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What Drives Individual Attitudes towards Immigration in South Africa?

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What drives individual attitudes towards immigration in South Africa? *

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Abstract

This paper empirically investigates the determinants of individual attitudes towards immigration in South Africa using the 1996, 2001 and 2007 rounds of the World Value Survey. The main question we want to answer is whether South African public opinion on migration is affected by the potential labor market competition of migrants towards natives. We investigate this issue by estimating the impact of survey respondents' individual skill on their pro-migration attitudes. Our estimates show that the impact of individual skill – measured both with educational attainment and an occupation-based measure – is positive and significant in both 1996 and 2001. Given that in both years immigrants to South Africa are on average more skilled than natives, we conclude that the labor-market channel does not play a role in preference formation over immigration. What might explain the positive impact of individual skill are non-economic determinants.

JEL classification: F22, J61.

Keywords: Immigration Attitudes, South Africa.

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"*One of the fundamental problems facing Home Affairs and any drafters of a new regionalist and development-oriented immigration policy is a public that remains extremely hostile to immigration as a principle and to migrants in general.* " (Crush 2008).

1 Introduction

Who is against immigration in South Africa? In this paper, we investigate the drivers of individual attitudes towards immigrants in the post-Apartheid period, looking at the role of both economic and non economic determinants. We use data from three rounds of the World Value Survey, carried out in 1996, 2001 and 2007. The main question we want to answer is whether South African public opinion on migration is affected by the potential labor market competition of migrants towards natives. We investigate this issue by estimating the impact of survey respondents' individual skill on their pro-migration attitudes. Our estimates show that the impact of individual skill – measured both with educational attainment and an occupation-based measure – is positive and significant in both 1996 and 2001 (and becomes insignificant in 2007). However, in both 1996 and 2001 immigrants to South Africa are on average more skilled than natives (Facchini, Mayda and Mendola 2011). Thus, if the impact of individual skill on preferences was driven by the labor market channel, we would expect it to be negative in both years, since it is the more educated natives who should feel the labor-market competition of immigrants the most. Thus we conclude that, in South Africa over the 1996-2007 period, the labor-market channel does not play a role in preference formation over immigration. What might explain the positive impact of individual skill are non-economic determinants. For example, more educated individuals might be more favorable to migration because they are better-informed about the benefits linked to migration, because they are more cosmopolitan and, possibly, more politically correct (see, for instance, Hainmueller and Hiscox 2007 and Hainmueller and Hiscox 2010). We also find that a few additional socio-economic characteristics measured at the individual level, such as political affiliation with the right, impact preferences. However, their effect is not stable over time. Finally, we provide anecdotal evidence that the overall composition of migrants relative to natives in each province - in terms of skill, religion, etc. - affects the average opinion towards migrants in that province.

Our analysis of public opinion towards migrants in South Africa is motivated by two sets

of considerations. First, migration to South Africa is likely to have positive development effects on both South Africa and other African origin countries. However, while in recent years the official government rhetoric has moved towards a more open stand towards migrants, South African voters have become more and more averse to international migration. As a result, a growing gap has emerged between voters attitudes and announced government preferences. Since our analysis clarifies which factors drive (or do not drive) public opinion, it can shed light on how immigration to South Africa can be made politically feasible, which ultimately can benefit both South Africa and other countries in the region. In what follows, we explain this point in greater detail.

International migration, especially from neighbouring countries, represents a long-standing feature of South African history. Starting from the 1850's, many migrant workers were brought into the country from the surrounding regions, to work on the newly discovered gold mines (Crush 2000) and in the agricultural, construction and service sectors. This type of migration continued and rose up to the 1970's. In the last twenty years of the Apartheid regime, migration to South Africa came to a halt, as black migration started to be perceived by the government as a source of political threat. Instead, over the last two decades, with the end of the Apartheid regime and the evolution of the country into a regional superpower, South Africa was able to turn itself again into a very attractive destination for foreign workers – especially skilled ones – coming from the surrounding regions (Facchini, Mayda, and Mendola 2011). However, the end of the Apartheid regime in 1994 did not lead to a change in the government's restrictive policies towards immigration. The 1991 "Aliens Control Act" – 'Apartheid's last act' as has been named by many observers – continued to shape migration policy with its "control and expulsion" mentality. It was only with the passage of the Immigration Act in 2002, and its Amendment in 2004, that the policy towards migration changed. In the government's official discourse migration is now perceived as a development tool, both for South Africa and the neighbouring countries (Crush 2008).[1]

Migration to South Africa is likely to have important effects on many origin countries

[1] "The South African Minister of Home Affairs, Nosiviwe Mapisa-Nqakula, has also championed a development-oriented approach to migration policy and management. She spoke on behalf of the G77 plus China at the UN High Level Dialogue in September 2006, touching in a measured and constructive way (in contrast to the churlish inputs of many Western countries) on many of the themes central to the migration-development debate. Within South Africa itself, Mapisa-Nqakula has also advanced the concept of migration for development. South Africa has endorsed both the African Union (AU) Strategic Framework on Migration and the AU Common Position on Migration and Development." (Crush 2008).

in both Eastern and Southern Africa – for example, Mozambique, Zimbabwe, Lesotho, and Malawi – especially through the positive role played by remittances. There is indeed evidence that remittances from South Africa to the origin countries are substantial.[2] As far as South Africa itself is concerned, while income distribution effects will probably take place (see for example, Facchini, Mayda, and Mendola 2011[3]), there is likely to be a "migration surplus" (Borjas 1995). In other words, according to the theory, the impact of migration on the destination country should be positive on net through the labor market channel. From a public finance point of view, since migrants to South Africa tend to be quite skilled, they are also likely to make a positive net contribution to the welfare state.

The recent shift in the rhetoric of the South African government towards an open, development-oriented immigration policy contrasts with South African public opinion, which tends to be very hostile towards immigrants. According to the World Value Survey data, only approximately a third of respondents in a nationally representative sample favored migration in 1996 and 2001, respectively.[4] Thus, there exists a substantial gap between the government's recent migration policy discourse and public opinion towards immigrants. The goal of this paper is to shed light on why South African voters are so opposed to immigration. To that end, we will follow the growing literature that has studied the formation of preferences towards immigration and consider the role of both economic and non–economic determinants.[5]

Second, our analysis of the determinants of South African public opinion towards immigrants, in particular focusing on the labor market channel, is motivated by our recent work on the effect of international migration to South Africa on natives' labor market opportunities over the same period of time (Facchini, Mayda and Mendola 2011). In that paper, when we estimate regressions of the impact of immigration on natives' employment rates, we find a large negative and significant coefficient on the immigration share of a given skill level in

[2] "The Zimbabwean economy — and consequently many Zimbabwean families — have survived only because of remittances sent from those living in South Africa and elsewhere. The World Bank has no estimates of the remittances Zimbabwe has received in recent years, but it does report that remittance flows out of South Africa exceeded US$1 billion in both 2005 and 2006; what proportion of those flows went to Zimbabwe, however, is unclear, particularly since Lesotho and Mozambique are also major recipients of remittances." (Crush 2008).

[3] Facchini, Mayda and Mendola (2011) find that migration inflows into South Africa, between 1996 and 2007, have led to a large and negative impact on natives employment rates.

[4] Negative public opinion towards immigrants is consistent with the recent xenophobic attacks which left, in May 2008, 62 people dead.

[5] See Section 2 for more details.

a given district. If the negative coefficient is evidence of an adverse labor market impact of migrants on native workers, then we would expect to find that the labor market plays a key role in shaping individual immigration attitudes. This is not what we find in this paper.

The remainder of the paper is organized as follows. Section 2 reviews the existing literature, whereas section 3 presents a theoretical framework that clarifies the link between individual attitudes and immigration policy. Section 4 details the evidence in the literature on the labor-market impact of migration in South Africa. Section 5 describes our data and section 6 presents our individual–level empirical analysis. Section 7 provides suggestive evidence on the role of non–economic factors at the province level, and Section 8 concludes.

2 Related literature

The analysis carried out in this paper is related to two strands of literature. First, it represents a contribution to the large empirical literature that has studied the determinants of individual level preferences towards immigration in destination countries. Second, it is one of the first attempts to systematically analyze the evolution of public opinion towards immigration in South Africa in the post–Apartheid era.

Starting from the mid nineties, several papers have looked at the drivers of public opinion towards immigration in individual destination countries. Much of the literature has focused on the United States (for example, Citrin et al. 1997, Espenshade and Hempstead 1996, Kessler 2001, Scheve and Slaughter 2001, Hanson, Scheve, and Slaughter 2007, Facchini, Mayda, and Puglisi 2009) and on Great Britain (for example, Dustmann and Preston 2007). In addition a few papers have analyzed public opinion using cross-country data (for example, Brücker et al. 2002, Bauer, Lofstrom, and Zimmermann 2000, Chiswick and Hatton 2002, Mayda 2006, Facchini and Mayda 2008, Facchini and Mayda 2009, Card, Dustmann, and Preston 2009).

The works focusing on the United States reach contrasting conclusions. Early contributions, like Espenshade and Hempstead (1996) and Citrin et al. (1997), find mostly evidence in favor of non-economic explanations behind preference patterns. Similar results have also been found in a recent paper by Hainmueller and Hiscox (2010) using an experimental setting. At the same time, the results in Scheve and Slaughter (2001), Kessler (2001) and Hanson, Scheve, and Slaughter (2007) draw attention to the importance of economic deter-

minants: the former two papers provide evidence in line with the labor market channel,[6] while the latter finds support also for the role payed by the welfare-state channel. Several of the findings in the cross-country literature are also consistent with economic determinants. Mayda (2006) estimates that, in countries where immigrants are less skilled than natives, there exists a positive correlation between the level of individual skill and pro-migration attitudes. On the other hand, the correlation has the opposite sign in countries characterized by skilled migration. Facchini and Mayda (2009) confirm these labor-market results by showing that they are robust to taking into account the welfare state, which has its own independent effect on individual migration attitudes across countries.

The majority of the above papers also finds evidence consistent with non-economic determinants of public opinion, whose role has been especially emphasized by Hainmueller and Hiscox (2007) and Card, Dustmann, and Preston (2009).

Summing up, the existing evidence based on advanced destination countries suggests that opinions towards migration are driven by both economic and non–economic drivers. For this reason, in our study of South Africa, we will look at both set of determinants.

Our paper also contributes to the debate on the drivers of attitudes towards immigration, specifically in South Africa. As has been argued by many observers, opinions towards immigration in the country are the result of the complex interaction of an array of different socio-economic and political factors. Particularly important is the role played by the heritage of the Apartheid regime, during which discrimination and racial segregation were actively promoted by the government. The laws enacted in this period were purposely designed to create divisions among groups and to manipulate the concept of identity by stigmatizing foreigners. As a result, even after the fall of the regime, some of the sense of territory it had created, combined with the perception of the outsiders as a threat, have continued to be widespread among South African citizens, spoiling Nelson Mandela's dream of a rainbow nation (Nieftagodien 2008).

The recent eruption of xenophobic violence in May 2008 has made the question of 'who is against immigration?' the focus of much debate among South African social scientists. Given the virulence of the phenomenon, it has received much attention in the official rhetoric of the government, and policy makers have suggested a wide range of speculative explanations and

[6]Scheve and Slaughter (2001) find that, in the United States, the more educated an individual is, the more likely he is to be pro-migration, which is consistent with the labor-market channel since migrants to the United States are less skilled than natives on average.

recommendations, which have been followed by a multitude of interventions and responses by the South African civil society (Misago et al. 2009, Everatt 2011).

Systematic studies of what drives attitudes towards immigrants in South Africa are scarce. An interesting exception is represented by the descriptive analysis carried out by Crush et al. (2008), who attempt to shed light on the factors behind xenophobic sentiments, discriminatory practices and violence against migrants and their families. To that end, Crush et al. (2008) use two nationally representative surveys collected by the South African Migration Project (SAMP) in the post-apartheid period (respectively in 1999 and 2006).

Several interesting facts emerge from the SAMP surveys. First, the incidence of negative attitudes towards immigrants has continued to increase between 1999 and 2006, which is consistent with what we find based on the WVS dataset. In 2006, 37 percent of the respondents wanted a total ban on foreigners entering the country. Three quarters supported the electrification of borders and almost as many agreed that non-citizens should carry personal identification with them at all times. As many as 30 percent of the respondents reported that they would take action to prevent migrants from neighbouring countries from moving into or operating a business in their community. Finally, a startling 16 percent of those interviewed declared that they were prepared to join forces with others to expel foreign nationals from their area. As we will see in section 5, these results are confirmed by the World Value Survey. Based on the 2007 WVS round, South Africa is one of the countries in the world whose citizenry is most opposed to immigration. Second, direct evidence from the SAMP survey suggests that very strong opinions against foreigners are often the result of prejudice: in fact, most of the respondents in the survey have only had a very limited exposure to foreign nationals (Crush et al. 2008).

Additional evidence on what drives the observed negative attitudes towards foreigners is scant. Several theories have been put forward, but little analysis has been carried out to provide support for one or the other. Many observers have highlighted the role of economic factors, and in particular labor market competition, as a major determinant of anti-immigration attitudes. In particular, Pillay (2008) has emphasized the importance of inequality in shaping xenophobic sentiments, arguing that immigration is likely to exacerbate the already vast inequality characterizing South Africa (the country currently ranks as the second most unequal society in the world). Confirming the theory of relative deprivation, Misago et al. 2009 also identify high unemployment and poor services delivery as the main

drivers of conflict between socio-economic groups (see also Gelb 2008). Still, the widespread hostility towards foreigners expressed also by wealthy people in the 2006 SAMP survey contrasts with the argument based on unequal opportunities. As a possible explanation, it has been suggested that the South African elite is simply against the 'outsiders' (and manipulate the poorest South Africans against them) in order to retain its power and wealth (Neocosmos 2008). Goal of this paper is to address this question in a more systematic way.

3 Theoretical framework

To understand the process of migration policy formation we can take advantage of a conceptual scheme which is based on Rodrik (1995) and is illustrated in Figure 1. The basic idea is that the formulation of migration policies is the result of the interaction between "policy demand" and "policy supply". On the demand side, the starting block is represented by voters' individual preferences, and by how these preferences are shaped by the inflows of foreign workers. Both economic and non-economic factors are likely to play a role. Grass roots movements, political parties and/or organized pressure groups[7] aggregate these preferences into a migration policy demand. On the supply side, policy makers' behavior is shaped by their own views towards immigration and, of course, by the institutional setting in which the policy making process takes place.

This theoretical framework thus highlights the key role played by individual preferences in shaping immigration policy. The goal of this paper is to analyze the determinants of individual preferences towards immigrants, how they are shaped by economic factors and how they impact the actual policy making in South Africa.

To understand economic drivers, the existing literature has assumed that respondents are characterized by self-interest maximizing behavior. As a result, in forming their opinion, individuals consider the impact of migration on their utility. Since the economic impact of migration is uneven across the population, the main economic drivers of attitudes are associated with income-distribution effects. Among the economic drivers of opinions, as we have discussed in section 2, much emphasis has been put on the role played by the labor market. To understand the working of this mechanism, assume that skilled and unskilled labor are combined to produce a single good according to a constant returns to scale production func-

[7]See for instance Facchini and Willmann (2005) and Facchini, Mayda, and Mishra (2011).

tion. Under these assumptions theory predicts that, through the labor market channel, the income-distribution effects of migration depend on the skill composition of migrants relative to natives in the destination country. If immigrants are on average less skilled than natives, they will hurt unskilled natives and benefit skilled ones, as their arrival will induce a decrease in the unskilled wage and an increase in the skilled wage. Conversely, if migrants are relatively more skilled than natives, skilled natives will be hurt, whereas unskilled ones will benefit from their presence. Similar predictions could also be obtained in a Heckscher–Ohlin framework, as long as the immigration shock is sufficiently large to put the economy outside of the cone of diversification.

A second channel that has been considered in the economic literature highlights the role played by the "welfare state". In many immigrant destination countries, the public sector redistributes a substantial fraction of national income across individuals (Boeri, Hanson, and McCormick 2002). In these contexts, immigration has a non-negligible impact on public finances, since foreign workers both contribute to and benefit from the welfare state. This channel is less likely to play an important role in shaping preferences towards immigration in South Africa, as even if the welfare state in this country is well developed by middle income standards, it is still relatively small compared to the other rich destinations studied by the literature, and immigrants enjoy only limited access to these programs (OECD 2008).

