

Online Appendix to  
The Welfare Magnet Hypothesis:  
Evidence From an Immigrant Welfare Scheme in Denmark\*

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## A Supplementary Figures and Tables

Figure A.I: Ad Campaign in Lebanese Newspapers and Online, September 2015

7/9-2015

**The Danish immigration authorities are informing about changes of conditions regarding residence in Denmark being implemented by the new Danish government**


Denmark has decided to tighten the regulations concerning refugees in a number of areas.

The Danish Parliament has just passed a regulation to:


- Reduce the social benefits significantly. The social benefits for newly arrived refugees will be reduced by up to 50 percent.

The government will maintain and ensure that:

- Foreign nationals granted temporary protection in Denmark will not have the right to bring family members to Denmark during the first year.
- Foreign nationals can only be granted a permanent residence permit after 5 years at the earliest. Prior to this they risk having their residence permit revoked.
- In order to obtain a permanent residence permit in Denmark there are language requirements in terms of the ability to speak and understand the Danish language.
- When an application for asylum is regarded manifestly unfounded it is refused in accordance with a particularly expedited procedure.
- All rejected asylum seekers must be returned quickly from Denmark.
- There is a special return centre to ensure that rejected asylum seekers leave Denmark as quickly as possible.



Ministry of Immigration,  
Integration and Housing



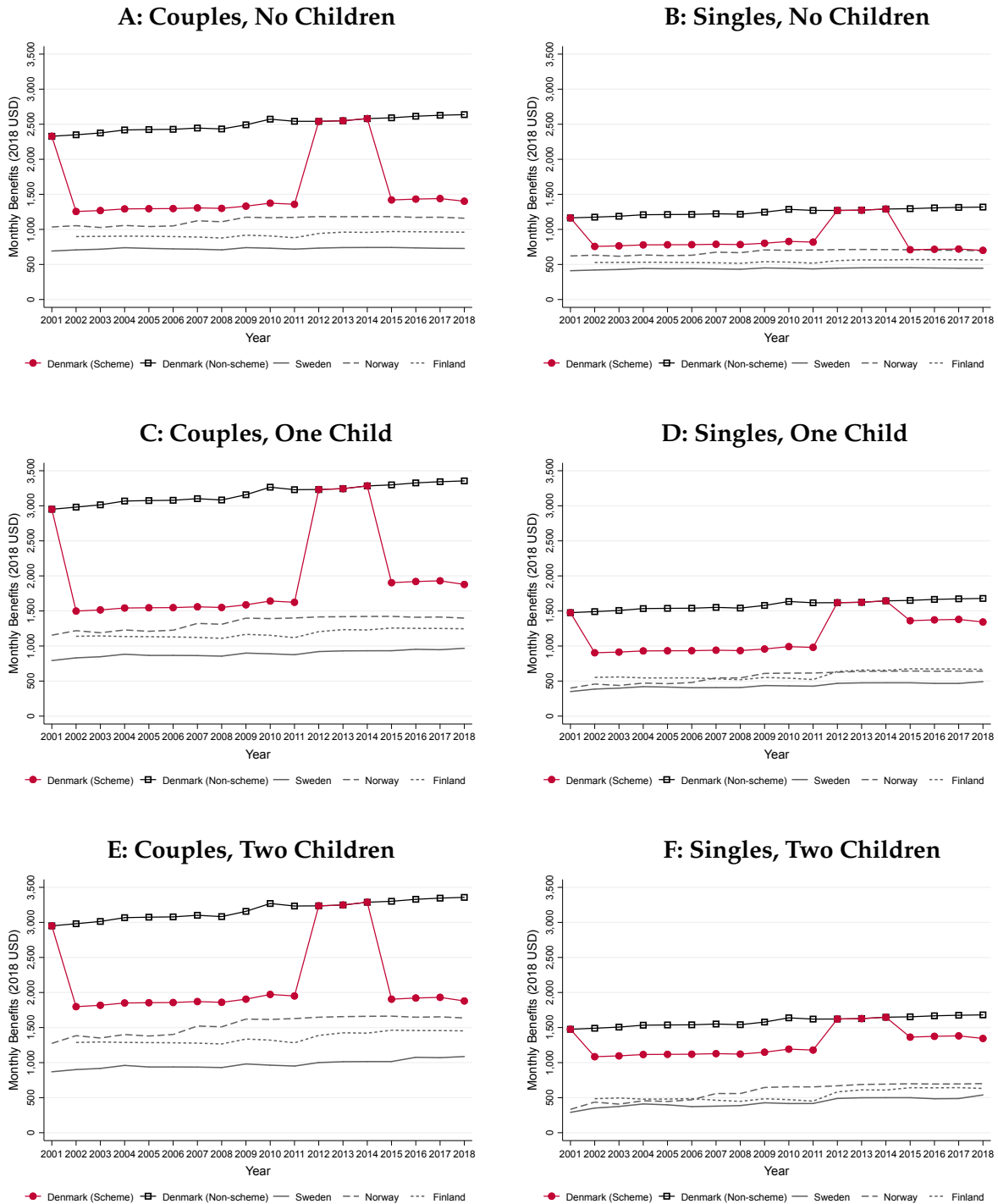
Ministry of Immigration,  
Integration and Housing

