioner for Refugees (UNHCR), http://data.unhcr.org/syrianrefugees.

Table 2: Syrian refugees in Turkey (Dec 2011-Jun 2016)

Date	Total	Out of camp-settlement	In-camp-settlement	% change, Total	% change, Out-camp-settlement	% change, In-camp-settlement
Dec-11	9118	0	9118	--	--	--
Dec-12	152981	21148	131833	1577.79%	--	1345.85%
Dec-13	578389	370814	207575	278.08%	1653.42%	57.45%
Dec-14	1552839	1318824	234015	168.48%	255.66%	12.74%
Dec-15	2412991	2145748	267243	55.39%	62.70%	14.20%
Jun-16	2743497	2483342	260155	--	--	--

Table 3: Distribution of Samples by Province

	Wave 1 (2013)		Wave 2 (2014)		Wave 3 (2015)		Total	
	n	%	*n*	%	*n*	%	*n*	%
Adana	167	6.5	97	8.0	69	10.8	333	7.5
Adıyaman	50	1.9	--	--	--	--	50	1.1
Gaziantep	484	18.8	317	26.1	137	21.4	938	21.2
Hatay	175	6.8	207	17.1	71	11.1	453	10.2
İstanbul	--	--	100	8.2	--	--	100	2.3
Kahramanmaraş	247	9.6	--	--	72	11.3	319	7.2
Kilis	187	7.3	74	6.1	70	10.9	331	7.5
Konya	--	--	49	4.0	--	--	49	1.1
Malatya	28	1.1	--	--	--	--	28	0.6
Mardin	130	5.0	158	13.0	--	--	288	6.5
Mersin	--	--	64	5.3	--	--	64	1.4
Osmaniye	136	5.3	--	--	77	12.0	213	4.8
Şanlıurfa	975	37.8	148	12.2	144	22.5	1267	28.6
Total	2579	100.0	1214	100.0	640	100.0	4433	100.0

Note: *n* denotes the count. Wave 3 survey was carried out in 10 provinces, but refugees only in 7 provinces were asked conflict-related questions. The whole sample in Wave 3 includes demographic information on 5,760 refugees.

Table 4: Survey Respondents by Gender and Age Group (%)

	Male		Female		Both Genders	
	n	%	*n*	%	*n*	%
18-29	590	17.6	284	26.4	874	19.7
30-44	1664	49.6	464	43.1	2128	48.0
45-59	819	24.4	220	20.4	1039	23.4
60+	283	8.4	109	10.1	392	8.8
Total	3356	100	1077	100	4433	100

Table 5: Education Level by Gender and Age Group (%)

		Age Group									
		18-29		30-44		45-59		60+		All Ages	
Gender	Education	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Men	Illiterate	70	12.6	171	10.6	117	15.0	81	31.0	439	13.7
	Literate	45	8.1	135	8.3	64	8.2	25	9.6	269	8.4
	Primary school	147	26.5	466	28.8	184	23.5	65	24.9	862	26.8
	Elementary school	131	23.6	412	25.4	191	24.4	33	12.6	767	23.8
	High school	87	15.7	224	13.8	102	13.0	19	7.3	432	13.4
	Bachelor or graduate	74	13.4	211	13.0	124	15.9	38	14.6	447	13.9
Women	Illiterate	29	11.4	69	15.7	101	51.0	65	77.4	264	27.1
	Literate	28	11.0	57	13.0	18	9.1	4	4.8	107	11.0
	Primary school	81	31.9	170	38.7	38	19.2	9	10.7	298	30.6
	Elementary school	58	22.8	83	18.9	18	9.1	2	2.4	161	16.5
	High school	40	15.7	41	9.3	12	6.1	2	2.4	95	9.7
	Bachelor or graduate	18	7.1	19	4.3	11	5.6	2	2.4	50	5.1
Both Genders	Illiterate	99	12.3	240	11.7	218	22.2	146	42.3	703	16.8
	Literate	73	9.0	192	9.3	82	8.4	29	8.4	376	9.0
	Primary school	228	28.2	636	30.9	222	22.7	74	21.4	1160	27.7
	Elementary school	189	23.4	495	24.1	209	21.3	35	10.1	928	22.1
	High school	127	15.7	265	12.9	114	11.6	21	6.1	527	12.6
	Bachelor or graduate	92	11.4	230	11.2	135	13.8	40	11.6	497	11.9

Table 6: Marital Status by Gender and Age Group (%) in 2015

Men

Age Group	*n*	Never Married	Married	Separated/Divorced	Widowed	Cohabitation
18-29	868	54.6	44.6	0.5	0.1	0.2
30-44	822	3.7	95.9	0.2	0.2	0.0
45-59	545	0.0	98.9	0.2	0.7	0.2
60-69	200	0.0	99.0	0.0	1.0	0.0
Total	**2,435**	**20.7**	**78.5**	**0.3**	**0.4**	**0.1**

Women

Age Group	*n*	Never Married	Married	Separated/Divorced	Widowed	Cohabitation
18-29	1.308	18.3	77.4	0.5	3.9	0.0
30-44	1.235	2.8	89.4	1.0	6.9	0.0
45-59	639	0.3	81.4	0.8	17.5	0.0
60-69	143	0.7	59.4	0.0	39.9	0.0
Total	**3,325**	**8.3**	**81.9**	**0.7**	**9.1**	**0.0**

Both Genders

Age Group	***n***	**Never Married**	**Married**	**Separated/Divorced**	**Widowed**	**Cohabitation**
18-29	2.176	32.8	64.3	0.5	2.4	0.1
30-44	2.057	3.1	92.0	0.7	4.2	0.0
45-59	1.184	0.2	89.4	0.5	9.8	0.1
60-69	343	0.3	82.5	0.0	17.2	0.0
Total	**5,760**	**13.5**	**80.5**	**0.5**	**5.4**	**0.1**

Table 7: Employment in the Last 12 Months (from the 2015 Survey) by Gender and Age Group (%)

Age Group	*n*	Unemployed (unable to work)	Government employee	Retired	Self-employed	Homemaker	Unemployed (able to work)	Non-government employee	Non-paid	Student	Unclassified	**Total**
Men												
18-29	847	1.5	2.8	0.2	3.5	1.1	22.3	55.3	0.1	13.0	0.1	100.0
30-44	779	4.5	3.1	0.3	4.6	1.0	30.2	55.1	0.4	0.1	0.8	100.0
45-59	532	13.0	2.6	5.6	4.1	0.4	48.5	24.8	0.4	0.0	0.6	100.0
60-69	190	40.5	1.1	13.2	1.1	1.1	36.8	5.8	0.5	0.0	0.0	100.0
Total	**2,348**	**8.3**	**2.7**	**2.5**	**3.8**	**0.9**	**32.0**	**44.3**	**0.3**	**4.7**	**0.4**	**100.0**
Women												
Age Group	*n*	Unemployed (unable to work)	Government employee	Retired	Self-employed	Homemaker	Unemployed (able to work)	Non-government employee	Non-paid	Student	Unclassified	Total
18-29	1,287	0.2	2.3	0.0	0.3	80.5	5.1	4.8	0.2	6.4	0.1	100.0
30-44	1,211	0.2	2.7	0.2	0.5	86.3	2.4	7.0	0.3	0.2	0.2	100.0
45-59	631	2.5	1.6	0.5	0.2	88.7	3.0	2.2	0.3	0.2	0.8	100.0
60-69	141	13.5	0.7	0.7	0.0	84.4	0.7	0.0	0.0	0.0	0.0	100.0
Total	**3270**	**1.3**	**2.3**	**0.2**	**0.3**	**84.4**	**3.5**	**4.9**	**0.3**	**2.6**	**0.2**	**100.0**
Both Genders												
Age Group	*n*	Unemployed (unable to work)	Government employee	Retired	Self-employed	Homemaker	Unemployed (able to work)	Non-government employee	Non-paid	Student	Unclassified	**Total**
18-29	2,134	0.7	2.5	0.1	1.6	49.0	11.9	24.8	0.2	9.0	0.1	100.0
30-44	1,990	1.9	2.9	0.2	2.1	52.9	13.3	25.8	0.4	0.2	0.4	100.0
45-59	1,163	7.3	2.1	2.8	2.0	48.3	23.8	12.6	0.3	0.1	0.7	100.0
60-69	331	29.0	0.9	7.9	0.6	36.6	21.5	3.3	0.3	0.0	0.0	100.0
Total	**5,618**	**4.2**	**2.5**	**1.2**	**1.8**	**49.5**	**15.4**	**21.4**	**0.3**	**3.5**	**0.3**	**100.0**

Table 8: Average Monthly Household Income of Syrian Refugees (in 2015) in the Last Twelve Months by Province and Gender

Province	Men			Women			Both Gender		
	SP	TL	$US	SP	TL	$US	SP	TL	$US
Adana	118	1233	414	16	630	212	**134**	**1,161**	**390**
Ankara	140	859	289	55	943	317	**195**	**882**	**297**
Gaziantep	241	1615	543	142	3171	1066	**383**	**2192**	**737**
Hatay	205	999	336	221	784	264	**426**	**887**	**298**
İstanbul	307	1150	386	483	1274	428	**790**	**1,226**	**412**
Kahramanmaraş	60	1748	588	99	706	237	**159**	**1,099**	**369**
Kilis	176	731	246	196	561	189	**372**	**641**	**216**
Mersin	155	1306	439	169	964	324	**324**	**1,127**	**379**
Osmaniye	137	825	277	211	740	249	**348**	**773**	**260**
Şanlıurfa	320	939	315	228	643	216	**548**	**816**	**274**
Overall	**1,859**	**1,109**	**373**	**1,820**	**1,069**	**359**	**3,679**	**1,089**	**366**

*1 USD = 2.9755 TL Central Bank of Turkey, www.tcmb.gov.tr [15.12.2015]

Table 9: Home province the Syrian refugees in Turkey by gender

Province	Men		Women		Both Genders	
	n	%	*n*	%	*n*	%
Aleppo	1,328	54.8	2,034	61.4	**3,362**	**58.6**
Idlib	186	7.7	271	8.2	**457**	**8.0**
Homs	160	6.6	208	6.3	**368**	**6.4**
Latakia	159	6.6	173	5.2	**332**	**5.8**
Al-Raqqah	159	6.6	162	4.9	**321**	**5.6**
Hama	142	5.9	102	3.1	**244**	**4.3**
Damascus	84	3.5	159	4.8	**243**	**4.2**
Deir ez-Zor	125	5.2	106	3.2	**231**	**4.0**
Al-Hasakah	40	1.6	39	1.2	**79**	**1.4**
Rif Dimashq	19	0.8	31	0.9	**50**	**0.9**
Daraa	17	0.7	24	0.7	**41**	**0.7**
Other Provinces	6	0.2	6	0.2	**12**	**0.2**
Total	**2,425**	**100.0**	**3,315**	**100.0**	**5,740**	**100.0**