From a non-economic point of view, cultural, racial and ideological considerations have been found to play a role. Affiliation/alignment with right–wing political parties has been usually found to have a negative impact on pro–immigration attitudes. Similarly, natives tend to be more in favor of immigration if foreigners share a similar ethnic background. Finally, it has been argued that more educated individuals are more in favor of immigration (independently of the skill level) simply because they better appreciate the value of diversity (Hainmueller and Hiscox 2007).

4 The labor market impact of migration in South Africa in 1996-2007

Several papers in economics analyze the impact of migration on the labor market opportunities of natives in the destination country.[8] Recent work by the authors (Facchini, Mayda and Mendola 2011) uses the methodologies developed in the existing literature to investigate the effect of international migration on South African workers' employment rates and wages. Using data from the 1996 and 2001 rounds of the Census and from the 2007 South African Community Survey, we exploit the variation in the labor market characteristics of migrants and in their geographical distribution within the country. In the regressions on the impact of immigration on natives employment rates, we find a large negative and significant coefficient on the immigration share of a given skill level in a given district. In our benchmark specification, a ten percentage point increase in the labor supply of a skill group in a district – brought about by immigration – is associated with a 6.7 percentage points decrease in natives' total employment rate. Interestingly, we find that this negative average employment effect is for the most part driven by medium and highly skilled migration. At the same time, we do not find a significant effect of immigration on our monetary compensation measure. One important caveat in interpreting the latter finding is that the South African Census only provides information on individual total income and, as a result, it is not possible for us to disentangle changes in labor income from changes in other sources of income and, within labor income, changes in wages from changes in the number of hours worked. It is indeed the results of this analysis, in particular the employment rates results, which has motivated the investigation in this paper of the political economy of migration in South Africa focusing specifically on the labor market channel.

The correlations we uncover in the employment regressions in Facchini, Mayda and Mendola (2011) can be interpreted in four different ways. First, we can understand the negative coefficient as evidence of a negative causal impact of international migration on South African natives' employment rates. Second, we can view the negative coefficient as support for a

[8]Examples of this literature are the seminal work by Card (1990) on the effect of the Mariel boatlift on the Miami labor market, the analysis in Hunt (1992) of the forced repatriation of pieds noirs from the North African colonies to France and the investigation by Friedberg (2001) of the effect of Russian immigration to Israel in the 1990's (see also the review of this literature in Friedberg and Hunt 1995). This first set of papers, based on the spatial correlation approach, was followed by the national-level analyses in Borjas (2003), Aydemir and Borjas (2007), etc.

negative causal impact of international migration on South African natives' flows within the country, i.e. natives react to the presence of foreign workers by relocating to other districts within the same country and, as a consequence, natives' employment rates decrease. Third, the negative coefficient can be interpreted as showing the negative causal impact of international migration to South Africa on natives' flows to other countries, i.e. South African emigration to other countries. In this case, the less favorable labor market conditions for natives, brought about by immigration, lead natives to move to other countries. While these first three interpretations are different, they share a common message: all of them imply a causal effect running from international migration to South African natives' outcomes through the less favorable labor market conditions natives face because of immigration. In particular, according to these interpretations, international migration causes natives' displacement, either in the form of work displacement or in the form of physical displacement. If one of these three interpretations is correct, we would then expect South Africans' attitudes towards migrants to reflect the adverse impact of migration. In other words, we would expect to find that the labor market channel plays a role in shaping attitudes towards immigrants.

The fourth interpretation of the negative coefficient on the migration share in the employment rates' regressions is related to reverse causality. In particular, the negative correlation could be driven by emigration of South African native workers which causes international migration inflows. According to this interpretation, South African workers leave the country for reasons unrelated to immigrant inflows to South Africa, for example due to improved labor market condition abroad. As South African workers move abroad, they leave vacant positions, which are taken up by migrants moving to South Africa. If the fourth interpretation is correct, we would not expect the South African labor market to be driving public opinion towards migrants.[9]

5 Data

To study what drives individual attitudes towards immigration in South Africa, we use individual-level data from three waves of the World Value Survey (WVS) (1996, 2001 and

[9]Our own research in progress in Facchini, Mayda and Mendola (2011) aims to establish the direction of causality in the employment regressions by using an instrumental variable estimation strategy.

2007). The immigration question in the WVS asks the following: "How about people from other countries coming here to work. Which one of the following do you think the government should do? (a) Let anyone come who wants to? (b) Let people come as long as there are jobs available? (c) Place strict limits on the number of foreigners who can come here? (d) Prohibit people coming here from other countries? (e) Don't know."

We transform answers to the WVS immigration question into two dependent variables: an ordered variable, *Immig Opinion*, and a dichotomous variable, *Pro Immig Dummy*, both constructed after excluding "Don't know" responses from the sample. We also exclude from the analysis individuals who were not born in South Africa. The variable *Immig Opinion)* ranges from 1="prohibit people coming here from other countries" to 4="Let anyone come who wants to". *Pro Immig Dummy* is instead defined as follows: *Pro Immig Dummy* =1, if *Immig Opinion*=3 or 4; 0, if *Immig Opinion*=1 or 2.

The WVS also contains information on the socio-economic background of each respondent and on his/her labor market characteristics. We use information from questions on age, gender, social class, broad political affiliation with the right/left, political party affiliation and religion. We control for the ethnic background of the individual, using two different measures: the first one is a broad measure based on four big categories (white, black, indian, coloured); the second measure is based on information from the survey on the language spoken by the respondent at home. We construct two measures of individual skill from, respectively, data on education (the highest education level attained by the individual) and data on occupation. We use these skill measures to test the implications of the labor-market model. Based on the occupation data, we construct and control for broad occupational dummies. We use each respondent's individual real income as a basic indicator of individual economic status. In addition, two questions asked in the WVS allow us to investigate the impact of nationalism on individual attitudes towards immigrants. Finally, we account for the geographical location of the respondent, by controlling for a variable which measures the size of the town where the individual lives and by using province dummy variables.

Furthermore, we have access to aggregate data on the province within South Africa where each respondent lives. The sources of these data are the 1996 and 2001 rounds of the South African Census and the 2007 South African Community Survey. We are thus able to match the individual-level survey data with province-specific data, such as on the relative skill composition of natives to immigrants. To conclude, the dataset we construct makes it

possible to identify both stated immigration policy preferences and individual and provincial characteristics that explain immigration opinions in standard economic and non-economic models.

The summary statistics provide interesting information on public opinion on immigration in South Africa over time, vis à vis other countries and (only in the first wave of the WVS) in comparison to attitudes towards trade, which is an alternative dimension of economic integration. According to Appendix Table A1, only 34% of the South African respondents interviewed in 1996 are in favor of migration, i.e. they would allow anyone to come to work or they would allow anyone to come provided that there jobs available. Since in the regressions we will focus on the sample of men in the labor force (with ages between 15 and 64 years old), we also report the summary statistics for this restricted sample. In 1996, only 32% of South African men in the labor force are in favor of migration. The same table also shows that, interestingly, South Africans are approximately as opposed to trade as they are to immigration. Only 36% of South African voters and of South African men in the labor force favor free trade, i.e. they think it is better if goods made in other countries can be imported and sold in South Africa if people want to buy them (as opposed to having stricter limits on selling foreign goods in South Africa, to protect the jobs of South Africans). This result on immigration vs. trade attitudes contrasts with the findings in the existing literature for rich destination countries. In fact Mayda (2008) shows that public opinion is on average more pro-trade than pro-immigration in several developed countries.

Next, the bottom portion of Appendix Table A1 presents the break down of percentages for each answer to the immigration question. The mode of the distribution is, by far, the answer "Place strict limits on the number of foreigners who can come here," both for the whole sample and for the sample of men in the labor force. Interestingly, Appendix Table A2 shows that, in 1996, South Africa is one of the countries where the population is most opposed to immigration. This result is telling given that the cross-country sample includes several other middle and low-income countries. For example, in 1996 54% of the respondents in Nigeria are in favor of migration. Finally, according to Appendix Table A3, the skill composition of migrants is an important determinant of public opinion in South Africa. The higher the relative skill composition (RSC) of natives to immigrants (i.e., the more unskilled immigrants are) in a province, the more opposed to immigrants respondents are on average in that province (see also Figure 2).

The summary statistics for 2001 present a picture that is quite similar to 1996. According to Appendix Table A4, the fraction of respondents favoring migration increases only slightly (to 37% for the whole sample and to 36% for men in the labor force). The mode of the distribution in the bottom panel of the table is still the same answer as for 1996. South Africa still appears to be more hostile to migration than the majority of countries in the sample (Appendix Table A5). Finally, Appendix Table A6 shows that average migration attitudes across provinces are still negatively correlated with the RSC of the province (see also Figure 3).

In the last year of our analysis, instead, we observe a substantial change (Appendix Tables A7-A9). In 2007, the fraction of respondents favoring migration declines substantially to only 23% (the corresponding figure for men in the labor force, is 24%). Furthermore, while the mode of the distribution of answers (to the migration question) remains the same, now a much higher fraction of the sample would like to "prohibit people coming here [South Africa] from other countries". In the cross-country sample, in terms of the dichotomous migration variable, only Malaysia, Indonesia and Thailand are more opposed to migration than South Africa; in terms of the ordered migration variable, only Malaysia is. Thus this evidence is consistent with the xenophobic feelings that have recently characterized the immigration debate in South Africa, and they are also broadly consistent with the results obtained in the SAMP survey carried out in 2006 (Crush et al. 2008). Finally, the evidence across provinces for 2007 is similar to what we found for the previous two years if we exclude Eastern Cape from the analysis (see Figures 4 and 5). In 2007, Eastern Cape becomes an outlier, due to a substantial drop in pro-migration attitudes (the fraction of respondents in favor of migration in Eastern Cape is 38% in 1996, 45% in 2001 and 7% in 2007).[10]

6 Empirical results

In this Section, we describe the main results of the empirical analysis. As mentioned above, we have contructed two different measures of pro-migration attitudes, a dichotomous one (*Pro Immig Dummy*) and an ordered one (*Immig Opinion*). We use non-linear models. Since ordered probit results are harder to summarize, we use the dichotomous measure and

[10]Based on this findings it is then not surprising that some of the first xenophobic killings of 2008 involved two Somali shopkeepers in this province.

estimate probit specifications. In particular, following the literature, we run a series of probit models taking the following general form:

$$Prob(Pro\ Immig\ Dummy_i = 1|x_i) = \Phi(x_i\beta) \tag{1}$$

where $\Phi(\cdot)$ is the cumulative distribution function of the Normal distribution and x_i is a vector of individual level economic and non-economic characteristics that, depending on the specification, might be interacted with provincial level variables. Given the issues – pointed out in Ai and Norton (2003) – in the estimation of the marginal effects of interaction variables in Stata, we present coefficient estimates.[11] Finally, we restrict the sample to men in the labor force (with ages between 15 and 64 years old) who were born in South Africa.

One of the main goals of the empirical analysis is to determine whether individual attitudes towards immigrants in South Africa are shaped by economic drivers, in particular working through the labor-market channel. As explained in the theoretical section, we can investigate this issue by estimating the impact of individual skill on pro-migration attitudes. In 1996 and 2001 individual skill, measured both with educational attainment and an occupation-based measure, is one of the most important determinants of South Africans' individual preferences on immigration (see Tables 1-2 and Tables 4-5, respectively). Its impact is robust, positive and significant in almost all specifications in both years. However, it is not straightforward to interpret this result. According to our own estimates based on Census data in a related paper (Facchini, Mayda, and Mendola 2011), both in 1996 and in 2001 immigrants tend to be quite skilled in South Africa relative to natives: Immigrants have increased the supply of men in the labor force with less than primary education by 5.8% in 1996 and 5.6% in 2001; they have increased the supply of men in the labor force with less than secondary education by 4% in 1996 and 4.5% in 2001; they have increased the supply of men in the labor force with secondary education or some college by 4.9% in 1996 and 4.7% in 2001; however, they have increased the supply of men in the labor force with a completed university education by a much greater percentage, in particular by 12.2% in 1996 and 16.3% in 2001. These numbers show that migrants are on average more skilled than natives in both 1996 and 2001. Thus, if the impact of individual skill on attitudes was driven by the labor market channel, we would expect it to be negative in both years, since

[11] In our analysis, interaction variables appear in Tables 3, 6 and 9 but, to be consistent, we report coefficient estimates for all Tables.

it is the more educated natives who should feel the labor-market competition of immigrants the most. As mentioned above, this is not what we find, which suggests that the labor-market channel does not play a role in shaping attitudes. What might explain the positive impact of individual skill on pro-migration public opinion are non-economic determinants. For example, more educated individuals might be more in favor of migration because they are better-informed about the benefits linked to migration and also because they are more cosmopolitan and, possibly, more politically correct (see for instance Hainmueller and Hiscox 2007 and Hainmueller and Hiscox 2010).

However, there are two caveats in the interpretation that the labor market channel is not at work. First, while we have evidence that the South African Census captures a portion of illegal migrants (see Facchini, Mayda, and Mendola 2011), it is likely that many of them are not captured in the Census dataset. Since illegal migrants tend to be unskilled, our measure of the skill composition of migrants relative to natives might be upward-biased. Second, labor markets might be segmented within the country, in which case we would need to consider the relative skill composition of migrants in the geographical unit which defines the labor market. This is what we investigate next. In Tables 3 and 6, respectively for 1996 and 2001, we introduce in the regression both the direct effect of skill – measured using education in regression (2) and the occupation-based measure of individual skill in regression (3) – and the interaction of skill with the relative skill composition of natives to migrants in the province where the respondent lives. If the labor market channel is at work, we should find a negative impact of the direct effect of skill and a positive impact of the interacted effect of skill. In other words, we should find that more skilled natives are less pro-migration if migrants are skilled, while they are more pro-migration if migrants are unskilled. This is not what our results suggest. In particular, the province-specific impact of skill is not affected by the relative skill composition of natives to migrants in each province, i.e. the interaction coefficient is not significant. In all provinces, no matter how skilled migrants are, the impact of individual skill is positive. We confirm the robustness of these results on the labor market by estimating a regression which includes the number of immigrants relative to natives in the education category of the respondent (results not shown). In one specification we consider the number of immigrants relative to natives in the province in which the respondents lives. In another, we consider the number of immigrants relative to natives at the national level. In both specifications, we find that the ratio has an insignificant impact. Thus these results

confirm the interpretation based on non-economic determinants. As for 2007, note that the impact of individual skill is no longer statistically significant (see Table 9). As an additional robustness check for the labor market channel, in columns (4) and (5) of Tables 1, 4 and 7 we include direct controls for individual–level occupation, taking advantage of a breakdown in ten different broad groups. With the exception of 1996, when we find that non–manual office workers and highly qualified professionals are more likely to support immigration than the omitted group (agricultural workers), we do not find any statistically significant pattern. This result highlights once again the limited explanatory power of the labor market channel.

Next, we turn to consider the impact of a number of socio-demographic factors (Tables 1-9). A few of them appear to be important in shaping attitudes towards immigrants. In particular, in 1996, political affiliation with the right has a negative and significant impact on pro-migration attitudes. The coefficient on the same variable becomes insignificant in 2001 and, in 2007, surprisingly, it turns positive and significant. This pattern is confirmed when we look at the effect of political party support. In 1996, supporters of the conservative party appear to be more opposed to migration than members of the African National Congress (ANC), the omitted category in our regressions. In 2001, with a more fragmented party structure, supporters of the Inkhata Freedom Party and those of the United Democratic Movement appear to be more in favor of migration than ANC supporters. Finally, in 2007 more anti–immigrant sentiments characterize supporters of the Democratic Alliance, of the Freedom Front and of the Independent Democrats compared to supporters of the ANC.

Using the ethnic group variable based on language spoken at home, we find that in 1996 and in 2007 South Africans speaking English favor migration more than those speaking Afrikaans (we find no significant results in 2001). As an alternative measure we have also used a self reported measure of ethnicity, which involves four possible groups: "white", "black", "indian" and "coloured". Using "white" as the omitted category, the findings of column (2) in Tables 1, 4 and 7 suggest that attitudes towards immigrants do not vary too much across these broadly defined aggregations. Only in 2007 respondents belonging to the "indian" and "coloured" group appear to be significantly more likely to support immigration than white South Africans.

