Do Values Matter For Migration Decisions?

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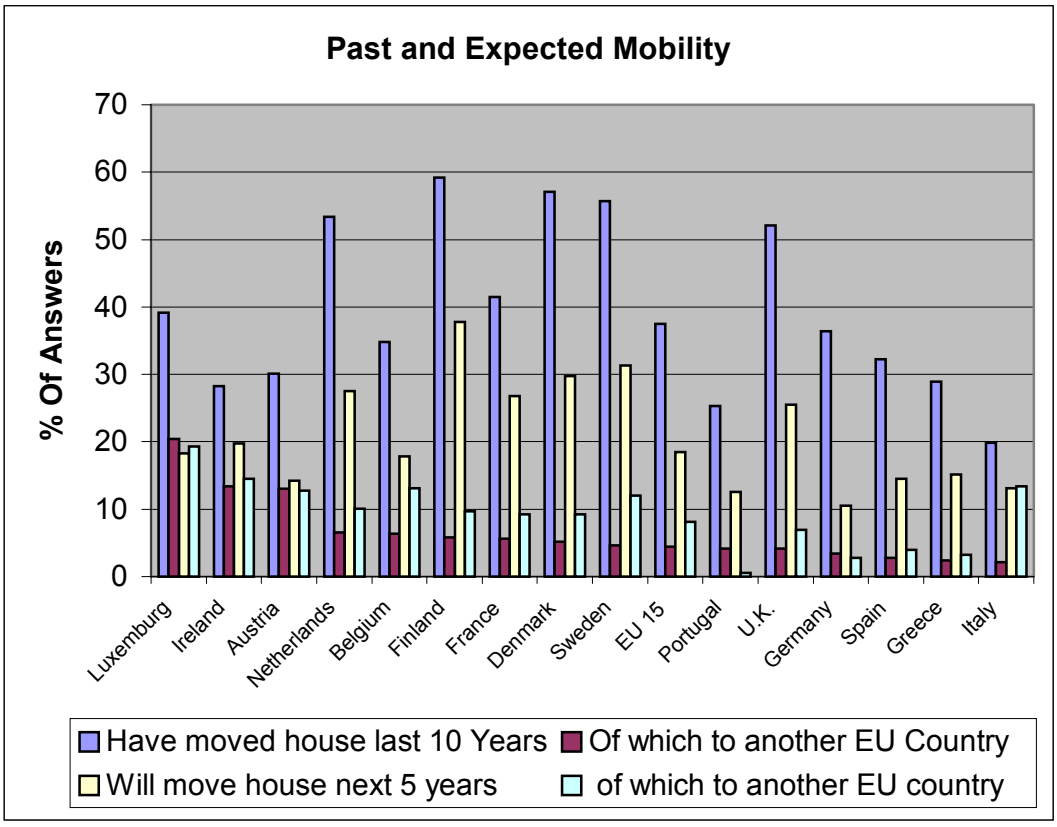
1. Introduction

Migration issues loomed large in the accession debate. Fears that large wage gaps (or even wage-welfare gaps) between the old and the new members would lead to massive east-west migration, potentially overburdening infrastructure and labor markets, prompted many members of the EU15 to delay full mobility. Concern was not limited to the old member states, with concerns about the potential brain drain caused by younger and skilled citizens moving west being voiced in the new member states.

Figure 1.1: Mobility



Source: (Eurobarometer Survey 54.2,2001)

In contrast to the often-breathless popular debate envisioning migration waves, academic research has taken a more cautious stance.[2] Plugging the numbers for the new and old EU members into standard migration equations yields only small predicted flows, remaining in the low single percentage digits even over a decade. The finding is not surprising given that the elasticities are based on the historical experience which, at least in the case of past EU expansions, do not suggest a particularly large elasticity of migration to income gaps.[3],[4]

[2] See for example, Bauer and Zimmermann (1999), Brücker et al. (2001), Fertig (2001), Bertola et al. (2002).

[3] For analysis of past EU expansions, see for example Eurostat (2000) and Zaiceva (2003).

[4] Of course, extrapolations rely on a ceteris paribus assumption and are thus inherently fragile. In the case of the new EU members, two comparability issues arise. First, the income gap is larger than in prior

To be sure, wage gaps – the focal point of most analyses --- are sizable. Yet such wage gaps confront the legendary immobility of the European worker. Figure 1 presents survey data on recent and expected mobility for the EU15. Taking the (not untypical) example of France, while about 40% of respondents moved house in the preceding decade, only about 5% of these moved to another EU country. Given the choice between staying unemployed in their region or moving to another region (not necessarily in another country) in order to find work, 34% of respondents in the old EU would choose to stay [Eurobarometer, 54.2, Q.44] Not surprisingly, then, the share of foreign and foreign born workers in the labor force of the EU15 has remained small, with the single exception of Luxembourg (Table 1)

Table 1: Foreign/Foreign born
(% Of Population and Labor Force)

Country	Foreign Population Share 1996	Foreign Labor Force Share[5] 1996
Austria	9.0	10.0
Belgium	9.0	8.1
Denmark	4.7	3.0
Finland	1.4	0.8
France	6.3	6.3
Germany	8.9	9.1
Ireland	3.2	3.5
Italy	2.0	1.7
Luxembourg	34.1	53.8
Netherlands	4.4	3.1
Portugal	1.7	1.8
Spain	1.3	1.0
Sweden	6.0	5.1
United Kingdom	3.4	3.4

Source: Fertig, Michael and Christoph Schmidt, 2002, Mobility within Europe – What do we (still not) know? IZA Discussion Paper No. 447, Bonn, page 5.

The reluctance of Europeans to move between countries can reflect either unwillingness or inability. The barrier to movement argument historically had some merit. Legal obstacles to skill recognition, nationality based entitlement programs and limited benefit portability imposed, if not an outright legal barrier to migration, at least

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expansions. If the income effect on migration is non-linear, migration flows may thus be larger than expected based on past expansions. Second, there is arguably more of a stock adjustment potential left for the new accession countries than was the case for the Iberian expansion, the most widely used point of comparison.

[5] EU Foreign population share only captures individuals changing their residence for a prolonged period and thus excludes seasonal workers.

sufficient institutional costs to act as a deterrent. These barriers have, however, been substantially reduced eliminated in the context of EU depending. For the specific sample I will study in this paper --- migration among EU members from 1995 to 1998 --- legal and institutional barriers can be viewed as fairly minor, with the exception of benefit portability and skill portability in a few specialized professions.

Low migration within the EU-15 is thus arguably better viewed as an outcome of individual decision-making, of an unwillingness rather than as an inability to move. Whence the unwillingness? The theory of migration, dating back to the path breaking works of Ravenstein (1895, 1897), provides useful guideposts. In a general setting, individuals (or households) can be thought of as viewing location as one choice variable in their expected utility maximization problem. Utility can be location specific through income (and thus material consumption-based utility) and through income-independent utility.

The first of these dimensions, the expected income differential and its dependence on a host of factors, has been explored in depth by a very productive literature. In contrast, I believe it is fair to say that, reflecting the scarcity of data, the non-material consumption component has not received commensurate attention in the literature on aggregate migration, though it figures prominent in human geography analysis and micro-economic studies.

Yet there are good reasons to expect that income-independent utility differences across locations play an important role: the size of the income gaps implies that financial costs of moving and low legal barriers to movement implies that reasonable monetary costs of moving, or even risk aversion cannot provide a full explanation for the small observed migration flows.[6]

What is meant by the term? Analyses such as Sjastaad's influential work (1962) refer to the "psychological cost" of being far from family and friends and a "preference for familiar versus strange surroundings". More generally, the assumption is that (broadly defined) cultural differences between home and host country may impact utility. Such differences may be simple (and in principle bridgeable) language problems adversely impacting communication. Or they may be fundamental differences in lifestyles and attitudes, for example concerning the role of religion, approaches to childrearing, the role of the state etcetera.

