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CENTRE OF PLANNING AND ECONOMIC RESEARCH

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Labour Force Participation of Female Youth: The Role of Culture

by

Jennifer Cavounidis and Ioannis Cholezas

Abstract

This paper compares the labour force participation in Greece of young women aged 15-29 of Greek and Albanian nationality and investigates the corresponding determining factors. The data show that among the younger age cohort, containing women aged 15-21, nationals of Albania are more likely to participate in the labour market than Greek nationals. On the contrary, among women aged 22-29, Albanian nationals are much less likely to participate in the labour force than Greek nationals. As years of stay in Greece increase, female Albanian nationals, irrespective of age, tend to converge to the LFP patterns of their Greek counterparts and often to surpass them. Further, young female Albanians differ from natives in key characteristics; they are much more likely to be married and are usually less educated. Our main research contribution is the use of the female labour force participation rate in Albania at the time of immigration to Greece to gauge cultural norms brought to the host country. Following the literature, we believe the relationships ascertained may indicate the effect of culture of the source country on the choice of immigrants to participate or not in the labour market of the host country, while at the same time allowing for the impact of institutional arrangements concerning access to residence permits for foreign nationals in Greece, which together with prevailing cultural norms concerning gender roles, favour early marriage for women so that they can gain stay permits as spouses.

Keywords: labour force participation, immigrants, gender, culture, youth.

Περίληψη

Η εργασία συγκρίνει τα ποσοστά συμμετοχής στο εργατικό δυναμικό των νέων γυναικών ηλικίας 15-29 με ελληνική και αλβανική υπηκοότητα και διερευνά τους παράγοντες διαμόρφωσής τους στην Ελλάδα. Τα δεδομένα δείχνουν ότι στις νεότερες ηλικιακές ομάδες, που περιλαμβάνουν γυναίκες ηλικίας 15-21 ετών, οι γυναίκες με αλβανική υπηκοότητα είναι πιο πιθανό να συμμετέχουν στην αγορά εργασίας σε σύγκριση με τις ελληνίδες. Σε αντιδιαστολή, στις γυναίκες 22-29 ετών οι γυναίκες αλβανικής υπηκοότητας είναι λιγότερο πιθανό να συμμετέχουν στο εργατικό δυναμικό σε σύγκριση με τις ελληνίδες. Καθώς τα έτη παραμονής στη χώρα αυξάνουν, οι γυναίκες αλβανικής καταγωγής, ανεξαρτήτως ηλικίας, τείνουν να συγκλίνουν στα ποσοστά συμμετοχής των ελληνίδων και συχνά τα ξεπερνούν. Επιπλέον, οι νέες γυναίκες αλβανικής καταγωγής διαφέρουν από τις αντίστοιχες ελληνίδες σε χαρακτηριστικά κλειδιά: είναι πιο πιθανό να είναι έγγαμες και συνήθως έχουν λιγότερα έτη εκπαίδευσης. Η κύρια ερευνητική συνεισφορά της εργασίας είναι η χρήση του ποσοστού συμμετοχής των γυναικών στο εργατικό δυναμικό στην Αλβανία το έτος που πραγματοποιήθηκε η μετανάστευση στην Ελλάδα, ώστε να εκτιμηθεί η επίδραση των πολιτισμικών προτύπων της χώρας καταγωγής. Κατ' αναλογία με τη σχετική βιβλιογραφία, πιστεύουμε ότι οι σχέσεις που επιβεβαιώνονται πιθανά αντανακλούν την επίδραση του πολιτισμού της χώρας καταγωγής στην επιλογή των μεταναστριών να συμμετέχουν ή όχι στην αγορά εργασίας της χώρας υποδοχής, ενώ την ίδια στιγμή επιτρέπουν την αναγνώριση επιδράσεων από το θεσμικό πλαίσιο που αφορά στην πρόσβαση σε άδεια παραμονής των αλλοδαπών στην Ελλάδα, στοιχεία τα οποία σε συνδυασμό με τις κυρίαρχες πολιτισμικές νόρμες που αφορούν στους ρόλους των δύο φύλων, ενθαρρύνουν το γάμο των γυναικών σε μικρή σχετικά ηλικία, προκειμένου να αποκτήσουν άδεια παραμονής ως σύζυγοι.

Λέξεις κλειδιά: συμμετοχή στο εργατικό δυναμικό, μετανάστες, φύλο, πολιτιστικά πρότυπα, νέοι.