In several studies on individual attitudes religious affiliation has been found to play a role in shaping attitudes towards immigrants (see for instance Facchini and Mayda 2008 and Guiso, Sapienza, and Zingales 2003). For this reason, in column (4) and (5) of tables 2, 5

and 8 we have included also a control for the religious faith of the respondent. Very limited evidence can be found of a systematic effect of a specific religious confession. For example, in 2001 and 2007 Jewish respondents appear to be more pro–migration than protestants (the omitted category), but the opposite is true in 1996.

Finally, in Tables 3, 6 and 9, we include province level fixed effects, to account for the impact of unobserved, additive, province-specific effects. The results on the impact of individual skill are robust: this impact remains positive and significant in 1996 and 2001 and insignificant in 2007. The coefficients on the province dummy variables are themselves interesting. We find that, controlling for a number of individual-level controls, in 1996 the North-West province is more opposed to migration than the Gauteng province (omitted dummy), while the Kwazulu/Natal province is more in favor of migration. These patterns disappear in 2001 and 2007.

7 Non economic determinants: Some aggregate evidence

In order to shed further light on the effects of non-economic determinants of individual preferences towards immigration, in this section we present some anecdotal evidence on the relationship between socio-cultural characteristics at the level of the province and the average public opinion on migration in South Africa. For this purpose, we focus on some key observable attributes of each South African province, such as (i) the level of cultural dissimilarity between immigrants and natives with respect to race, language and religion; (ii) the level of exposure to the mass-media and (iii) the provincial-level crime rates. The rationale behind such an approach is that, as discussed throughout the paper, racial or cultural prejudice, the degree to which immigrants and natives are culturally different, the perceived link between immigration and crime, and the exposure to mass media outlets with different ideological positions, are likely to play an important role in shaping public opinion.

Ideally, testing the effect of such socio-cultural features on individual preferences within a country would require either individual-level information on all attributes or aggregate data on a large enough set of administrative units. Unfortunately though, shortage of available micro-data on these issues in South Africa allows us to present only scatter plots of the

provincial-level correlations of interest. The latter though add up to suggestive evidence of the role of non-economic drivers in shaping individual attitudes towards immigration in the country. Figures 6–7 show the correlation between the race dissimilarity index – which measures the dissimilarity between natives and immigrants in the Census racial affiliation (i.e. White, Black-African, Asian-Coloured) – and the average pro-immigration attitudes across the nine South African provinces between 1996 and 2001.[12]

Simple correlations are always positive suggesting that, the more ethnically diverse are immigrants with respect to natives in a province, the more favorable to immigration are on average natives in that province. This result may reflect a positive effect of (ethnic) cultural diversity on immigration attitudes, or may simply mirror a spurious correlation, due in particular to reverse causality. This is so since immigrants, especially those who are racially different from the local population, are likely to locate themselves in provinces where people are more favorable to immigration. Similarly, more 'cosmopolitan' natives may decide to live where there is a higher degree of diversity, driven by immigration. Thus, the positive impact of provincial dissimilarity in terms of race on pro-immigration attitudes may suffer from an upward (positive) bias.

We also use additional measures of dissimilarity at the level of the province by calculating the same index as above with respect to the language spoken at home (i.e. Afrikaans, English, IsiNdebele, IsiXhosa, IsiZulu etc.[13]) and the religious affiliation (i.e. no religion, Buddhist, Hindu, Jewish, Muslim, Christian, Other). Unfortunately the latter variables are not available in the 2007 South African Community Survey. Interestingly, while in 1996 and 2001 the correlation between language dissimilarity and pro-immigration preferences is positive (Figures 8 and 9), the dissimilarity index in terms of religion is always negatively associated with pro-immigration attitudes (Figures 10 and 11). As for the racial dissimilarity, the positive correlation between language dissimilarity and pro-immigration attitudes is probably driven by reverse causality. Instead, still due to reverse causality, the negative correlation between religious dissimilarity and immigration attitudes is likely to represent

[12]The variable Race Dissimilarity is an average across provinces of the Census dissimilarity index calculated as $\frac{1}{2}\sum_x 1/2|P_x(N) - P_x(M)|$ where N and M stand for native and immigrant population and P_x represents the share of population of ethnicity x. We construct similar indicators replacing ethnicity with other cultural traits such as language and religion.

[13]First languages spoken at home as reported in the Census are: Afrikaans, English, IsiNdebele, IsiXhosa, IsiZulu, Sepedi, Sesotho, Setswana, Siswati, Tshivenda, Xitsonga, Dutch, German, Greek, Italian, Portuguese, French, Tamil, Hindi, Telugu, Gujarati, Urdu, Chinese, Swahili, Shona, Arabic, Other.

a lower-bound estimate of the impact of religious differences on pro-migration preferences. The negative impact of religious dissimilarity on South African public opinion is consistent with early cross-country empirical evidence provided by Mayda (2006). The latter paper shows that, across several destination countries, individuals with a taste for a multicultural society are negatively affected in their immigration opinion by bigger dissimilarities between natives and immigrants in religious terms.

To delve further into the role played by cultural traits and values, we provide additional suggestive evidence on the role of mass media as well as crime exposure in shaping the average public opinion on migration in South African provinces. As we have already discussed, many observers have pointed out that the mass media are likely to be very influential in the formation of individual preference towards immigration (Facchini, Mayda, and Puglisi 2009) To assess their role, we have constructed a measure of media exposure based on the number of times the word "migration" or "xenophobia" was mentioned in 2007 in articles published by South African newspapers available in the Factiva database.[14] Figure 12 and 3 show that on average media exposure is positively related to public opinion in favor of immigration across South African provinces in 2007. This result could point to an educative role of the media with respect to immigration attitudes, even though we cannot control for the specific media's (positive or negative) narrative about immigration in South Africa, nor for other (un)observable confounding factors. In particular we cannot control for self-selection of individuals into reading newspapers, which might explain the positive correlation we observe.

Many observers have also suggested that one of the main reasons people are against immigration is because they perceive a direct link between immigration and crime rates. This may be a salient component of South African preferences towards immigration since crime is a major issue in the country. South Africa has one of the highest rates of murders, assaults, rapes, and other crimes world wide (United Nations 2011) Though, simple correlations reported in Figures 14 and 15 between crime rates and immigration attitudes do not point to a significant relationship. Overall, as already mentioned above, a thorough analysis of the link between non-economic drivers of individual attitudes towards immigration – re-

[14]We have used information from the following English language South African newspapers: *Cape Argus, Cape Times, Daily News, Independent on Saturday, Mercury, The Post, Pretoria News, SAPA (South Africa Press Association), The Star*. We have also used information from the following Afrikaan language South African newspapers: *Die Burger, Beeld, Volksblad*.

lated to cultural, religious or environmental traits – would require more-disaggregated and better-quality data.

8 Conclusions

In this paper we have empirically investigated the determinants of individual attitudes towards immigration in South Africa. We have used three rounds of the World Value Survey to show first of all that immigration is very widely opposed, and that opposition against foreigners has increased in the post–Apartheid period, notwithstanding the major shift in the policy stance brought about by the Immigration Act of 2002 and its amendment of 2004. Secondly, we have analyzed the role played by both economic and noneconomic drivers in shaping individual preferences.

We have found that economic characteristics that work through the labor market do not play a significant role. This is an important finding, which allows us to better interpret existing results in the literature. In particular, in a related paper on the effects of immigration on natives' labor market outcomes (Facchini, Mayda and Mendola 2011), we find large negative effects of immigration on natives' employment rates. The fact that economic labor-market factors do not appear to shape individual preferences towards immigration seems to suggest that the above finding cannot be interpreted as the result of the displacement of natives by foreign workers. A much more likely interpretation is that immigrants might just be "filling" existing gaps in the South African labor market brought about by emigration – where especially highly skilled workers are in very scarce supply.

Non–economic factors on the other hand appear to be important determinants of individual level preferences. In particular, noneconomic drivers that work through ideology and ethnic cleavages do play a role, even if it is not straightforward to identify a clear pattern over time. Our provincial level analysis shows similar patterns, but better data would be required to assess the causal role of non–economic factors on individual level preferences.

References

Bauer, T. K., M. Lofstrom, and K. F. Zimmermann (2000). Immigration policy, assimilation of immigrants and natives' sentiments towards immigrants: Evidence from 12

OECD countries. IZA Discussion Paper No. 187.

Boeri, T., G. Hanson, and B. McCormick (2002). *Immigration policy and the welfare system*. Oxford OX2, 6DP: Oxford University Press.

Borjas, G. J. (1995). The economic benefits from immigration. *Journal of Economic Perspectives 9*(2), 3–22.

Brücker, H., G. S. Epstein, B. McCormick, G. Saint-Paul, A. Venturini, and K. Zimmermann (2002). Managing migration in the European welfare state. In T. Boeri, G. Hanson, and B. McCormick (Eds.), *Immigration Policy and the Welfare System*. Oxford: Oxford Economic Press.

Card, D., C. Dustmann, and I. Preston (2009). Immigration, wages and compositional amenities. NBER WP 15521.

Chiswick, B. R. and T. J. Hatton (2002). International migration and the integration of labour markets. In *Globalization in Historical Perspective.* Chicago: The University of Chicago Press.

Citrin, J., D. Green, C. Muste, and C. Wong (1997). Public opinion toward immigration reform: The role of economic motivation. *The Journal of Politics 59*(3), 858–881.

Crush, J. (2000). Migrations past: An historical overview of cross–border movement in Southern Africa. In D. McDonald (Ed.), *On borders: Perspectives on international migration in southern Africa*, pp. 12–24. New York: St. Martin's Press.

Crush, J. (2008). South Africa: Policy in the face of xenophobia. Available at http://www.migrationinformation.org.

Crush, J., D. A. McDonald, V. Williams, K. Lefko-Everett, D. Dorey, D. Taylor, and R. La Sablonniere (2008). The perfect storm: The realities of xenophobia in contemporary south africa. Migration Policy Paper 50.

Dustmann, C. and I. Preston (2007). Racial and economic factors in attitudes to immigration. *The B.E. Journal of Economic Analysis and Policy 7*. Article 62.

Espenshade, T. J. and K. Hempstead (1996). Contemporary American attitudes toward U.S. immigration. *International Migration Review 30*, 535–570.

Everatt, D. (2011). Xenophobia, civil society and south africa. *Poltikon: South African Journal of Political Studies 30*, 1–5.

Facchini, G. and A. M. Mayda (2008). From individual attitudes towards migrants to migration policy outcomes: Theory and evidence. *Economic Policy 56*, 651–713.

Facchini, G. and A. M. Mayda (2009). Individual attitudes towards immigrants: Welfare state determinants across countries. *Review of Economics and Statistics 91*, 295–314.

Facchini, G., A. M. Mayda, and M. Mendola (2011). South–south migration and the labor market: Evidence from South Africa. mimeo.

Facchini, G., A. M. Mayda, and P. Mishra (2011). Do interest groups affect U.S. immigration policy? *Journal of International Economics 85*, 114–128.

Facchini, G., A. M. Mayda, and R. Puglisi (2009). Illegal immigration and media exposure: Evidence on individual attitudes. CEPR DP 7593.

Facchini, G. and G. Willmann (2005). The political economy of international factor mobility. *Journal of International Economics 67*, 201–219.

Gelb, S. (2008). Behind xenophobia in south africa. poverty or inequality? In S. Hassim, T.Kupe, and E. Worby (Eds.), *Go Home or Die Here: Violence, Xenophobia and the Reinvention of Differences in South Africa*, pp. 79–92. Johannesburg: Wits University Press.

Guiso, L., P. Sapienza, and L. Zingales (2003). People's opium: Religion and economic attitudes. *Journal of Monetary Economics 50*, 225–282.

Hainmueller, J. and M. Hiscox (2007). Educated preferences: Explaining individual attitudes toward immigration in europe. *International Organization 61*, 399–442.

Hainmueller, J. and M. J. Hiscox (2010). Attitudes towards highly shilled and low skilled immigration: Evidence from a survey experiment. *American Political Science Review 104*, 1–24.

Hanson, G. H., K. Scheve, and M. Slaughter (2007). Public finance and individual preferences over globalization strategies. *Economics and Politics 19*, 1–33.

Kessler (2001). Immigration, economic insecurity, and the "ambivalent" American public. The Center for Comparative Immigration Studies Working Paper No. 41.

Mayda, A. M. (2006). Who is against immigration? A cross-country investigation of individual attitudes toward immigrants. *Review of Economics and Statistics 88*, 510–530.

Mayda, A. M. (2008). Why are people more pro-trade than pro-migration? *Economics Letters 101*, 160–163.

Misago, J. P., L. Landau, and T. Monson (2009). Towards tolerance, law and dignity: Adressing violence against foreign nationals in south africa. mimeo.

Neocosmos, M. (2008). The politics of fear and the fear of politics: Reflections on xenophobic violence in south africa. *Journal of Asian and African Studies 43*, 586–594.

Nieftagodien, N. (2008). Xenophobia in alexandra. In S. Hassim, T.Kupe, and E. Worby (Eds.), *Go Home or Die Here: Violence, Xenophobia and the Reinvention of Differences in South Africa*, pp. 65–78. Johannesburg: Wits University Press.

OECD (2008). *South Africa: Economic Assessment*. Paris: OECD.

Pillay, D. (2008). Relative deprivation, social instability and cultures of entitlements. In S. Hassim, T.Kupe, and E. Worby (Eds.), *Go Home or Die Here: Violence, Xenophobia and the Reinvention of Differences in South Africa*, pp. 93–104. Johannesburg: Wits University Press.

Rodrik, D. (1995). Political economy of trade policy. In G. Grossman and K. Rogoff (Eds.), *Handbook of International Economics, Vol.3*, Chapter 28, pp. 1457–1494. The Netherlands: North-Holland Elsevier Science.

Scheve, K. F. and M. J. Slaughter (2001). Labor market competition and individual preferences over immigration policy. *Review of Economics and Statistics 83*, 133–145.

United Nations (2011). United Nations Surveys on Crime Trends and the Operations of Criminal Justice Systems (CTS). *available at* http://www.unodc.org/unodc/en/data-and-analysis/United-Nations-Surveys-on-Crime-Trends-and-the-Operations-of-Criminal-Justice-Systems.html.