Table 10: Duration of time as a refugee in Turkey

Month	Men		Women		Both Genders	
	n	%	*n*	%	*n*	%
0 - 6 months	533	21.9	655	19.7	**1,188**	**20.6**
7 - 12 months	368	15.1	503	15.1	**871**	**15.1**
13 - 18 months	300	12.3	404	12.2	**704**	**12.2**
19 - 24 months	420	17.2	694	20.9	**1,114**	**19.3**
25 - 30 months	153	6.3	217	6.5	**370**	**6.4**
31 - 36 months	361	14.8	510	15.3	**871**	**15.1**
37 - 42 months	102	4.2	74	2.2	**176**	**3.1**
43 - 48 months	145	6.0	208	6.3	**353**	**6.1**
48 + months	53	2.2	60	1.8	**113**	**2.0**
Total	**2,435**	**100.0**	**3325**	**100.0**	**5,760**	**100.0**
Average (months)	**21.1**		**21.3**		**21.2**	

Table 11: Month of leaving Syria by month for each home province (%, Apr 2011-Dec 2015)

Month	Aleppo	Al-Hasakah	Al-Raqqah	Damascus	Deir ez-Zor	Hama	Homs	Idlip	Lattakia	Rif-Dimashq	Total
Mar-11	0.1	0.4		0.8		1.4		4.3	0.4		1.1
Apr-11								0.3	0.2		0.1
May-11								0.6			0.1
Jun-11	0.1					0.3		1.1	0.2		0.3
Jul-11	0.4			4.0	0.8	1.6	1.9	6.5	1.6		2.0
Aug-11				0.8		0.3		0.2			0.1
Sep-11	0.1						1.0	0.1			0.1
Oct-11	0.8	2.0		0.8		0.3	1.0	0.7	1.8		0.8
Nov-11		0.4		0.8				0.4	0.9		0.2
Dec-11								0.2			0.0
Jan-12	1.5		0.7	3.2	0.8	3.8	1.0	4.4	**11.4**		3.2
Feb-12								0.2			0.0
Mar-12	0.2			0.8	1.6	0.8		1.3	0.7		0.6
Apr-12	0.9	1.2	0.7	0.8	0.8	0.5	1.0	1.3	1.8		1.1
May-12	1.0	0.8	0.4			0.5		0.4			0.6
Jun-12	0.5	1.2	0.4	0.8		0.5		0.4	4.0		0.9
Jul-12	**7.9**	4.3	7.8	4.0	3.1	3.5	2.9	7.5	**28.4**	**14.8**	**9.0**
Aug-12	4.3	1.2	3.2	5.6	2.3	3.5	3.8	4.1	**13.0**	3.7	4.8
Sep-12	4.2	2.0	1.8	4.0	3.9	5.7	1.9	5.4	6.3	3.7	4.4
Oct-12	**8.5**	**11.8**	4.6	**12.1**	6.3	7.3	8.6	8.1	7.2	3.7	**8.1**
Nov-12	4.3	5.5	9.5	6.5	**11.7**	3.5	2.9	5.5	3.6		5.0
Dec-12	2.9	3.5	6.0	4.0	**10.2**	5.7	1.9	6.3	1.1		4.1
Jan-13	**7.1**	7.1	6.7	9.7	9.4	**21.4**	**14.3**	**11.9**	7.8	3.7	**9.6**
Feb-13	5.3	9.4	8.5	3.2	3.9	7.9	1.9	5.9	1.6	**11.1**	5.6
Mar-13	5.2	6.3	**12.4**	5.6	9.4	6.5	3.8	3.8	1.6	**22.2**	5.4
Apr-13	**8.0**	**11.0**	**10.2**	**10.5**	9.4	4.6	6.7	4.3	1.1	7.4	**6.7**
May-13	2.6	4.7	8.8	6.5	7.0	1.9	3.8	2.4	0.9	7.4	3.1
Jun-13	4.0	8.2	8.5	6.5	5.5	4.3	9.5	2.1	0.2	3.7	4.0
Jul-13	0.9	0.8	0.7	0.8		0.8	4.8	2.0	0.2		1.1
Aug-13	0.6	2.4	0.7	1.6		0.3	1.0	0.7		3.7	0.7
Sep-13	0.8	3.9	0.7	0.8		0.3		1.0			0.9
Oct-13	3.7	5.5	1.8	1.6	1.6	3.3	2.9	0.9	0.2	3.7	2.6
Nov-13	0.3					0.3					0.1
Dec-13	0.9	0.8						0.3	0.2		0.5
Jan-14	2.3		1.1	1.6	3.1	2.2	5.7	1.9	0.4		1.9
Feb-14	4.2	0.4	0.4				1.0	0.3		3.7	1.8
Mar-14	3.0		0.4	0.8	0.8	1.1	5.7	0.7		7.4	1.7
Apr-14	2.5	0.4	0.7			0.5	1.0	0.1			1.2
May-14	1.9			0.8		0.3		0.2			0.8
Jun-14	1.6		0.4			0.8		0.6			0.9
Jul-14	2.0	1.6	1.1		2.3	0.8	3.8	0.2	0.4		1.3
Aug-14	1.0	1.2	0.7	0.8	1.6	0.3	1.0				0.6
Sep-14	1.2	2.0	0.7		1.6	0.3	1.0	0.2	0.2		0.8
Oct-14	1.9										0.8
Nov-14	0.1					0.3	1.0				0.1
Dec-14	0.1										0.0
Jan-15	0.5		0.4		2.3	0.5	1.9	0.2	1.1		0.5
Feb-15	0.3								0.2		0.2
Mar-15	0.1					0.5			0.2		0.1
Apr-15								0.2	0.2		0.1
May-15	0.2					0.8			0.2		0.2
Jun-15		0.4				0.5		0.1	0.2		0.1
Jul-15	0.2		0.4					0.1			0.1
Sep-15	0.1				0.8						0.1
Oct-15	0.1						1.0	0.1			0.1
Nov-15	0.1					0.3	1.0	0.1			0.1
Dec-15									0.2		0.0

Note: Table reports percent by each month for refugees in each province. Only those provinces with significant number of refugee inflow to Turkey included in the table.

Table 12: Reasons for leaving Syria by gender and survey wave

Reason for leaving		Men	Women	Wave 1 (2013)	Wave 2 (2014)	Total
Security	*n*	2804	696	2421	1079	3500
	% *n*	93.0	94.6	94.2	91.3	93.3
	% Responses	69.8	71.0	72.1	65.8	70.0
Economic	*n*	492	119	387	224	611
	% *n*	16.3	16.2	15.1	19.0	16.3
	% Responses	12.2	12.1	11.5	13.7	12.2
Political view	*n*	446	86	394	138	532
	% *n*	14.8	11.7	15.3	11.7	14.2
	% Responses	11.1	8.8	11.7	8.4	10.6
Medical/health	*n*	171	64	120	115	235
	% *n*	5.7	8.7	4.7	9.7	6.3
	% Responses	4.3	6.5	3.6	7.0	4.7
Other	*n*	104	15	36	83	119
	% *n*	3.4	2.0	1.4	7.0	3.2
	% Responses	2.6	1.5	1.1	5.1	2.4

Table 13: Place planned for re-migration by gender and survey wave

		Men	Women	Wave 1 (2013)	Wave 2 (2014)	Total
Not sure	*n*	152	26	126	52	178
	% *n*	26.0	18.3	23.0	28.9	24.5
	% Responses	25.9	17.9	23.0	28.0	24.3
Return to Syria	*n*	115	44	110	49	159
	% *n*	19.7	31.0	20.1	27.2	21.9
	% Responses	19.6	30.3	20.1	26.3	21.7
Another refugee camp in another province	*n*	94	11	97	8	105
	% *n*	16.1	7.7	17.7	4.4	14.4
	% Responses	16.0	7.6	17.7	4.3	14.3
Another province in Turkey	*n*	57	30	45	42	87
	% *n*	9.7	21.1	8.2	23.3	12.0
	% Responses	9.7	20.7	8.2	22.6	11.9
Another country	*n*	63	11	52	22	74
	% *n*	10.8	7.7	9.5	12.2	10.2
	% Responses	10.7	7.6	9.5	11.8	10.1
Another refugee camp in the same province	*n*	47	19	53	13	66
	% *n*	8.0	13.4	9.7	7.2	9.1
	% Responses	8.0	13.1	9.7	7.0	9.0
Out-camp settlement in Turkey	*n*	60	4	64		64
	% *n*	10.3	2.8	11.7		8.8
	% Responses	10.2	2.8	11.7		8.7

Table 14: Reasons for re-entering Syria by gender and survey wave

Reason for re-entry to Syria		Men	Women	Wave 1 (2013)	Wave 2 (2014)	Wave 3 (2015)	Total
Visiting relatives and friends	*n*	637	239	409	283	184	876
	% *n*	45.7	49.9	38.6	60.2	53.6	46.8
	% Responses	42.2	46.4	35.4	53.7	53.6	43.3
Checking home/property	*n*	388	130	369	119	30	518
	% *n*	27.9	27.1	34.8	25.3	8.7	27.7
	% Responses	25.7	25.2	32.0	22.6	8.7	25.6
Other reasons	*n*	369	117	264	106	116	486
	% *n*	26.5	24.4	24.9	22.6	33.8	26.0
	% Responses	24.5	22.7	22.9	20.1	33.8	24.0
Trading	*n*	115	29	112	19	13	144
	% *n*	8.3	6.1	10.6	4.0	3.8	7.7
	% Responses	7.6	5.6	9.7	3.6	3.8	7.1

Table 15: Condition expected and time of return by gender and survey wave

		Men	Women	Wave 1 (2013)	Wave 2 (2014)	Wave 3 (2015)	Total
When the conflicts in Syria ends	*n*	2102	724	1519	864	443	2826
	% *n*	63.5	67.9	59.3	73.2	69.8	64.6
	% Responses	59.5	62.1	59.3	57.6	69.8	60.2
When the government changes	*n*	702	218	531	321	68	920
	% *n*	21.2	20.5	20.7	27.2	10.7	21.0
	% Responses	19.9	18.7	20.7	21.4	10.7	19.6
When the conflicts in my home city ends	*n*	353	133	241	209	36	486
	% *n*	10.7	12.5	9.4	17.7	5.7	11.1
	% Responses	10.0	11.4	9.4	13.9	5.7	10.3
Never	*n*	231	57	153	76	59	288
	% *n*	7.0	5.3	6.0	6.4	9.3	6.6
	% Responses	6.5	4.9	6.0	5.1	9.3	6.1
As soon as possible	*n*	87	22	75	15	19	109
	% *n*	2.6	2.1	2.9	1.3	3.0	2.5
	% Responses	2.5	1.9	2.9	1.0	3.0	2.3
Other	*n*	57	12	44	15	10	69
	% *n*	1.7	1.1	1.7	1.3	1.6	1.6
	% Responses	1.6	1.0	1.7	1.0	1.6	1.5