On an empirical level, these psychological costs are very difficult to quantify: it is hard to find a numerical measure of different approaches to childrearing or of the utility effect of moving from a sunny to a rainy location. The literature has hence relied on three reasonable if partial proxies for psychological costs, language, distance and the stock of prior migrants from the same country.

These variables are reasonable proxies. Their interpretation in terms of psychological cost measures is however impeded by the double duty they are forced to assume in the typical regression framework. Language is assumed to impact the ability of

[6] Burda (2001) explores these issues in greater detail.

a migrant to participate in social activities in the host country --- a source of income independent utility. Yet language differences also acts as a straightforward barrier to employment. A positive elasticity of a "common language" variable can thus proxy both for reflect both a positive income effect for an individual, and reduced social isolation.

Distance is treated as a general proxy for cultural difference, but also does duty as a measure of the financial cost of relocation and, in the mental map tradition [Gould and White (1992)] as a proxy for the imprecision of information about the destination location.[7] A negative distance elasticity can thus be alternatively interpreted as reflecting the effect of greater cultural differences, greater moving costs or greater uncertainty about opportunities.

Finally, the stock of prior migrants is assumed to reduce cultural alienation, and thus, ceteris paribus, to decrease the utility loss of additional as well as existing migrants. Yet, in the ethnic network tradition [Ben-Porath (1980), Massey et al. (1987), Boyd (1989), Fawcett (1989), Kritz et al. (1992).] the stock of previous migrants is also assumed to reduce search costs for housing, employment etcetera. A positive elasticity may thus reflect these search factors rather than reduced psychological costs per se (Carrington, Detragiache and Vishwanath (1996)).[8]

In this paper I take a stab at dis-entangling these effects by using direct measures of "values" to inquire whether values matter for migration, after controlling for the more standard determinants, or whether the latter are really sufficient to explain observed migration patterns. Specifically, I construct variables that measure the attitude of populations to

- the role of individuals
- the role of the state and society at large
- gender equality
- openness to immigration
- materialism and post-materialism

The variables are based primarily on the World Value Survey, Inglehart, Basañez and Moreno (1998), augmented by Eurobarometer results. Direct data on values and opinions are complemented by the traditional proxies: the stock of prior migrants, linguistic and religious linkage; as well as the standard determinants such as the income gap, unemployment rates etc.

The approach of course carries substantial interpretative risks. Most notably, value systems differ across individuals as well as potentially across regions. In particular, the values of the subset of the population willing to migrate may differ from those of the

[7] "The information that people have about a region of their country is determined to a large extent by their location within that country; it is directly proportional to the size of the region's population, and inversely proportional to the square root of the distance away from their location" (Gould and White (1992:107)). See also Ravenstein (1885,1889), Schwartz (1973), Lowry (1966), Masser (1970)).

[8] A recent study focusing on south-north migration (Eurostat 2000) explicitly explores the information pattern of migrants, finding information to primarily derive from family and friends rather than from official sources, though this feature appears to be less pronounced for migrants of higher socio-economic status.

population at large; for instance, one might expect a greater emphasis on individualism among migrants. Constructing value variables for entire populations thus at best provides an approximation. Then again, so do measures of "the" wage level, "the" unemployment rate or "the" distance.

The next section briefly reviews the conceptual framework. Section three describes the data used for the traditional gravity framework. Section four turns to the measurement of psychological cost, proposing a set of proxies. Section five briefly discusses the migration data. Section six contains the empirical results and section seven concludes.

2. Conceptual Framework

The most popular model of aggregate migration is build around an expected utility framework focused either on the individual or the household (Mincer (1978)). Utility is location specific both through an income channel affecting material consumption C^M and through a dependence of non-material consumption[9] C^N on location i. Individuals select location to maximize their lifetime expected utility:[10]

$$(1) \qquad \underset{(i)}{\text{Max}}\ E(U) = E(\int U(C^M(t,i),C^N(t,i))dt)$$

The simple model has a number of well-known implications:

- If $U(C^N(t,i))$ is highest in the home location of an individual[11], individuals will only move once the wage difference exceeds a positive threshold. The size of the threshold depends on the psychological cost of moving. If the cost varies across host countries, so does the wage threshold triggering migration. In this case, excluding measures of psychological costs from regression analysis may yield misleading estimates of the income-gap elasticity.
- The material consumption difference depends on the income gap. The income gap is generally equated with the (real after tax) wage gap. If a migrant is eligible for welfare benefits in the host country[12], the material consumption depends on the maximum of the wage and the welfare wage gap. Higher welfare benefit entitlements for immigrants thus increase migration, ceteris paribus, unless the potential earned income of the migrant exceeds the welfare benefits. If the migrant is risk-averse, an additional positive effect arises as welfare benefits set a lower bound on income, reducing uncertainty.

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[9] This component also includes the utility effect of not being able to consume items only available in the home country.

[10] The size of the literature prevents a summary. Among the seminal contributions are Ravenstein (1887), Hicks (1932) and Harris and Todaro (1970). For a recent integrative survey, see Fertig and Schmidt (2002).

[11] The opposite case of individuals accepting lower real incomes by moving to a location generating higher utility from non-material consumption, be it safety, bucolic surroundings, or shared values, is perhaps more relevant in the intra-country location decision.

[12] Borjas (1999a) provides a detailed analysis. See also Bauer (2002) for an integrative analysis. To date, the evidence on welfare migration does not suggest major effects. See Blundell, Fry and Walker (1988) for the United Kingdom, Fertig and Schmidt (2001) for Germany, Borjas (1999) and Levine and Zimmermann (1999) for the United States, inter alia.

- If $U(C^N(t,i))$ is higher for older individuals[13], for example through more extensive family connections, the proclivity to migrate decreases with age. The same result obtains if return migration is ruled out and if the non-labor income gap between the home and the host country is smaller than the wage gap. The effect is re-enforced to the extent that individuals accumulate location specific human capital.

- To the extent that C^N contains elements that are produced by a community of residents, the utility loss of relocation decreases in the stock of individuals from the same home country already present in a specific location.[14]

- The decision applies to any two locations, and is thus applicable to both intra- and inter-national migration. It is however reasonable to assume that significant border effects apply as many cultural consumption goods are country specific, implying that $U(C^N(t,i))$ declines in distance and drops discretely as a border is crossed.

The implications define the set of standard explanatory variables in bilateral migration equations and their expected sign. Ceteris paribus, it is generally assumed that:

- A greater wage gap (welfare-wage) gap affects migration positively
- A higher unemployment rate in the host country affects migration negatively
- A higher unemployment rate in the home country affects migration positively.
- A greater share of young people in the home population affects migration positively
- A more pronounced "cultural difference" between host and home country raises the psychological costs of migration and thus affects migration negatively

3. Gravity Data

Before turning to the issues involved in measuring values, this section briefly describes the data used for the traditional controls. The sample includes all (pre-2004) EU countries with the exception of Greece (no World Value Survey Data), Ireland (incomplete migration data) and Luxembourg (no World Value Survey Data). For the remaining twelve countries all data-points are available with the exception of welfare entitlements for Portugal. The dataset thus consists of 132 bilateral observations.

3.1 Spatial Variables

DISTance is defined as the log of the distance between the central cities in the home and host country in km, taken from www.indo.com/distance. The literature also

[13] Comparing the homogeneity of preferences over locations for individuals in a given location over age reveals a marked increase in homogeneity as age increases from seven years to eighteen years. (Gould and White (1992: 115)). It thus appears that at least a good part of location specific utility does not change much beyond the late teens, though the fluidity of family/friend networks suggests that other parts of location specific utility increase with age.

[14] An example along this line are location-specific foodstuffs which given sufficient market size, may be exported to the host country. The presence of Indian restaurants around Nokia headquarters is an oft-cited example.

suggests the presence of border effects capturing both any remaining legal or institutional barrier to migration associated with nation states and information effects.[15] BORDER is a dummy set equal to one if the home and host country share a border. It is assumed that DIST exerts a negative influence on bilateral migration and that BORDER exerts a positive influence.

