Review of Data and Predictions about Attitudes to Migration and the Environment

prepared for the Foresight Project on *Global Environmental Migration*

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Contents

1. Introduction

This report on "Data and Predictions about Attitudes to Migration and the Environment", commissioned by "Foresight", addresses the *Key Questions of Interest*, which as outlined in section 3.1 of the Specification:

(a) A careful and comprehensive review of data sources that include questions about attitudes to immigration and attitudes about environmental change (as far as it exists)
(b) A brief review of the literature that analyses attitudes to immigration and (as far as available) literature that analyses attitudes of environmental change
(c) A conceptual discussion about the relationship between environmental change and attitudes to immigration, and how these two can be linked in a meaningful future research agenda
(d) An exploration of possibilities to enhance existing survey data sets by adding sets of questions on attitudes to the environment and migration, so as to support a future research agenda.

The report is structured as follows. In the next section, we provide a brief conceptual discussion about analysis of attitudinal response data of the type that is relevant for the project.

2. Conceptual Discussion

Our goal is to understand how attitudes to migration and environmental concerns are related. We will discuss two cases. First, individuals may form attitudes about their *own* future migration, which may be related to their concerns about changes in environmental circumstances. For example, farmers might be concerned about desertification of their lands or increased variability of rainfalls that significantly depress both incomes and the value of land, so they might decide to move in search of better opportunities. Secondly, attitudes of individuals about *immigration* may

be related to their concerns about the environment; for example, citizens of the receiving countries might be more sympathetic to refugees displaced by some kind of natural disaster and more willing to accept them than those immigrants who do not face an emergency situation and come for purely economic reasons.

While the first relationship describes the possible link between (intended) migrations and environmental changes, the second describes the relationship between the concerns individuals have about the environment, and the concerns individuals have about immigration. Both these relationships answer potentially important policy questions. While the first speaks to whether individuals who are concerned about environmental change have at the same time a higher (or lower) tendency to emigrate, the second speaks to whether individuals who are concerned about immigration are at the same time also concerned about the environment. However, both relationships, if established by e.g. regression analysis (through regressing the attitude to migration on the attitude towards the environment) are not *causal*: the first can not be interpreted as the *effect* of environmental changes on the tendency to migrate, and the second can not be interpreted as the *effect* of environmental concerns on attitudes to immigration.

There are however a number of interesting issues arising from the pure correlation of these different concerns, and how they relate to e.g. demographic characteristics of respondents. For instance, an important question is whether environmental concerns are more or less prevalent among more educated individuals, and whether – at the same time – concerns about immigration are stronger among well educated individuals. Such relationships can be deduced from data that reports concerns.

To be more detailed, consider for instance a survey that measures both attitudes towards emigration and concerns about environmental change. As we explain below, one such survey is the World Gallup Survey asking questions about both the "tendency" to possibly emigrate, and concerns about global warming and climate change. Consider the following regression model that could be used for analysis to relate these two concerns:

$$(1) \qquad A_i = a_0 + a_1 + a_2 E_i + X_i' a + f_i + u_i$$

Here the index i stands for individual, A is the measured attitude towards migrating (e.g. measured by responses to the questions "Ideally, if you had the opportunity, would you like to move permanently to another country, or would you prefer to continue living in this country?" and "Are you planning to move permanently in the next 12 months?"), E is the individual's concern about the environment, X are other measurable factors that relate to the individual's attitude towards migration, f are unobserved factors that relate to attitudes to migration, and u is measurement error.