Table 16: Damage status of the home in Syria by survey wave

	Wave 1 (2013)		Wave 2 (2014)		Wave 3 (2015)		Total	
	n	%	*n*	%	*n*	%	*n*	%
Collapsed	791	30.9	452	38.3	329	51.8	1572	36.0
Do not know	523	20.5	358	30.4	101	15.9	982	22.5
Heavily damaged	412	16.1	138	11.7	78	12.3	628	14.4
Non-damaged	403	15.8	142	12.0	62	9.8	607	13.9
Partially damaged	427	16.7	89	7.5	65	10.2	581	13.3

Table 17: War experiences and war impacts on individual levels by survey wave

		Wave 1 (2013)		Wave 2 (2014)		Wave 3 (2015)		Total	
		n	%	*n*	%	*n*	%	*n*	%
Searched for job in Turkey	Yes	1616	62.7	1010	83.2	342	53.4	2968	67.0
	No	946	36.7	164	13.5	281	43.9	1391	31.4
Plan for moving to another place	Yes	478	18.5	193	15.9			671	15.1
	No	1835	71.2	900	74.1			2735	61.7
	Do not know	239	9.3	41	3.4			280	6.3
Ability to produce any product	Yes	947	36.7					947	21.4
	No	451	17.5					451	10.2
Family members need physiological support	Yes	1246	48.3	586	48.3			1832	41.3
	No	1297	50.3	583	48.0			1880	42.4
Availability of shelter after returning to Syria	Yes	1068	41.4	402	33.1	0	0.0	1470	33.2
	No	1511	58.6	812	66.9	640	100.0	2963	66.8
Any damage to home due to war	Yes	1630	63.2	679	55.9	472	73.8	2781	62.7
	No	949	36.8	535	44.1	168	26.3	1652	37.3
Deaths from family due to war	Yes	818	31.7	364	30.0	240	37.5	1422	32.1
	No	1761	68.3	850	70.0	400	62.5	3011	67.9
Family members with sleeping disorder	Yes	794	30.8	443	36.5			1237	27.9
	No	1785	69.2	771	63.5	640	100.0	2556	57.7

Table 18: Number of deaths in the family due to war and adult family members with sleeping disorder

		Wave 1 (2013)		Wave 2 (2014)		Wave 3 (2015)		Total	
		n	%	*n*	%	*n*	%	*n*	%
Number of deaths in the family due to war	1	375	14.5	141	11.6	124	19.4	640	14.4
	2	167	6.5	67	5.5	48	7.5	282	6.4
	3	92	3.6	45	3.7	14	2.2	151	3.4
	4	42	1.6	24	2.0	4	0.6	70	1.6
	5	39	1.5	16	1.3	10	1.6	65	1.5
	6	17	0.7	16	1.3	2	0.3	35	0.8
	7	13	0.5	10	0.8	2	0.3	25	0.6
	8	12	0.5	5	0.4	1	0.2	18	0.4
	9	5	0.2	2	0.2			7	0.2
	10	18	0.7	13	1.1			31	0.7
	11	2	0.1	1	0.1			3	0.1
	12	2	0.1	1	0.1			3	0.1
	13	1	0.0	3	0.2			4	0.1
	14	1	0.0					1	0.0
	15	2	0.1	5	0.4	4	0.6	11	0.2
	16	1	0.0	1	0.1			2	0.0
	20	6	0.2	2	0.2	3	0.5	11	0.2
	25	2	0.1	2	0.2			4	0.1
	29			1	0.1			1	0.0
	30	1	0.0	2	0.2			3	0.1
	33			1	0.1			1	0.0
	40			1	0.1			1	0.0
	50	2	0.1	2	0.2			4	0.1
	80	1	0.0					1	0.0
Number of adult family members with sleeping disorder	1	296	11.5	97	8.0			393	8.9
	2	337	13.1	221	18.2			558	12.6
	3	68	2.6	30	2.5			98	2.2
	4	50	1.9	40	3.3			90	2.0
	5	23	0.9	25	2.1			48	1.1
	6	12	0.5	7	0.6			19	0.4
	7	6	0.2	8	0.7			14	0.3
	8	1	0.0	8	0.7			9	0.2
	9			3	0.2			3	0.1
	10	1	0.0	1	0.1			2	0.0
	12			1	0.1			1	0.0
	14			1	0.1			1	0.0
	19			1	0.1			1	0.0

Table 19: Pairwise test of independence between demographic, socio-economic and conflict-related variables

Variable Pairs	Pearson Chi-Square	LR	LLA	Phi	Cramer's V	CC	*n*
Income-Survey Year	710.434***	696.612***	38.740***	0.416***	0.294***	0.384***	4106
Flee Reason-Survey Year	30.005***	31.143***	0.989	0.089***	0.089***	0.089***	3761
Return Condition-Survey Year	336.112***	481.524***	88.137***	0.281***	0.199***	0.271***	4243
Home Damage-Survey Year	99.992***	198.984***	66.853***	0.214***	0.151***	0.209***	4370
Deaths-Survey Year	10.561***	10.350***	0,027**	0.049***	0.049***	0.049***	4371
Shelter Existence-Survey Year	19.530***	20.047***	19.846***	0.073***	0.073***	0.073***	3685
Migration Plan-Survey Year	41.321***	46.281***	36.590***	0.106***	0.106***	0.105***	3686
Physiological Effect-Survey Year	0.366	0.410	0.410	-0.011	0.011	0.011	3712
Education-Survey Year	88.691***	91.343***	25.951***	0.143***	0.101***	0.141***	4364
Sleeping Disorder-Survey Year	77.564***	76.490***	51.735***	0.166***	0.166***	0.164***	2801
Deaths-Survey Year	75.121***	83.937***	0.089	0.234***	0.165***	0.228***	1374
Return Condition-Deaths	29.494***	28.913***	3.001*	0.084***	0.084***	0.083***	4214
Return Condition-Home Damage	76.597***	79.998***	4.513**	0.135***	0.067***	0.134***	4211
Migration Plan-Deaths	8.205**	8.077**	8.125***	0.047**	0.047**	0.047**	3664
Migration Plan-Home Damage	14.656*	14.359*	0.956	0.063*	0.045*	0.063*	3659
Return Condition-Shelter Existence	26.381***	26.911***	4.560**	0.089***	0.086***	0.086***	3530
Migration Plan-Shelter Existence	1.529	1.534	1.360	0.021	0.021	0.021	3617
Return Condition-Income	139.077***	150.961***	21.393***	0.188***	0.084***	0.184***	3950
Migration Plan-Income	26.333***	25.856***	14.838***	0.088***	0.062***	0.087***	3417
Return Condition-Province of Origin	241.287***	233.694***	12.694***	0.239***	0.107***	0.232***	4234
Return Condition-Gender	9.925*	10.470*	3.103*	0.049*	0.049*	0.048*	4215
Return Condition-Education	60.011***	57.164***	2.213	0.120***	0.053***	0.119***	4202
Migration Plan-Province of Origin	47.267***	43.715**	0.928	0.113***	0.080***	0.113***	3677
Migration Plan-Gender	0.392	0.397	0.357	0.010	0.010	0.010	3662
Migration Plan-Education	25.329***	24.649***	17.304***	0.083***	0.059***	0.083***	3666
Migration Target-Gender	34.084***	31.348***	0.002	0.142***	0.142***	0.140***	1694
Migration Target-Education	69.840***	71.597***	26.280***	0.204***	0.091***	0.200***	1683
Migration Target-Income	230.306***	207.051***	78.030***	0.376***	0.168***	0.352***	1625
Migration Target-Home Damage	99.943***	91.535***	0.337	0.244***	0.122***	0.237***	1682
Migration Target-Deaths	10.239	9.998	5.759**	0.078	0.078	0.078	1678
Migration Target-Shelter Existence	13.111**	12.987**	6.515**	0.089**	0.041**	0.089**	1660

Note: The table reports pairwise independence tests for the pair of variables in the first column. In addition to the Pearson Chi-Square test, we report likelihood ratio (LR), linear-by-linear association (LLA), Cramér's phi (Phi), and Cramér's V tests. The table also reports the contingency coefficient (CC) and the number of observations (*n*). When both variables have two categories, we report the Yates' continuity of correction in the second column instead of the Pearson Chi-Square test. *, **, and *** denote significance at 10%, 5%, and 1%, respectively.

Table 20: Pairwise test of independence between demographic, socio-economic and conflict-related variables conditional on the survey wave (year)

Variable Pairs	Pearson Chi-Square	LR	LLA	Phi	Cramer's V	CC	*n*
Migration Target-Province of Origin							
Wave 1	123,448**	135,343***	2.5	0,476***	0,194***	0,430***	545
Wave 2	191,546***	117,921***	0.082	0,409***	0,183***	0,379***	1143
Overall	236,095***	216,346***	24,835***	0,374***	0,153***	0,350***	1688
Migration Target-Gender							
Wave 1	34,074***	29,935***	0.372	0,25***	0,25***	0,242***	547
Wave 2	69,059***	54,383***	4,707**	0,245***	0,245***	0,238***	1147
Overall	34,084***	31,348***	0.002	0,142***	0,142***	0,140***	1694
Migration Target-Education							
Wave 1	54,467***	58,768***	0.849	0,316***	0,141***	0,301***	545
Wave 2	29.602	32.097	2.359	0.161	0.072	0.159	1138
Overall	69,840***	71,597***	26,280***	0,204***	0,091**	0,200***	1683
Migration Target-Income							
Wave 1	63,363***	64,424***	4,071**	0,351***	0,157***	0,331***	514
Wave 2	39,613**	45,753***	1.736	0,189**	0,084**	0,186**	1111
Overall	230,306***	207,051***	78,030***	0,376***	0,168***	0,352***	1625
Migration Target-Home Damage							
Wave 1	43,130***	41,029**	0.443	0,281***	0,141***	0,271***	545
Wave 2	46,401***	46,247***	0.008	0,202***	0,101***	0,198***	1137
Overall	99,943***	91,535***	0.377	0,244***	0,122***	0,237***	1682
Migration Target-Deaths							
Wave 1	4.779	4.813	0.001	0.094	0.094	0.094	541
Wave 2	11,656**	11,036*	3,682*	0,101**	0,101**	0,101**	1137
Overall	10.239	9.998	5,759**	0.078	0.078	0.078	1678
Migration Target-Shelter Existence							
Wave 1	14,087**	14,129**	1.485	0,162**	0,162**	0,160**	539
Wave 2	5.878	5.775	0.481	0.072	0.072	0.072	1121
Overall	13,111**	12,987**	6,515**	0.089	0.089	0.089	1660
Migration Plan-Province of Origin							
Wave 1	43,210**	42,618**	0.746	0,130**	0,092**	0,129**	2546
Wave 2	44,720***	40,123***	1.503	0,199***	0,141***	0,195***	1131
Overall	47,267***	43,715**	0.928	0,113***	0,080***	0,113***	3677
Migration Plan-Gender							
Wave 1	7,886**	8,190**	4,924**	0,056**	0,056**	0,056**	2552
Wave 2	14,039***	13,112***	9,643**	0,112***	0,112***	0,112***	1110
Overall	0.392	0.397	0.357	0.01	0.01	0.01	3662
Migration Plan-Education							
Wave 1	15.586	15.255	10,435***	0.078	0.055	0.078	2546
Wave 2	6.801	7.102	1.375	0.078	0.055	0.078	1120
Overall	25,329***	24,649***	17,304***	0,083***	0,058***	0,083***	3666
Migration Plan-Income							
Wave 1	19,330**	20312**	3,040*	0,091**	0,065**	0,091**	2315
Wave 2	19,618**	18,305**	1.337	0,133**	0,094**	0,132**	1102
Overall	26,333***	25,856***	14,838***	0,088***	0,062***	0,087***	3417

Note: See note to Table 19.