1. Introduction

The impact of culture, norms and values on economic outcomes has been increasingly recognized in recent years. The labour force participation (LFP) of women of immigrant origin has proved a "privileged" site for the study of the effects of culture on economic outcomes. Wide variation in the labour force participation of women across societies has long been observed, and differences in culture and specifically in preferences and beliefs about appropriate roles for women, have been considered to be a major factor behind this diversity. It was difficult, however, to substantiate the precise role played by cultural factors as opposed to that of economic and institutional factors. In recent years, researchers have attempted to isolate the effects of culture by taking advantage of its presumed portability and comparing the LFP of immigrants and native women in destination countries, where they share the same economic and institutional context, and have attributed observed differences to cultural differences.

In an age of increasing migration, the labour force outcomes of immigrant men and women have a major impact on the economies of destination countries. In many destinations, the labour force participation of migrant men and women has lagged significantly behind that of their native counterparts and created great concern, particularly in European countries characterized by population ageing and shrinking labour forces. The factors behind variation in LFP rates and the factors that affect the assimilation process of immigrant to native LFP patterns have important policy implications with respect to the design of government programmes to facilitate LFP of immigrant women and improve their economic outcomes.

In this paper, we study the impact of culture on the LFP of immigrant women, utilizing the example of Greece and focusing on the LFP of young immigrant women of Albanian origin aged 15-29 and comparing it to that of their native Greek counterparts. Similar to the experience of many European countries, from the beginning of the 1990's Greece received significant inflows of migrants from former socialist regimes of Central and Eastern Europe subsequent to their collapse. These countries exhibited LFP rates of women which were often higher than those of the destination countries to which their citizens headed, contrary to the pattern typical of most receiving countries such as the United States where most of the relevant research has been performed. To date, the effect of culture in this different set of circumstances has scarcely been examined.

In what follows, we first provide a brief overview of the literature on culture and women's LFP and next discuss the specific research context of immigration to Greece. Subsequently, we describe the sample employed by providing some descriptive statistics and the estimation methods before moving on to present our results. In the last section we conclude.

2. Brief review of literature

In one of the early studies to quantitatively explore the effect of culture on economic outcomes, Antecol (2000) found that source country female LFP rates were positively correlated with LFP rates of immigrant women in the US, even when controlling for human capital characteristics. A correlation was also ascertained, though weaker, between US and source country LFP rates of 2nd generation women.

Apart from the effect of culture on the labour force behaviour of women, another economic outcome that has been examined in relation to culture is that of fertility and often these two outcomes have been studied in tandem. Fernandez and Fogli (2009) used 1970 census data to examine the LFP and fertility rates of 2nd generation women in the U.S. and used past values (for 1950) of LFP and total fertility rates in the country of origin of their fathers (because information on country of birth of mothers was not available if both parents had been born outside the U.S.) as cultural proxies. Both the hours of work and number of children of the 2nd generation women were found to be positively correlated with these cultural proxies. It should be noted, given the dearth of research on the effect of culture when immigrants move from a country with high LFP to one with a lower one, that in the Fernandez and Fogli (2009) study all women whose fathers were born in countries that became centrally planned economies around World War II were eliminated from the analysis on the rationale that parents of these 2nd generation women must have arrived in the U.S. by 1940 and therefore did not experience the important transformations in economies, institutions and cultures that characterized these countries in that period, and hence the use of data from the 1950's would not properly reflect the culture of these people. Likewise, women whose fathers were born in Russia were also excluded from the analysis with the similar rationale that most parents were likely not to have lived there long after the revolution of 1917 and thus data for 1950 would not capture the correct cultural beliefs of these individuals.

Blau, Kahn and Papps (2011) examined the assimilation of married immigrant women into the U.S. labour market and found that women from high-female-labour–supply countries worked more than those from low-female-labor-supply source countries. Both groups of women worked less at time of arrival than natives of the U.S.but those from countries with higher female-labour-supply closed the gap after 6-10 years in the U.S. while those from low-female-labour-supply countries reduced the gap but continued to lag behind natives. No effect of women's source country LFP was found for men, suggesting that the findings for women's LFP reflect views about appropriate gender roles rather the overall work orientation of certain source countries that could affect men and women similarly. The study also found that the labor supply of native-born wives of immigrant husbands is positively related to women's LFP in husband's country of origin, which could be due to a direct influence of the husband on wife's behaviour or to a selection of spouse who holds similar values; whatever the case, the finding is suggestive of role of culture in shaping outcomes.

With respect to 2nd generation women, Blau, Kahn, Liu and Papps (2013) identified evidence of intergenerational transmission of gender roles. More specifically, they found that fertility and the labour supply of 2nd generation women were significantly affected by the immigrant generation's levels of these, with the effects of the mother's source country proving stronger that those of the father's source country.

Analysis based on a 2009 survey of the immigrant population of Italy (Scoppa and Stranges 2014) also showed that employment and participation in the labour market of immigrant women is affected by the culture of the countries of origin, as proxied in the corresponding LFP rates of women. Specifically, it was ascertained that an increase of 10 points in women's LFP in the origin country led to an increase of the employment probability of immigrant women in Italy by about 5 percentage points.