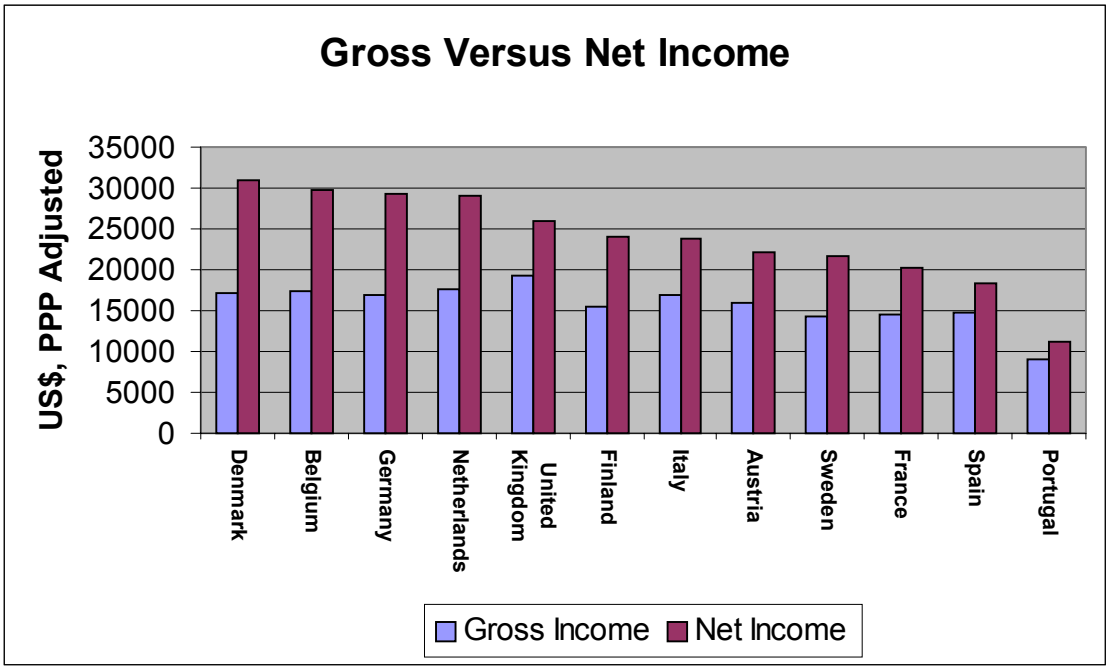
3.2 Country Size

HOME_Y and HOST_Y measure the GDP in the home and host country as a fraction of the German GDP. The original data are in purchasing power parity US$, taken from the CIA Factbook 2003. Country size is expected to be associated positively with migration.

3.3 Relative Income

The YN_HOST and YN_HOME variables measure income in the host and home country. Income is measured as the log of annual net income after employee's social security contributions, personal income tax and transfer payments for a single employee earning the average wage. The data are in purchasing power parity US$ and are taken from the OECD publication The Tax/Benefit Position of Employees, 1997, Table 18. I use a single earner to capture the most prominent migrant group. YN_HOST and YN_HOME are expected to enter positively and negatively, respectively.

Figure 3.1 Gross Versus Net Income



Source: OECD, The Tax/Benefit Position of Employees, 1997.

[15] Gould and White (1992) note that information maps, depicting knowledge over space, display a marked border effect, controlling for distance even over very short distances, for example in two towns close to each other but on opposite sides of a border. While language may play a role, the effect is also observed across locations with fairly limited linguistic barriers.

The use of net rather than gross figures assumes that potential migrants are informed about, and mostly concerned about net rather than gross pay.[16] The assumption is not trivial. Figure 3.1 plots gross versus the net income for the single average earner. The figure reveals Denmark as the country with the highest gross but only the fourth highest net income, while Germany ranks third on the gross, but only sixth on the net scale. By contrast, the United Kingdom comes in fifth on the gross scale but first on the net scale, while the Netherlands place forth on the gross but second on the net scale. As a robustness test, YG_HOST and YG_HOME variable using the gross income are used (2001 data).

As a further robustness test, I use the self-reported satisfaction with life.[17] While income and life satisfactions are positively correlated, a number of differences emerge. The following table reports the rank for both series, revealing Swedes to be very satisfied with life despite a relatively low income rank, and Germans to be relatively dissatisfied despite a high income rank.

Table 3: Ranks: Income and Satisfaction

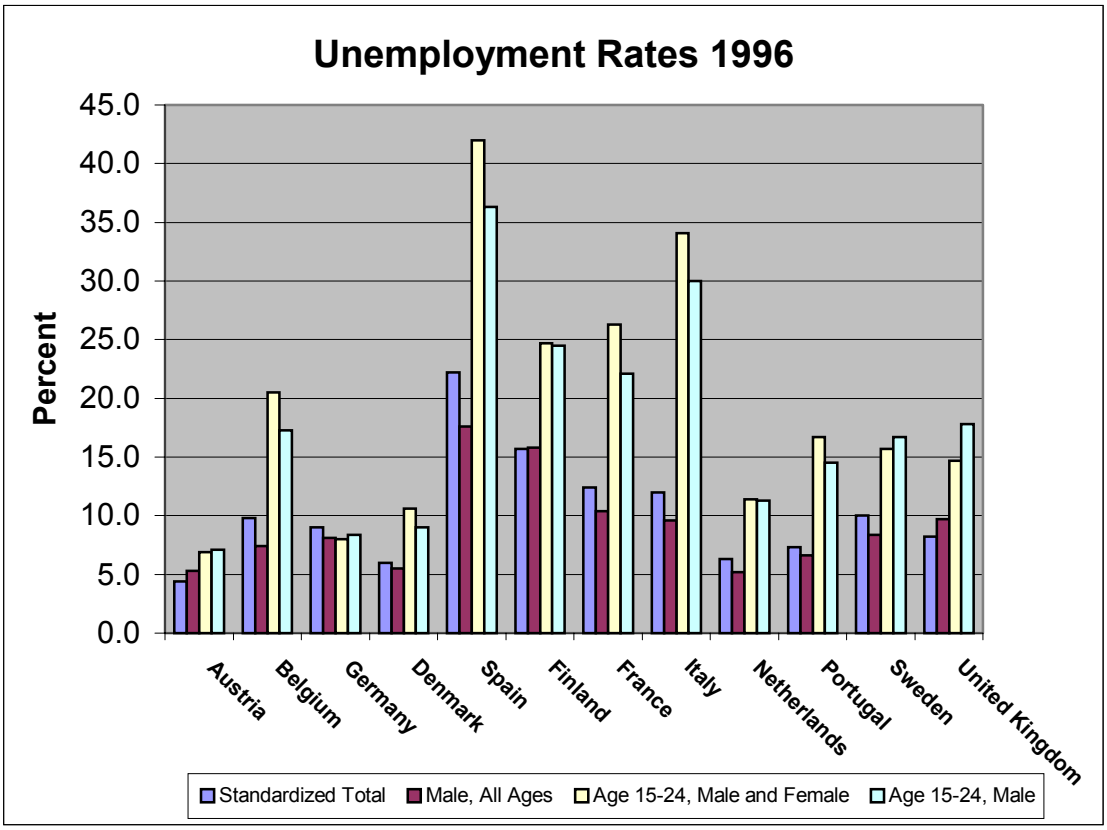
	Satisfaction with Life	Gross Income
Denmark	1	1
Netherlands	2	4
Sweden	3	9
Belgium	4	2
Finland	5	6
United Kingdom	6	5
Germany	7	3
Italy	8	7
Spain	9	11
Austria	10	8
Portugal	11	12
France	12	10

Source: Inglehart et al. 1998, V-96.