The Danish  
Immigration Service



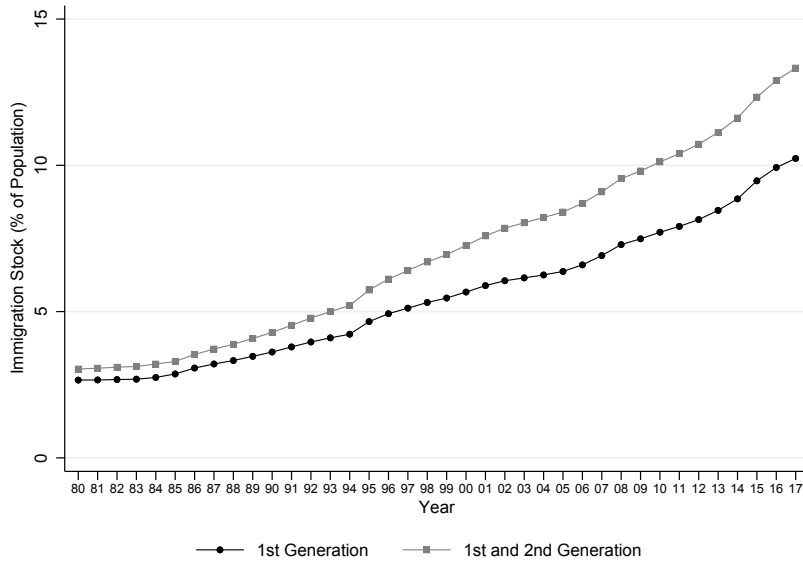
Notes: The two pictures show an ad campaign run by the Danish Government in September 2015 to inform potential immigrants about the recently (re)introduced welfare scheme, along with information about other regulatory rules. The left picture shows the campaign text in English released by the Danish Ministry of Immigration. The right picture shows the printed ad (from NBC News: <https://www.nbcnews.com/storyline/europes-border-crisis/denmark-buys-ads-lebanon-newspapers-aimed-refugees-n423216>). The ad campaign ran online and in Lebanese printed newspapers.