When estimating the relationship in (1) using data from a survey that measures respective attitudes, we obtain an estimate of the parameter a_2. However this estimate is not *causal*, in the sense that it does not tell us about the way individual i's attitude to migrating changes if the concern of the individual about the environment changes. The reason is that the unobserved characteristics summarised in f may affect both attitudes to the environment and attitudes towards migrating. For instance, individuals who are having a tendency to be overly concerned about environmental issues may at the same time have a tendency to not engage in any unknown ventures, so that they would tend to be less willing to emigrate. Thus, the parameter estimate we obtain is biased in the sense that it suggests a less strong relationship between environmental concern and migration tendency. Of course, as we do not know which unknown factors are included in f, affecting both environmental concern and willingness to emigrate, we are not able to sign the direction of this bias. Thus, such regressions will *not* answer the question "What is the effect of an increase in environmental concern on the willingness to emigrate".[1]

One standard way to address this problem is to use an "instrument", i.e. a variable that exogenously shifts concerns about the environment, but affects the tendency to migrate only through this concern. Such variables are extremely hard to find when engaging in the analysis of attitudes, as the following example illustrates. Suppose we used extreme environmental changes over the last year as such an instrument. These could be extreme temperatures of rainfalls – both of which may impact on the individual's *concern* about the environment. Such events are clearly unforeseen in most circumstances. However, in order to help identifying the *effect* of environmental concern on attitudes to migration, these events must affect the latter only via

[1] A further issue is the possible *simultaneity* between the two responses: Concerns about the environment may affect attitudes to future migration, but the latter may – in turn – be also affecting concerns about the environment.

environmental concerns. Whether this assumption is plausible is less clear – weather events could affect the wish to migrate directly, e.g. through economic factors like past harvest. We conclude that the *causal* relationship between attitudes is extremely difficult to obtain.

As we discuss above, a further set of attitudes relates to attitudes about *immigration* in potential receiving countries. Here measurement is more readily available in existing data sets. For instance, most attitude surveys measure attitudes to further immigration. More difficult is obtaining information about concerns of the environment. When we now regress attitudes to immigration on attitudes about environmental change, we run into exactly the same problem as we discussed before: factors that are unobserved but relate to the formation of both these attitudes may lead to a bias in the *causal* coefficient. In this circumstance, it is not even clear whether there is any meaningful interpretation to any "causal" parameter. However, the correlation alone is certainly interesting, as it tells us something about how individuals with great concern about the environment think about immigration.

We have so far not discussed the vector X in (1). This vector could contain a number of observable variables like age, and education. It is certainly interesting to see how such demographic measures are related to attitudes to immigration as well as the environment. For instance, are the better educated more, or less concerned about immigration, and are they at the same time more, or less concerned about the environment? This type of analysis may allow for interesting conclusions, which are important from a policy perspective. For instance, if the lower educated voice less concern about the environment, but more concern about migration, then this information may be important for policy and awareness campaigns. We will illustrate below some aspects of such analysis, based on the Eurobarometer.

Analysis of attitudes can be developed further. For instance, it is possible to relate overall attitudes towards e.g. migration to different "factors" to which these are related. In Dustmann and Preston (2010) three such channels are considered for analysis of attitudes to immigration: concerns about cultural homogeneity, concerns about the economic impact, and altruistic concerns. The way to perform such analysis is to identify sets of questions in the survey that are related to either of these three channels, and then to create "factors" which are related to the

overall attitude measure. We explain this approach briefly in the appendix; details can be found in Dustmann and Preston (2007) and Card, Dustmann, and Preston (2009). While providing interesting insights into the way some possibly underlying channels relate to attitudes to immigration (or the environment), such analysis is again not causal, for reasons very similar to the ones discussed above.

3. Review of Data Sources useful for work on Attitudes to Migration and Environmental Change

We now turn to a review of existing data sources that contain information about attitudes about migration and attitudes about the environment, or concerns about the environment.

There are at least two types of data available: High frequency surveys that are collected to draw a picture of public opinion on particular issues, like e.g. the Eurobarometer. These surveys are often limited in size and in the amount of background information they provide. Lower frequency surveys that are carefully designed and meant to serve a basis for rigorous academic analysis, like e.g. the European Social Survey. These surveys are often repeated on an annual or bi-annual basis, contain a large set of background information on the respondent, and sometimes modules on particular issues.