Finally, I add a welfare variable, defined as the log of the maximum monthly amount of net income under social assistance, also for a single individual, in purchasing power adjusted US$, taken from the OECD publication Benefits and Wages, 2002, Table 2.10. The benefit data are not available for Portugal; the dataset including the WEL_HOME and WEL_HOST variables thus shrinks by twenty-two observations to 110 observations.

[16] This might be the case, for example, if immigrants are less likely to utilize the benefits financed by the tax wedge.

[17] The measure is based on question V-96 in Inglehart et al. (1998): "All things considered, how satisfied are you with your life as a whole these days?"



Source: OECD Employment Outlook 1997

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3.4 Unemployment

Unemployment in the home and in the host country can act as a push factor and as a deterrent. The UM_HOME and UM_HOST variables equal the unemployment rate for males aged between 15 and 24, the traditionally dominant migrant group. The choice is not trivial as figure 3.2 reveals: there are substantial differences between the total standardized unemployment rate, the total male unemployment rate according to national definitions, and the unemployment rate in the 15 to 24 age group. As a robustness test, I also use the standardized overall unemployment rate, UT_HOME and UT_HOST. The data are for 1996 and are taken from the OECD Employment Outlook, 1997.

3.5 Demographics

The AGE variable aims to capture population pressures for outward migration. It is defined as the share of the population aged between 20 and 29 in the home country. The data are taken from the United Nations 1999 Demographics Yearbook.

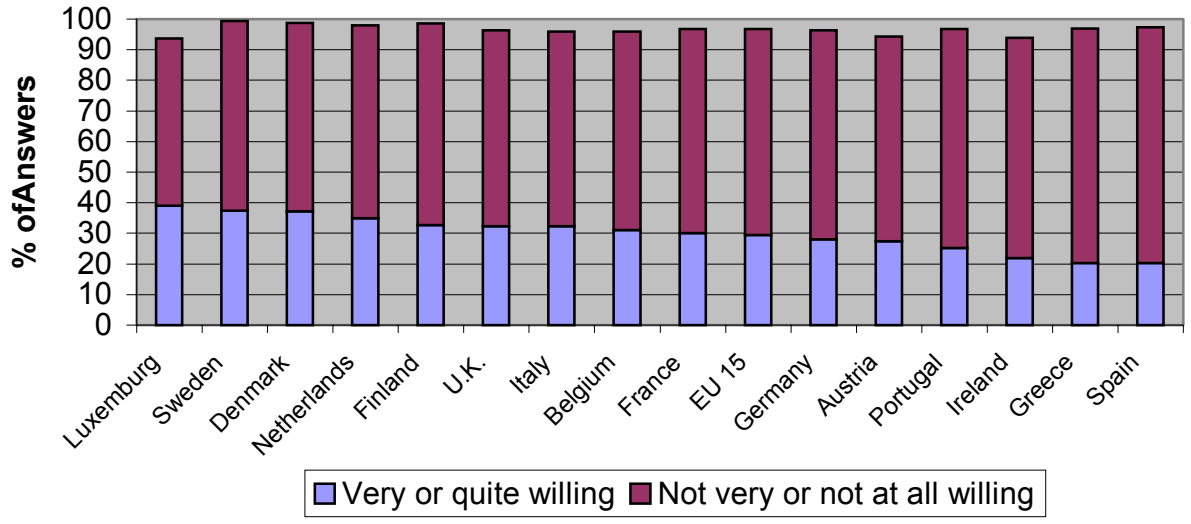
4. Measures of Psychological Cost and Values

In order to introduce cultural and psychological terms into the empirical evidence, the term “psychological costs” and “values” must be operationalized. There are of course innumerable aspects to “culture”; the focus here is on a small, non-exhaustive subset of numerical measures that might reasonably be expected to be relevant for migration choice.

4.1 Linguistic Link

Perhaps least controversial is the view that a common language, by enhancing the ability to participate in society, reduces the psychological cost of migration. Figure 4.1 illustrates the extent to which language is perceived as an obstacle to mobility.

Figure 4.1: Language and Mobility
Q: How willing would you be to live in another EU country where the language is different from your native language?



Source: Eurobarometer, 54:2, Question 47.

Linguistic linkage has traditionally been measured by a dummy set equal to one if the home and host country share a common primary language, and zero otherwise, implicitly assigning no weight to the possibility of an immigrant communicating in a third language. As the latter pattern becomes more prevalent with the emergence of English as a professional language in much of Europe (including of this conference), the dichotomous approach risks understating the linguistic connection between home and host countries not sharing a primary language.

To allow for this feature, the LANGUAGE measure is defined as 1 if home and host country share a common primary language[18], and as

$$LANGUAGE(i,j) = \alpha_{i,ENGLISH}\,\alpha_{j,ENGLISH}$$

otherwise, where i and j denote the home and host country, and $\alpha_{i,ENGLISH}$ denotes the fraction of the population in country i speaking English. L(i,j) thus measures the probability that a random resident of country i can communicate with a random resident of country j either in the host country language or in English, under the simplifying

[18] Data taken from the CIA Factbook online version.

assumption that English is the only foreign language learned. The indicator is based on Eurobarometer data reported in Ginsburgh and Weber (2004).

4.2 Religion

To the extent that religious views are closely intertwined with values, they can be used as a proxy for similarity of the latter. I define a RELIGION dummy as equal to one if the same religion is dominant in both home and host country, with dominant defined as having at least at least a sixty percent share among individuals identifying themselves as religious, based on the CIA Factbook at www.cia.gov/cia/publications/factbook.

4.3 Views

I use responses to a set of questions contained in the World Value Survey, as reported and discussed in Inglehart, Basañez and Moreno (1998)[19] to construct three variables aiming to capture population views on (i) the role of individuals, (ii) the role of the state/society at large, and (iii) gender roles. The measures are used to ask two questions. Controlling for other factors:

- do population views in the host country influence migration choices?
- do differences in views between the home and the host country influence migration choices?

4.3.a The Role of the Individual and the State

The first two measures aim to capture the relative weight placed on the state and on the individual in terms of addressing challenges and assuming responsibilities. For the IND_HOST and the IND_DIFF variable, the following questions are used to construct a measure of the emphasis placed on individual effort and responsibility as well as on the market as an allocation device.

V-250 "There should be greater incentives for individual effort"
V-247 "I find that both freedom and equality are important. But if I were to choose one or the other, I would consider personal freedom more important, that is, everyone can live in freedom and develop without hindrance"
V-228 Do you consider it especially important for children to learn hard work at home?
V-97 The reason that there are people in this country who live in need is because of laziness and lack of will power.
V-125 "Imagine two secretaries, of the same age, doing practically the same job. One finds out that the other earns $50 a week more than she does. The better-paid secretary, however, is quicker, more efficient, and more reliable at her job. In your opinion, is it fair or not that one secretary is paid more than the other?" (% Answering "fair")
V-254 "Competition is harmful. It brings out the worst in people." [Disagree]
V-337 Do you strongly agree that "We are more likely to have a healthy economy if the government allows more freedom for individuals to do as they wish?" [Agree]