Figure 1: Determination of immigration policy

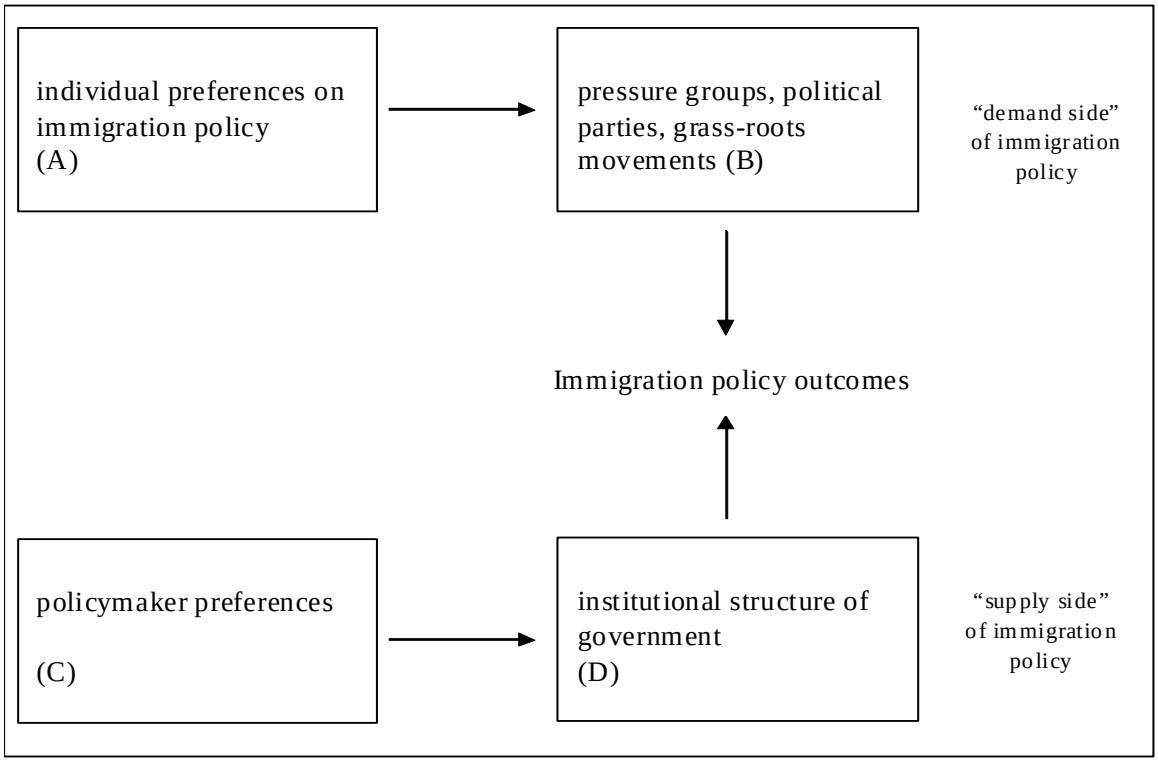


Table 1. Determinants of individual attitudes towards migrants in South Africa (WVS 1996)

Probit	1	2	3	4	5
Dependent variable	**Pro Immig Dummy (WVS)**				
age	-0.0052	-0.0048	-0.0065	-0.0037	-0.0007
	0.0048	0.0048	0.0052	0.0054	0.0055
education (educational attainment)	0.121	0.0889			0.0869
	0.0387**	0.0400*			0.0477+
upper social class	-0.0015	-0.0017	-0.0283	-0.003	-0.0278
	0.0565	0.0573	0.0599	0.0614	0.0635
political affiliation with the right	-0.0364	-0.0506	-0.0547	-0.0556	-0.0571
	0.0209+	0.0205*	0.0227*	0.0229*	0.0229*
english (language spoken at home)	0.5922		0.5409	0.497	0.4727
	0.1422**		0.1445**	0.1465**	0.1463**
zulu (language spoken at home)	0.3685		0.2117	0.1549	0.233
	0.1772*		0.2041	0.2073	0.2119
xhosa (language spoken at home)	0.4538		0.1957	0.085	0.1737
	0.1826*		0.19	0.1925	0.2
shoto (language spoken at home)	-0.1888		-0.322	-0.4056	-0.3644
	0.2052		0.2353	0.2403+	0.2426
other (language spoken at home)	-0.1968		-0.26	-0.3874	-0.3374
	0.1759		0.1866	0.1895*	0.1939+
black (ethnicgroup)		-0.2627			
		0.164			
indian (ethnicgroup)		-0.0522			
		0.2057			
coloured (ethnicgroup)		-0.2559			
		0.1695			
(occupation-based) individual skill			0.0896		
			0.0232**		
farmer (occupation)				-0.4667	-0.6497
				0.5569	0.5507
unskilled manual (occupation)				0.4247	0.3662
				0.2485+	0.2506
semi-skilled manual (occupation)				0.311	0.2575
				0.2715	0.274
skilled manual (occupation)				0.6498	0.5673
				0.2640*	0.2712*
foreman, supervisor (occupation)				0.4455	0.346
				0.3029	0.3088
non-manual office (occupation)				1.3564	1.2348
				0.3418**	0.3491**
supervisor non manual (occupation)				0.378	0.2113
				0.2982	0.3113
high qualified professional (occupation)				0.7594	0.4952
				0.2867**	0.3183
manager<10 (occupation)				0.8058	0.6306
				0.3272*	0.3408+
manager 10+ (occupation)				0.8219	0.6408
				0.3154**	0.3306+
constant	-0.7842	-0.2335	-0.4841	-0.6123	-0.9488
	0.3249*	0.3736	0.3154	0.3507+	0.3951*
Observations	867	867	739	739	739
Pseudo R-squared	0.07	0.03	0.08	0.1	0.11

Robust standard errors in parentheses. ** significant at 1%; * significant at 5%; + significant at 10*. The sample excludes all individuals who were not born in South Africa. *education* (the highest education level attained by the individual) is coded as follows: 1=none; 2=less than primary; 3=primary; 4=less than secondary university preparatory; 5=secondary university preparatory; 6=some university education; 7=university.

upper social class is coded as follows: 1=lower class, 2=working class; 3=lower middle class; 4=upper middle class; 5=upper class. *political affiliation with the right* is coded as follows: in order, from 1 (left-wing) to 10 (right-wing). individual skill is coded as follows: 1=agricultural worker; 2=farmer; 3=unskilled manual; 4=semi-skilled manual; 5=skilled manual; 6=foreman, supervisor; 7=non manual-office; 8=supervisor non manual; 9=high qualified professional; 10=manager of establishment with less than 10 employees; 11=manager of establishment with 10 or more employees.

Table 2. Determinants of individual attitudes towards migrants in South Africa (WVS 1996)

Probit	1	2	3	4
Dependent variable	**Pro Immig Dummy (WVS)**			
age	-0.0054	-0.0027	-0.0011	-0.0005
	0.005	0.0052	0.006	0.0063
education (educational attainment)	0.1166	0.141	0.1445	0.1361
	0.0418**	0.0452**	0.0514**	0.0529*
upper social class	0.0345	-0.0483	-0.0229	-0.0257
	0.0598	0.0642	0.0726	0.076
political affiliation with the right		-0.0264	-0.0464	-0.0565
		0.0226	0.0254+	0.0263*
english (language spoken at home)	0.3003	0.5009	0.5789	0.4817
	0.1589+	0.1513**	0.1927**	0.1963*
zulu (language spoken at home)	0.2846	0.3088	0.4848	0.524
	0.2196	0.1983	0.2371*	0.2387*
xhosa (language spoken at home)	0.3606	0.3371	0.5385	0.5054
	0.2211	0.1970+	0.2280*	0.2339*
shoto (language spoken at home)	-0.351	-0.3851	-0.2765	-0.1891
	0.2403	0.2256+	0.2686	0.2741
other (language spoken at home)	-0.2615	-0.4762	-0.2964	-0.3719
	0.2289	0.2002*	0.2338	0.2444
azanian people´s organisation (party)	1			
	0.8499			
freedom front (party)	-0.5437			
	0.3229+			
inkatha freedom party (party)	0.0501			
	0.3241			
pan africanist communist party (party)	0.022			
	0.4079			
south african communist party (party)	-0.0402			
	0.6356			
conservative party (party)	-0.7976			
	0.3858*			
democratic party (party)	0.1582			
	0.2771			
national party (party)	0.0796			
	0.1793			
income		-0.0142	-0.0159	0.0069
		0.0285	0.0325	0.0345
roman catholic (religion)			0.0487	0.0574
			0.1887	0.1961
orthodox (religion)			-0.4529	-0.4516
			0.4875	0.4903
muslim (religion)			-0.2325	-0.2356
			0.4786	0.4827
hindu (religion)			-0.1907	-0.0871
			0.2796	0.2927
zionist (religion)			-0.67	-0.6873
			0.2766*	0.2813*
tac (religion)			-0.3008	-0.2327
			0.401	0.4101
national pride (1)				0.1828
				0.1634
national pride (2)				0.1179
				0.1851
Observations	867	753	610	574
Pseudo R-squared	0.07	0.08	0.11	0.11

Robust standard errors in parentheses. ** significant at 1%; * significant at 5%; + significant at 10*. The sample excludes all individuals who were not born in South Africa. *income* is coded as follows: from 1=lowest decile in the country to 10=highest decile in the country. *national pride (1)* is coded as follows:1=not at all proud to be South African; 4=very proud to be South African. *national pride (2)* is coded as follows: 1=if willing to fight in a war for South Africa; 0=if not willing. See also footnote to Table 1.

Table 3. Determinants of individual attitudes towards migrants in South Africa (WVS 1996)

Probit with region dummy variables	1	2	3
Dependent variable	**Pro Immig Dummy (WVS)**		
age	-0.0033	-0.0042	-0.0054
	0.0049	0.0049	0.0054
political affiliation with the right	-0.0356	-0.0393	-0.055
	0.0211+	0.0209+	0.0222*
upper social class	-0.0205		
	0.0573		
english (language spoken at home)	0.3628	0.3461	0.3232
	0.1651*	0.1700*	0.1704+
zulu (language spoken at home)	0.0927	0.0989	0.1305
	0.2029	0.2007	0.2195
xhosa (language spoken at home)	0.2376	0.242	0.118
	0.1925	0.1884	0.1953
shoto (language spoken at home)	0.1008	0.077	-0.0327
	0.2253	0.2236	0.2525
other (language spoken at home)	0.1704	0.1702	0.1149
	0.208	0.2085	0.2186
education (educational attainment)	0.1368	0.1442	
	0.0400**	0.0604*	
education*relative skill ratio		-0.0179	
		0.0786	
(occupation-based) individual skill			0.1127
			0.0390**
individual skill*relative skill ratio			-0.0177
			0.0499
town size	0.0049	-0.004	0.0345
	0.0415	0.0412	0.0461
northern province (province)	-0.4295	-0.4353	-0.1976
	0.2961	0.3063	0.3201
mpumalanga (province)	0.272	0.2307	0.3793
	0.2697	0.2708	0.2941
north west (province)	-0.7219	-0.7563	-0.5586
	0.2981*	0.3000*	0.3212+
kwazulu/natal (province)	0.7012	0.6454	0.4669
	0.1835**	0.3174*	0.3141
free state (province)	-0.2515	-0.3069	-0.1726
	0.26	0.2538	0.273
eastern cape (province)	0.409	0.3478	0.2598
	0.2076*	0.3404	0.3293
western cape (province)	0.2815	0.2146	0.3023
	0.1606+	0.3591	0.3191
northern cape (province)	-0.2476	-0.3256	-0.3336
	0.3357	0.3989	0.425
Constant	-1.0025	-0.9095	-0.8953
	0.3821**	0.4049*	0.3891*
Observations	867	883	751
Pseudo R-squared	0.1	0.11	0.11

Robust standard errors in parentheses. ** significant at 1%; * significant at 5%; + significant at 10*.

The sample excludes all individuals who were not born in South Africa. *town size* is coded as follows: in order, from 1=under 5,000 to 5=500,000 and more. The *relative skill ratio* is the log of one plus the relative skill composition (RSC). The RSC is the ratio of skilled to unskilled labor in the native relative to the immigrant populations. For both natives and immigrants, the ratio of skilled to unskilled labor is measured as the ratio of the number of individuals with secondary completed and university education to the number of individuals with less than primary and primary completed. In order to get the semi-elasticity with respect to the RSC, one needs to multiply coefficients' estimates of the relative skill ratio by RSC/(1+RSC). The RSC uses data on the stock of immigrants and natives in South Africa in 1996.

Table 4. Determinants of individual attitudes towards migrants in South Africa (WVS 2001)

Probit	1	2	3	4	5
Dependent variable	**Pro Immig Dummy (WVS)**				
age	0.0002	-0.0033	-0.0022	-0.0056	-0.0035
	0.0085	0.0088	0.009	0.0085	0.0086
education (educational attainment)	0.1951	0.1671			0.1023
	0.0863*	0.0836*			0.0826
upper social class	-0.0215	-0.0216	-0.0214	0.074	0.059
	0.0934	0.0997	0.1034	0.0958	0.0959
political affiliation with the right	0.0268	0.0136	0.0031	0.0138	0.0179
	0.0367	0.0393	0.0389	0.0417	0.0419
english (language spoken at home)	0.1019		0.0953	0.2752	0.269
	0.2921		0.2854	0.2393	0.2367
zulu (language spoken at home)	-0.0833		-0.066	-0.0617	-0.0537
	0.3393		0.3694	0.3191	0.3159
xhosa (language spoken at home)	-0.07		-0.0266	-0.0443	-0.026
	0.3654		0.3891	0.3404	0.3421
shoto (language spoken at home)	-0.1893		-0.0574	0.058	0.0869
	0.3617		0.3826	0.362	0.3599
other (language spoken at home)	-0.7074		-0.5969	-0.3956	-0.4058
	0.3496*		0.3607+	0.3033	0.3
black (ethnicgroup)		-0.4737			
		0.3177			
indian (ethnicgroup)		-0.4431			
		0.3526			
coloured (ethnicgroup)		-0.3676			
		0.3253			
(occupation-based) individual skill			0.124		
			0.0454**		
farmer (occupation)				-0.2485	-0.4542
				0.6705	0.7063
unskilled manual (occupation)				-0.0709	-0.1362
				0.4	0.4275
semi-skilled manual (occupation)				-0.5263	-0.6429
				0.4088	0.4475
skilled manual (occupation)				-0.5849	-0.7337
				0.4229	0.4647
foreman, supervisor (occupation)				0.2121	0.0506
				0.5662	0.5962
non-manual office (occupation)				-0.0535	-0.239
				0.5361	0.5738
supervisor non manual (occupation)				1.0235	0.8352
				0.5698+	0.5999
high qualified professional (occupation)				0.4414	0.1491
				0.4878	0.5463
manager<10 (occupation)				0.4042	0.2056
				0.4736	0.5136
manager 10+ (occupation)				0.0486	-0.171
				0.566	0.6155
constant	-1.0978	-0.5508	-0.7722	-0.3009	-0.6645
	0.6196+	0.704	0.5807	0.6515	0.7238
Observations	955	955	833	833	833
Pseudo R-squared	0.05	0.04	0.07	0.13	0.13

Robust standard errors in parentheses. ** significant at 1%; * significant at 5%; + significant at 10*. The sample excludes all individuals who were not born in South Africa. *education* (the highest education level attained by the individual) is coded as follows: 1=none; 2=less than primary; 3=primary; 4=less than secondary university preparatory; 5=secondary university preparatory; 6=some university education; 7=university.

upper social class is coded as follows: 1=lower class, 2=working class; 3=lower middle class; 4=upper middle class; 5=upper class. *political affiliation with the right* is coded as follows: in order, from 1 (left-wing) to 10 (right-wing). individual skill is coded as follows: 1=agricultural worker; 2=farmer; 3=unskilled manual; 4=semi-skilled manual; 5=skilled manual; 6=foreman, supervisor; 7=non manual-office; 8=supervisor non manual; 9=high qualified professional; 10=manager of establishment with less than 10 employees; 11=manager of establishment with 10 or more employees.

Table 5. Determinants of individual attitudes towards migrants in South Africa (WVS 2001)

Probit	1	2	3	4
Dependent variable	**Pro Immig Dummy (WVS)**			
age	0.0039	0.0022	-0.0099	-0.0065
	0.009	0.0091	0.0087	0.0092
education (educational attainment)	0.1942	0.1624	0.1525	0.2145
	0.0845*	0.0955+	0.1045	0.1099+
upper social class	-0.0327	-0.0542	-0.0068	0.0579
	0.0986	0.1075	0.1268	0.1251
political affiliation with the right		0.0358	0.0508	0.0585
		0.0393	0.0451	0.0459
english (language spoken at home)	0.0997	0.1284	0.187	0.0587
	0.3316	0.2992	0.3418	0.3032
zulu (language spoken at home)	0.3379	0.0075	0.1198	0.3652
	0.3617	0.3549	0.4036	0.389
xhosa (language spoken at home)	0.4262	-0.203	0.0116	0.0285
	0.3817	0.3983	0.4117	0.3877
shoto (language spoken at home)	0.1995	-0.2958	-0.2162	0.0293
	0.3961	0.3661	0.4075	0.4152
other (language spoken at home)	-0.3924	-0.7417	-0.2972	-0.139
	0.3572	0.3644*	0.4214	0.3944
african muslim party (party)	-0.0909			
	0.5066			
african christian democratic (party)	0.6389			
	0.507			
afrikaner eenheidsbeweging (party)	0.0997			
	0.5422			
azanian people´s organisation (party)	0.9833			
	0.953			
democratic alliance (party)	0.5332			
	0.3247			
freedom front (party)	0.2589			
	0.4631			
inkatha freedom party (party)	1.1025			
	0.4270**			
minority front (party)	-0.549			
	0.4389			
pan africanist communist party (party)	0.052			
	0.6706			
united christian democratic (party)	0.1026			
	0.449			
united democratic movement (party)	1.0655			
	0.4851*			
income		0.0268	0.0624	-0.0096
		0.0677	0.073	0.0726
roman catholic (religion)			0.0439	0.3454
			0.3074	0.322
orthodox (religion)			0.5118	0.4191
			1.0518	0.9815
jew (religion)				1.769
				0.7313*
muslim (religion)			0.2385	0.4466
			0.4038	0.4278
hindu (religion)			-0.1194	0.1949
			0.4388	0.4764
evangelical (religion)			-0.1944	-0.2198
			0.3431	0.3618
independent african church (religion)			-0.2101	-0.3682
			0.3472	0.3551
national pride (1)				-0.3767
				0.1684*
national pride (2)				-0.0921
				0.2785
Observations	895	846	672	609
Pseudo R-squared	0.09	0.06	0.08	0.12

Robust standard errors in parentheses. ** significant at 1%; * significant at 5%; + significant at 10*. For defintions see footnotes to Table 2 and 4.