We summarised the key existing surveys in Table 1 (split in two parts 1a and 1b). The Table contains the following information (subject to open access to required information):

a. The name of the data set, the agency that collects the data, and the purpose of collection.
b. The time dimension of the survey – since when they run, their frequency etc.
c. Which waves contain information on immigration attitudes and/or environmental issues.
d. What breakdown on regional and time level is possible.

e. What are the background information supplied in the data set, with respect to individuals' socio-economic characteristics.

f. What information is available on individual perceptions of migration and environmental change.

g. What is the sample frame and the sample size of the data source.

The information we provide here will allow a good assessment of the available resources to investigate issues of immigration attitudes and environmental changes.

Including electoral polls and small scale surveys, the number of data sets available worldwide may be too extensive for a review of this magnitude. We thus focus on data i) with a direct relevance to the UK or allowing cross-country comparisons ii) on data sources that are managed with high quality sampling frames which ensure representativeness and contain sufficiently large samples to allow meaningful statistical analysis. According to these two criteria, we review the following surveys below:

1. Eurobarometer
   (Link : http://www.gesis.org/en/services/data/survey-data/eurobarometer-data-service/)
2. World Gallup Survey
   (Link : http://www.gallup.com/consulting/worldpoll/24046/About.aspx)
3. Pew Global Attitudes Project
   (Link : http://pewglobal.org/datasets/)
4. European Social Survey
   (Link : www.europeansocialsurvey.org)
5. World Values Survey
   (Link : www.worldvaluessurvey.org)
6. British Social Attitudes Survey (complemented with Northern Ireland Social Attitudes Survey, or Northern Ireland Life and Times Survey since 1998, and Young People's Social Attitudes Survey)
   (Link: http://www.data-archive.ac.uk/;
   for interactive use: http://www.britsocat.com/Body.aspx?control=BritsocatHome)

7. Communities Survey (or Citizenship Survey, or Home Office Citizenship Survey - HOCS) (Link: http://www.data-archive.ac.uk/)
8. International Social Survey Program
   (Link: http://www.issp.org/; http://www.gesis.org/en/services/data/survey-data/issp/)

Surveys like "Attitudes towards Immigrants" conducted by the Center for Research on Social Reality (Spain) and "Economic Valuations and Interethnic Fears: Perceptions of Chinese Migration in the Russian Far East" are examples of data not included in the review as they focus only on Spain or Russia.

Information about relevant surveys is split into two tables. Table 1a presents the surveys' technical characteristics such as purpose of the survey (in principle, for all surveys that we review the purpose is to monitor public opinion on a great variety of issues), the agency collecting the data, time and regional dimension, sample size, and availability. Multi-country surveys normally have around 1000 observations per country, with larger samples for large countries such as China and Russia. The *European Social Survey* has 1500 observations per country as default, but only 800 observations per country with less than two million inhabitants. Surveys that concentrate on one particular country (like the British Social Attitude Survey) have usually more observation. Another difference between comparative and national surveys is the nature of some questions being asked. Questions in an international survey need to be comparable across countries, and make sense in each single country. That excludes questions that may be of interest from a particular country perspective.

All the surveys we list in the Table are free of charge in case of non-commercial use, except for the Gallup World Poll. However, access to some data is not straightforward, and sometimes requires complicated registration procedures. In case of British data, getting access is considerably more complicated for non-members of UK universities. As for the Gallup World Poll data (spanning 2005-2010), a one-year access licence to the entire survey costs US$ 285,000; for academics, Gallup provides a one-year licence to the 2005-2006 dataset for a reduced rate of $US 5,000.

Table 1b presents what kind of data on attitudes to migration and environmental change the surveys contain, as well as what individual background information is available. For space

reasons, the table does not show an exhaustive list of survey questions concerning these issues, but rather gives an idea what questions were asked.

Surveys are different in relative importance that they give to the problem of migration and to environmental issues. For example, European Social Survey and British Citizenship survey pay practically no attention to people's perceptions of climate change and related questions, while International Social Survey program asks much more diverse and detailed information about attitudes to environment than to immigration.