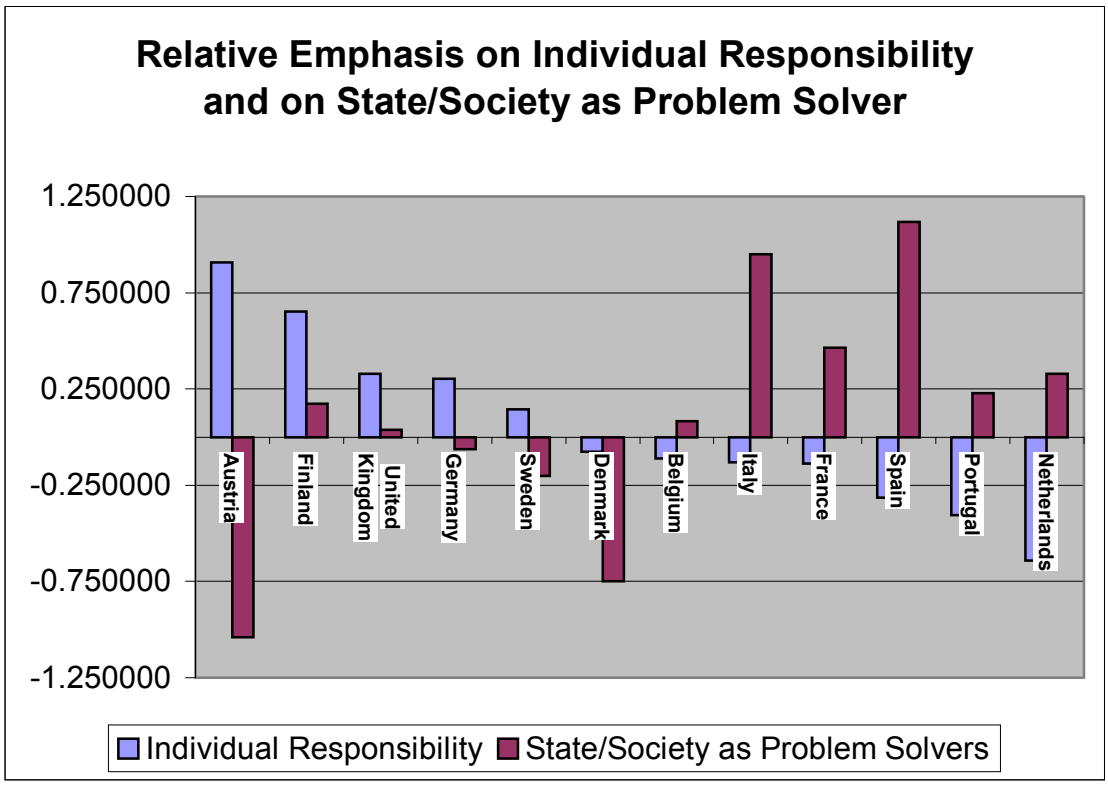
[19] In the following, V-xxx refers to the question number in Inglehart, Basañez and Moreno 1998. For Germany, data for West Germany are used.

For the SOL_HOST and SOL_DIFF variable, the following three questions are used to construct a measure of the emphasis on the state and on society at large as problem solvers.

V-97 There are people in this country who live in need because there is injustice in our society.
V-252 "The state should take more responsibility to ensure that everyone is provided for."
V-261 Progress toward a less impersonal and more humane society is the most important country goal.

To ensure comparability, the responses for each individual question are first transformed into deviations from the median for that question, and then divided by the standard deviation of the deviation from the median. The variables IND_HOST and SOL_HOST are then defined as the average across all questions for each of the two groups. To construct IND_DIFF and SOL_DIFF, I first construct IND_HOME and SOL_HOME measures analogously to IND_HOST and SOL_HOST and then construct IND_DIFF = ABS(IND_HOST minus IND_HOME) and SOL_DIFF = BA(SOL_HOST minus SOL_HOME). IND_DIFF and SOL_DIFF thus capture the "distance in values" between home and host country, while IND_HOST and SOL_HOST captures the values of the home country.

Figure 4.2 The Individual and the State



Source: Based on Inglehart, Basañez and Moreno (1998). Construction described in text.

4.3.b Gender Roles

The gender variable aims to capture attitudes towards gender roles and equality in the workplace, based on four questions in the World Value Survey:

V-128 When jobs are scarce, men have more right to a job than women
V-218 Do you agree/strongly agree that "a working mother can establish just as warm and secure a relationship with her children as a mother who does not work". (100 minus fraction responding "agree" or "strongly agree")
V-219 Do you agree/strongly agree that "a pre-school child is likely to suffer if his or her mother works"
V-220 Do you agree/strongly agree that "A job is alright but what most women really want is a home and children".

The GEN_HOST, GEN_DIFF and GEN_TOP (Austria, Italy, Germany, Portugal) variables are constructed analogously to the variables describes in the previous section.

4.3.c. Materialism Versus Postmaterialism

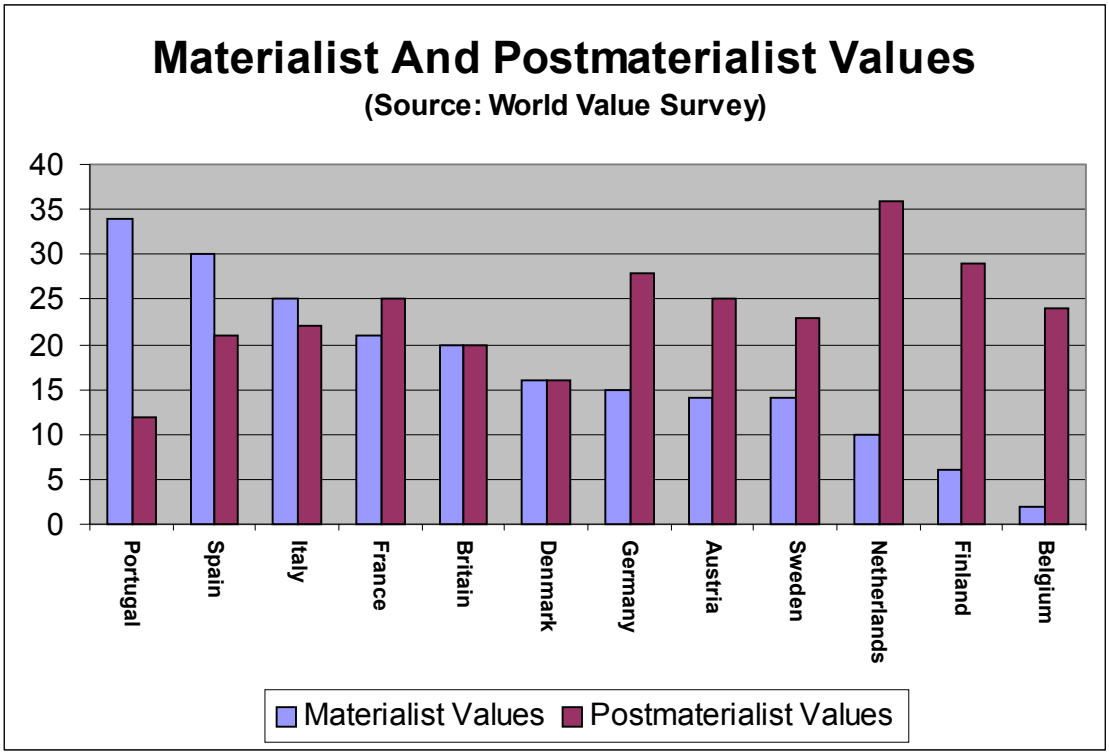
The three measures described above are based on a subjective selection of questions that I believe might reasonably be expected to influence migration decisions. In addition, I also use an aggregate value measure constructed by Inglehart, Basañez and Moreno (1998) that sidesteps any subjective selection on my side. The two measures aim to capture, respectively, the pre-valence of "Materialist" and "Post-Materialist" values. I define the variables POST_HOST and MAT_HOST as the numerical value of the indicator from Inglehart, Basañez and Moreno (1998), with higher values indicating a greater prevalence of the value. The variables POST_DIFF is defined as the absolute differences between the post-materialist score in the home and the host country, the variable MAT_DIFF is defined analogously for materialist values.

4.4 Openness Towards Foreigners

OPENESS measures host country attitudes towards foreigners and towards immigration, which may reasonably be expected to affect the utility of a migrant. The Special Eurobarometer Opinion Poll No. 47.1, carried out in March and April of 1997[20] explores these attitudes in greater detail. I use three of the responses to the Eurobarometer survey and one question from the World Value Survey to construct an aggregate OPENESS indicator. The first three question address views on minority groups, their usefulness in the current context thus depends on whether intra-EU migrants are perceived, and perceive themselves, as belonging to a minority group. The last question directly addresses migration.