Table 6. Determinants of individual attitudes towards migrants in South Africa (WVS 2001)

Probit with region dummy variables	1	2	3
Dependent variable	**Pro Immig Dummy**		
age	-0.0017	0.0015	-0.003
	0.0082	0.0077	0.0085
political affiliation with the right	0.0139	0.0085	-0.0099
	0.0352	0.034	0.0374
upper social class	-0.0482		
	0.0928		
english (language spoken at home)	0.0101	-0.0319	0.0722
	0.287	0.296	0.2842
zulu (language spoken at home)	-0.2431	-0.2352	-0.1424
	0.3949	0.3929	0.4054
xhosa (language spoken at home)	-0.3459	-0.297	-0.2367
	0.3809	0.3746	0.3696
shoto (language spoken at home)	-0.2312	-0.259	-0.1292
	0.4094	0.4069	0.4179
other (language spoken at home)	-0.7524	-0.777	-0.5385
	0.4103+	0.4034+	0.4112
education (educational attainment)	0.1712	0.2318	
	0.0864*	0.1340+	
education*relative skill ratio		-0.1331	
		0.1955	
(occupation-based) individual skill			0.0729
			0.0672
individual skill*relative skill ratio			0.0561
			0.1009
town size	0.1377	0.1414	0.0892
	0.0646*	0.0634*	0.068
northern province (province)	-0.0831	0.1047	-0.0332
	0.4858	0.4885	0.5178
mpumalanga (province)	0.1466	0.2344	-0.2093
	0.3787	0.3965	0.3754
north west (province)	0.1216	0.1086	-0.2014
	0.429	0.4191	0.4151
kwazulu/natal (province)	0.1588	-0.2093	0.1996
	0.2862	0.6361	0.511
free state (province)	0.151	0.1091	0.0811
	0.4838	0.4805	0.5473
eastern cape (province)	0.6584	0.2812	0.7767
	0.3526+	0.7062	0.5807
western cape (province)	-0.2627	-0.7	-0.0554
	0.3109	0.7204	0.5742
northern cape (province)	-0.3589	-0.5367	-0.1993
	0.5774	0.6889	0.6298
Constant	-1.3247	-1.27	-1.0305
	0.7069+	0.7578+	0.6837
Observations	955	990	852
Pseudo R-squared	0.08	0.08	0.09

Robust standard errors in parentheses. ** significant at 1%; * significant at 5%; + significant at 10*.

The sample excludes all individuals who were not born in South Africa. *town size* is coded as follows: in order, from 1=under 5,000 to 5=500,000 and more. The *relative skill ratio* is the log of one plus the relative skill composition (RSC). The RSC is the ratio of skilled to unskilled labor in the native relative to the immigrant populations. For both natives and immigrants, the ratio of skilled to unskilled labor is measured as the ratio of the number of individuals with secondary completed and university education to the number of individuals with less than primary and primary completed. In order to get the semi-elasticity with respect to the RSC, one needs to multiply coefficients' estimates of the relative skill ratio by RSC/(1+RSC). The RSC uses data on the stock of immigrants and natives in South Africa in 2001.

Table 7. Determinants of individual attitudes towards migrants in South Africa (WVS 2007)

Probit	1	2	3	4	5
Dependent variable	**Pro Immig Dummy (WVS)**				
age	0.0004	0.0012	-0.0072	-0.0083	-0.01
	0.0056	0.0057	0.0065	0.0066	0.0072
education (educational attainment)	-0.0406	-0.014			-0.0815
	0.0612	0.0629			0.0795
upper social class	0.0157	0.0637	-0.0619	-0.0595	-0.0363
	0.0594	0.0599	0.0669	0.0684	0.0694
political affiliation with the right	0.051	0.0541	0.0805	0.0779	0.0759
	0.0283+	0.0279+	0.0334*	0.0337*	0.0339*
english (language spoken at home)	0.4874		0.3852	0.4012	0.4053
	0.2136*		0.2282+	0.2280+	0.2275+
zulu (language spoken at home)	0.0774		0.1924	0.1732	0.1569
	0.2043		0.2253	0.2277	0.2304
xhosa (language spoken at home)	-0.3959		-0.3222	-0.3678	-0.3882
	0.2573		0.2871	0.297	0.2991
shoto (language spoken at home)	0.17		0.1584	0.154	0.1472
	0.217		0.2441	0.2464	0.2455
other (language spoken at home)	0.0927		0.1722	0.1859	0.1858
	0.2274		0.2685	0.2744	0.2703
black (ethnicgroup)		0.1952			
		0.1853			
indian (ethnicgroup)		0.6103			
		0.3058*			
coloured (ethnicgroup)		0.498			
		0.2472*			
(occupation-based) individual skill			0.0316		
			0.0314		
unskilled manual (occupation)				0.4108	0.4232
				0.3794	0.3674
semi-skilled manual (occupation)				0.2095	0.2985
				0.376	0.3689
skilled manual (occupation)				0.377	0.4882
				0.3787	0.3736
foreman, supervisor (occupation)				0.1629	0.2832
				0.5943	0.5988
non-manual office (occupation)				0.173	0.3001
				0.427	0.4274
supervisor non manual (occupation)				0.5603	0.7218
				0.4587	0.4698
high qualified professional (occupation)				0.619	0.864
				0.402	0.4562+
manager<10 (occupation)				0.4144	0.5644
				0.4453	0.454
manager 10+ (occupation)				0.3114	0.4929
				0.4893	0.5072
constant	-1.0663	-1.4685	-1.0679	-1.1798	-0.9076
	0.4545*	0.5008**	0.4081**	0.5108*	0.612
Observations	825	825	641	641	640
Pseudo R-squared	0.03	0.01	0.03	0.04	0.05

Robust standard errors in parentheses. ** significant at 1%; * significant at 5%; + significant at 10*. The sample excludes all individuals who were not born in South Africa. *education* (the highest education level attained by the individual) is coded as follows: 1=none; 2=less than primary; 3=primary; 4=less than secondary university preparatory; 5=secondary university preparatory; 6=some university education; 7=university.

upper social class is coded as follows: 1=lower class, 2=working class; 3=lower middle class; 4=upper middle class; 5=upper class. *political affiliation with the right* is coded as follows: in order, from 1 (left-wing) to 10 (right-wing). individual skill is coded as follows: 1=agricultural worker; 2=farmer; 3=unskilled manual; 4=semi-skilled manual; 5=skilled manual; 6=foreman, supervisor; 7=non manual-office; 8=supervisor non manual; 9=high qualified professional; 10=manager of establishment with less than 10 employees; 11=manager of establishment with 10 or more employees.

Table 8. Determinants of individual attitudes towards migrants in South Africa (WVS 2007)

Probit	1	2	3	4
Dependent variable	**Pro Immig Dummy (WVS)**			
age	0.0048	-0.0006	-0.0027	-0.0015
	0.0057	0.0058	0.0068	0.0071
education (educational attainment)	-0.0372	-0.0668	-0.0784	-0.1025
	0.0612	0.0621	0.0772	0.0787
upper social class	0.0914	-0.0249	0.0469	0.0388
	0.0611	0.0661	0.079	0.0844
political affiliation with the right		0.0487	0.0375	0.0573
		0.0290+	0.035	0.0378
english (language spoken at home)	0.351	0.4943	0.3798	0.3936
	0.2247	0.2182*	0.2562	0.2807
zulu (language spoken at home)	-0.2856	0.0807	-0.0844	-0.2246
	0.2545	0.2083	0.2594	0.2731
xhosa (language spoken at home)	-0.8567	-0.4106	-0.4417	-0.4531
	0.2839**	0.2644	0.323	0.3441
shoto (language spoken at home)	-0.2241	0.1728	-0.0426	0.006
	0.2633	0.2188	0.2577	0.2691
other (language spoken at home)	-0.2714	0.1377	-0.0651	-0.2375
	0.2665	0.2321	0.2688	0.2828
african christian democratic (party)	-0.5674			
	0.3623			
democratic alliance (party)	-0.6737			
	0.2244**			
freedom front (party)	-1.282			
	0.4910**			
inkatha freedom party (party)	0.1943			
	0.3479			
minority front (party)	-0.5101			
	0.6866			
independent democrats (party)	-1.4041			
	0.4531**			
new national party (party)	-1.0831			
	0.5541+			
sa communist party (party)	0.1387			
	0.59			
income		0.0403	0.0319	0.0011
		0.0334	0.0392	0.041
roman catholic (religion)			0.2112	0.3474
			0.2193	0.2316
jew (religion)			1.3891	1.4205
			0.8276+	0.8427+
muslim (religion)			0.3297	0.0991
			0.4817	0.525
hindu (religion)			-0.0622	0.0424
			0.4332	0.4484
evangelical (religion)			0.2104	0.3219
			0.2358	0.2512
jehovah witnesses (religion)			0.7661	0.8437
			0.4073+	0.4871+
african church (religion)			0.3335	0.4086
			0.2598	0.2712
pentecostal (religion)			0.2428	0.4265
			0.355	0.3719
national pride (1)				0.0996
				0.1482
national pride (2)				-0.2802
				0.1904
Observations	837	803	541	475
Pseudo R-squared	0.05	0.03	0.04	0.05

Robust standard errors in parentheses. ** significant at 1%; * significant at 5%; + significant at 10*. The sample excludes all individuals who were not born in South Africa. *income* is coded as follows: from 1=lowest decile in the country to 10=highest decile in the country. *national pride (1)* is coded as follows:1=not at all proud to be South African; 4=very proud to be South African. *national pride (2)* is coded as follows: 1=if willing to fight in a war for South Africa; 0=if not willing. See also footnote to Table 7.

Table 9. Determinants of individual attitudes towards migrants in South Africa (WVS 2007)

Probit with region dummy variables	1	2	3
Dependent variable	**Pro Immig Dummy (WVS)**		
age	-0.0023	-0.0017	-0.0067
	0.0059	0.0057	0.0065
political affiliation with the right	0.0576	0.0601	0.0796
	0.0289*	0.0280*	0.0329*
upper social class	0.0091		
	0.0605		
english (language spoken at home)	0.4884	0.4008	0.3744
	0.2371*	0.2378+	0.2463
zulu (language spoken at home)	0.1473	0.1562	0.2819
	0.2448	0.2367	0.2521
xhosa (language spoken at home)	-0.2148	-0.1444	-0.1673
	0.2903	0.2777	0.3273
shoto (language spoken at home)	0.3901	0.2825	0.4013
	0.2517	0.2533	0.2692
other (language spoken at home)	0.3566	0.2497	0.4545
	0.2778	0.2694	0.2953
education (educational attainment)	-0.0719	0.1552	
	0.0652	0.101	
education*relative skill ratio		-0.2999	
		0.1264*	
(occupation-based) individual skill			0.0205
			0.0619
individual skill*relative skill ratio			-0.0108
			0.0713
town size	0.1003	0.0781	0.0299
	0.0592+	0.057	0.0661
northern province (province)	0.1288	-0.106	-0.0033
	0.3375	0.3369	0.3734
mpumalanga (province)	0.3949	0.3538	0.2963
	0.3375	0.3248	0.3651
north west (province)	-0.0141	-0.3065	-0.1541
	0.3273	0.3141	0.3989
kwazulu/natal (province)	0.1713	-0.7161	0.1983
	0.2061	0.4398	0.36
free state (province)	-0.1236	-0.1933	-0.2517
	0.261	0.2695	0.3398
eastern cape (province)	-0.1688	-1.3179	-0.0676
	0.2954	0.5608*	0.4544
western cape (province)	0.3537	-0.7746	0.3914
	0.2228	0.538	0.437
northern cape (province)	0.4564	-0.099	0.3258
	0.6509	0.6888	0.6697
Constant	-1.4267	-0.791	-1.4406
	0.5189**	0.5888	0.5216**
Observations	825	852	657
Pseudo R-squared	0.04	0.05	0.04

Robust standard errors in parentheses. ** significant at 1%; * significant at 5%; + significant at 10*.

The sample excludes all individuals who were not born in South Africa. *town size* is coded as follows: in order, from 1=under 5,000 to 5=500,000 and more. The *relative skill ratio* is the log of one plus the relative skill composition (RSC). The RSC is the ratio of skilled to unskilled labor in the native relative to the immigrant populations. For both natives and immigrants, the ratio of skilled to unskilled labor is measured as the ratio of the number of individuals with secondary completed and university education to the number of individuals with less than primary and primary completed. In order to get the semi-elasticity with respect to the RSC, one needs to multiply coefficients' estimates of the relative skill ratio by RSC/(1+RSC). The RSC uses data on the stock of immigrants and natives in South Africa in 2007.

Appendix Table A1. Individual attitudes towards immigration and trade in South Africa (WVS 1996)

Variable	Obs	Mean	Std. Dev.	Min	Max
ALL					
Pro Immig Dummy (WVS)	2779	0.3390	0.4734	0	1
Immig Opinion (WVS)	2779	2.2303	0.7897	1	4
Pro Trade Dummy (WVS)	2679	0.3550	0.4786	0	1
Trade Opinion (WVS)	2679	1.3550	0.4786	1	2
MEN IN THE LABOR FORCE (15-64 YEARS OLD)					
Pro Immig Dummy (WVS)	1030	0.3155	0.4650	0	1
Immig Opinion (WVS)	1030	2.1922	0.7337	1	4
Pro Trade Dummy (WVS)	1003	0.3559	0.4790	0	1
Trade Opinion (WVS)	1003	1.3559	0.4790	1	2

The sample excludes all individuals who were not born in South Africa. Immig Opinion (WVS) gives responses to the following question: "How about people from other countries coming here to work. Which one of the following do you think the government should do? Prohibit people coming here from other countries (=1); Place strict limits on the number of foreigners who can come here (=2); Let people come as long as there are jobs available (=3); Let anyone come who wants to (=4)." In the definition of Immig Opinion (WVS), missing values include "don't know" and NA responses. Pro Immig Dummy (WVS) is instead defined as follows: Pro Immig Dummy (WVS)=1, if Immig Opinion (WVS)=3 or 4; 0, if Immig Opinion (WVS)=1 or 2; "don't know" and NA responses are missing values. Trade Opinion (WVS) gives responses to the following question: "Do you think it is better if: Goods made in other countries can be imported and sold here if people want to buy them (=2); or There should be stricter limits on selling foreign goods here, to protect the jobs of people in this country (=1). In the definition of Trade Opinion (WVS), missing values include "don't know" responses. Pro Trade Dummy (WVS) is instead defined as follows: Pro Trade Dummy (WVS)=1, if Trade Opinion (WVS)=2; 0, if Trade Opinion (WVS)=0; "don't know" responses are missing values.