Figure A.II: Cash Welfare in Denmark and the Other Nordic Countries 2001-2018



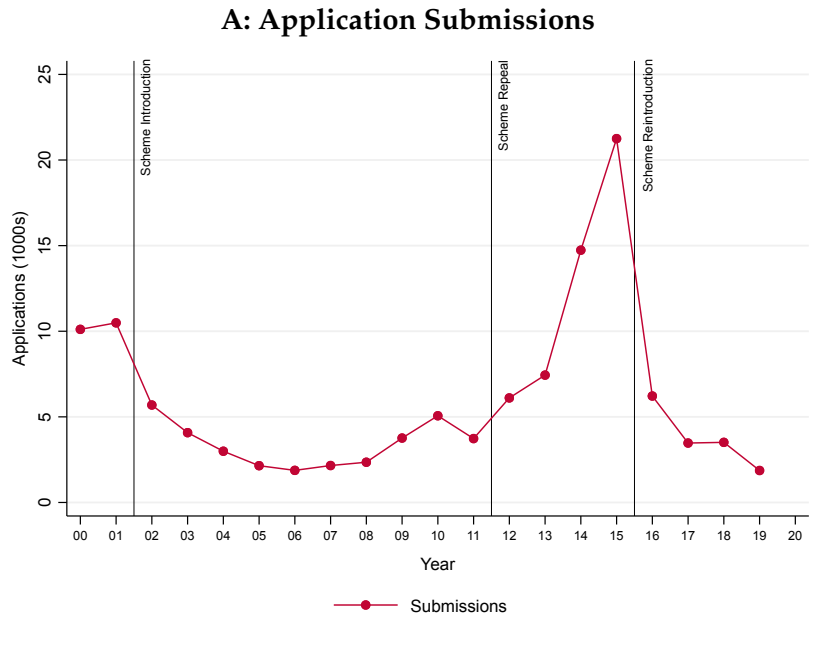
Notes: The figure shows maximum monthly cash benefits (in 2018 USD) for different household types in Denmark and the other Nordic countries. For Denmark, the figure shows both scheme and non-scheme benefits. Information on scheme benefits in Denmark are based on the website of STAR (The Danish Agency for Labour Market and Recruitment). The remaining benefits data are based on our own calculations using the OECD tax-benefit calculator. The calculations give benefits for non-employed households at age 40 who have been out of work for three months. For households with children, the age of the first child is set to 10 and the age of the second child is set to 8. The benefit series include only cash welfare (and not, e.g., unemployment insurance or in-kind benefits such as housing support).

Figure A.III: Immigrant Stock 1980-2017

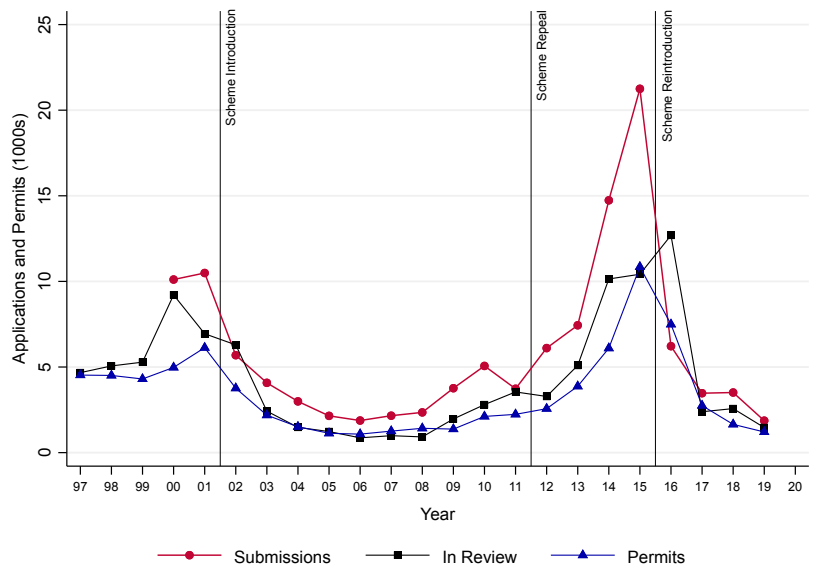


Notes: The figure shows the share of first-generation immigrants and the share of first- and second-generation immigrants in the Danish population. Definitions of first- and second-generation immigrants follow the official definitions of Statistics Denmark: a first-generation immigrant is a person who was born outside of Denmark and where neither of the parents are Danish citizens and born in Denmark. A second-generation immigrant is a person who was born in Denmark and where neither of the parents are Danish citizens and born in Denmark.