Some questions are repeated in many surveys, though the exact wording may vary, for example, whether the respondent thinks that the number of immigrants in his home country should be increased or decreased, or whether he thinks that immigrants are good or bad for the economy. On environmental issues, the most popular question is a very general one: whether the respondent agrees that climate change (or environmental pollution) represents a serious threat to the world today. Some surveys, while asking this question, also try to understand whether the respondent actually *knows* something about the environment (International Social Survey Program, Eurobarometer, Gallup World Poll).

At the same time, surveys are not identical in the information that they gather. The most interesting example is the Gallup World Poll: while most of the surveys ask about people's attitudes to immigrants and other ethnic groups, Gallup does not collect this information at all. Instead, it asks people whether they intend to move from the area where they live and whether they would like to move to another country and, if yes, to which one. The Gallup World Poll contains quite rich data on potential drivers of migration. Information on whether respondents have relatives and friends in other countries would help to understand validity of intentions to move; details about the residence area (e.g. quality of water and air) can also be informative about potential factors that induce people to move; etc. Another source of remarkably different questions is The (British) Citizenship Survey. While asking the standard questions about people's attitudes to immigration and the resulting ethnic mix, it is more focussed than other surveys on *immigrants*' experience in the UK: whether immigrants feel prejudice and worse treatment than other ethnic groups, whether they live in ghettos (neighbourhoods where the majority of people are of the same ethnic origin as they are), etc.

As for individual background information, all surveys provide a standard set of characteristics such as gender, age, ethnicity (or country of birth and sometimes parents' country of birth), marital status, education, labour market status, and type of locality where respondents live. Most of the surveys also include questions on religious and political views. The most exhaustive information is given by the European Social Survey, as it is the one survey that is truly academically-driven. Moreover, the European Social Survey asks detailed questions about employment of the respondent's partner and provides country of birth, education and occupation for respondents' parents. Questions about the respondent's partner are also asked in Eurobarometer and International Social Survey Program.

Being a high-frequency survey (run several times per year), Eurobarometer provides the most recent data on both perceptions of immigration and environment. The fact that questions are periodically repeated allows us to observe attitudes' dynamics or aggregate data over several waves in order to increase sample sizes. A disadvantage is that questions on migration and the environment are asked in different waves, so we cannot observe answers of the same individual to both sets of questions. Actually, in more recent data, both sets of questions are simultaneously asked only by Pew Global Attitudes Project (in 2007).

4. Preliminary Empirical Assessment using the Euro-barometer

In this section, we will provide some evidence on the relationship between environmental concern and concern about immigration, using the Euro-barometer. This section intends to provide: (a) some key information about the evolution of concerns in the UK, and 5 other European countries: Germany, France, Italy, Denmark and Sweden; (b) relate these concerns to some underlying personal characteristics, like age education; and (c) provide some examples of possible descriptive analysis of such data sources.

In Figure 1, we display the overall information about the importance of different issues in the Eurobarometer over time, for the six countries above, where responses are weighted according to population size. The questions asked were: Do you believe that [*Immigration, Environment protection, Security, Economic Issues, Social Issues*] is one of the two most important problems in your country. We see from the figure that overall, Economic issues dominate the concern of

respondents, with 60% -90% believing that economic issues are among the two most important problems. The importance of this has increased – unsurprisingly – since late 2007. Immigration and environmental protection, on the other hand, are considered by the smallest fractions to be among the two priority problems, with environmental protection being lowest.

In Figure 2, we display the same responses, concentrating on the UK. Again, economic issues dominate concerns in particular since the second half of 2006. Interestingly, immigration is quite high, and has – different form the average of countries – priority over social issues. Environmental protection is considered by a small minority (always lower than 10%) as one of the two main problems in the UK.

In Figures 3 and 4, we display (over the same period) the percentage of individuals who believe that immigration is one of the two most important issues, and the percentage of people who believe that environmental protection is one of the two most important issues, for the six countries separately. Figure 3 shows that immigration is considered to be among the two most important issues by a larger proportion in the UK than in almost every other country in each of the years since 2002. There are peaks at particular points in time, e.g. in the run up to EU enlargement in May 2004. On the other extreme, immigration has been considered as an issue of continuously lower priority in Germany, followed by Sweden, France and Italy. In Denmark, the importance of immigration decreased over the decade. These figures suggest some considerable differences in the importance of immigration among the top problems, and indicate a high sensitivity towards this issue in the UK.