Appendix Table A1 (cont.). Individual attitudes towards immigration in South Africa (WVS 1996)

Immigration Policy	**ALL**		**MEN IN THE LABOR FORCE (15-64 YEARS OLD)**	
("How about people from other countries coming here to work. Which one of the following do you think the government should do?	**absolute frequencies**	**percentages**	**absolute frequencies**	**percentages**
Let anyone come who wants to?	159	5.59	35	3.34
Let people come as long as there are jobs available?	783	27.53	290	27.7
Place strict limits on the number of foreigners who can come here?	1,376	48.38	543	51.86
Prohibit people coming here from other countries?	461	16.21	162	15.47
na, dk	65	2.29	17	1.62
Total	2,844	100	1,047	100

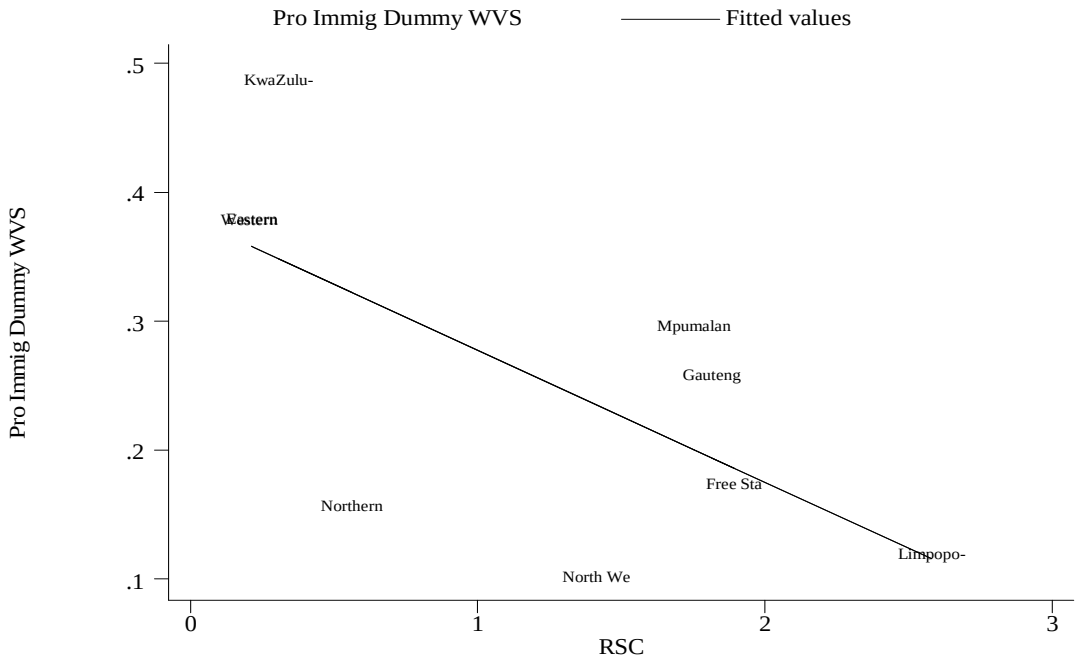
Appendix Table A2. Immigration attitudes across countries (WVS 1996)

country	Pro Immig Dummy (WVS)	Immig Opinion (WVS)	Pro Immig Dummy (WVS)	Immig Opinion (WVS)
	all		men in the labor force (15-64 years old)	
Philippines	0.2485	2.2225	0.2363	2.2051
Hungary	0.2573	2.1084	0.2842	2.1858
Puerto Rico	0.2822	2.2415	0.3136	2.2864
Macedonia	0.3224	2.2636	0.3505	2.3207
Slovakia	0.3327	2.1737	0.3299	2.1867
South Africa	0.3390	2.2303	0.3155	2.1922
USA	0.3438	2.2947	0.3661	2.3272
Taiwan	0.3504	2.3048	0.3851	2.3366
India	0.3530	2.1859	0.3462	2.1918
Czech Republic	0.3729	2.2279	0.3500	2.2188
Finland	0.3924	2.3946	0.3981	2.4142
Sweden	0.4058	2.4878	0.3964	2.4675
Turkey	0.4062	2.1706	0.4269	2.2157
East Germany	0.4145	2.3939	0.4190	2.3908
Venezuela	0.4254	2.2498	0.4388	2.2911
Lithuania	0.4382	2.2583	0.4513	2.3312
China	0.4398	2.3983	0.4372	2.4070
Estonia	0.4516	2.3689	0.5195	2.4648
Norway	0.4583	2.4848	0.4239	2.4514
Latvia	0.4649	2.3649	0.5296	2.4605
Peru	0.4748	2.4353	0.5089	2.4937
Dominican Rep.	0.4922	2.5781	0.4474	2.5614
Japan	0.4984	2.4772	0.5238	2.5265
Montenegro	0.5142	2.5236	0.5119	2.5952
Australia	0.5332	2.5363	0.5496	2.5625
Moldova	0.5392	2.4915	0.5718	2.5660
Russia	0.5392	2.4172	0.6045	2.5540
Nigeria	0.5413	2.6571	0.4895	2.5607
New Zealand	0.5664	2.5600	0.5778	2.5714
Switzerland	0.5667	2.5580	0.5842	2.5816
Bulgaria	0.5720	2.4941	0.5858	2.5243
Argentina	0.5931	2.5710	0.6277	2.6062
Serbia	0.5981	2.6849	0.6554	2.7487
Croatia	0.6018	2.6282	0.6146	2.6624
Slovenia	0.6038	2.5357	0.5954	2.5305
Chile	0.6120	2.6471	0.6585	2.6831
Mexico	0.6145	2.6934	0.6147	2.7194
Brazil	0.6151	2.7316	0.6154	2.7393
Romania	0.6310	2.5993	0.6718	2.6974
Uruguay	0.6868	2.7346	0.7008	2.7582
Belarus	0.7047	2.7741	0.7206	2.8151
West Germany	0.7094	2.8235	0.7007	2.8095
Spain	0.7150	2.8103	0.7324	2.8479
Armenia	0.7229	2.8449	0.7268	2.8744
Ukraine	0.7369	2.8652	0.7690	2.9149
Azerbaijan	0.7806	2.9198	0.8214	2.9889
Bosnia	0.7818	3.1328	0.7904	3.1617

Appendix Table A3. Summary Statistics by Province (WVS 1996)

province	Pro Immig Dummy (WVS)	skilled to unskilled labor ratio N vs. M (RSC)
Western Cape	0.3744	0.2117
Eastern Cape	0.3758	0.2203
KwaZulu-Natal	0.4836	0.3062
Northern Cape	0.1527	0.5607
North West	0.0978	1.4137
Mpumalanga	0.2926	1.7514
Gauteng	0.2547	1.8142
Free State	0.1698	1.8933
Limpopo-Nothern Pro	0.1155	2.5794

Figure 2. The relationship between migration attitudes and the relative skill composition (RSC) of natives to immigrants



Appendix Table A4. Individual attitudes towards immigration in South Africa (WVS 2001)

Variable	Obs	Mean	Std. Dev.	Min	Max
ALL					
Pro Immig Dummy (WVS)	2856	0.3662	0.4819	0	1
Immig Opinion (WVS)	2856	2.2167	0.8147	1	4
MEN IN THE LABOR FORCE (15-64 YEARS OLD)					
Pro Immig Dummy (WVS)	1078	2.2032	0.8019	1	4
Immig Opinion (WVS)	1078	0.3562	0.4791	0	1

The sample excludes all individuals who were not born in South Africa. Immig Opinion (WVS) gives responses to the following question: "How about people from other countries coming here to work. Which one of the following do you think the government should do? Prohibit people coming here from other countries (=1); Place strict limits on the number of foreigners who can come here (=2); Let people come as long as there are jobs available (=3); Let anyone come who wants to (=4)." In the definition of Immig Opinion (WVS), missing values include "don't know" and NA responses. Pro Immig Dummy (WVS) is instead defined as follows: Pro Immig Dummy (WVS)=1, if Immig Opinion (WVS)=3 or 4; 0, if Immig Opinion (WVS)=1 or 2; "don't know" and NA responses are missing values.

Appendix Table A4 (cont.). Individual attitudes towards immigration in South Africa (WVS 2001)

Immigration Policy	ALL		MEN IN THE LABOR FORCE (15-64 YEARS OLD)	
("How about people from other countries coming here to work. Which one of the following do you think the government should do?	absolute frequencies	percentages	absolute frequencies	percentages
Let anyone come who wants to?	139	4.66	47	4.2
Let people come as long as there are jobs available?	907	30.42	337	30.14
Place strict limits on the number of foreigners who can come here?	1,244	41.72	482	43.11
Prohibit people coming here from other countries?	566	18.98	212	18.96
na, dk	126	4.23	40	3.58
Total	2,982	100	1,118	100

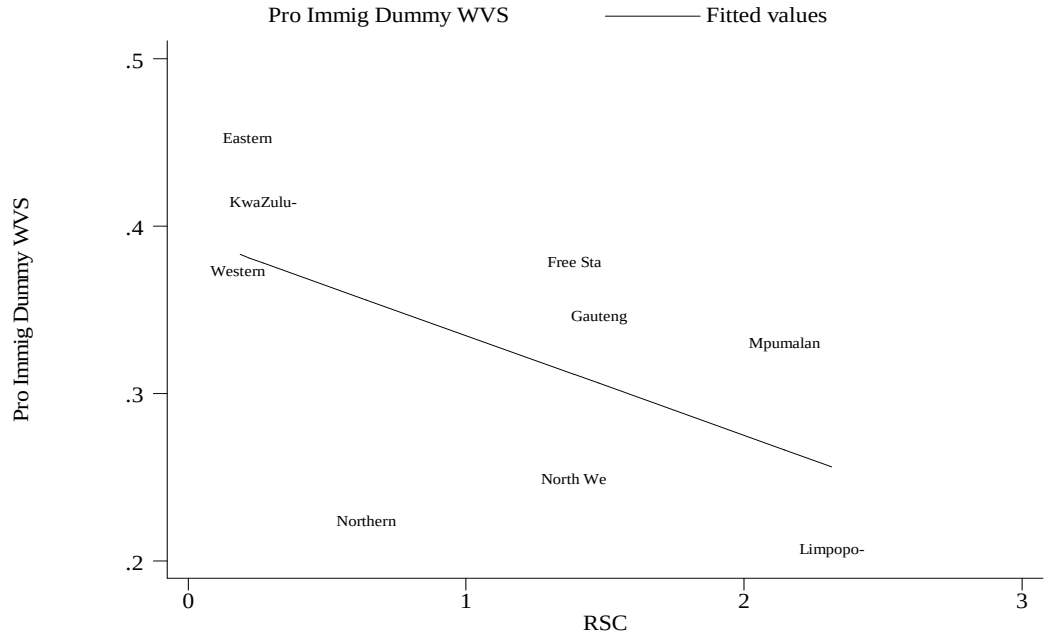
Appendix Table A5. Immigration attitudes across countries (WVS 2001)

country	Pro Immig Dummy (WVS)	Immig Opinion (WVS)	Pro Immig Dummy (WVS)	Immig Opinion (WVS)
	all		men in the labor force (15-64 years old)	
Singapore	0.2575	2.2741	0.2476	2.2611
Tanzania	0.2814	2.3134	0.2992	2.3594
Indonesia	0.3050	2.3192	0.3573	2.3760
Philippines	0.3243	2.3674	0.3333	2.3827
Macedonia	0.3302	2.2088	0.3760	2.3290
Iran	0.3417	2.1866	0.3392	2.2002
India	0.3498	2.1268	0.3284	2.0738
Jordan	0.3511	2.1657	0.3012	2.0824
South Africa	0.3662	2.2167	0.3562	2.2032
Montenegro	0.3676	2.2754	0.4302	2.3798
Puerto Rico	0.4329	2.5036	0.4497	2.5973
Egypt	0.4722	2.3909	0.4444	2.3662
Turkey	0.4859	2.3191	0.4901	2.3315
Canada	0.5235	2.5484	0.5747	2.6207
Serbia	0.5403	2.6265	0.5352	2.6239
Bangladesh	0.5554	2.4874	0.5978	2.5914
Argentina	0.5562	2.5597	0.5361	2.5478
USA	0.5670	2.6507	0.5788	2.6925
Chile	0.5695	2.5780	0.5573	2.5803
Japan	0.5696	2.5867	0.6354	2.6759
Uganda	0.5858	2.6790	0.5779	2.6811
Pakistan	0.5911	2.6266	0.5627	2.5867
Peru	0.5925	2.6856	0.6093	2.7222
Mexico	0.6024	2.6143	0.6221	2.6631
Kyrgyzstan	0.6051	2.6173	0.5976	2.6036
Saudi Arabia	0.6170	2.7279	0.6396	2.7459
China	0.6190	2.6524	0.6100	2.6574
South Korea	0.6276	2.6220	0.6493	2.6777
Algeria	0.6378	2.7533	0.6792	2.8323
Zimbabwe	0.6422	2.6653	0.6118	2.6259
Venezuela	0.6487	2.7078	0.6472	2.7016
Nigeria	0.6916	2.9359	0.6795	2.8889
Sweden	0.7032	2.8625	0.7082	2.8442
Bosnia	0.7158	2.8179	0.7179	2.8161
Moldova	0.7234	2.8522	0.6726	2.7722
Morocco	0.7279	2.9897	0.7338	2.9737
Albania	0.7516	2.9764	0.7911	3.0731
Spain	0.7617	2.8986	0.7725	2.8915
Vietnam	0.7925	3.0342	0.7938	3.0309

Appendix Table A6. Summary Statistics by Province (WVS 2001)

province	Pro Immig Dummy (WVS)	skilled to unskilled labor ratio N vs. M (RSC)
Western Cape	0.3702	0.1856
Eastern Cape	0.4496	0.2206
KwaZulu-Natal	0.4113	0.2694
Northern Cape	0.2211	0.6405
North West	0.2459	1.3881
Free State	0.3754	1.3902
Gauteng	0.3436	1.4766
Mpumalanga	0.3272	2.1449
Limpopo-Nothern Province	0.2042	2.3148

Figure 3. The relationship between migration attitudes and the relative skill composition (RSC) of natives to immigrants



Appendix Table A7. Individual attitudes towards immigration in South Africa (WVS 2007)

Variable	Obs	Mean	Std. Dev.	Min	Max
ALL					
Pro Immig Dummy (WVS)	2744	0.2274	0.4192	0	1
Immig Opinion (WVS)	2744	1.9993	0.8248	1	4
MEN IN THE LABOR FORCE (15-64 YEARS OLD)					
Pro Immig Dummy (WVS)	982	0.2393	0.4269	0	1
Immig Opinion (WVS)	982	2.0234	0.8341	1	4

The sample excludes all individuals who were not born in South Africa. Immig Opinion (WVS) gives responses to the following question: "How about people from other countries coming here to work. Which one of the following do you think the government should do? Prohibit people coming here from other countries (=1); Place strict limits on the number of foreigners who can come here (=2); Let people come as long as there are jobs available (=3); Let anyone come who wants to (=4)." In the definition of Immig Opinion (WVS), missing values include "don't know" and NA responses. Pro Immig Dummy (WVS) is instead defined as follows: Pro Immig Dummy (WVS)=1, if Immig Opinion (WVS)=3 or 4; 0, if Immig Opinion (WVS)=1 or 2; "don't know" and NA responses are missing values.