Figure A.IV: Asylum Applications from Outside EU: Annual Data

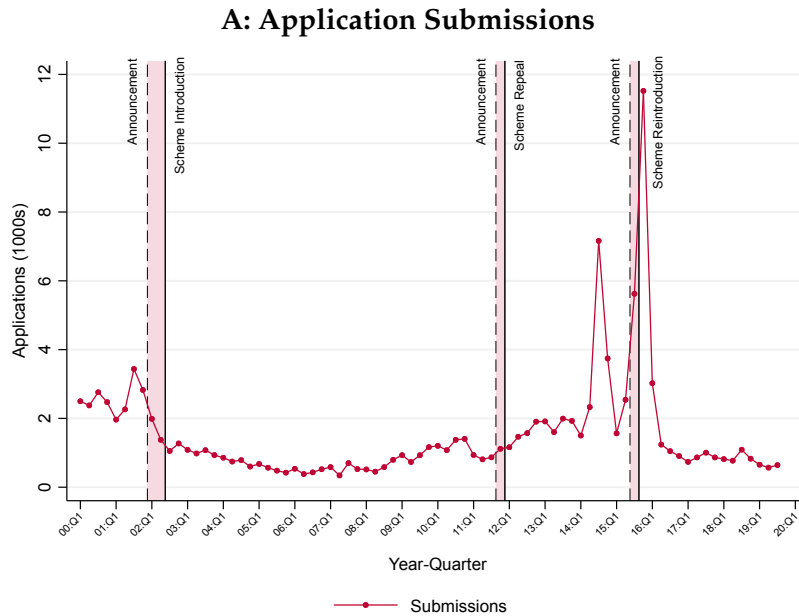


### B: Application Submissions, Applications in Review, and Residence Permits

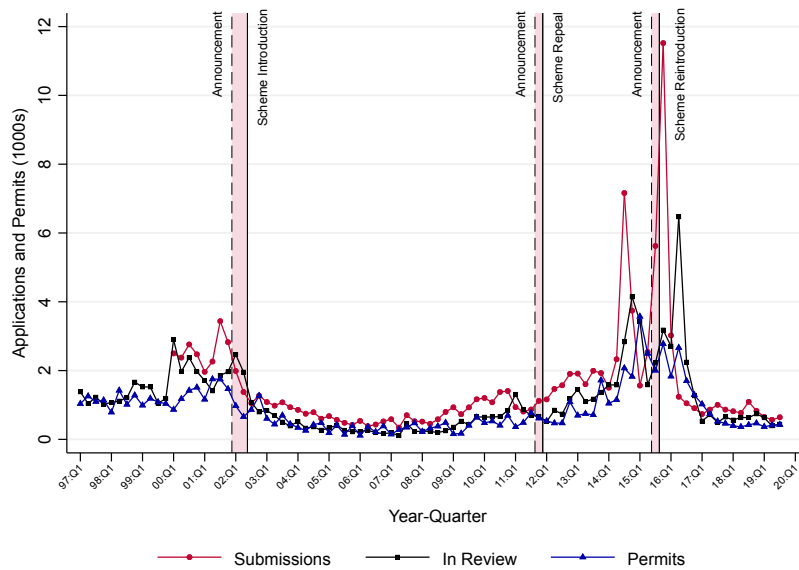


Notes: This figure shows asylum applications to Denmark at the annual level. Panel A shows applications submitted, while Panel B compares applications submitted (dots), applications registered for administrative review (squares), and residence permits granted (triangles). The solid vertical lines mark the timing of scheme reform implementations. Asylum seekers from Bosnia are dropped from the sample. The data are obtained from Statistics Denmark's online database (Statistikbanken, tables VAN5 and VAN77).