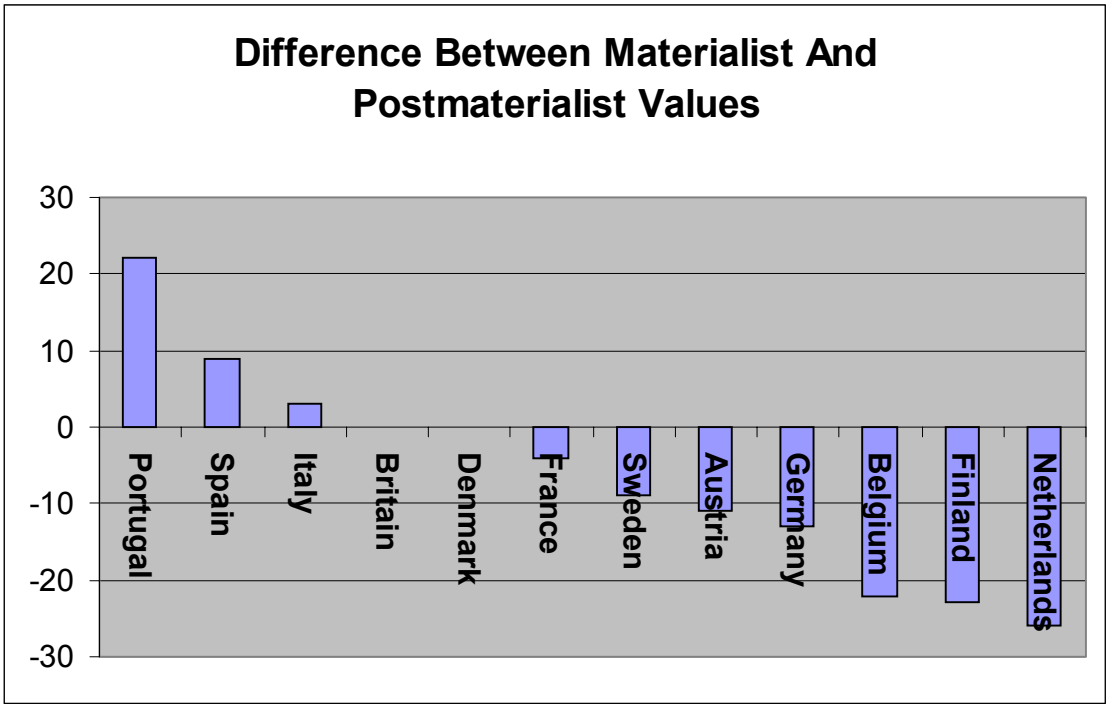
[20] http://europa.eu.int/comm/public_opinion/archives/ebs/ebs_113_en.pdf

Figure 4.3: Materialism and Post-Materialism I



Source: Inglehart, Basañez and Moreno (1998), V-405, pages 465-466.

Figure 4.4 Materialism and Post-Materialism



Source: Inglehart, Basañez and Moreno (1998), V-405, pages 465-466.

(i) *Discrimination*. Respondents were asked whether "*people from minority groups are discriminated against in the job market*". The sub-measure used is the fraction of "yes" responses (non responses are excluded).

(ii) *Assimilation*. Respondents were asked whether *"in order to be fully accepted members of society, people belonging to these minority groups must give up their own culture"*. The sub-measure used is the fraction of respondents answering yes (non responses are excluded).[21]

(iii) *Capacity*. Respondents were asked to assess the statement that *"our country has reached its limits; if there were to be more people belonging to these minority groups we would have problems"*. The sub-measure used is the fraction of respondents answering yes (non responses are excluded).[22]

(iv) *Preference*. The World Value Survey (Inglehart, Basañez and Moreno, 1998), Q. V-130 asked whether "when jobs are scarce employers should give priority to own nationality over immigrants". The sub-measure used is the percentage agreeing with the statement.

The aggregate OPENNESS is defined as the average of the four responses, again rescaled as the deviation from the median divided by the standard deviation of the median.

4.5 Stock of Prior Immigrants

Finally, I include the log of the stock of immigrants from the same home country living in the host country. As discussed above, the stock variable assumes multiple roles; it acts as a proxy for reduced search cost as well as a proxy for higher non-material utility. Indeed, to the extent that some home-country specific products are more readily available in locations with large immigrant population, even the choice set of material consumption may be enlarged. The following section describes the migration data in detail.

[21] The question contained two parts. The second question was "*In order to be fully accepted members of society, people belonging to these minority groups must give up such parts of their religion or culture which may be in conflict with the law*". Respondents had the option to disagree with both statements, to agree with the first, and to agree with the second question. (Eurobarometer 47.1.1997,Special Survey 113 p.6.)

[22] The question contains two parts. The second question is "In order to be fully accepted members of society, people belonging to these minority groups must give up such parts of their religion or culture which may be in conflict with the law". Respondents had the option to disagree with both statements, to agree with the first, and to agree with the second question. (Eurobarometer 47.1.1997,Special Survey 113, p.7.)

5. Migration Data

The paper focuses on gross migration from a home to a host country. It does not deal explicitly with issues associated with return and repeat migration.[23] Migration data are known to be subject to a number of serious caveats (see Eurostat (2000)), which can be no more than acknowledged here. In particular, the data used exclude seasonal migration. The migration data were obtained from Haver Analytics (www.haver.com), and are based on Eurostat data. For the flow data, I computed the mean of three consecutive years to avoid outlier bias. The years were in most cases 1996, 1997 and 1998.[24] For the stock data, I used 1995 data when available.[25]

6. Empirical Results

This section turns to the empirical evidence. I begin with a re-estimation of a fairly standard migration equation in gravity framework, using only the core traditional variables, before adding the measures of value differences. Before turning to the results, it may be helpful to summarize the set of variables used, these are briefly summarized in Table 6.1.

6.1 Methodology

The empirical analysis uses a variant of the gravity equation. The gravity approach in migration is generally traced back to the work of the German geographer Ravenstein (1885, 1889), and in its more general form to Zipf (1941). It has been modified over the years, with important contributions by Stouffer (1940) introducing the notion of "intervening opportunities", Lee (1966) and others. The gravity equation comes in assorted flavors; I use the original formulation with the log of bilateral migration as the dependent variable. Standard errors are White.

6.2 Results

Tables 6.2 and 6.3 report a first set of results using solely the traditional determinants. Table 6.2 explores the alternative indicators of size, distance and common borders. Given the relatively small range of GDP per capita, total GDP and population are highly correlated. Population works marginally better as a scale variable, and is used in the subsequent regressions.

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[23] Sizeable literatures explore issues associated with return and repeat migrations, see for example Constant and Zimmermann (2003) for repeat migration and Dustmann (1996) for return migration.

[24] For Belgium, 1998 data were unavailable, I instead used 1995. For France 1996 data were unavailable, I instead used 1999.

[25] For the United Kingdom, 1994 stock data were used. For Austria, the mean of the 1991 and 2001 stocks was used. For France, the mean of the 1990 and the 1999 stock was used. In both cases a small problem of endogeneity may thus arise. The in principle preferable alternative of updating start of decade figures with cumulative migration flows was not feasible as net migration figures were not available.