A recent study of fertility change among immigrants to Israel from the former Soviet Union (Okun and Kagya 2012) parallels the Greek study on female LFP to be discussed below in that the differences between sending and receiving countries are contrary to those typically observed. More specifically, their research has concentrated on the fertility patterns of immigrant women moving from high-fertility source countries and arriving in low-fertility countries, and on the LFP of immigrant women moving from source countries with low female LFP to destinations with higher LFP, while in this case women in the former Soviet Union exhibited lower fertility rates than those characteristic of Israel. Contrary to what would be expected on the basis of assimilation theory, fertility rates of the women migrating from the former Soviet Union to Israel did not converge upwards towards the Israeli rates, but instead remained at levels even lower than those experienced prior to immigration.

3. The research context, data and estimation methods

The research context

As other countries of Southern Europe, Greece was transformed in the last decades of the 20th century from a country of emigration to a country of immigration. Inflows of immigrants took on noteworthy proportions from the mid-1970s but it was with the collapse of socialist regimes in Central and Eastern Europe at the beginning of the 1990s that migrant inflows took on massive proportions. According to population censuses of Greece, more than three-quarters of the migrants present in Greece in 2001 as well as in 2011 were from former socialist regimes in Central and Eastern Europe. As for specific source countries, Albania emerged as the principal source country of flows to Greece, accounting for over half of all migrants present in Greece in 2001 as well as 2011. Specifically, in 2001 Albania accounted for 58% of the migrant population, followed by Bulgaria (5%) and Georgia (3%) and in 2011 53%, followed by Bulgaria (8%) and Romania (5%).

The overwhelming majority of migrants who entered Greece in the 1990's and the early 2000's either entered without proper documents or overstayed their entry visas but hundreds of thousands of these migrants obtained proper documents in one of the three programmes for regularisation of undocumented migrants carried out in 1998, 2001 and 2005 (Cavounidis, 2008). Access to Greek citizenship has remained very restrictive except for migrants of Greek origin. For those not of Greek origin (the vast majority of immigrants), provisions for permit renewal require proof of social security contributions made with respect to declared employment, while spouses and children can acquire residence permits by virtue of their family relationship to such a person.

Data presentation

In order to examine the labour market outcomes of young (aged 15-29) women of Albanian origin (whether or not they were born in Greece or abroad) and compare them with those of young native women, micro-data of the Labour Force Survey of Greece were utilised.

The Labour Force Survey (LFS) is conducted by the Greek Statistical Authority (ELSTAT) throughout the country four times a year. The survey is representative of the total population of Greece, both natives and immigrants, and provides information on numerous demographic and socioeconomic characteristics which are considered crucial for our analysis. The main goals of the survey, which involves all regions across Greece, are a) to gather analytic information on employment and unemployment of household members over 15 years of age along with information on their gender, age and education, b) to describe the structure of employment by industry, occupation, hours worked, etc., c) to monitor the duration of unemployment with regards to gender, age, education, place of residence and characteristics related to the last job, e.g. industry and occupation, and d) to provide information on other variables such as the employment status of household members or the existence of a spare-time job, etc.

The sample we employ extends from the first quarter of 2004 (2004Q1) until the fourth quarter of 2013 (2013Q4). Beginning in 2004, LFS data took the form of a rotating panel, which means that each individual participates in the survey multiple times, and specifically for six consecutive quarters (waves) in this case. The entire sample contains approximately 30,000 households (mean sample intensity is 0.85%) in each wave. Every quarter one sixth of the sample is replaced, which means that around 120,000 interviews are conducted on a yearly basis. The main reasons for choosing panel data are that they allow one to take into account the endogeneity of the unit of analysis, in this case individuals, and that they embody richer information and have higher volatility while there is less correlation between variables, thereby leading to more efficient estimators.

Table 1. Labour Force Surveys panel data structure, (Greek and Albanian females aged 15-29)

# of times the individual is observed	Observations			Individuals		
	N*	%	Cumulative %	N	%	Cumulative %
1	5,007	2.4	2.4	5,007	10.9	10.9
2	9,128	4.4	6.8	4,564	9.9	20.8
3	12,861	6.2	13.0	4,287	9.3	30.1
4	16,152	7.8	20.7	4,038	8.8	38.9
5	19,445	9.3	30.1	3,889	8.4	47.3
6	145,668	69.9	100.0	24,278	52.7	100.0
Total	208,261			46,063		

Source: LFS data, 2004Q1-2013Q4, ELSTAT.

* This column equals the product of the number of individuals by the number of times they are appear in the sample.