Table 20: (continued)

Variable Pairs	X2	LR	LLA	Phi	Cramer's V	CC	n
Migration Plan-Home Damage							
Wave 1	12.671	12.717	0.787	0.071	0.05	0.071	2535
Wave 2	6.451	6.276	0.114	0.076	0.054	0.076	1124
Overall	14,656*	14,359*	0.956	0,063*	0,045*	0,063*	3659
Migration Plan-Deaths							
Wave 1	6,206**	6,113**	6,160**	0,049**	0,049**	0,049**	2541
Wave 2	1.989	1.955	1.96	0.042	0.042	0.042	1123
Overall	8,205**	8,077**	8,125***	0,047**	0,047**	0,047**	3664
Migration Plan-Shelter Existence							
Wave 1	2.538	2.548	2.38	0.032	0.032	0.032	2507
Wave 2	0.232	0.234	0.22	0.014	0.014	0.014	1110
Overall	1.529	1.534	1.36	0.021	0.021	0.021	3617
Return Condition-Province of Origin							
Wave 1	127,913***	129,008***	2.331	0,224***	0,100***	0,218***	2558
Wave 2	77,389***	58,187*	0.879	0,273***	0,136***	0,263***	1042
Wave 3	91,638***	86,440***	2.519	0,380***	0,170***	0,355***	634
Overall	241,287***	233,694***	12,694***	0,239***	0,107***	0,232***	4234
Return Condition-Gender							
Wave 1	6.276	6.848	2.281	0.049	0.049	0.049	2563
Wave 2	6.505	7.477	5,766***	0.8	0.8	0.8	1023
Wave 3	15,879***	16,134***	7,987***	0,159***	0,159***	0,157***	629
Overall	9,925*	10,470*	3,103*	0,049*	0,049*	0,048*	4215
Return Condition-Education							
Wave 1	41,154**	38,789**	0.652	0,127**	0,057**	0,126**	2557
Wave 2	45,646***	42,946***	0.727	0,210***	0,105***	0,205***	1037
Wave 3	34.32	35,213*	2.546	0.238	0.106	0.231	608
Overall	60,011***	57,164***	2.213	0,120***	0,053***	0,119***	4202
Return Condition-Income							
Wave 1	37,690**	36,805*	0.57	0,127**	0,057**	0,126**	2324
Wave 2	38,477***	27.094	0.913	0,195***	0,097***	0,191***	1012
Wave 3	21.99	23.008	7,601***	0.189	0.085	0.186	614
Overall	139,077***	150,961***	21,393***	0,188***	0,084***	0,184***	3950
Return Condition-Home Damage							
Wave 1	41,684***	43,580**	0.888	0,128***	0,064***	0127***	2544
Wave 2	21.707	22.332	1.757	0.145	0.072	0.143	1037
Wave 3	25.996	25.88	0.008	0.203	0.102	0.199	630
Overall	76,597***	79,998***	4,513**	0,135***	0,067***	0,134***	4211
Return Condition-Deaths							
Wave 1	13,706**	13,497**	1.771	0,073**	0,073**	0,073**	2250
Wave 2	12,345**	11,822**	0.302	0,109**	0,109**	0,108**	1037
Wave 3	19,813***	19,855***	5,191**	0,178***	0,178***	0,175***	627
Overall	29,494***	28,913***	3,001*	0,084***	0,084***	0,083***	4214
Return Condition-Shelter Existence							
Wave 1	13,476**	13,758**	0.663	0,073**	0,073**	0,073**	2511
Wave 2	12,983**	13,014**	2,840*	0,113**	0,113**	0,112**	1019
Overall	26,381***	26,911***	4,560**	0,086***	0,086***	0,086***	3530

Note: See note to Table 19.

Table 21: Descriptive statistics for the binary regression variables

Variable	*n*	Mean	Std. Dev.	Min	Max
RETURN	4433	0.878	0.327	0	1
MIGRATE	4433	0.151	0.358	0	1
RTNASAP	4433	0.022	0.147	0	1
MIGRATEINT	4433	0.016	0.124	0	1
GENDER	4401	1.245	0.430	0	1
DEATH	4371	2.675	0.469	0	1
SHELTER	3685	2.601	0.490	0	1
DAMAGE	4433	0.627	0.484	0	1
DEATH	4433	0.321	0.467	0	1
IN-CAMP	4433	0.205	0.406	0	1
WATER AND HYGIENE	4433	4.014	0.204	1	5
HEALTH SERVICE	4433	4.956	0.126	1	5
SECURITY	4433	4.139	0.231	1	5

Note: The table reports the number of observations (*n*), arithmetic mean (Mean), standard deviation (Std. Dev.), the minimum (Min), and the maximum (Max) of the variable.

Table 22: Logit model estimates

Independent variable	Dependent variable			
	RETURN	MIGRATE	RTNASAP	MIGRATEINT
GENDER: Women	0.33230**	0.00060	-0.55002	-0.38569
	(0.15630)	(0.11676)	(0.38819)	(0.37299)
INCOME: 10001-20000	0.32057**	-0.05775	0.88505**	0.58175*
	(0.13628)	(0.11264)	(0.34842)	(0.33686)
INCOME: 20001-30000	0.22928	0.15526	0.74672*	0.39362
	(0.17313)	(0.13571)	(0.41831)	(0.43097)
INCOME: 30001-40000	0.08670	0.42982**	0.66656	0.82231
	(0.26670)	(0.20593)	(0.65585)	(0.57438)
INCOME: 40001-50000	0.57655*	0.41642**	1.27636**	0.76707
	(0.30775)	(0.20129)	(0.51170)	(0.57313)
INCOME: 500001+	0.29771	0.31917	1.53836***	1.57844***
	(0.29131)	(0.21105)	(0.47479)	(0.46070)
EDUCATION: Literate	0.43351*	0.06514	-0.22705	-0.34010
	(0.24949)	(0.18620)	(0.61863)	(0.60798)
EDUCATION: Primary school	0.11410	0.20400	0.42025	0.06011
	(0.17397)	(0.14547)	(0.42266)	(0.41711)
EDUCATION: Elementary school	0.03513	0.15039	0.16771	-0.17036
	(0.18185)	(0.15330)	(0.45054)	(0.45556)
EDUCATION: High school	-0.08315	0.31714*	0.27072	0.34626
	(0.20789)	(0.17135)	(0.48902)	(0.46047)
EDUCATION: Bachelor/graduate	-0.07044	0.29107*	0.53190	0.00187
	(0.21230)	(0.17268)	(0.46062)	(0.49191)
SHELTER: No	-0.24024**	0.05654	0.07026	-0.00127
	(0.12210)	(0.09614)	(0.25514)	(0.26919)
DAMAGE: Yes	0.00177	-0.06503	-0.19368	0.42508
	(0.12115)	(0.09735)	(0.25527)	(0.26677)
DEATH: Yes	-0.1928*	0.11506	-0.03156	0.45464*
	(0.11696)	(0.09495)	(0.25826)	(0.25741)
RFGTIME: 13-24 months	-0.47363***	-0.06020	-0.42135	0.94296***
	(0.13225)	(0.11595)	(0.36470)	(0.27420)
RFGTIME: 25-36 months	-1.63955***	-0.60977*	-0.79406	-0.40111
	(0.23240)	(0.32802)	(1.02226)	(1.02786)
RFGTIME: 35-48 months	-4.67346***			
	(1.05746)			
Constant	2.17885***	-1.73834***	-4.50997***	-4.93668***
	(0.18627)	(0.16123)	(0.48205)	(0.48517)
n	3367	3356	3356	3356
log *L*	-1135.460	-1597.625	-338.313	-305.298
AIC	2306.919	3229.249	710.626	644.596
BIC	2417.111	3333.264	814.641	748.610

Note: Table reports the maximum likelihood estimates of the logit models. Standard errors of the estimates are given in parentheses. In addition to the number of observations (*n*), the table reports the log likelihood (log *L*), the Akaike Information Criterion (AIC), and the Bayesian Information Criterion (BIC). *, **, and *** denote significance at 10%, 5%, and 1%, respectively.

Table 23: Logit models selected by general to specific modelling approach

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Independent Variable	*Dependent Variable*					
	RETURN	MIGRATEINT	RETURN	RETURN	MIGRATEINT	MIGRATEINT
GENDER: Women	0.25448*		0.27645**	0.23637*		
	(0.13993)		(0.14024)	(0.14126)		
SHELTER: No	-0.24036**		-0.25052**	-0.00961		
	(0.11047)		(0.11057)	(0.13189)		
DEATH: Yes	-0.19362*	0.49813**	-0.20353*	-0.15895	0.49702**	0.47330*
	(0.11089)	(0.25217)	(0.11080)	(0.11227)	(0.25254)	(0.25744)
RFGTIME: 13-24 months	-0.47479***					
	(0.12574)					
RFGTIME: 25-36 months	-1.63262***					
	(0.21798)					
RFGTIME: 35-48 months	-3.53032***					
	(0.65697)					
INCOME: 10001-20000		0.36602			0.46468	0.33669
		(0.32019)			(0.32245)	(0.33004)
INCOME: 20001-30000		0.14516			0.25072	0.23707
		(0.41610)			(0.41838)	(0.41946)
INCOME: 30001-40000		0.54581			0.64088	0.58670
		(0.56188)			(0.56342)	(0.56469)
INCOME: 40001-50000		0.56336			0.63146	0.61234
		(0.56197)			(0.56340)	(0.56413)
INCOME: 500001+		1.24851***			1.39028***	1.34670***
		(0.43821)			(0.44221)	(0.44409)
DAMAGE: Yes		0.43413*			0.42480*	0.74459**
		(0.25170)			(0.25184)	(0.36442)
RFGMONTHS		0.01272***	-0.25542***	-0.25538***	0.34529***	0.35781***
		(0.00426)	(0.04713)	(0.04669)	(0.12250)	(0.12483)
$RFGMONTHS^2$			-0.00233***	-0.00232***	0.00402***	0.00419***
			(0.00053)	(0.00053)	(0.00139)	(0.00142)
IN-CAMP: Yes				0.44918**		-0.59585**
				(0.21530)		(0.28664)
WATER AND HYGIENE				-0.13887		-0.14574
				(0.24153)		(0.54015)
HEALTH SERVICE				-0.49202**		-0.51804***
				(0.22907)		(0.20131)
SECURITY				-0.89883***		-0.94367***
				(0.20773)		(0.40019)
Constant	2.39805***	-5.39674***	2.58786***	2.21029***	-5.37480***	-5.24470***
	(0.10382)	(0.61358)	(0.12719)	(0.12910)	(1.68520)	(1.74222)
n	3642	4090	3646	3621	4090	4064
Log *L*	-1257.361	-330.103	-1257.869	-1231.331	-323.455	-313.682
AIC	2528.721	678.206	2527.737	2482.662	666.911	653.365
BIC	2572.123	735.053	2564.945	2544.607	730.074	735.394

Note: See notes to Table 22.