Appendix Table A7 (cont.). Individual attitudes towards immigration in South Africa (WVS 2007)

Immigration Policy	ALL		MEN IN THE LABOR FORCE (15-64 YEARS OLD)	
("How about people from other countries coming here to work. Which one of the following do you think the government should do?	absolute frequencies	percentages	absolute frequencies	percentages
Let anyone come who wants to?	154	5.61	59	6.01
Let people come as long as there are jobs available?	470	17.13	176	17.92
Place strict limits on the number of foreigners who can come here?	1,340	48.83	476	48.47
Prohibit people coming here from other countries?	780	28.43	271	27.6
Total	2,744	100	982	100

Appendix Table A8. Immigration attitudes across countries (WVS 2007)

country	Pro Immig Dummy	Immig Opinion	Pro Immig Dummy	Immig Opinion
	all		men in the labor force (15-64 years old)	
Malaysia	0.0938	1.9331	0.0996	1.9469
Indonesia	0.2036	2.1822	0.2290	2.2239
Thailand	0.2100	2.1233	0.2483	2.1845
South Africa	0.2274	1.9993	0.2393	2.0234
Georgia	0.2794	2.2056	0.2495	2.1800
Egypt	0.3020	2.0834	0.2952	2.1013
Taiwan	0.3221	2.2521	0.3729	2.3390
Trinidad and Tobago	0.3279	2.2643	0.3693	2.3105
Serbia	0.3935	2.3956	0.4035	2.3684
USA	0.4101	2.4101	0.4006	2.4006
Zambia	0.4221	2.3839	0.4013	2.3145
Japan	0.4529	2.4361	0.4771	2.4679
India	0.4608	2.4110	0.4767	2.4552
Poland	0.4825	2.5417	0.4797	2.5473
Germany	0.4835	2.4903	0.5012	2.5290
Cyprus	0.4891	2.5196	0.4847	2.5215
Finland	0.4904	2.5502	0.4913	2.5296
Turkey	0.5132	2.3957	0.5459	2.4771
Canada	0.5221	2.5616	0.5489	2.5979
Spain	0.5483	2.5938	0.5587	2.6034
Brazil	0.5531	2.5299	0.5421	2.5378
Norway	0.5630	2.5905	0.5884	2.6174
Chile	0.5680	2.5627	0.5778	2.5873
Italy	0.5716	2.5870	0.5455	2.5909
Ghana	0.5758	2.6913	0.5387	2.6373
Mexico	0.5766	2.5244	0.5950	2.5697
Australia	0.5776	2.5951	0.5420	2.5524
Argentina	0.5944	2.6728	0.5200	2.5867
South Korea	0.6165	2.6064	0.6084	2.5979
Slovenia	0.6189	2.6054	0.6049	2.5944
Moldova	0.6402	2.6663	0.6558	2.6795
Romania	0.6581	2.7839	0.6692	2.8483
Bulgaria	0.6805	2.7278	0.7395	2.7983
Ethiopia	0.6837	3.0384	0.6488	2.9982
Morocco	0.6883	2.8549	0.6692	2.8162
Sweden	0.6962	2.8487	0.7100	2.8700
China	0.7075	2.8210	0.7104	2.8233
Guatemala	0.7196	2.8117	0.7143	2.8024
Switzerland	0.7204	2.7826	0.7745	2.8582
Peru	0.7260	2.8908	0.7273	2.9202
Ukraine	0.7313	2.8855	0.7452	2.9183
Vietnam	0.7605	3.2487	0.8063	3.3375
Andorra	0.7728	2.8107	0.7824	2.8321
Mali	0.7955	3.0968	0.8039	3.1041
Uruguay	0.7986	3.0012	0.7794	2.9596
Burkina Faso	0.8886	3.3138	0.8631	3.2739
Rwanda	0.8962	3.2759	0.8961	3.2771

Appendix Table A9. Summary Statistics by Province (WVS 2007)

province	Pro Immig Dummy (WVS)	skilled to unskilled labor ratio N vs. M (RSC)
Western Cape	0.2490	0.3399
Eastern Cape	0.0742	0.3678
KwaZulu-Natal	0.2933	0.5192
Northern Cape	0.2271	1.2209
North West	0.1835	1.7789
Limpopo-Nothern Provinc	0.2133	1.9561
Free State	0.1961	2.0138
Gauteng	0.2560	2.0266
Mpumalanga	0.1837	2.4519

Figure 4. The relationship between migration attitudes and the relative skill composition (RSC) of natives to immigrants (WVS 2007)

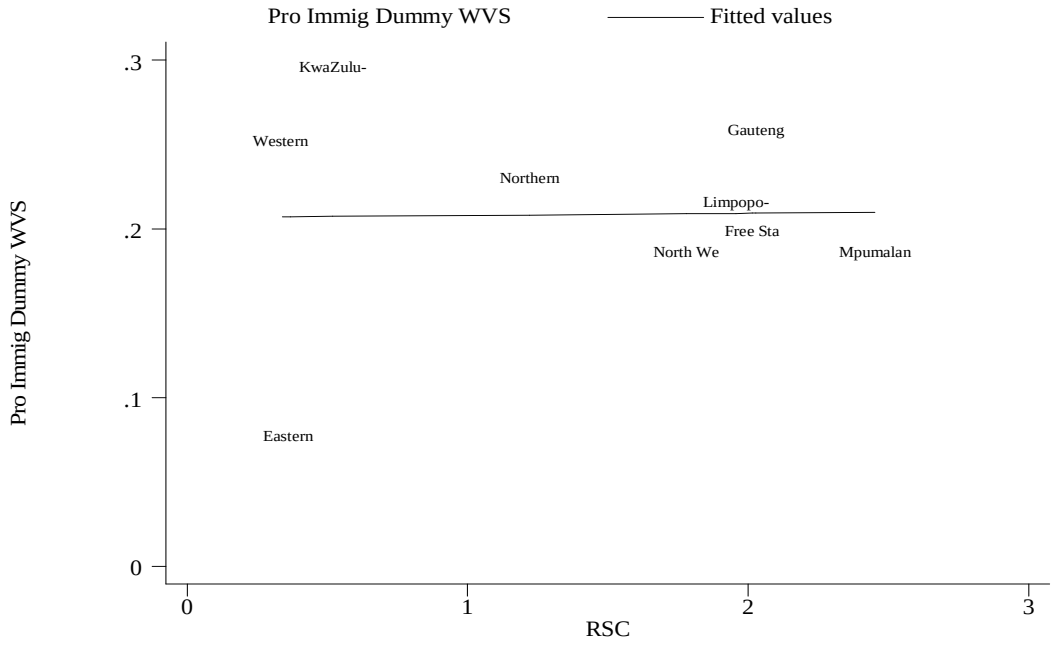
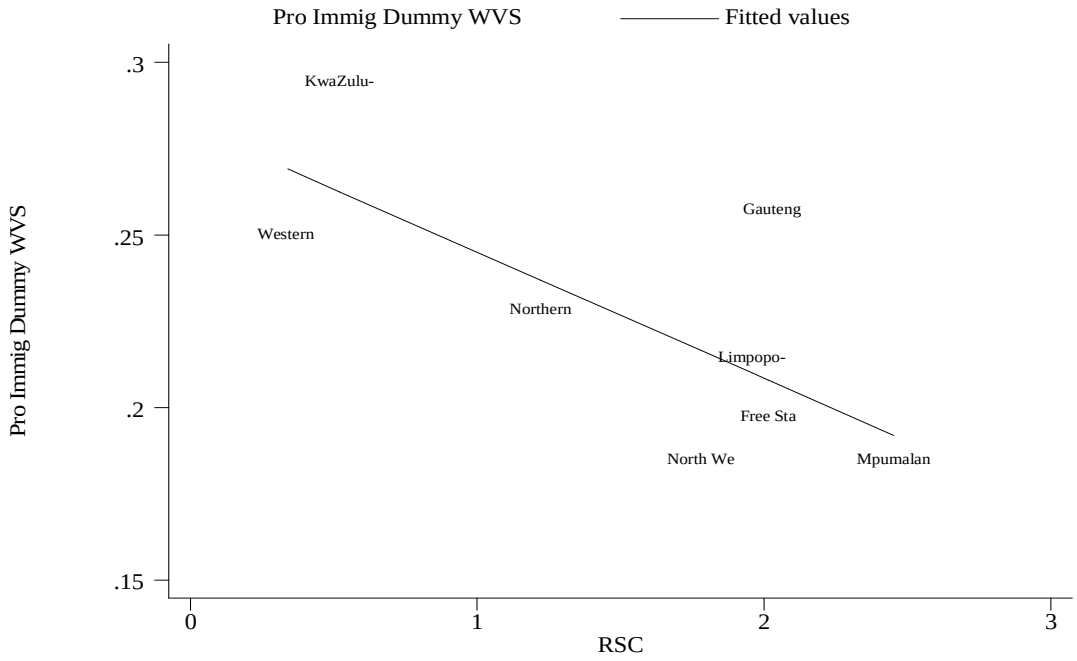


Figure 5. The relationship between migration attitudes and the relative skill composition (RSC) of natives to immigrants (excluding Eastern Cape)



Note: This figure excludes Eastern Cape.