Table 1 reports the total number of observations and individuals in our sample for the entire period under investigation. The sample consists of women aged 15-29[1] who are nationals of Greece and Cyprus (grouped together[2]) and of Albania. The total number of observations exceeds 200,000, which translates into more than 45,000 individuals. Albanian females account for almost 6% of the entire sample, i.e. approximately 2,700 individuals. Last but not least, 70% of the observations are observed in all six waves, which correspond to more than 50% of the individuals.

Table 2. Sample composition and labour force participation rates by marital status and age group

	Composition**		LFPR***		Differential****
	Greeks* (%)	Albanians (%)	Greeks* (%)	Albanians (%)	(pp)
15-19					
Single	98.8	94.6	7.3	11.1	-3.8
Married	1.1	5.2	26.7	22.4	4.4
Other (widowed/divorced)	0.1	0.2	6.7	100.0	-93.3
Total	-	-	7.5	11.8	-4.3
20-24					
Single	91.1	39.6	47.1	56.7	-9.6
Married	8.6	59.8	48.7	32.7	15.9
Other (widowed/divorced)	0.3	0.7	65.4	76.9	-11.5
Total	-	-	47.3	42.5	4.8
25-29					
Single	64.7	11.2	88.8	84.4	4.4
Married	33.9	87.0	63.8	41.7	22.1
Other (widowed/divorced)	1.4	1.9	81.6	70.5	11.1
Total	-	-	80.3	47.0	33.3

Source: LFS data, 2004Q1-2013Q4, ELSTAT.
* Includes citizens of both Greece and Cyprus. ** These should add to a hundred within each age group. *** These two columns refer to labour force participation rates, e.g. 100% means that all women in this group participate in the labour force in the case of Albanian widows or divorced women. **** The differential is expressed in percentage points and it represents the difference between labour force participation rates, i.e. LFPR Greeks-LFPR Albanians.

International data of the World Bank[3] on labour force participation rates of women aged 15-64 show that women in Albania had higher LFP than women in Greece at least through the 1990s and the beginning of the 2000s. From the beginning of the 1990s, however, the rate for Albanian women steadily declined while that of Greece rose steadily. In 2005 the rate for

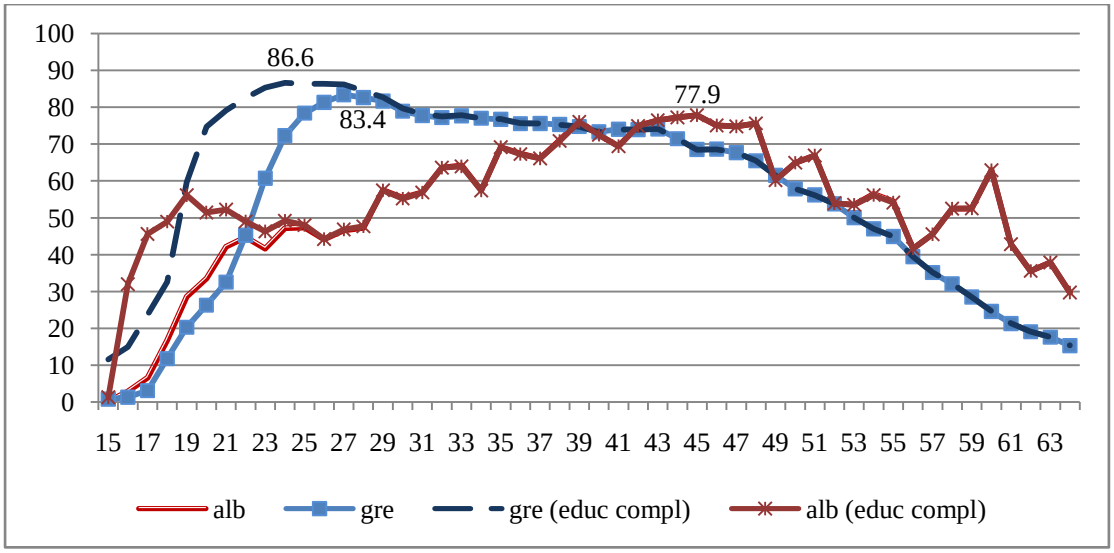
[1] The data have been cleared from inconsistencies in key variables, i.e. gender, age and education. This means that individuals with unjustified variations in those variables have been dropped and are not included in the analysis.
[2] Citizens of Cyprus have been included with citizens of Greece since they generally share a common language and similar culture.
[3] Data retrieved on October 17th 2014 from Database World Development Indicators. The figures are for females aged 15-64.

women in Greece surpassed that of women in Albania, and by 2012 there was a gap in favour of Greece of almost seven percentage points (58.5% vs. 51.7%). On the other hand, 2013 data for Greece show that women of Albanian citizenship aged 15-64 have similar participation rates with their counterparts of Greek citizenship (54.8% vs. 56.0%).