Figure A.V: Asylum Applications from Outside EU: Quarterly Data



**B: Application Submissions, Applications in Review, and Residence Permits**



Notes: This figure shows asylum applications to Denmark at the quarterly level. Panel A shows applications submitted, while Panel B compares applications submitted (dots), applications registered for administrative review (squares), and residence permits granted (triangles). The solid vertical lines mark the timing of scheme reform implementations, and the dashed vertical lines mark the timing of scheme reform announcements. Asylum seekers from Bosnia are dropped from the sample. The data are obtained from Statistics Denmark’s online database (Statistikbanken, tables VAN5 and VAN77).

Table A.I: Main Changes to Immigration Regulations, 2000-2017

<b>Date</b>	<b>Reform</b>	<b>Description</b>	<b>Affected group</b>
May 2000	Affiliation requirement	Restricts marriage-based immigration to cases where the spouses' "combined affiliation" to Denmark is at least as strong as to any other country.	Family
June 2002	24-year rule	Marriage-based immigration restricted to couples where both spouses are at least 24 years old.	Family
June 2002	Tightening of affiliation requirement	Affiliation requirement tightened to require that spouses have a "combined affiliation" to Denmark stronger than to any other country.	Family
June 2002	Stricter criteria to obtain permanent residency	Required time in Denmark to apply for permanent residency extended from 3 to 7 years; tighter restrictions for convicted criminals.	Asylum and Family
June 2002	"De Facto" refugee concept replaced with "protection status"	A tightening of approval conditions for asylum seekers who do not meet criteria set by international conventions.	Asylum
April 2007	Immigration test	Requirement to pass a test in Danish language and society to obtain family-based immigration.	Family
May 2010	Altered criteria to obtain permanent residency	Criteria for attainment of permanent residency changed to include requirements on employment, education etc., but required time in Denmark shortened to 4 years.	Asylum and Family
June 2011	Tightening of affiliation requirement	Affiliation requirement tightened again to require that spouses have a substantially greater affiliation to Denmark than to any other country.	Family
June 2011	Point system for marriage-based immigration	Marriage-based immigration now made conditional on obtaining a number of points based on criteria such as past employment, education and language skills.	Family
May 2012	Rollback of 2011 reforms	Immigration reforms from 2011 (point system for marriage-based immigration and tightened affiliation requirement) rolled back.	Family



<b>Date</b>	<b>Reform</b>	<b>Description</b>	<b>Affected group</b>
Feb. 2015	Introduction of "temporary protection status"	Certain asylum seekers fleeing conflicts or war will be granted "temporary protection status," which requires periodic renewal until the conflict ends or permanent residency is attained.	Asylum
Jan. 2016	Longer waiting period for family-based migration for refugees on temporary protection status	Waiting period for refugees on temporary protection status to apply for visas for family members extended from 1 to 3 years.	Asylum and Family
Jan. 2016	Stricter criteria to obtain permanent residency	Required time in Denmark to obtain permanent residency extended from 4 to 6 years and subject to some stricter requirements on e.g. employment, language tests.	Asylum and Family
Sept. 2016	Suspension of participation in UNHCR resettlement program	Danish Government suspends participation in the UNHCR resettlement program, through which Denmark had received around 500 refugees annually until this point.	Asylum
May 2017	Longer waiting period to obtain permanent residency	Required time in Denmark to obtain residency further extended from 6 to 8 years.	Asylum and Family

Notes: This table summarizes the main changes to immigration regulation over the period 2000-2017. Many other adjustments to immigration regulation have not been included in the table, as they changed only minor details of the legislation.