Table 6.1 Variable Summary

Variable Name	Variable Description	Expected Effect on Bilateral Migration
Dependent		
MIG_F	Ln migration from home country to host country, 3 year average	
Independent		
DIST	Log of distance between i and j	-
BORDER	Dummy = 1 if home and host country share a border	+
HOME_Y	Home country GDP as a fraction of Germany (US$, ppp based)	+
HOST_Y	Host country GDP as a fraction of Germany (US$, ppp based)	+
POP_HOME	Ln of population in home country	+
POP_HOST	Ln of population in host country	+
YN_HOME	Log of annual net income after employee's social security contributions, personal income tax and transfer payments for a single employee earning the average wage, in US$, purchasing power adjusted, in the home country.	-
YN_HOST	Same for host country.	+
YG_HOME	Log of annual gross income for a single employee earning the average wage, in US$, purchasing power adjusted, in the home country.	-
YG_HOST	Same for host country.	+
SAT_HOME	Ln of life satisfaction (index 0-100) home country	-
SAT_HOST	Ln of life satisfaction (index 0-100) host country	+
WEL_HOME	Ln of the maximum monthly amount of net income under social assistance, for a single individual, in purchasing power adjusted US$, for the home country.	-
WEL_HOST	Same for host country	+
YPC_HOME	Ln of income per capita in home country, basis US$, ppp adjusted	-
YPC_HOST	Ln of income per capita in host country, basis US$, ppp adjusted	+
UM_HOME	Unemployment rate for males aged 15-24 in home country.	+
UM_HOST	Unemployment rate for males aged 15-24 in host country.	-
UT_HOME	OECD standardized unemployment rate (overall) in home country.	+
UT_HOST	OECD standardized unemployment rate (overall) in host country.	-
AGE	The population fraction aged 20 to 29 in the home country.	+
Values		
LANGUAGE	1 if home and host country share a primary language, else product of the population fractions speaking English.	?/+
RELIGION	1 if home and host country have the same dominant religion	?/+
IND_HOST	Measure of attitudes towards the importance of individual effort in host country	?
SOL_HOST	Measure of attitudes towards the importance of society/the state in host country	?
GEN_HOST	Measure of attitudes to gender roles in host country	?
IND_DIFF	Absolute value of the difference between IND_HOST and IND_HOME	?/-
SOL_DIFF	Absolute value of the difference between SOL_HOST and SOL_HOME	?/-
GEN_DIFF	Absolute value of the difference between GEN_HOST and GEN_HOME	?/-
POST_HOST	Measure of post-materialist values in host country	?
MAT_HOST	Measure of materialist values in host country	?
POST_DIFF	Absolute difference in post-materialist value score between home and host country	?/-
MAT_DIFF	Absolute difference in materialist value score between home and	?/-
OPENNESS	Measure of openness to minorities/immigrants in the host country.	?/-
MIG_S	Ln of population of home country living in host country	+

Table 6.2

	[1]	[2]	[3]
Constant	11.77	0.526	5.022
	(8.68)***	(0.27)	(1.37)
Distance	-0.980	-1.023	-0.998
	(5.23)***	(5.49)***	(5.17)***
Border	-0.017	0.039	0.011
	(0.06)	(0.12)	(0.03)
Home-GDP	1.798		0.415
	(6.01)***		(0.43)
Host-GDP	2.384		1.392
	(6.60)***		(1.35)
Home-Pop.		0.578	0.457
		(6.24)	(1.52)
Host-Pop.		0.743	0.326
		(6.65)***	(1.10)
R^2	0.557	0.560	0.567
Obs	132	132	132

Table 6.3 adds the relative income measures, using, in columns 1 through 3, net income, gross income and, as a robustness check, income per capita and satisfaction with life. For all four cases, a higher income/satisfaction level in the host country is significantly associated with higher bilateral migration. Greater income in the home country is negatively associated with migration, though the effect is weaker. For the life satisfaction and the gross income variable, the coefficient is insignificant, for the former even positive. Based on these results, there appears to be little difference in the explanatory power of gross and net income, for the remaining regressions, I use the gross measure which performs marginally better.

Column 5 adds the welfare benefits to the measure of gross income, at the cost of losing 22 observations. Higher welfare benefits in the host country are associated with higher migration, ceteris paribus. So is, however, higher welfare in the source country. It should be noted that welfare payments often differ sharply depending on marital status, number of children and other factors, the welfare measure is thus arguably less precise. To maintain the maximum sample size, the welfare variable is excluded in the following regressions.

Columns [6] and [7] add the demographic and the unemployment variables to the equation. The young fraction of the population in the home country enters negatively, against expectations. The unemployment rate at home enters with the expected sign, but is highly insignificant. Higher unemployment in the host country is significantly negatively associated with bilateral migration. The unemployment rate for young males performs marginally better, it is used in the following regressions.

Table 6.3

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Constant	-12.137	-12.257	-0.941	-23.542	-20.253	-4.458	-6.115
	(1.29)	(1.87)*	(0.05)	(3.06)**	(1.52)	(0.62)	(0.83)
Distance	-0.866	-0.805	-1.012	-0.774	-0.514	-0.684	-0.706
	(4.17)***	(3.86)***	(4.42)***	(4.36)***	(2.33)**	(3.24)***	(3.36)**
Border	0.183	0.186	0.045	0.290	0.638	0.235	0.262
	(0.58)	(0.62)	(0.13)	(1.05)	(2.16)**	(0.84)	(0.90)
Home-Pop.	0.635	0.599	0.526	0.618	0.731	0.660	0.660
	(7.07)***	(6.81)***	(5.54)***	(5.60)***	(7.12)***	(6.90)***	(6.93)***
Host-Pop.	0.649	0.742	0.800	0.981	0.839	0.886	0.828
	(5.94)***	(7.42)***	(7.16)***	(8.57)***	(8.82)***	(8.57)***	(8.02)***
Net Income Home	-1.063						
	(1.59)						
Net Income Host	2.297						
	(4.57)***						
Gross Income Home		-0.578			-1.938	-0.916	-0.911
		(1.44)			(2.22)**	(2.08)**	(1.97)*
Gross Income Host		1.677			2.290	1.364	1.530
		(5.18)***			(2.75)**	(4.99)***	(5.34)***
Income p.c. Home			-2.318				
			(2.27)**				
Income p.c. Host			2.450				
			(3.33)***				
Satisfaction Home				0.480			
				(0.52)			
Satisfaction Host				4.074			
				(4.41)***			
Welfare Home					1.137		
					(3.08)***		
Welfare Host					0.623		
					(1.94)*		
Age-Home						-25.042	-21.335
						(2.23)**	(2.01)**
Male U Rate Home						0.013	
						(1.03)	
Male U Rate Host						-0.045	
						(4.19)***	
U Rate Home							0.018
							(0.86)
U Rate Host							-0.060
							(2.89)**
R^2	0.636	0.645	0.618	0.626	0.674	0.704	0.682
Obs	132	132	132	132	110	132	132

Table 6.4 begins the exploration of values. Column 1 adds the religion dummy, the linguistic link measure and the variable measuring the openness of the host country to minorities and immigrants. In this specification, only the linguistic link enters significantly, with the expected positive sign. Column 2 adds the measures of the values concerning the role of individuals, the role of the state and society, and gender. I explore two alternatives here. The first is that what matters are the values of the host country, the second that what matters is the difference in values between the home and the host country.

All three measures of host country values enter significantly, albeit only at the ten percent level for the society/state measure. Both greater emphasis on individuality and greater emphasis on state/society are negatively associated with migration. As discussed above, a high score on one does not imply a low score on the other. An increase in the gender variable, indicating less gender equality, is associated with higher bilateral migration. Turning to the second set of measures, greater differences in values concerning the role of individuals and gender equality enter with a significant negative coefficient. The inclusion of the value measures also alters the sign of the openness variable, which now becomes negative and more significant, though still not meeting the ten percent threshold.

As a robustness test, Columns 3 and 4 use the broadly defined "materialist" and "post-materialist" measures constructed by Inglehart, Basañez and Moreno (1998) in place of the individual/society/gender indicators. A greater emphasis on post-materialist values is associated with a significantly lower bilateral migration. The value differences do not exert a significant effect. In the following regressions, I use the host and the difference in values.

Taken together, the inclusion of the value measures raises the R2 slightly but significantly. Based on this regression, it would appear that the standard explanatory variables account for the lion's share of explanatory power for migration, but that values may add in understand some of the residual unexplained variance.