Figure 4 displays this information for the percentage of individuals who rank environmental protection in this category. Here the UK is in the lower group, together with France, Germany, and Italy; the countries where environmental protection is ranked highest are Denmark and Sweden, with a dramatic upswing in the early months of 2006.

We now turn to understanding how concerns along these two dimensions differ with individual characteristics (similar analysis can be done with other data sources listed above). In Table 2, we report regression results where we regress a binary variable assuming the value 1 if the

respondent believes that immigration (environmental protection) is among the two main concerns on three education dummies (measuring whether the individual has stopped full-time education at age 15 or under (which is the reference category), age 16-19, or age 20 and older; or whether the individual is age 24 or younger (which is the reference category), age 25-39, age 40-54, or age 55 and older. In Table 4, we run the same regressions, where now the binary indicator is a set of responses about the impact of immigrants on the receiving country. We concentrate our analysis on the UK, and regress on a set of year dummies in addition.

The coefficient estimates in Table 2 are the differences in the importance of the respective concern (environment, immigration) between an individual that falls in any of these categories, relative to the base category (which are young and low educated individuals). The entries in the Table suggest that immigration is considered as more important by older individuals, and as less important by better educated individuals, while protecting the environment is considered as more important by the better educated, and by older individuals.

In Table 3 we report respective results for a set of attitudes about what immigration does to the receiving economy. Again, this information is drawn from the Eurobarometer, and pools several years. Analysis is restricted to the UK, and we include a set of year dummies.

Overall, it seems that individuals (and particularly those in the age category above 55) do believe to a lesser extent that immigrants enrich culture or increase unemployment, but to a larger extent that immigrants cause insecurity, or are needed for the economy. The numbers in the table also suggest that the better educated have an overall more positive view about immigration: They are more likely to believe that immigrants enrich the culture, are needed for the economy, and are needed to cope with aging; at the same time, they are less likely to believe that immigrants cause insecurity, increase unemployment. This education gradient with respect to attitudes to immigration questions has been noted in several other papers, using different surveys (see e.g. Scheve and Slaughter 2001, or Dustmann and Preston 2007 and the discussion in the next section).

In Figures X1-X5 in the Appendix, we illustrate each of these attitudinal responses for the two

different years when they are observed (2006 and 2009), and for the six European countries we list above. Overall, these figures suggest that the country with less positive attitudes to what immigration does for the receiving country is the UK, and the country with the most positive attitudes is Sweden.

5. Brief Review of the Literature

5.1 Attitudes to Immigration

What determines people's attitudes and opinions about immigration? One view – widely accepted by economists – is that people evaluate policy issues like immigration from the perspective of their own self-interest. Natives may perceive that increased immigration crowds the labour market, reducing their wages or job opportunities. Alternatively, they may believe that immigrants consume more in public benefits than they contribute to government revenues, leading to an increase in the tax burden. Sociologists have argued that the concept of rational self-interest can be extended to incorporate group-level concerns: in particular, the concern that immigrants pose a "group threat" to the entitlements or social status of natives. A different but complementary view, emphasized by social psychologists, is that the processes of categorization and social identity shape views on immigration. In striving for a positive social identity, people seek to differentiate between their own group and other groups, leading to a bias in favour of their own culture, language, and customs, and against "foreign" culture, language, and customs. We will in the following paragraphs briefly outline some of the main theoretical models that have been developed by social scientists to understand opinions about immigration.