Figure 6: Race dissimilarity 1996

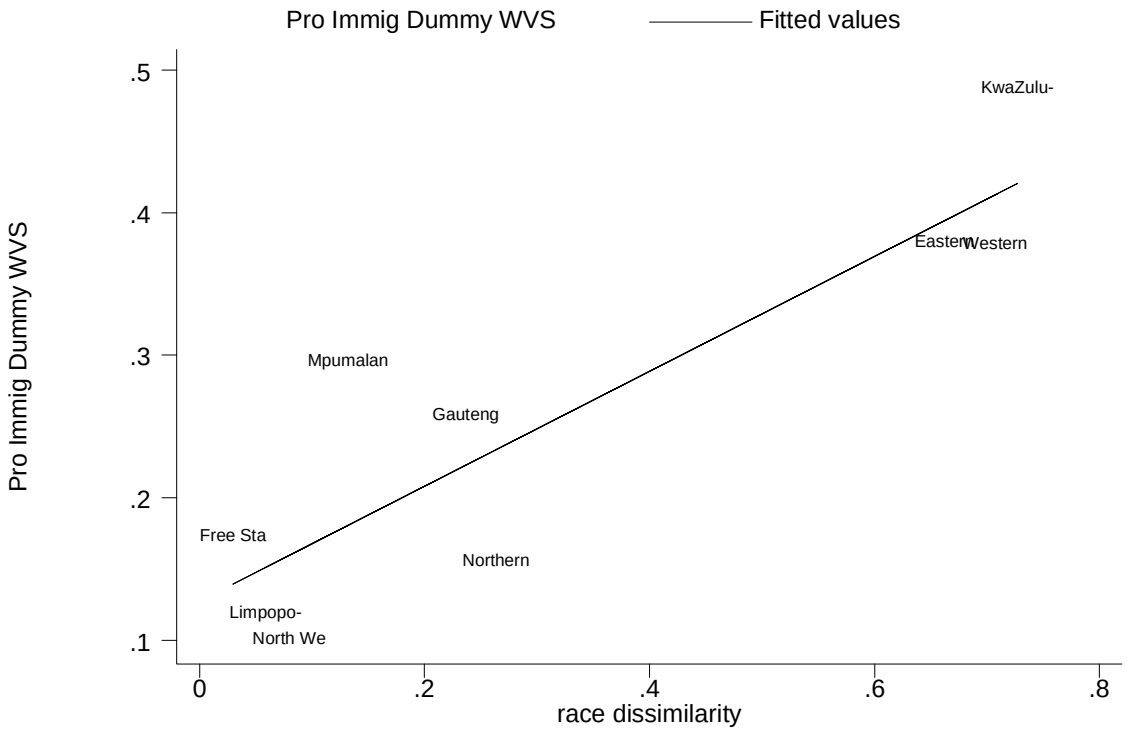


Figure 7: Race dissimilarity 2001

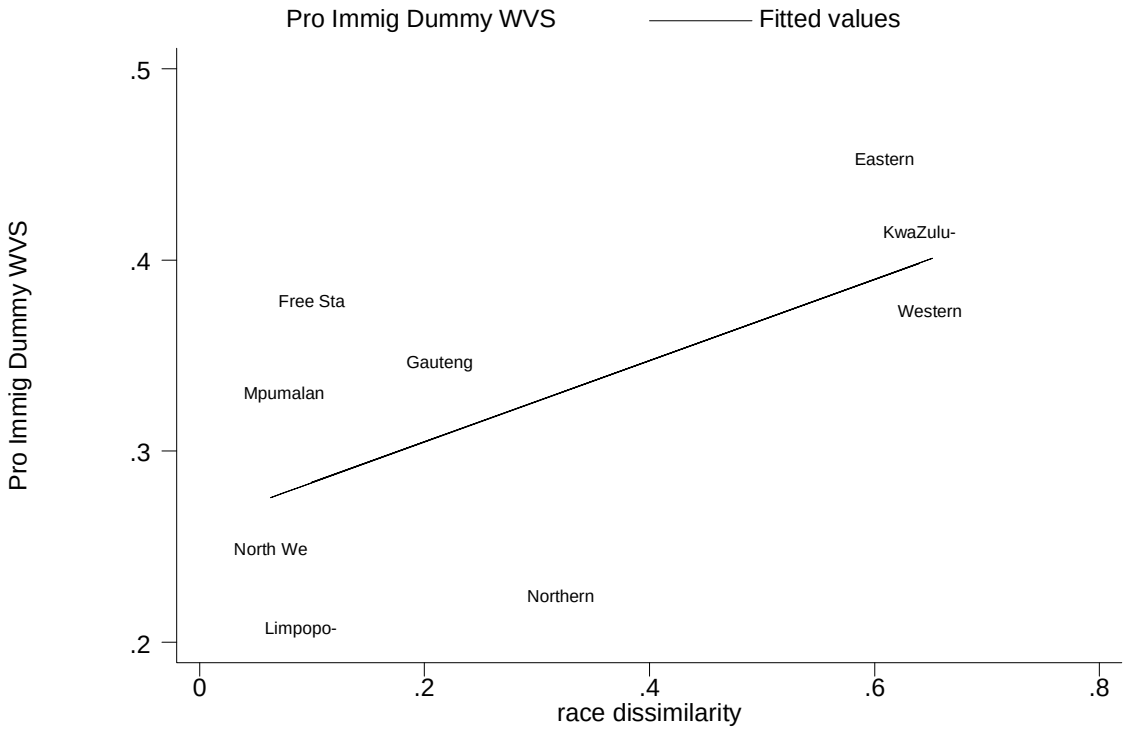


Figure 8: Language dissimilarity 1996

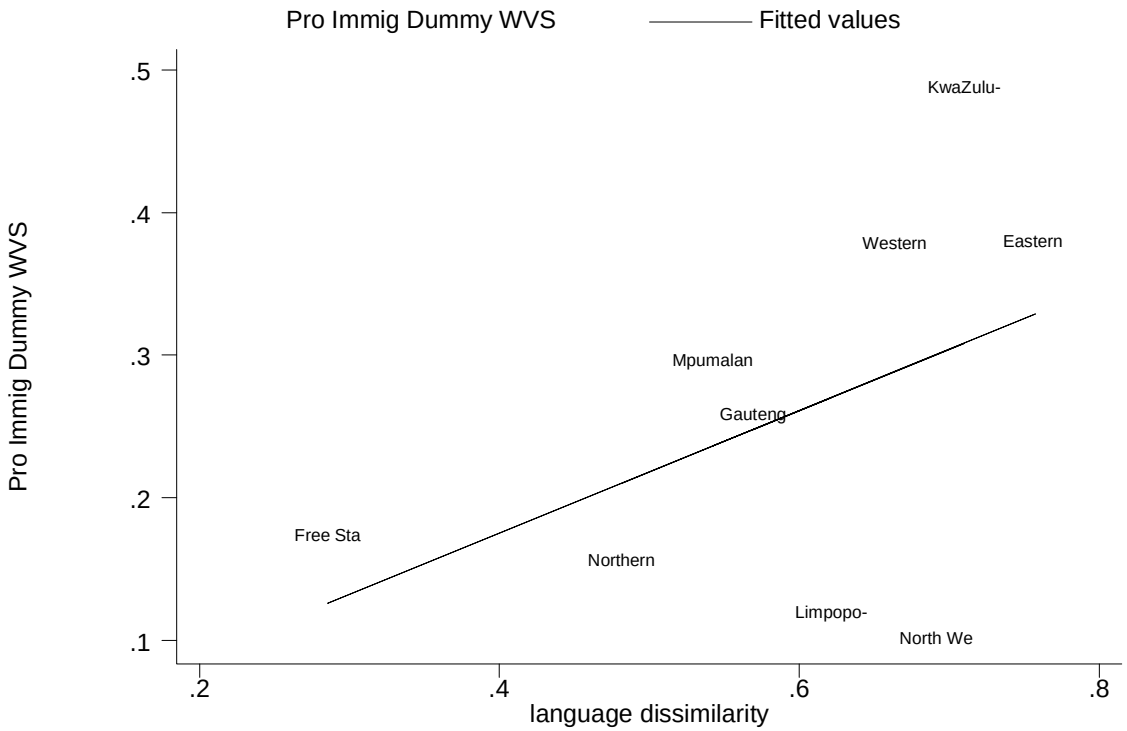


Figure 9: Language dissimilarity 2001

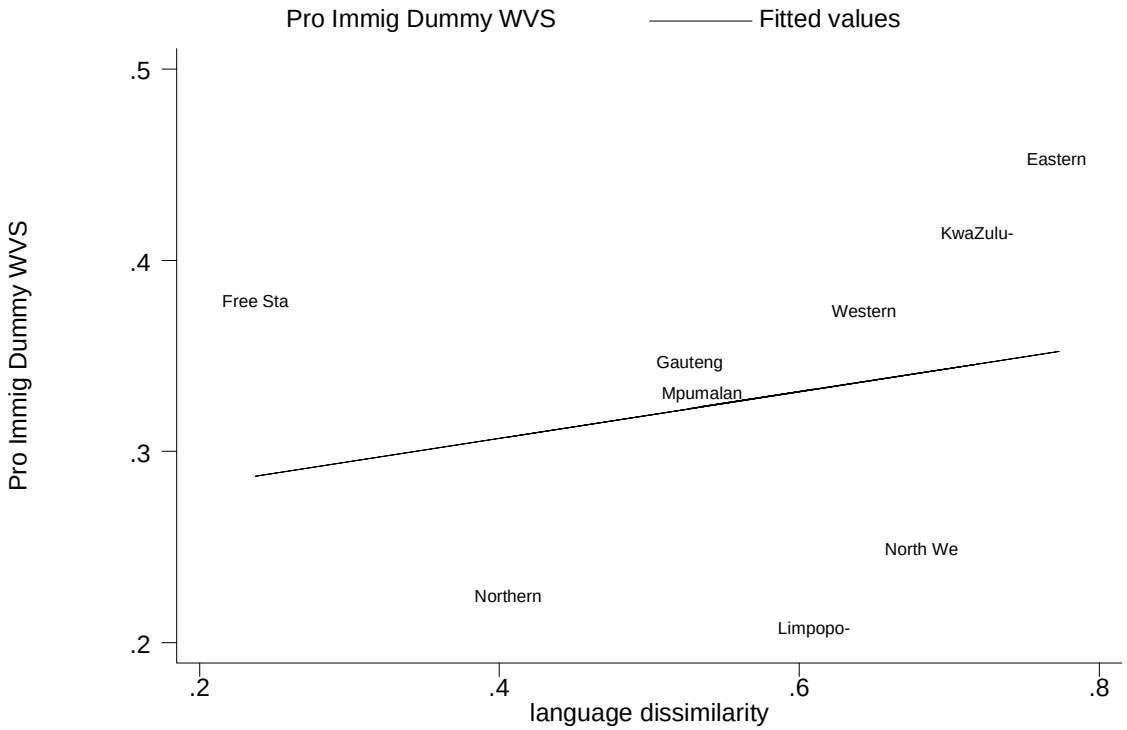


Figure 10: Religious dissimilarity 1996

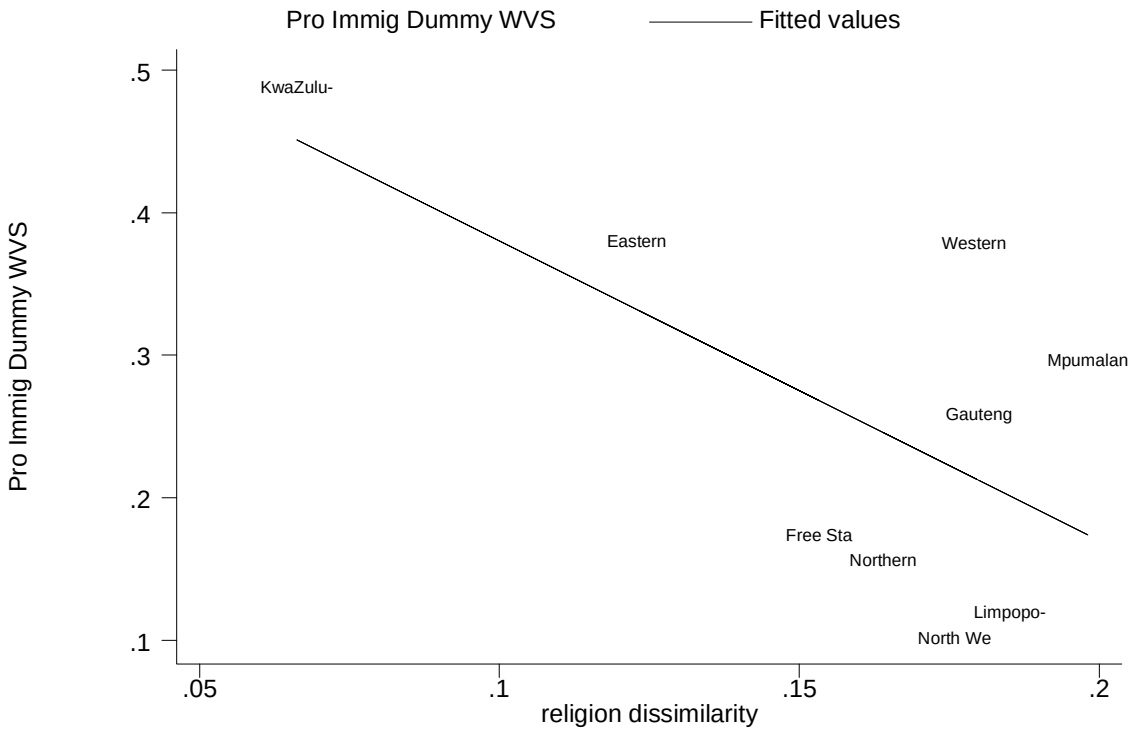


Figure 11: Religious dissimilarity 2001

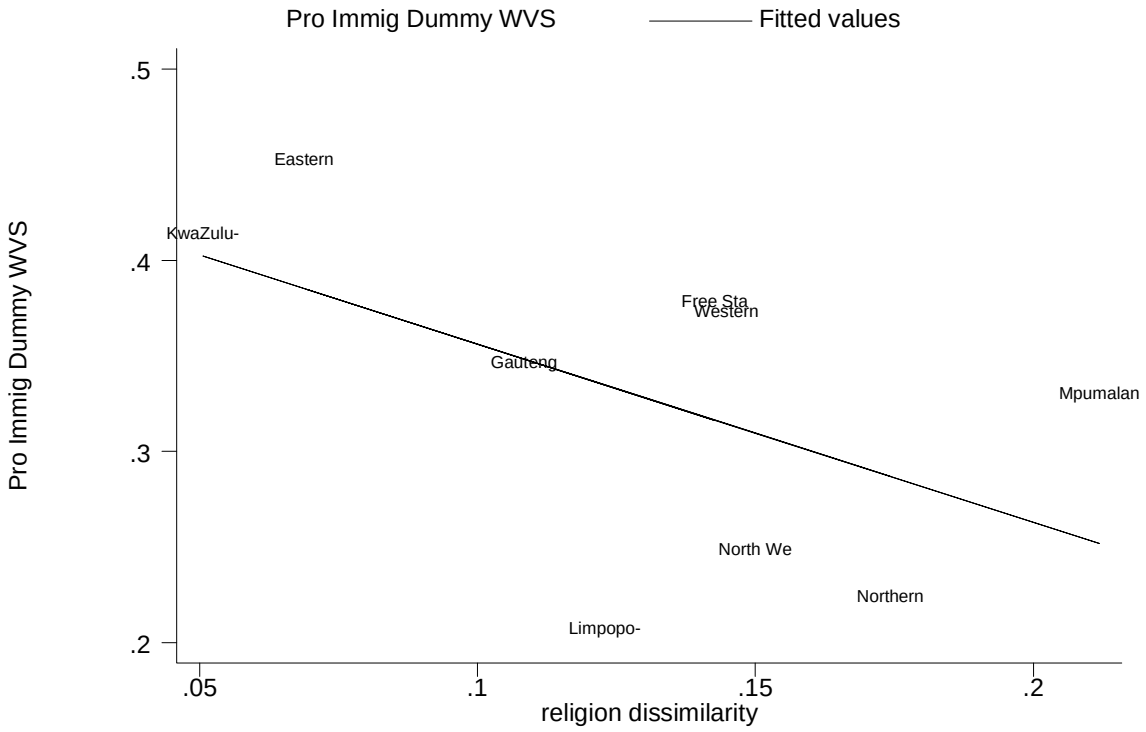


Figure 12: Media exposure 2007

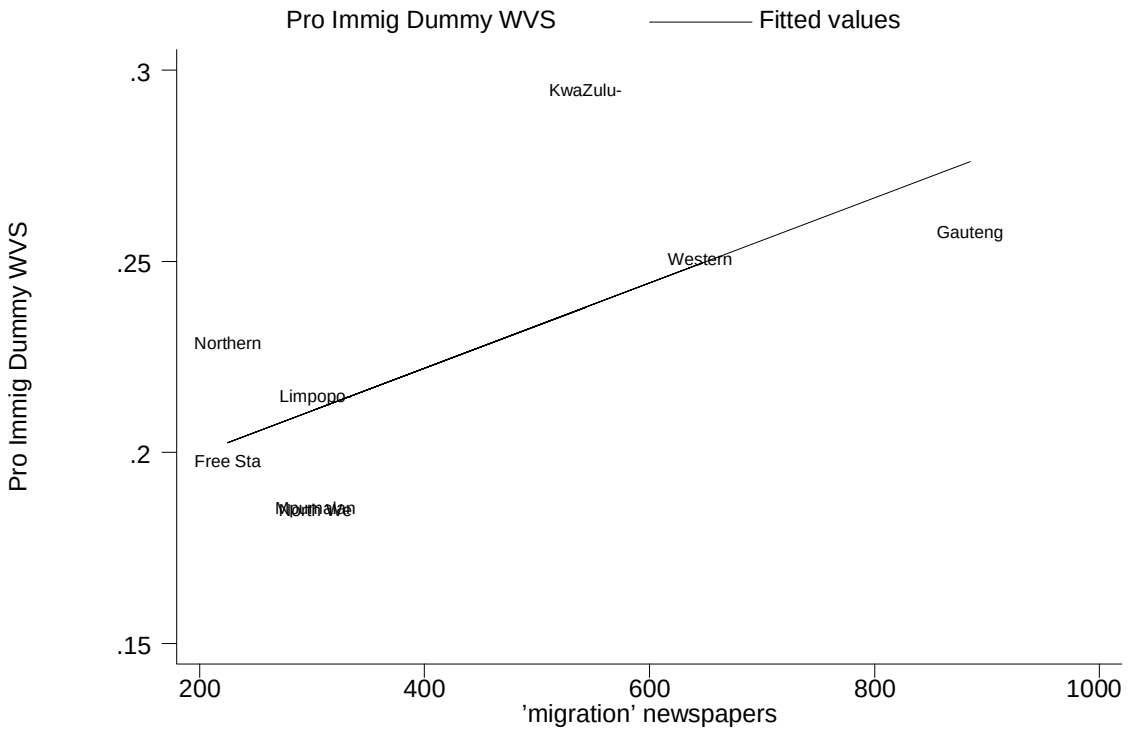


Figure 13: Media exposure 2007

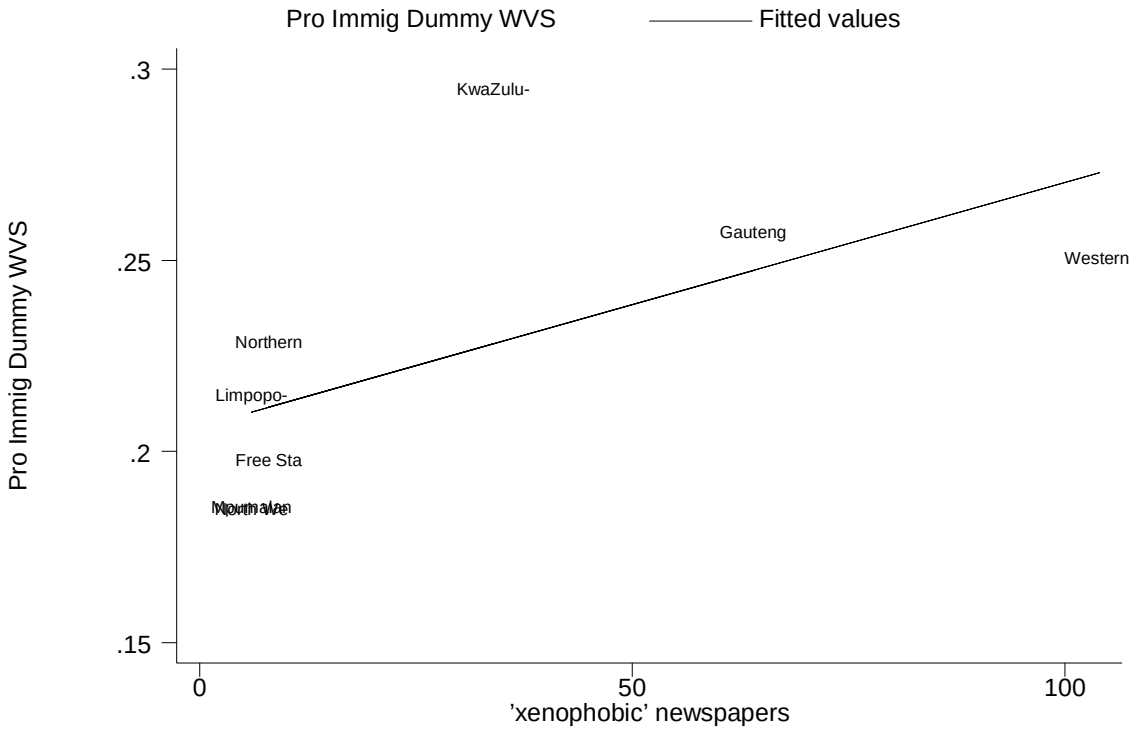


Figure 14: Crime rate 2001

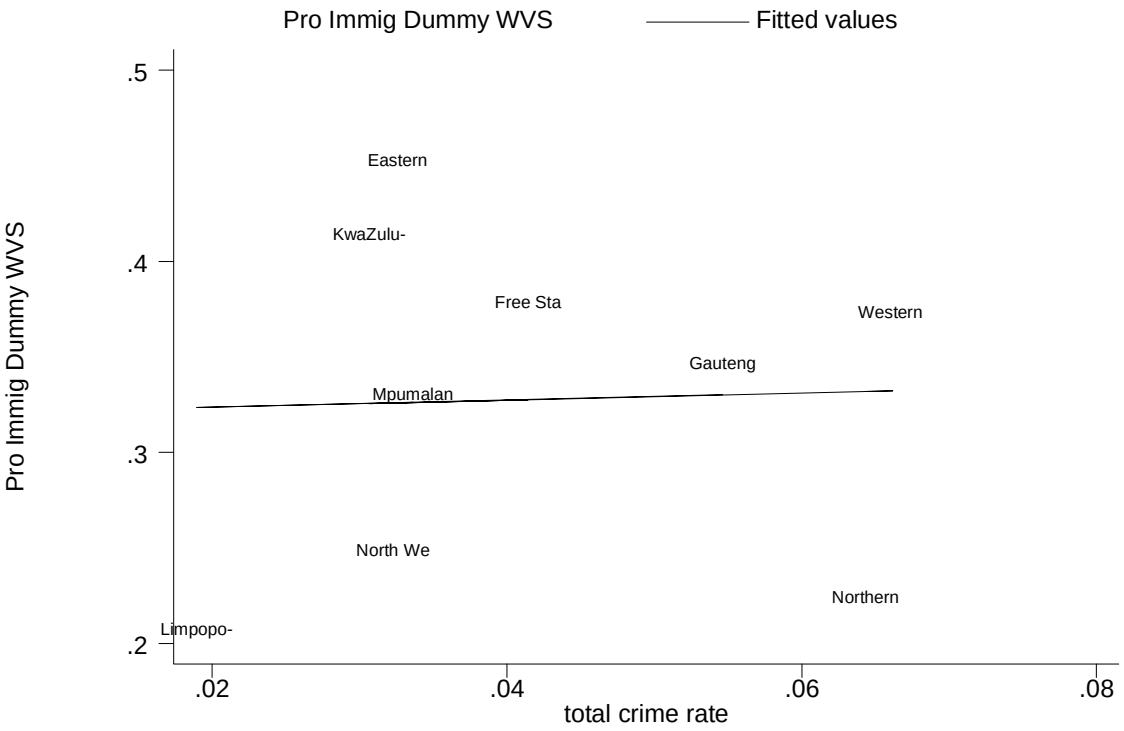


Figure 15: Crime rate 2007