Table 24: Estimates of predictive margins

Independent Variable	Dependent Variable			
	RETURN	MIGRATE	RTNASAP	MIGRATEINT
GENDER: Men	0.88021***	0.18562***	0.02345***	0.02059***
	(0.00612)	(0.00749)	(0.00289)	(0.00272)
GENDER: Women	0.90975***	0.18571***	0.01371***	0.01415***
	(0.01114)	(0.01563)	(0.00490)	(0.00475)
INCOME: 0-10000	0.86748***	0.17604***	0.01081***	0.01226***
	(0.00971)	(0.01137)	(0.00314)	(0.00310)
INCOME: 10001-20000	0.89887***	0.16785***	0.02576***	0.02164***
	(0.00877)	(0.01093)	(0.00454)	(0.00440)
INCOME: 20001-30000	0.89068***	0.19961***	0.02252***	0.01802***
	(0.01365)	(0.01738)	(0.00645)	(0.00597)
INCOME: 30001-40000	0.87671***	0.24688***	0.02082*	0.02729**
	(0.02596)	(0.03522)	(0.01191)	(0.01346)
INCOME: 40001-50000	0.91899***	0.24441***	0.03758**	0.02588**
	(0.02086)	(0.03399)	(0.01504)	(0.01272)
INCOME: 500001+	0.89687***	0.22697***	0.04823***	0.05576***
	(0.02435)	(0.03401)	(0.01683)	(0.01926)
EDUCATION: Illiterate	0.88041***	0.16106***	0.01681***	0.01914***
	(0.01371)	(0.01579)	(0.00596)	(0.00639)
EDUCATION: Literate	0.91747***	0.17001***	0.01345**	0.01374**
	(0.01518)	(0.02064)	(0.00669)	(0.00683)
EDUCATION: Primary school	0.89138***	0.19038***	0.02530***	0.02029***
	(0.00986)	(0.01316)	(0.00534)	(0.00462)
EDUCATION: Elementary school	0.88389***	0.18230***	0.01980***	0.01622***
	(0.01152)	(0.01432)	(0.00507)	(0.00464)
EDUCATION: High school	0.87183***	0.20832***	0.02188***	0.02674***
	(0.01634)	(0.02004)	(0.00687)	(0.00765)
EDUCATION: Bachelor/graduate	0.87318***	0.20408***	0.02818***	0.01918***
	(0.01675)	(0.01995)	(0.00752)	(0.00640)
SHELTER: Yes	0.89966***	0.18054***	0.02091***	0.01938***
	(0.00827)	(0.01083)	(0.00388)	(0.00373)
SHELTER: No	0.87705***	0.18899***	0.02238***	0.01936***
	(0.00725)	(0.00885)	(0.00344)	(0.00321)
DAMAGE: No	0.88584***	0.18923***	0.02446***	0.01635***
	(0.00916)	(0.00865)	(0.00462)	(0.00277)
DAMAGE: Yes	0.88601***	0.17952***	0.02027***	0.02468***
	(0.00679)	(0.01119)	(0.00306)	(0.00460)
DEATH: No	0.89211***	0.18001***	0.02197***	0.01640***
	(0.00636)	(0.00805)	(0.00307)	(0.00267)
DEATH: Yes	0.87314***	0.19749***	0.02130***	0.02548***
	(0.00987)	(0.01213)	(0.00441)	(0.00477)
RFGTIME: 1-12 months	0.90555***	0.18959***	0.02347***	0.01541***
	(0.00577)	(0.00770)	(0.00292)	(0.00239)
RFGTIME: 13-24 months	0.85703***	0.18057***	0.01557***	0.03826***
	(0.01362)	(0.01521)	(0.00518)	(0.00797)
RFGTIME: 25-36 months	0.65517***	0.11315***	0.01079	0.01039
	(0.04910)	(0.03233)	(0.01078)	(0.01039)
RFGTIME: 35-48 months	0.08781			
	(0.08383)			

Note: Table reports the estimates of the predictive margins. Standard errors of the estimates are given in parentheses, which are estimated using robust method.

Table 25: Estimates of predictive margins for logit models selected by general to specific modelling approach

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Independent Variable			*Dependent Variable*			
	RETURN	MIGRATEINT	RETURN	RETURN	MIGRATEINT	MIGRATEINT
GENDER: Men	0.87909***		0.87880***	0.87993***		
	(0.00593)		(0.00593)	(0.00589)		
GENDER: Women	0.90277***		0.90435***	0.90174***		
	(0.01075)		(0.01060)	(0.01083)		
SHELTER: Yes	0.89781***		0.89847***	0.88488***		
	(0.00780)		(0.00776)	(0.00966)		
SHELTER: No	0.87459***		0.87433***	0.88395***		
	(0.00695)		(0.00695)	(0.00697)		
DEATH: No	0.89012***	0.01340***	0.89055***	0.88944***	0.01341***	0.01320***
	(0.00617)	(0.00219)	(0.00615)	(0.00621)	(0.00219)	(0.00218)
DEATH: Yes	0.87056***	0.02182***	0.86999***	0.87367***	0.02179***	0.02095***
	(0.00966)	(0.00402)	(0.00968)	(0.00947)	(0.00400)	(0.00393)
RFGTIME: 1-12 months	0.90299***					
	(0.00554)					
RFGTIME: 13-24 months	0.85293***					
	(0.01356)					
RFGTIME: 25-36 months	0.64717***					
	(0.04727)					
RFGTIME: 35-48 months	0.21810**					
	(0.11087)					
INCOME: 0-10000		0.01187***			0.01115***	0.01146***
		(0.00286)			(0.00270)	(0.00278)
INCOME: 10001-20000		0.01702***			0.01759***	0.01594***
		(0.00344)			(0.00356)	(0.00338)
INCOME: 20001-30000		0.01370***			0.01427***	0.01446***
		(0.00453)			(0.00472)	(0.00479)
INCOME: 30001-40000		0.02029**			0.02089**	0.02035**
		(0.01004)			(0.01032)	(0.01005)
INCOME: 40001-50000		0.02064**			0.02070**	0.02086**
		(0.01020)			(0.01021)	(0.01028)
INCOME: 500001+		0.04005***			0.04293***	0.04220***
		(0.01388)			(0.01483)	(0.01460)
DAMAGE: No		0.01360***			0.02065***	
		(0.00225)			(0.00373)	
DAMAGE: Yes		0.02079***			0.01365***	
		(0.00376)			(0.00226)	
IN-CAMP: Yes				0.91828***		0.89417***
				(0.01139)		(0.01250)
IN-CAMP: No				0.88896***		0.84830***
				(0.01441)		(0.00907)

Note: See notes to Table 24.

Table 26: Estimates of average marginal effects

Independent Variable	Dependent Variable			
	RETURN	MIGRATE	RTNASAP	MIGRATEINT
GENDER: Women	0.02955**	0.00009	-0.00974*	-0.00644
	(0.01282)	(0.01752)	(0.00575)	(0.00553)
INCOME: 10001-20000	0.03139**	-0.00819	0.01495***	0.00938*
	(0.01328)	(0.01598)	(0.00557)	(0.00545)
INCOME: 20001-30000	0.02320	0.02357	0.01170	0.00576
	(0.01693)	(0.02094)	(0.00721)	(0.00679)
INCOME: 30001-40000	0.00923	0.07084*	0.01001	0.01503
	(0.02771)	(0.03702)	(0.01233)	(0.01382)
INCOME: 40001-50000	0.05151**	0.06837*	0.02676*	0.01362
	(0.02305)	(0.03590)	(0.01538)	(0.01312)
INCOME: 500001+	0.02940	0.05093	0.03741**	0.04350**
	(0.02637)	(0.03603)	(0.01717)	(0.01959)
EDUCATION: Literate	0.03706*	0.00895	-0.00335	-0.00540
	(0.02028)	(0.02571)	(0.00890)	(0.00926)
EDUCATION: Primary school	0.01096	0.02933	0.00849	0.00115
	(0.01689)	(0.02055)	(0.00799)	(0.00789)
EDUCATION: Elementary school	0.00347	0.02125	0.00299	-0.00292
	(0.01802)	(0.02149)	(0.00787)	(0.00795)
EDUCATION: High school	-0.00858	0.04727*	0.00508	0.00759
	(0.02154)	(0.02578)	(0.00916)	(0.01008)
EDUCATION: Bachelor/graduate	-0.00724	0.04303*	0.01137	0.00003
	(0.02190)	(0.02576)	(0.00969)	(0.00914)
SHELTER: No	-0.02260**	0.00845	0.00147	-0.00002
	(0.01125)	(0.01432)	(0.00533)	(0.00505)
DAMAGE: Yes	0.00017	-0.00971	-0.00419	0.00833
	(0.01164)	(0.01445)	(0.00566)	(0.00548)
DEATH: Yes	-0.01897	0.01748	-0.00066	0.00907*
	(0.01178)	(0.01460)	(0.00539)	(0.00548)
RFGTIME: 13-24 months	-0.04852***	-0.00902	-0.00790	0.02285***
	(0.01490)	(0.01717)	(0.00598)	(0.00836)
RFGTIME: 25-36 months	-0.25039***	-0.07644**	-0.01267	-0.00502
	(0.04951)	(0.03329)	(0.01119)	(0.01067)
RFGTIME: 35-48 months	-0.81774***	0.00000***	0.00000***	0.00000***
	(0.08403)	(0.00000)	(0.00000)	(0.00000)

Note: Table reports the estimates of the average marginal effects. Standard errors of the estimates are given in parentheses, which are estimated using robust method.