Economists usually assume that individual attitudes and opinions are driven by concerns over economic self-interest (Downs, 1957). In deciding whether to support or oppose increased immigration, for example, an individual tries to calculate how an increase in immigration will affect his or her labour market opportunities, neighbourhood, and quality of life, and arrive at an overall assessment of the proposed policy. In practice, the economic self-interest hypothesis is often narrowed down to two key questions: How does immigration affect the labour market

opportunities of an individual? How does it affect public finances? Both issues have been extensively researched in the recent economics literature. In the United States, where most of the existing research has been conducted, immigrants are on average less well-educated than the native population (see e.g., Borjas, 1999). As a result, it is widely believed that immigration exerts downward pressure on the labour market opportunities of less-educated Americans (Altonji and Card, 1991; Borjas, 2003), leading to the prediction that less-skilled natives will be relatively opposed to immigration (Scheve and Slaughter, 2001), whereas highly skilled workers and business owners will be in favour. Thus, the first economically motivated papers in attitudes to immigration rationalized the relationship between demographic characteristics and immigration within simple economic models, where those who would suffer labour market disadvantages are more opposed to further immigration.

Another channel through which immigrant inflows may affect the economic self-interest of existing residents is through an impact on government finances. New immigrants pay taxes, consume public services (e.g., education and health care) and receive government transfer payments (e.g., welfare and pension payments). To the extent that immigrants' use of public services and transfers fall short of their tax contributions, existing residents are made worse off. On the other hand, if immigrants pay more in taxes than they receive in services and transfers, they help ease the government budget constraint (Auerbach and Oreopoulos, 1999), making existing residents better off. Dustmann and Preston (2006) among others establish evidence that – among concerns about the effect of immigration on the economy – concerns about the fiscal burden far outweigh concerns about the labour market.

A third potential channel that may link immigration policy to economic self-interest is crime. Crime avoidance is a high cost activity, and fear of victimization exerts a powerful effect on measures of well-being. To the extent that immigrants raise the probability of criminal victimization, host country residents may be opposed to additional immigration. Like the fiscal impacts of immigration, concerns over public safety issues should have a similar effect on different groups of natives. For example, older and lower-income natives living in urban areas may be particularly exposed to crime, and relatively vulnerable to victimization. Card, Dustmann and Preston (2009) however find little evidence that crime is a major concern driving attitudes about immigration.

A fourth channel through which people may perceive an effect of immigration is through the efficiency of social and political institutions. Ethnic, linguistic, and cultural diversity may pose an obstacle to effective governance and long run growth (see e.g. Alesina, Baquir, and Easterly 1999).

Sociologists have argued that the attitudes of the majority population toward minority groups are determined not only by individual self interest, but also by a wider sense of the collective threat posed by competing groups to the economic, social and cultural dominance of the majority (Blumer 1958; Blalock 1967; Bobo 1983). Campbell (1965) summarized a variety of theories linking inter-group relations to competition between groups for real resources and labelled them as "Realistic Group Conflict" theories. Modern versions of this theory posit that competition between groups engenders the belief in a "group threat" which in turn leads to prejudice and negative stereotyping by members of one group against the other, while simultaneously bolstering within-group cohesion.

Models of economic self interest and realistic group conflict both predict that negative attitudes toward immigrants emerge from situations where increased immigration has (or is perceived to have) a negative effect on natives. A different perspective is provided by social identity theory. Social identity theory leads to the prediction that people will behave and hold opinions that enhance the gap between their own group and other groups, i.e., that they will exhibit "in-group favouritism" and "out-group bias".

The theoretical perspectives we have discussed so far all presume that attitudes toward immigration-related issues are driven by situational (market or group-level) factors. An alternative perspective is that opinions on issues like race, gender, and immigration are driven by personality factors that lead to prejudice, intolerance, and the dislike of "foreign" culture, language, and religion. A study by Aldorno et al. (1950) laid out the hypothesis that social and political attitudes are driven by personality factors that in turn depend on family upbringing – particularly exposure to harsh and disciplinarian parents.

There is a growing literature that empirically the way attitudes relate to underlying factors. In an important paper on attitudes towards further immigration, Scheve and Slaughter (2001) suggest that the way individuals assess these effects may relate to basic intuitions about labour market equilibria. Other papers that analyse the determinants of individual preferences over immigration

policies in several countries include Gang, Rivera-Batiz and Yun (2002), Mayda (2005), Fertig and Schmidt (2002), Bauer, Lofstrom and Zimmermann (2001), O'Rourke and Sinnott (2003), Hanson, Scheve and Slaughter (2004, 2005) and Facchini and Mayda (2006). Aslund and Rooth (2005) study shifts in attitudes as response to the terrorist attacks of 9/11.