It might seem on the basis of such figures that women of Albanian origin have adapted to Greek patterns regarding female labour force participation. When age however is taken into consideration, sharp discrepancies are observed between the two groups. While young women of Albanian origin 15-19 years of age exhibit a slightly higher LFP rate than their native counterparts, as shown in Table 2, in the age groups 20-24 and 25-29 they have lower LFP rates than native women, especially among women aged 25-29, where the difference reaches 33.3 percentage points. A closer look reveals first that the largest discrepancies are found amongst married young women and second that much larger proportions of women of Albanian origin are married in age groups 20-24 and 25-29 than are native women. This observation might lead one to believe that marriage has a crucial impact on the probability of labour force participation of women, an issue which will be explored below.

However, before investigating this major gap in the LFP of young women of native and Albanian origin, we examine the participation rates for women of all ages based on the sample employed. These rates are depicted in Graph 1 and have an inverse U-shape for both groups. Examination of Graph 1 allows one to distinguish between three periods. In the first period, up to the age of 21, Albanian women have a higher participation rate than their Greek counterparts, and the same is generally true for women in their late 30's and on (third period). In the interim (second period), Greek women seem to participate much more massively in the labour market than Albanian women. Moreover, native females reach the maximum participation rate in their late 20's (or mid 20's for those with completed education) while Albanian women in their mid 40's. A few more observations should be made on the basis of this graph. The first concerns the difference between women who have completed their education and those who have not. The differences are spotted in the first few years and, in particular, up to the late 20's for Greek women and mid 20's for Albanian women, and correspond to a gap of about five years. After those ages, participation rates are almost identical. The obvious explanation is that the differences traced amongst younger females are due to education, i.e. a big share of women study almost up to their 30's and, therefore, do not participate in the labour market. Further, the five-year difference between the two ethnic groups probably results from the fact that Greek females tend to stay longer in education. An additional observation is that the participation rate for Albanian females seems to be more volatile compared to Greeks, especially after the age of 50. One plausible explanation is that the actual number of Albanian women is small as it does not exceed 100 observations after that age.

Graph 1. Female labour force participation rates by age and nationality



Source: LFS data, 2004Q1-2013Q4, ELSTAT.
Notes: alb = Albanian females, gre = Greek and Cypriot females, alb (educ compl) = Albanian females who have completed their education, gre (educ compl) = Greek and Cypriot females who have completed their education. "educ compl" refers to the highest level of education attained, i.e. could be wither primary or tertiary education.

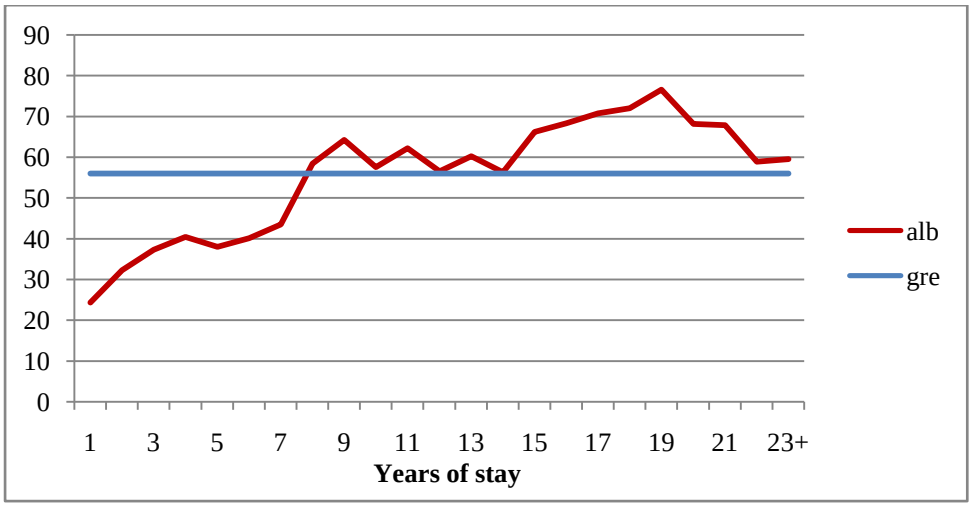
Furthermore, various theories on immigrants' behaviour in the host country would predict a pattern of converging participation rates between female Albanian immigrants and natives: the longer the immigrants stay in Greece, the stronger the convergence should be.[4] Graph 2 depicts the evolution of female LFP rates for Albanians (alb) aged 15-64 as years spent in Greece accumulate. Detailed information for years of stay in Greece is not available for the earlier years of the sample, so that Graph 2 concerns only the period 2009-2013, i.e. during the recession. The first impression obtained is that female LFP rates are considerably lower for Albanians after their arrival in the country, but that they quickly converge to patterns exhibited by Greeks and then surpass them, while after approximately 20 years of stay Albanians seem to converge to Greek standards once more, but from the upper side this time. One plausible explanation of the initial divergence from local patterns is that females of Albanian origin came to Greece bringing cultural norms of the source country which frowned upon women's participation in the labour force. As seen above, women's LFP rates in Albania began to steadily decline from the early 1990's, when the socialist regime was overthrown (and migration to Greece commenced), reflecting the traditional gender norms that the socialist regime had not managed to change, even if it had managed to increase women's LFP rates.[5] The subsequent convergence by Albanian immigrant women to Greek patterns can perhaps be explained by the gradual assimilation of these women to local norms as well as by the adverse economic conditions since 2009 which have probably forced many immigrant women to enter the labour market in order to compensate for the loss of income