## B Asylum Applications

Our main specification uses residency as the measure of immigration. However, in the first instance, it is the decision to *apply* for Danish residency that should respond to benefit reform. Due to the lag between applying for residency and the final decision about residency, the timing of the DiD evidence in Figure 2 may be less compelling than it appears. The length of the lag varies by residency type and between individual cases, and in most cases we cannot observe it directly in the data. However, for asylum seekers specifically, we do observe the number and timing of applications (in addition to actual permits granted). This gives a measure of the desirability of Denmark as a destination country without any potential timing issues.

Graphical evidence on this outcome is shown in Figure A.IV on an annual level. Panel A shows the total number of submitted asylum applications to Denmark since year 2000. We see a pattern very similar to that of the treated group in Figure 2 in our main analysis. The number of asylum applications declines markedly after the introduction of the welfare scheme, from around 10,000 to under 5000 within the space of a few years after the reform. It then increases again after the abolishment, and drops yet again after the reintroduction of the scheme. This pattern is thus fully consistent with what we see in our main analysis.

The series in Panel A is the best measure of asylum applications, but it is only available from 2000 onwards. Therefore, in Panel B of Figure A.IV, we add two alternative series which are available further back in time. The first of these series shows the number of applications under administrative review. This series excludes applications that were submitted, but rejected in an initial stage before undergoing a rigorous review. This series contains some lag relative to the one for total applications in Panel A. The second additional series shows the number of residence permits granted for asylum seekers. Because this occurs after the review stage, the potential lag for this series is greater still. Nevertheless, the three series track each other fairly closely.

One important point to notice from Panel B of Figure A.IV is that the spike in asylum applications around 2015 is much larger than the spike in residence permits granted. This suggests that a sizeable part of the spike in asylum applications around this time came from individuals who did not fulfill the UNHCR's criteria for refugee status. This illustrates part of the reason why we use actual residencies rather than applications as our main outcome: Not every application leads to migration, and while variation in applications are useful for validating the existence of behavioral responses, the economically important question relates to the impact of benefits on actual

migration.

Figure A.V shows the same series as Figure A.IV, but on a quarterly level.<sup>21</sup> In this figure, we have included two vertical lines for each reform, the first indicating the announcement of the reform and the second indicating the actual implementation. Since the announcement and implementation fall within the same calendar year for each of the three reforms, this distinction was not necessary for the annual graphs. However, with the higher-frequency data considered here, it is useful to indicate both given behavior may plausibly start to react to the policy already at the point of announcement. The quarterly series are more noisy as one would expect, but the patterns remain consistent with immigration responses to the benefit reforms. We do notice that the large spike of asylum applications in 2015 occurs just after the reintroduction of the welfare scheme. This is not inconsistent with our interpretations, however, as a slight lag in the reaction to reforms is to be expected due to e.g. informational frictions.<sup>22</sup>

Finally, to relate and contrast these results to those obtained in our main analysis, it is worth highlighting the following points. First, the outcome variable considered here includes only one of the two types of migration treated by the welfare scheme; our main analysis also includes family-based migration. Second, the analysis here considers migration inflow, whereas our main analysis considers net flow. Third, we do not have a control group for our asylum applications outcome, so even though we observe sharp changes around the reforms, it is hard to obtain a quantitative measure of the magnitude of the welfare magnet effect from this data alone. The main purpose of this analysis is to show that the timing of changes in applications data is not too dissimilar from the timing of changes in residence data, suggesting that our estimates do capture immigration responses to welfare benefits rather than confounding effects of other immigration determinants.

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<sup>21</sup>Unlike our main analysis where the outcome variable (net immigration flow) is observable only on an annual basis, asylum applications are observable on a quarterly basis.

<sup>22</sup>For instance, the Danish government's ad campaign in Lebanese newspapers (see Figure A.I) ran in September 2015, just after the reintroduction of the welfare scheme. Its purpose was to inform potential migrants of the welfare cuts. However, while many Syrian refugees passed through Lebanon on their way to Europe, it is likely that many of those who applied for asylum in Denmark in the final quarter of 2015 would have already been further along in their journey at this point.