It is also worth noting how the inclusion of the value measures alters the coefficients on the traditional determinants. As discussed above, in the traditional specification the distance term performs multiple duties as a proxy for the financial cost of moving, as a proxy for the information decay, and as a proxy for "psychological" costs. In column [6] of table 6.3, the equation with the highest explanatory power if no value data are included, distance enters negatively and highly significantly, with a coefficient of –0.684 and a t-stat of 3.24. Adding the language, religion and openness measures reduces the coefficient to –0.422 with a t-stat of 2.06. Adding the value variables on individuals, society/state and gender reduces the coefficient further to –0.327; it becomes statistically insignificant. The pattern is consistent with the view that the distance variable in the traditional equation does indeed at least partly captures psychological costs.[26]

[26] If one takes this view to the extreme and views distance solely as a proxy for values, an alternative estimate of the joint explanatory power of value variables can be obtained by re-estimating equation [6] of

Table 6.4

	[1]	[2]	[3]	[4]
Constant	-8.787	-13.930	-6.594	-13.844
	(1.12)	(1.59)	(0.78)	(1.68)*
Distance	-0.422	-0.327	-0.524	-0.358
	(2.06)**	(1.39)	(2.85)**	(1.66)*
Border	0.108	0.204	0.141	0.180
	(0.43)	(0.77)	(0.60)	(0.68)
Home-Pop.	0.714	0.619	0.703	0.746
	(8.10)***	(7.01)***	(8.15)**	(8.27)***
Host-Pop.	0.943	0.797	1.024	0.972
	(9.24)***	(5.53)***	(9.01)***	(9.58)***
Gross Income Home	-0.900	-0.662	-0.948	-0.731
	(2.00)**	(1.44)	(2.12)**	(1.66)*
Gross Income Host	1.407	1.850	1.478	1.610
	(4.59)***	(5.00)***	(3.18)**	(5.00)***
Age	-23.643	-21.249	-25.418	-24.835
	(2.15)**	(1.85)*	(2.47)**	(2.22)**
Male U Rate Home	0.012	0.006	0.013	0.014
	(0.88)	(0.46)	(1.05)	(1.07)
Male U Rate Host	-0.044	-0.002	-0.055	-0.042
	(3.67)***	(0.07)	(3.99)***	(3.50)***
Language	1.603	1.162	1.318	1.679
	(2.88)**	(1.83)*	(2.40)**	(2.94)**
Religion	0.391	0.084	0.396	0.464
	(1.55)	(0.32)	(1.62)	(1.95)*
Openness	0.105	-0.449	-0.592	0.131
	(0.43)	(1.48)	(1.42)	(0.54)
Individualism Host		-0.898		
		(2.06)**		
Society/State Host		-1.094		
		(1.84)*		
Gender Host		0.427		
		(2.96)***		
Individualism Difference		-0.431		
		(1.90)*		
Society/State Difference		-0.023		
		(0.12)		
Gender Difference		-0.390		
		(2.81)***		
Materialism Host			-0.016	
			(0.78)	
Post-Materialism Host			-0.070	
			(2.83)**	
Materialism Difference				0.005
				(0.38)
Post-Materialism Difference				0.029
				(1.90)*
R^2	0.730	0.764	0.747	0.739
Obs	132	132	132	132

table 6.3 excluding distance, and comparing results with equation [2] in Table 6.4. In terms of the R2, this yields an increase in the explanatory power from 0.676 (Eq. [6] in Table 6.3 without distance) to 0.764.

Table 6.5 explores the role of the stock of prior immigrants. Column [1] replicates the baseline regression (Table 6.4, column [2]). Column [2] adds the stock of prior immigrants. As discussed above, the stock plays a dual role as a measure of migration cost through network effects, and psychological costs. If the stock of immigrants was itself near perfectly explained by the explanatory variables already included, the addition of the stock measure would not boost the R2 significantly. This is not the case: the stock variable is highly significant, the R2 increases sizably.

Including the stock of prior immigrants further reduces the coefficient and significance of distance. It appears to replace the host country population as scale variable, and reduces the income elasticities. In terms of values, the measure of openness now becomes negative and significant (a higher value indicates less openness). The sign and significance pattern for host country values is not changed materially, though the estimated coefficients decline. The coefficients on the value difference also decline; the difference of views on gender becomes insignificant.

The stock of immigrants is the sum of past net flows. Column 3 explores the dependence between the stock data and the same set of explanatory variables. The regression is only suggestive, as in particular the timing of some of the explanatory variables reflects the focus on the flow regression. With that caveat, the explanatory power of the regression is quite high. Contrasting columns [1] and [3] yields a number of interesting differences and similarities. First, the spatial variables, both distance and border, are more important for the stock than for the flow regression, suggesting that spatial effects may have become less important over time. Linguistic ties and a common religion are both associated with higher bilateral migration, though only the linguistic tie variable is significant. Openness does not enter significantly, in contrast to the flow specification. The other value measures are generally less significant for the stock than for the flow variables, with the exception of the difference in views on gender.

Table 6.5

	[1]	[2]	[3]
	Flow	Flow	Stock
Constant	-13.930	-11.143	-4.806
	(1.59)	(1.48)	(0.42)
Distance	-0.327	-0.093	-0.403
	(1.39)	(0.41)	(1.79)*
Border	0.204	-0.215	0.724
	(0.77)	(0.82)	(2.72)***
Home-Pop.	0.619	0.219	0.688
	(7.01)***	(2.71)***	(6.99)***
Host-Pop.	0.797	0.192	1.043
	(5.53)***	(1.27)	(7.63)***
Gross Income Home	-0.662	-0.222	-0.759
	(1.44)	(0.62)	(1.38)
Gross Income Host	1.850	1.384	0.802
	(5.00)***	(4.53)***	(1.55)
Age	-21.249	-17.619	-6.261
	(1.85)*	(2.13)**	(0.48)
Male U Rate Home	0.006	0.005	0.001
	(0.46)	(0.56)	(0.099)
Male U Rate Host	-0.002	-0.003	0.002
	(0.07)	(0.16)	(0.077)
Language	1.162	0.421	1.278
	(1.83)*	(0.86)	(2.47)**
Religion	0.084	-0.058	0.245
	(0.32)	(0.28)	(0.87)
Openness	-0.449	-0.546	0.168
	(1.48)	(2.45)**	(0.46)
Individualism Host	-0.898	-0.438	-0.793
	(2.06)**	(1.40)	(1.87)*
Society/State Host	-1.094	-0.720	-0.644
	(1.84)*	(1.64)	(1.00)
Gender Host	0.427	0.302	0.214
	(2.96)***	(2.68)***	(1.45)
Individualism Difference	-0.431	-0.126	-0.526
	(1.90)	(0.75)	(2.19)
Society/State Difference	-0.023	0.042	-0.114
	(0.12)	(0.28)	(0.58)
Gender Difference	-0.390	-0.153	-0.409
	(2.81)***	(1.65)	(2.80)***
Stock of Immigrants		0.579	
		(7.76)***	
R^2	0.764	0.855	0.790
Obs	132	132	132

7. Conclusion

The potential for migration flows and their economic consequences has figured prominently in recent political debate. The traditional economic approach to migration combines economic factors (size, income gaps, unemployment) with an (explicitly modeled or implicitly assumed) "psychological cost" of migrating. In this paper I tried to take a closer look at this latter, arguably less well understood determinant of migration.

Some measures of potential psychological costs, such as the absence/presence of a common linguistic links or a prevalent common religion are fairly uncontroversial. In this paper, I attempted to delve deeper into the importance of "values" for migration decisions, using responses from the World Value Survey and Eurobarometer. Quantifying values is of course far from trivial, and the results are conditional on having used appropriate questions and numerical transformations.

With that caveat, the results do suggest that "values" may matter for explaining migration decisions. Both differences in values and values in the host country improve the explanatory power of the migration regression. It is also worth noting that the inclusion of measures of "psychological costs" reduces the explanatory power of distance, consistent with the view that distance at least partly acts as a proxy for psychological costs.

While values add to the explanatory power, and are significant both as a group and in many cases individually, the results also confirm that the traditional determinants account for the lion's share of explanatory power.

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