[4] See Okun and Kagya (2012) for a brief discussion of various theories attempting to interpret immigrants' behaviour, such as the assimilation theory, the adaptation theory, the characteristics hypothesis, etc.

[5] Various works have emphasized the traditional, patriarchal characteristics of family and society in post-communist Albania. See for example King and Vullnetari (2009) and Van Boeschoten (2007).

suffered by the household due to high male unemployment rates (31.2% in 2013Q4 for Albanian male immigrants).[6]

Graph 2. Female labour force participation rates (aged 15-64)



Source: LFS data, 2004Q1-2013Q4, ELSTAT.
Note: Due to the very small number of observations after 23 years of stay (migration to Greece from Albania commenced only at the beginning of the 1990s), the results have been unified to one category, i.e. 23+.

This study focuses on females aged 15-29, and attempts to disentangle the differential between young Albanian and Greek women by investigating the factors which affect the decision to participate in the labour force or not. In order to have a sample which better reflects the conditions before the recession and during it and to investigate the impact of the recession on the variables assumed to determine the participation of women in the labour market, we estimate participation regressions for the entire period under investigation and separately for the period before the recession (2004Q1-2008Q4) and the period during the recession (2009Q1-2013Q4), whenever this is allowed by the data.[7] Further, although the focus is on young Albanian women, we estimate a regression for Greek women as well, in order to have a reference point. But, before we go on to describe the methodological path followed some key characteristics of the youth sample should be presented.

Table 3 provides descriptive statistics for key variables considered crucial in the process of determining female labour force participation. First of all, major differences are observed between the two groups with respect to their marital status, as seen earlier. Much larger proportions of young female nationals of Albania are married than are their Greek counterparts. Specifically, as seen in Table 2, 59.8% of Albanian nationals aged 20-24 were married, compared to only 8.6% of Greek nationals, while the corresponding figures for women aged 25-29 were 87.0% and 33.9% respectively. Even when the whole sample is

[6] It should be noted that most male Albanian immigrants were employed in Construction (58.4% in 2008Q4 compared with 33.0% in 2013Q4), an industry which was severely hurt by the recession (57.5% less male Greek and Albanian employed in Construction between 2008Q4 and 2013Q4).
[7] For example, we already noted that years of stay in Greece are available only after 2008.

considered (15-29) differences regarding marriage persist, since 57.3% of Albanian nationals are married compared to 15.3% of young female Greeks.

One plausible explanation for this major difference in marriage patterns is that the institutional framework concerning provisions for residence permits "encourages" Albanians to marry in order to secure permission for stay on Greek territory, given that after the age of 18 a foreign national can no longer be issued a permit as a child of a foreign national with a residence permit but instead must either be a student at a recognised educational institution, obtain a work permit on the basis of proven employment and social security contributions, or procure a residence permit by virtue of "family reunification" as a spouse. Another plausible explanation concerns culture and the different norms and values prevailing in Albania and Greece about gender roles and appropriate ages of marriage.

Table 3. Sample composition and labour force participation rates by marital status, education and region of residence (aged 15-29)