Scheve and Slaughter (2001) report a strong relationship between education and more favourable attitude to further immigration, which is consistent with the hypothesis that the low skilled are opposed to immigration because of a fear of labour market competition. Mayda (2005), arguing within a similar theoretical setting, and using cross-country data, finds evidence for a positive correlation between individual skill level and pro-immigration attitudes in countries where the relative skill ratio of natives to immigrants is high. Using cross-state variation for the US, Hansen, Scheve and Slaughter (2005) establish similar evidence, and conclude that labour market pressures of immigration are an important determinant of public opinion on immigration restrictions. Dustmann and Preston (2006), investigating the determinants of evaluation of the economic impact of immigration, find that welfare considerations are the largest single factor of concern, and more important than labour market concerns. Dustmann and Preston's analysis focuses on responses to a question about the economic consequences of immigration, not on whether immigration regulations should be tightened, as do most of the other papers cited. Using cross-state variation in the US, Hansen, Scheve and Slaughter present evidence that exposure to immigrant fiscal pressure reduces support for immigration in particular among the more skilled. Facchini and Mayda (2006) study welfare-state determinants of individual attitudes towards immigrants. Based on cross-country data, they report attitudinal responses, which they argue to make sense in the context of a redistributive fiscal system.

Some papers present evidence that attitudinal questions regarding concern about identity or crime (Mayda 2005) or ideology (Scheve and Slaughter 2001) are indeed associated with preferences for tighter immigration regulation.

Dustmann and Preston (2008) discuss the problems when basing conclusions on interpretation of the association between *individual characteristics* and immigration attitudes within a labour market model or/and a welfare model. They argue that the most important characteristics are associated with attitudes to immigration through different channels, so that the separation of their

roles is difficult. For example, the fact that the highly educated are more liberal in their attitudes may reflect that their labour market position is less vulnerable to immigration of the typically expected skill composition. However, it could also reflect the strong association of education with attitudes to welfare or to culture. In Dustmann and Preston (2008) they explicitly model the channels through which these may impact on attitudes about immigration regulation. An important research question they address is then the relative contributions of these alternative explanations in explaining shifts in general attitudes of the public towards immigration, and how individual characteristics work through these channels. A further contribution is to separate the role of the three channels in driving attitudes regarding clearly distinguishable immigrant groups. They find that opposition towards further immigration is strongly related to the proposed origin of immigrants, with much larger resistance the more ethnically distinct the immigrant population is. Second, we establish that welfare concerns are generally a more important driver of attitudes than labour market concerns, in particular towards groups with a high welfare dependence. These views are strongest among respondents who are likely to be the biggest contributors if immigration, as sometimes suggested by those most hostile, induces a tax-financed increase in welfare dependency. The analysis also shows that racial/cultural prejudice is an important underlying channel through which overall attitudes are driven, in particular for the low skilled. Card, Dustmann and Preston (2009) provide analysis along similar lines based on the European Social Survey.

5.2 Attitudes to the Environment

In comparison to the literature on attitudes to migration, literature that studies attitudes to environmental changes is rather small. In general, it documents that people give a low priority to climate change and do not change their behaviour, even if they are aware of this problem (this is also documented by the descriptive statistics we provided based on the Eurobarometer). The low ranking of climate change reflects a widespread perception amongst the public that the issue is removed in space and time (Lorenzoni and Pidgeon, 2006). Whilst it is considered socially relevant, most individuals do not feel personally responsible for climate change (Kellstedt et al, 2008).