Table 27: Estimates of average marginal effects for logit models selected by general to specific modelling approach

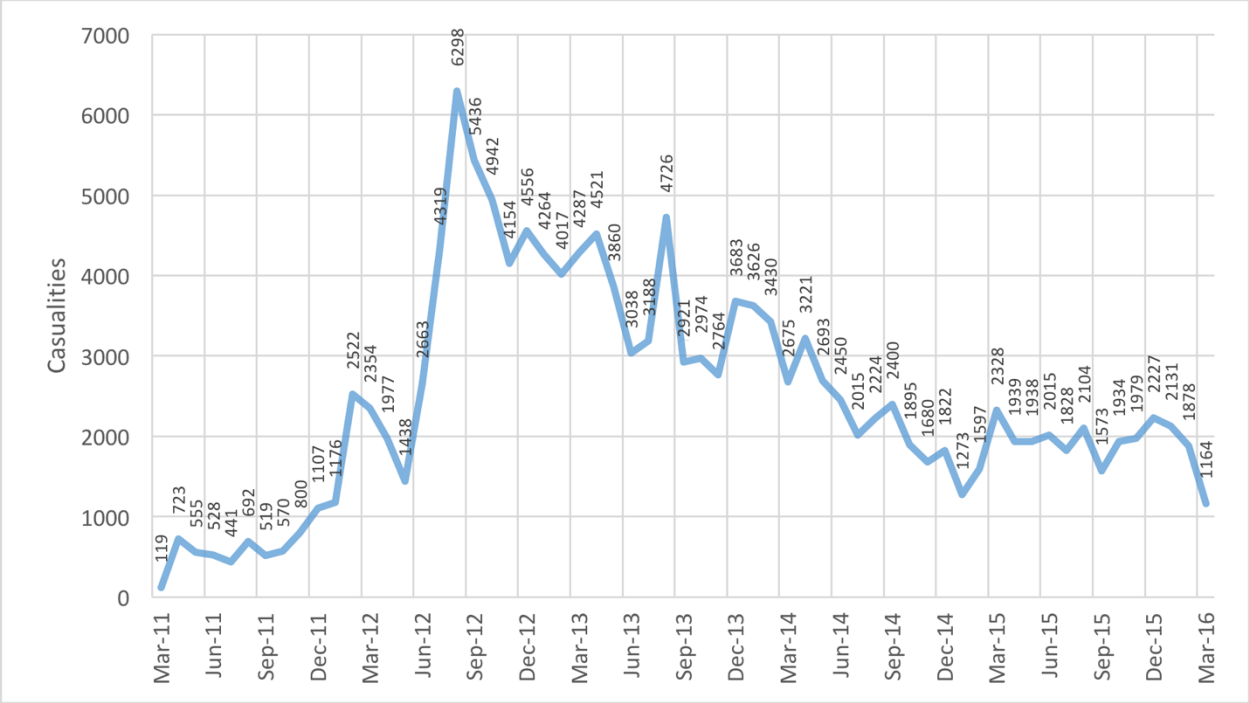
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Independent Variable			*Dependent Variable*			
	RETURN	MIGRATEINT	RETURN	RETURN	MIGRATEINT	MIGRATEINT
GENDER: Women	0.02368*		0.02555**	0.02181*		
	(0.01227)		(0.01215)	(0.01235)		
SHELTER: No	-0.02322**		-0.02414**	-0.00093		
	(0.01046)		(0.01043)	(0.01280)		
DEATH: Yes	-0.01956*	0.00842*	-0.02056*	-0.01577	0.00837*	0.00774*
	(0.01148)	(0.00458)	(0.01148)	(0.01136)	(0.00457)	(0.00451)
RFGTIME: 13-24 months	-0.05006***					
	(0.01465)					
RFGTIME: 25-36 months	-0.25583***					
	(0.04760)					
RFGTIME: 35-48 months	-0.68490***					
	(0.11101)					
INCOME: 10001-20000		0.00515			0.00645	0.00449
		(0.00448)			(0.00448)	(0.00440)
INCOME: 20001-30000		0.00183			0.00312	0.00300
		(0.00537)			(0.00545)	(0.00555)
INCOME: 30001-40000		0.00842			0.00974	0.00889
		(0.01043)			(0.01066)	(0.01043)
INCOME: 40001-50000		0.00877			0.00955	0.00940
		(0.01060)			(0.01056)	(0.01065)
INCOME: 500001+		0.02818**			0.03178**	0.03074**
		(0.01418)			(0.01509)	(0.01489)
DAMAGE: Yes		0.00720			0.00701	0.03377***
		(0.00440)			(0.00437)	(0.01045)
RFGMONTHS		0.00020**	-0.00257***	-0.00258***	0.00071***	0.00073***
		(0.00008)	(0.00093)	(0.00092)	(0.00027)	(0.00026)
IN-CAMP: Yes				0.03478**		-0.04382***
				(0.01580)		(0.01465)
WATER AND HYGINE				-0.00946		-0.01213***
				(0.01637)		(0.00517)
HEALTH SERVICE				-0.03878**		-0.03668**
				(0.01796)		(0.01635)
SECURITY				-0.08362***		-0.08255***
				(0.01678)		(0.01390)

Note: See notes to Table 26.

FIGURES

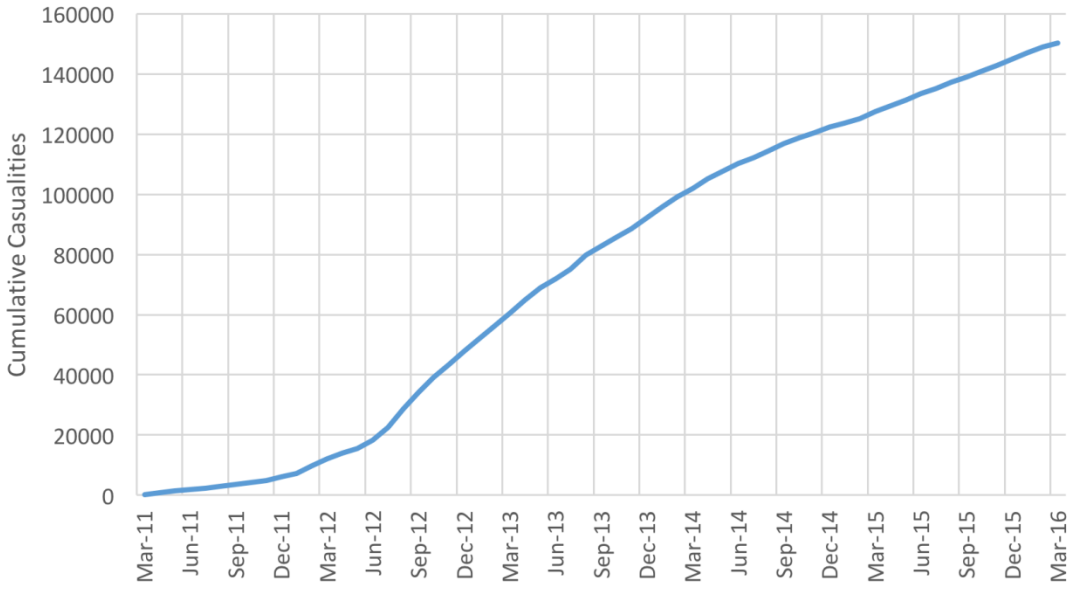
Figure 1: Map of Syria and Syrian refugee concentration regions of Turkey

Figure 2: Monthly verified casualties of Syrian civil war (Mar 2011-Mar 2016)



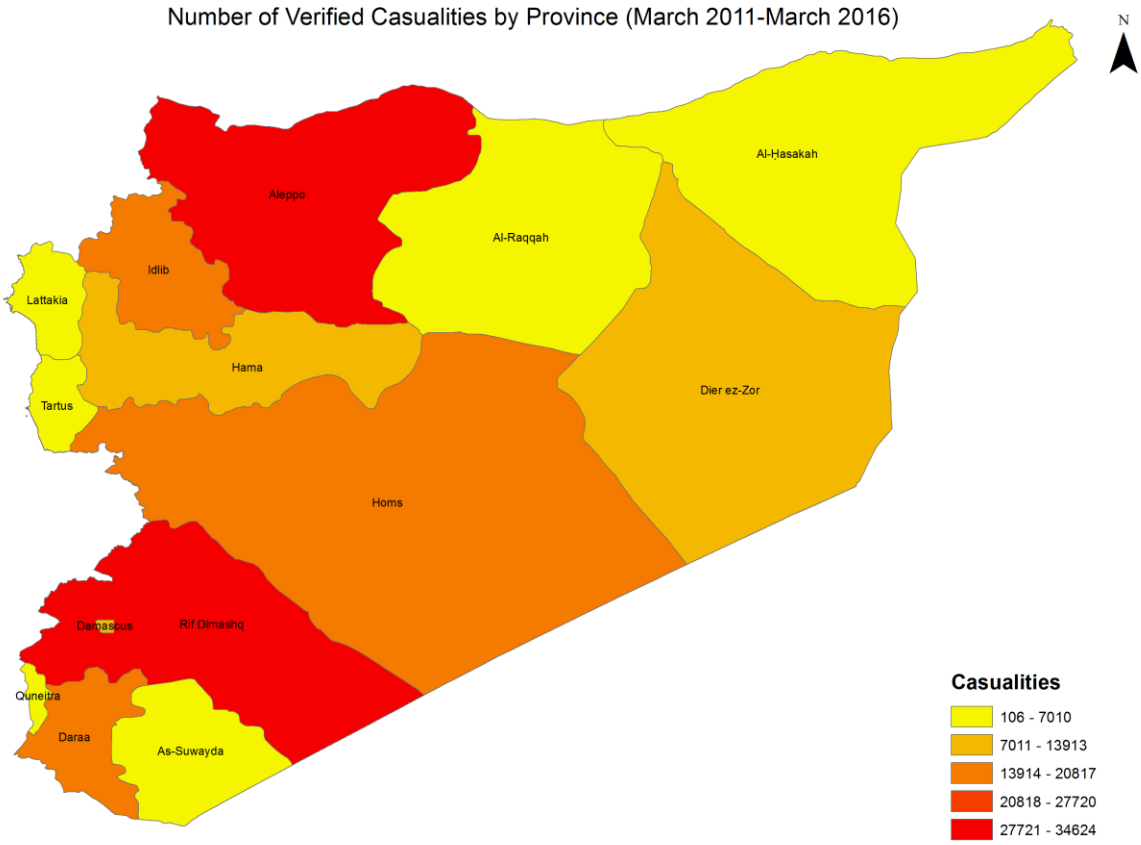
Source: Humanitarian Tracker, Syria Tracker Database (http://www.humanitariantracker.org) and Price *et al*. (2014).