	Composition		LFPR		Differential
	Greeks* (%)	Albanians (%)	Greeks* (%)	Albanians (%)	(pp)
Marital status					
Single	84.1	41.7	44.0	33.3	10.6
Married	15.3	57.3	60.2	38.2	21.9
Other (widowed/divorced)	0.6	1.0	76.4	73.0	3.4
Education level completed					
Compulsory education	28.8	65.9	16.0	29.7	-13.7
Upper secondary	44.0	28.3	39.5	44.5	-5.0
Post-secondary	9.8	2.9	90.6	80.2	10.4
Tertiary vocational	6.3	1.2	93.4	85.4	8.0
University	10.2	1.7	89.0	60.9	28.1
Master/PhD	0.9	0.0	93.5	-	-
Region of residence					
East Macedonia and Thrace	6.7	2.2	47.3	33.2	14.1
Central Macedonia	17.4	11.2	41.9	34.2	7.7
Western Macedonia	3.2	1.5	41.8	31.8	10.0
Epirus	7.3	6.3	41.6	34.6	7.0
Thessaly	5.7	5.2	46.8	24.6	22.3
Ionian Islands	1.8	2.6	48.6	42.8	5.8
Western Greece	7.5	4.7	43.3	29.1	14.2
Sterea Ellada	5.0	7.3	51.3	39.9	11.4
Attica	27.5	41.1	51.3	39.2	12.2
Peloponnese	5.4	6.5	49.2	33.2	15.9
North Aegean	1.9	1.1	47.3	41.0	6.2
South Aegean	2.3	2.3	47.0	43.3	3.8
Crete	8.2	7.9	44.7	37.1	7.6

* Includes citizens of both Greece and Cyprus
Source: LFS data, 2004Q1-2013Q4, ELSTAT.

The major difference in the marital status of Albanian and Greek nationals could have important implications for participation rates so long as marriage has a significant effect on women's decisions to participate in the labour market. This would seem highly probable in the case of Greek female youth, since the participation rate varies widely between married (60.2%) and single females (44.0%). One possible explanation could be that single Greek young females are studying, thus they have a low participation rate: 44.5% of females have not concluded their education. On the other hand, in the case of young Albanian women, married ones also have a higher participation rate, but the difference is narrow, approximately five percentage points.

Regarding education, Greek females are more educated than their Albanian counterparts, since the majority have completed upper secondary education (44.0%), while the majority of the latter have completed only compulsory education (65.9%). For higher levels of education the differences are also very large: 9.8% of Greek females have completed post-secondary education vs. 2.9% of Albanian females, while 17.4% of the former have completed tertiary education (including post graduate studies) compared with just 2.9% of the latter. Education is then another factor which varies significantly between the two groups of nationals and which could also create different patterns of labour force participation. It is evident in both groups that higher education is linked to higher participation rates almost linearly, which is expected based on economic theory.[8] Nevertheless, there is important divergence between Greeks and Albanians. For instance, in the two lowest levels of education young female Albanians participate more often in the labour market than their Greek counterparts, while the situation is reversed for higher levels of education. In addition, the difference in participation rates between the two groups ranges from -5.0 percentage points (pp) in Upper Secondary to 28.1pp in University, in favour of Greek female youth. In either case, female LFP rate seems to be much more volatile and dependent on education for young Greek as opposed to young Albanian women, as is evident by the higher standard deviation (sd) of the participation rates (0.338pp for Greeks vs. 0.235pp for Albanians).

Last but not least, the geographical distribution of young females is substantially different between ethnic groups. Approximately 41.1% of young female Albanians reside in Attica and another 11.2% in Central Macedonia, while for Greeks the respective figures are lower in the first case and higher in the second. There are also important differences between ethnic groups in the rate of participation, which is much more volatile in the case of Albanian young females (sd is 0.055pp for Albanians and 0.034pp for Greeks). Thus, the FLFPR differential between Greeks and Albanians ranges from 3.8pp in South Aegean to 22.3pp in Thessaly. In Attica, where young female Albanians are overrepresented, their LFPR is 12.2pp points lower, while in Central Macedonia the differential is 7.7pp compared with Greeks. The reasons behind such differences in participation rates across regions are not clear.

Methodological issues

Our goal is to model the decision of young females to participate or not in the labour market. Participation is defined as the situation in which a female is either employed or unemployed,

[8] Human capital theory developed by Mincer (1958, 1974), Schultz (1961), Becker (1964) and Ben-Porath (1967) predicts that more educated individuals are more willing to participate in the labour market in an attempt to yield returns from their investment in education.

i.e. actively seeking a job. The nature of our dependent variable dictates the use of either Logit or Probit regressions techniques, since the outcome of the decision process is binary, i.e. participate or not. Choosing between Logit or Probit is usually considered a matter of preference, although the two models rely on different assumptions regarding the identity function, i.e. Logit assumes that the identity function is a logistic cumulative distribution function, while Probit assumes that the identity function is a standard normal cumulative distribution function (Wooldridge, 2002: ch.15). Worthwhile differences between the two models occur in the tails of the distribution, but the difference is much less if interest lies only in marginal effects averaged over the sample, rather than for each individual (Cameron and Trivedi, 2006: ch.14), which is currently the case. Nevertheless, we estimated both Logit and Probit and compared the two models using the AIC[9] (Akaike Information Criterion) and BIC (Bayesian Information Criterion) test statistics for comparing different models. The results are reported in the Appendix (Tables A1 and A2) and they seem to indicate that Logit should be preferred to Probit, when it comes to Greek women, but the opposite is true for Albanian women[10]. Since using odds ratio appears more attractive and given that the tests show weak differences, we decided to use logit in both cases.