Patchen (2006) provides a review of findings what people know about environmental issues and to what extent they are worried about them, depending on their basic demographic (gender, age, education) and economic characteristics (income). An interesting result is that people who are more informed about the environment (men, better-educated individuals) do not necessarily express more concerns about it. However, they are more likely to support pro-environmental social policies. A recent study by Kellstedt et al (2008) confirms this result: more informed individuals show less concern for global warming. A possible explanation is that people's environmental knowledge and judgements are often influenced by the way environmental issues are treated in the media. As media give sensational coverage to catastrophic events, people that obtain information primarily from this source tend to overestimate environmental risks. Activities of interest groups (e.g. environmental organisations) also influence people's perceptions at a particular point of time (Lorenzoni and Pidgeon, 2006).

We could not identify any research that links attitudes to immigration and attitudes to environmental change.

6. Summary, Conclusion and Outlook

In this report, we discuss the possibility to use attitudinal data to understand attitudes and concerns about the environment, and about migration or immigration. We discuss early on two different types of analysis that may be interesting under the remit of the Foresight project: Firstly, the way attitudes about emigrating relate to concerns about environmental change. We have only identified one survey that collects respective data: the Gallup World Poll**.** All 132 countries included in the Gallup survey can be analysed to get an idea of future migration flows induced by environmental issues (number of people wanting to leave permanently their current place of residence, and destination countries in case of international movements). Alternatively, only the subsample of the MED countries can be examined taking into consideration the Foresight's focus on the MED region. The second aspect worth to study is the link between attitudes about immigration, or what immigrants do to the receiving country, and attitudes about environmental concerns. Such information is - as we illustrate – available in a number of existing attitude surveys.

We commence with a brief conceptual introduction, where we discuss the various ways of interpreting the relationship between attitudinal data that refer top environment and migration. We then introduce to a number of large and mostly international data sets that have information to attitudes towards immigration, the environment, or both. We discuss features, advantages and disadvantages of these surveys. We then provide some brief analysis of the Eurobarometer, pointing out trends in attitudes to the environment, and attitudes to immigration, and illustrating some methods for analysis[2]. Finally, we provide a brief literature review of papers that exist about attitudes to the environment, and to immigration.

Overall, it seems to us that the literature – while being quite rich on attitudes about immigration – is extremely thin on attitudes about the environment, and we could not identify any work that looks at both together.

For the purpose of the Foresight project, a number of things could be done. We have already provided some analysis for the Eurobarometer. A number of other readily available surveys allow deepening this analysis, looking at slightly different questions. For example, the European Social Survey also has relatively recent data on perceptions of migration (2008); Pew Global Attitudes Project has 2007 data on both attitudes to migration and environment, and it covers not only European countries. Such analysis could perhaps shed more light on the way concerns about the environment and immigration are related, and how these are concentrated among particular demographic groups. This may be informative for policy that aims at sharpening awareness. Also, Gallup provides potentially interesting information on the relationship between emigrating and environmental concern, which could be potentially utilised. However, as we point out, this data is commercial and quite pricy.

We also believe it would be interesting to understand better how particular events affect the concern or the overall attitude toward the environment. This could be implemented by, for instance, regressing environmental concerns on particular events (like climatic outliers, or extreme temperatures, but also particular events on the policy agenda, like the Copenhagen

[2] We are not able to deliver a similar analysis of intentions to emigrate, as access to the only survey that would allow us to conduct this research, Gallup World Poll, requires a fee to be paid.

summit) to elicit the way such events affect environmental concern. This analysis could be also extended to attitudes to immigration: as natural disasters and their impact on affected population get important media coverage, people may change their attitudes to immigration or, at least, to asylum seekers in response to negative environmental shocks such as draughts, floods, earthquakes, etc.

Future – and more medium- to long-term analysis – could be based on data collected for the particular purpose to understand the relationship between aspects of migration (from different perspectives) and the environment. One way to achieve that is by proposing particular modules to existing and running surveys. For instance, the ESS has a competition for two specialised modules for each biannual survey, which is opened now (till the 12th of May 2010). A very rich survey on environmental knowledge, attitudes and behaviour will be run in 2010 by International Social Survey Program. However, the latter will focus on the environment and does not contain a detailed module on perceptions of migration. However, this may be achieved by combination with other data sources.

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