Figure 3: Cumulative monthly verified casualties of Syrian civil war (Mar 2011-Mar 2016)



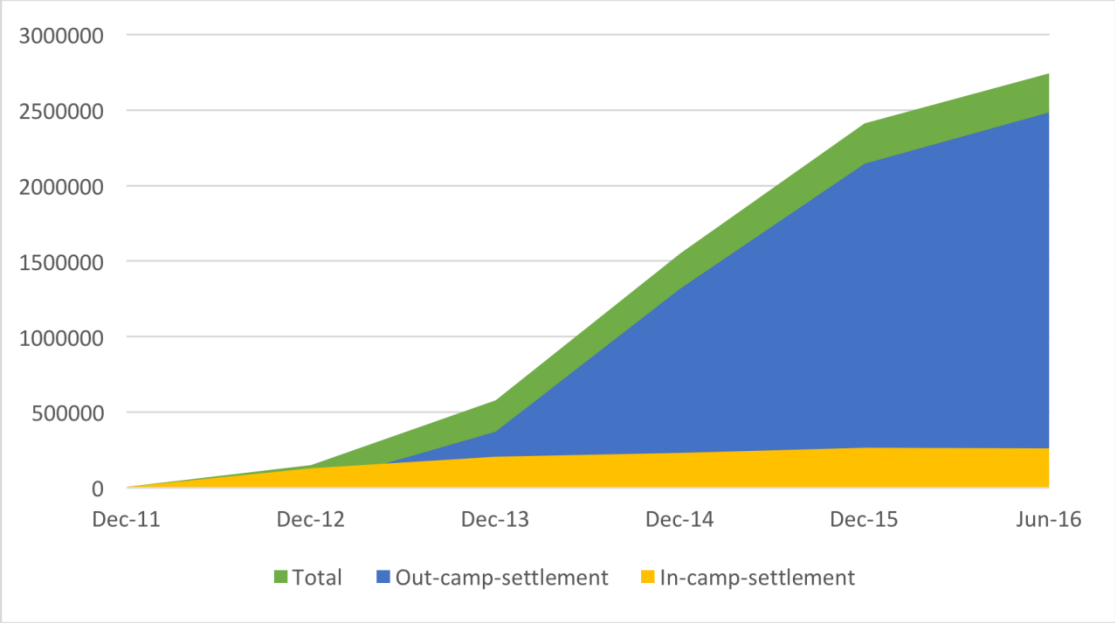
Source: Humanitarian Tracker, Syria Tracker Database (http://www.humanitariantracker.org) and Price *et al*. (2014).

Figure 4: Cumulative verified Syrian war casualties by province (Mar 2011-Mar 2016)



Source: Humanitarian Tracker, Syria Tracker Database (http://www.humanitariantracker.org) and Price *et al.* (2014).

Figure 5: Syrian refugees in Turkey



Source: AFAD (Disaster and Emergency Management Authority), http://www.afad.gov.tr.

Figure 6: Neighborhood level random sampling

Figure 7: Geographic distribution of the sample

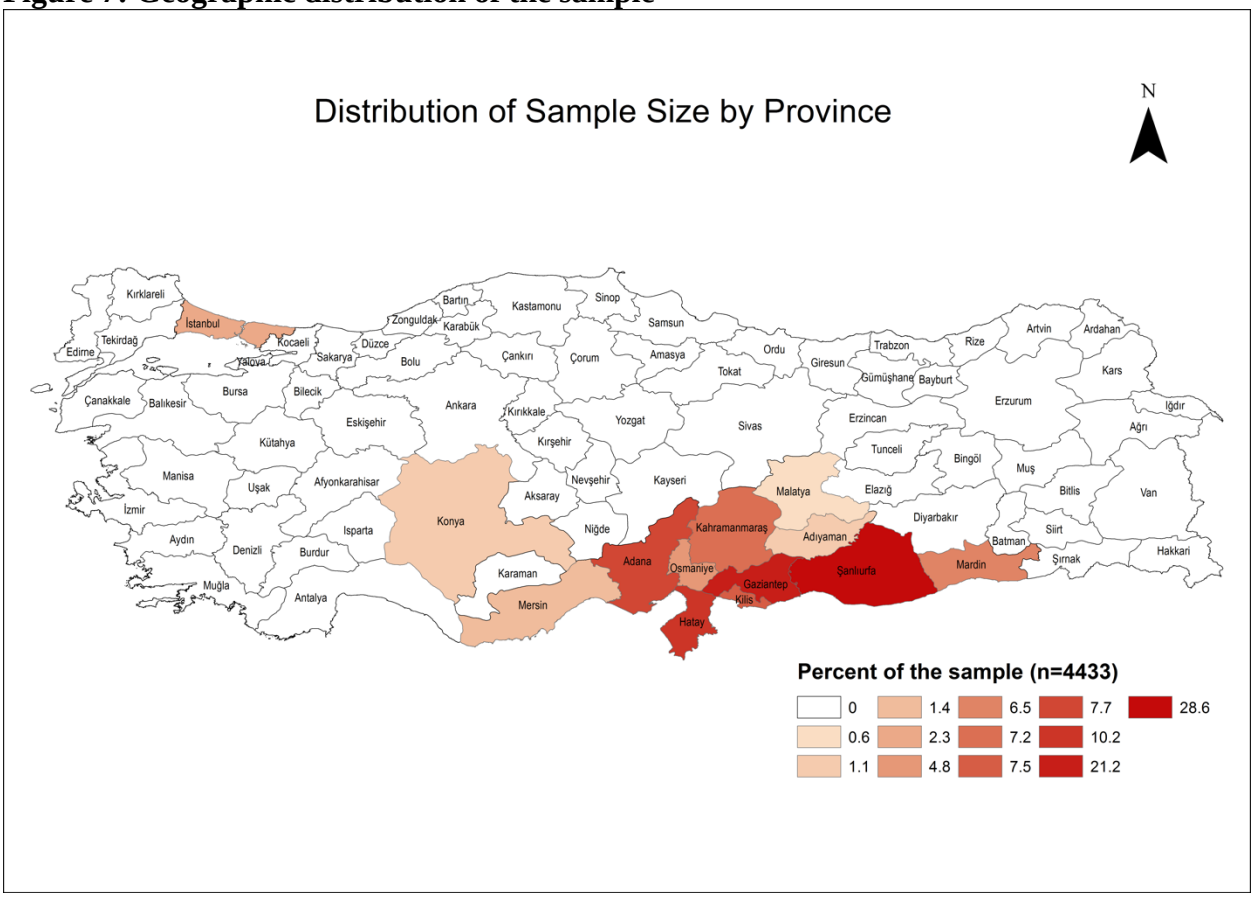


Figure 8: Survey respondents by gender and age group (%)

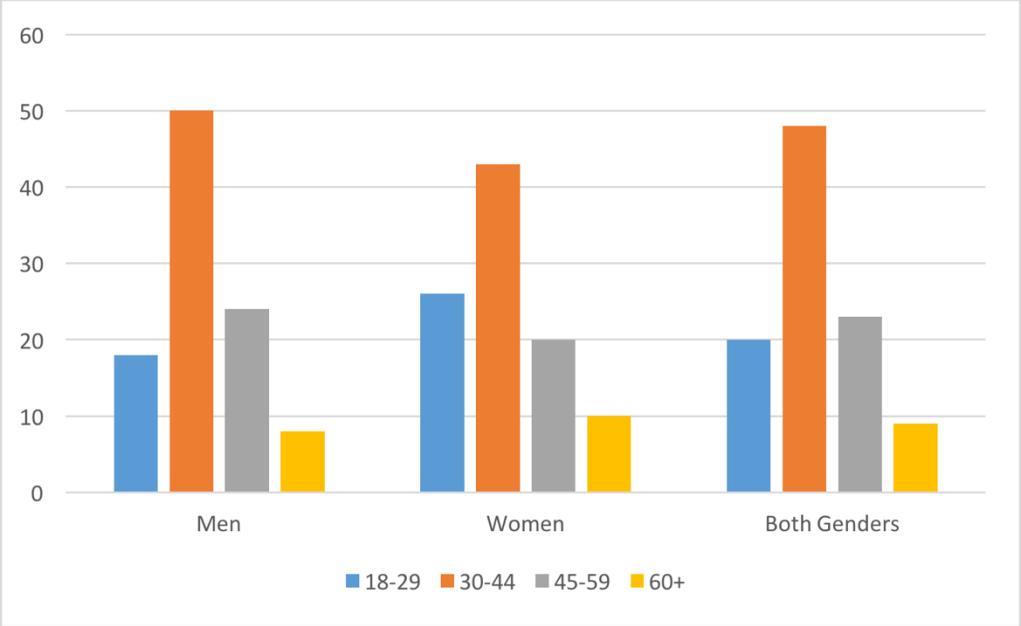


Figure 9: Average monthly household income of Syrians in the last twelve months by province (USD)

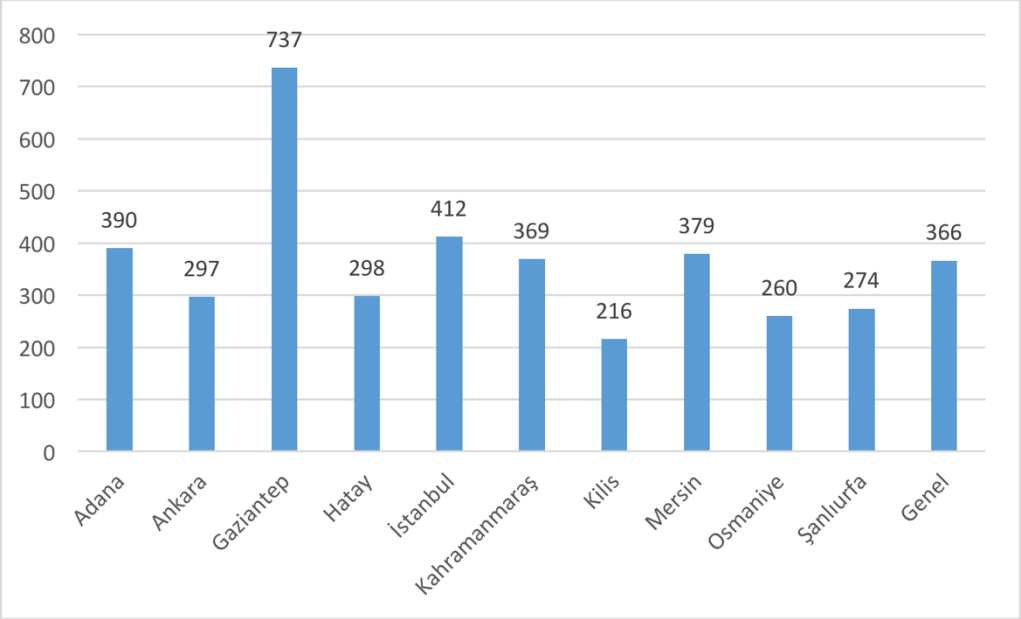


Figure 10: Syrian refugees in Turkey by home province

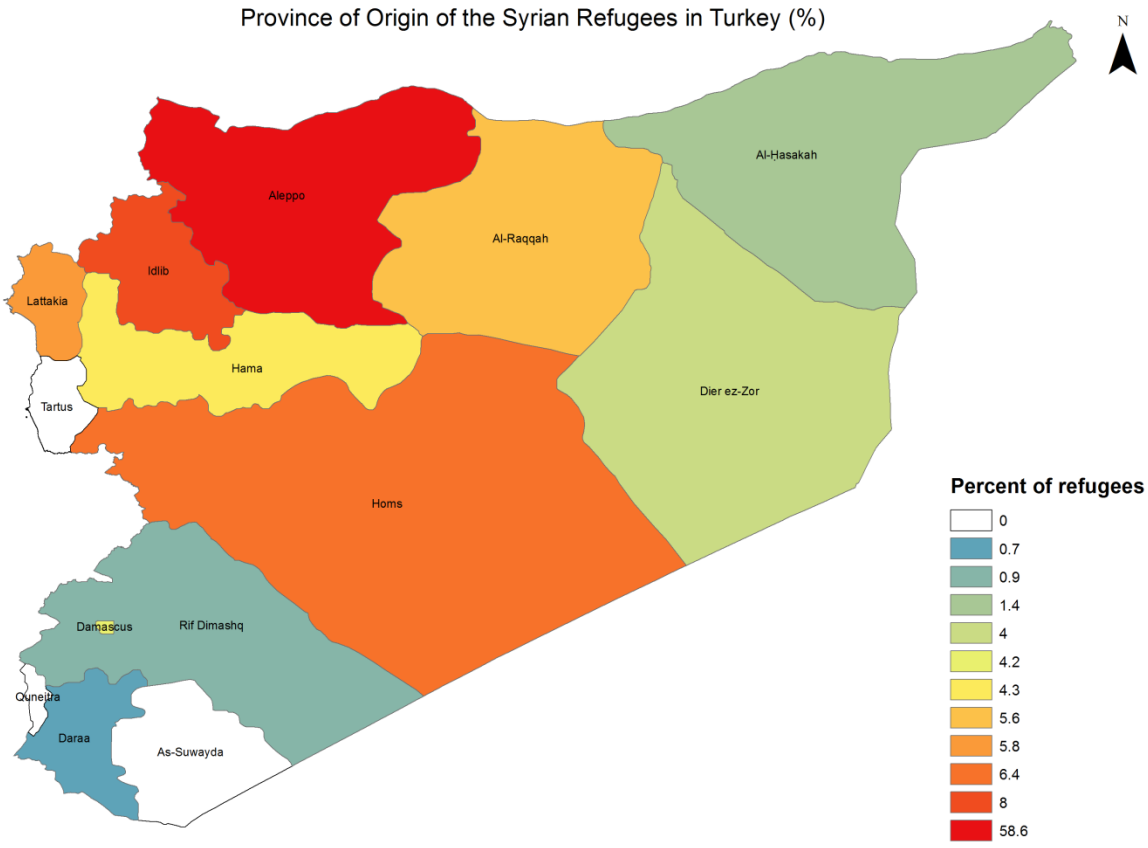


Figure 11: Time duration as a refugee in Turkey

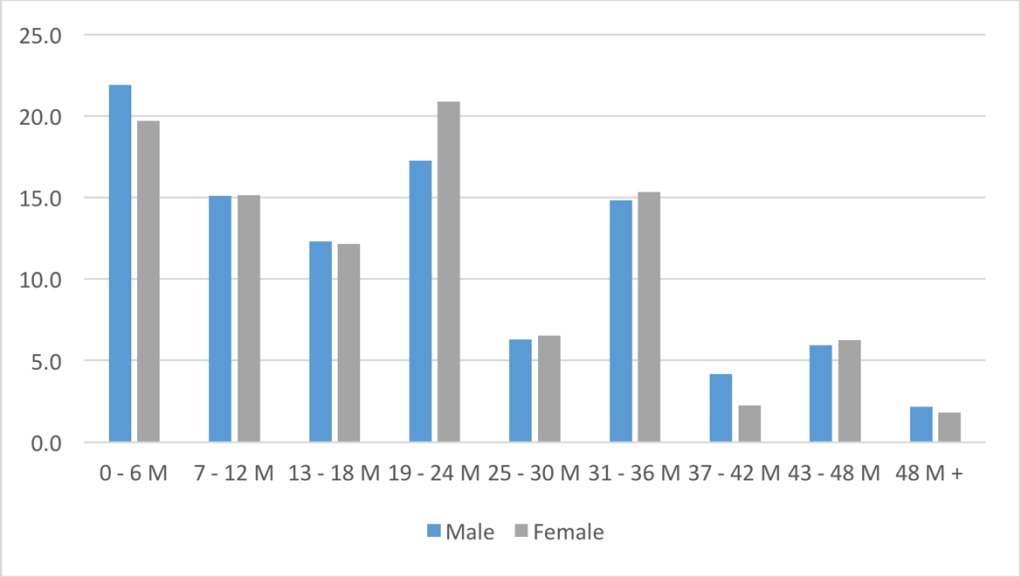


Figure 12: Month of leaving Syria by month for each home province (%, Apr 2011-Dec 2015)

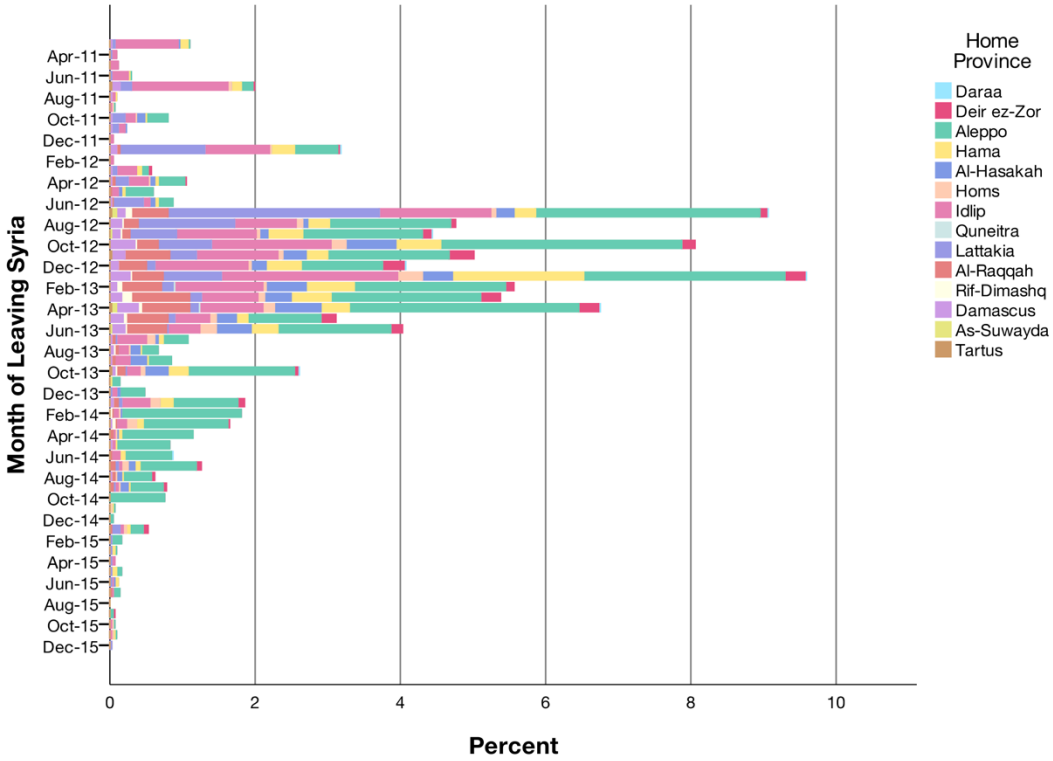


Figure 13: Percent of homes collapsed and collapsed plus heavily damaged by year

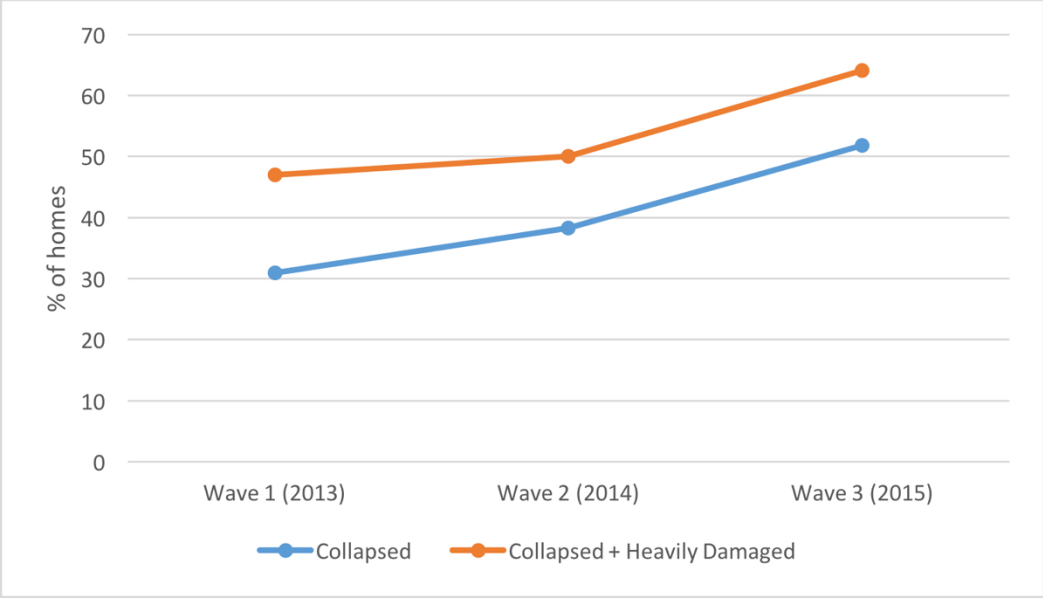


Figure 14: Predictive Margin Estimates of Return Probability for Time Lived As Refugee

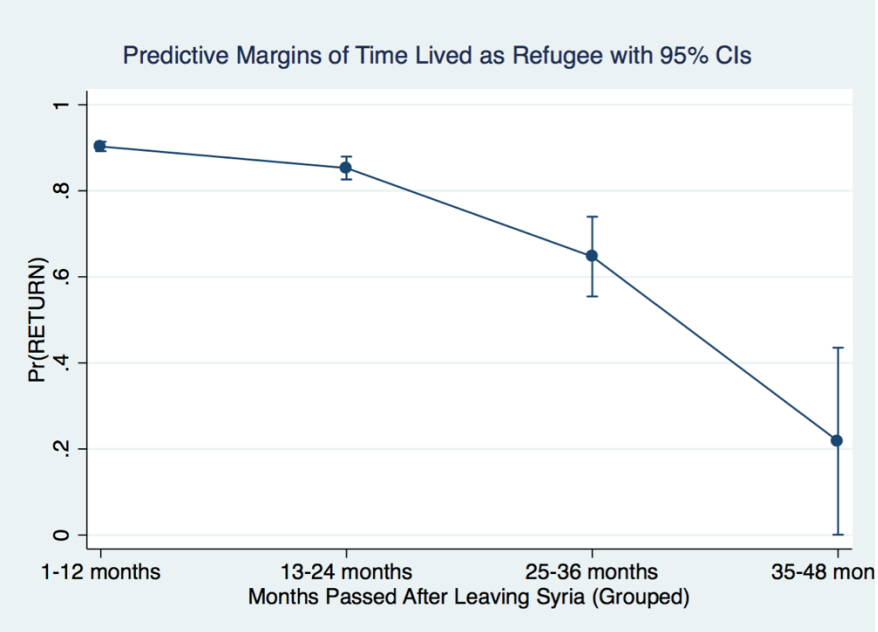


Figure 15: Predictive Margin Estimates of International Migration Probability for Months Passed after Leaving Syria