Thus, the model fitted with maximum likelihood after taking under consideration that the same individual is interviewed more than once (clustering) has the following form:

$$\Pr(y_i \neq 0|x_i) = \frac{\exp(x_i\beta)}{1+\exp(x_i\beta)}, \qquad (1)$$

where $y_i = 1$, if the woman participates in the labour force (either employed or unemployed) and 0 otherwise, and x_i is a vector of independent variables we discuss next.

Ideally, the independent variables should capture all those factors which affect the female's decision to participate in the labour market, i.e. factors which determine female labour supply. First, there are macroeconomic factors, which involve the economic conditions in a specific country and differences in female labour force participation rates could be explained by country differences in those factors. Since the country, i.e. the economic, social and institutional environment, is the same for immigrants and natives[11], we cannot use the institutional framework as an independent variable such as access to public childcare services, healthcare services provided free of charge for the elder, tax treatment of the second earner, childcare subsidies, child benefits, paid parental leave or tax incentives to share market work between spouses (Jaumotte, 2004).

Secondly, there are microeconomic factors, which involve specific characteristics of a female and might lead to different decisions regarding labour force participation within the same macroeconomic context. The choice of these factors relies on Becker's (1965) time allocation model, which argues that females arbitrage between leisure, labour and home production of goods and services. The latter includes caring for children and it implies that females' labour supply elasticity to the market wage is higher compared with men's, which children increase

[9] AIC= -2X(ln(likelihood))+2Xk and BIC=-2X(ln(likelihood))+ln(N)+k, where k= number of parameters estimated and N= number of observations.
See http://www.stata.com/manuals13/rbicnote.pdf#rBICnote.

[10] Further details regarding the AIC and BIC tests used can be found at Akaike (1974), Schwarz (1978), Sakamoto et al. (1976) and Raftery (1995).

[11] Of course this refers to legal immigrants. Illegal immigrants typically engage in unsecured and undeclared employment and are denied access to many social services.

even more. In this framework a number of factors-variables are employed as independent variables in our model. Such variables of individual socioeconomic and demographic characteristics (see also Merz, 1990; Christofides and Paschardes, 2000; Connelly et al., 2001; Marenzi and Pagani, 2003; Bloemen and Stancanelli, 2008) include age (and its square), which are the only continuous variables in our model, level of education completed (more educated women are closely attached to the labour market, because of higher expected earnings), family status (marriage might discourage women from working either due to cultural norms or increased time spent at home production), a dummy for being head of the household (in such a case the responsibility to provide for the household is expected to increase), the number of household members (more home production needed), the presence of household members over the age of 64 and children younger than 6 years old (which assumes there are members of household which increase the workload at home or in the case of older members might alternatively provide assistance with raising kids), and last but not least the presence of another employed individual in the household, which is something that might ease the pressure on the female to get a job according to the secondary worker theory[12].

Another set of variables includes the administrative region of residence (cultural differences or different types of available jobs, e.g. part-time jobs in regions with a strong tourism industry or demanding agricultural jobs in the regional areas), size of city or municipality of residence (type of jobs available), year of survey to capture the impact of economic cycles, quarter of survey to investigate the impact of seasonality, since it is not uncommon for women to work for a specified time interval each year and then drop out until next season, as well as a dummy for those still studying (which is quite often for Greek women up to the age of 24 and decreases the probability of working at the same time). Similar variables to the ones we chose are used in numerous studies modelling the participation decision of women, e.g. Cavounidis and Cholezas (2013), Scoppa and Stanges (2014), Blau at al. (2011), while others had richer datasets and therefore include additional variables, e.g. Fernandez and Fogli (2009) or Blau and Kahn (2011).

Finally, following the literature on the experience of immigrants in host countries regarding labour market participation (see Blau et al., 2011; Blau and Kahn, 2011; Scoppa and Stranges, 2014; Fernandez and Fogli, 2009), the female LFP rate in Albania (for females aged 15-64)[13] at the time the female immigrated to Greece[14] is used as an independent variable. The calculation of the variable makes use of the information on the years of stay in the country to determine the labour force participation rate in the country of origin, i.e. Albania in this case. As already mentioned, this piece of information is available only for the subsample "during the recession".

[12] For a discussion on added worker effect regarding women see Mincer (1962).
[13] The data were retrieved by the World Bank database and specifically from the World Development Indicators series.
[14] We make an assumption that the immigrants came to Greece straight from Albania. Naturally, if females were in some other country, and not their country of origin, before coming to Greece, the situation becomes more complicated. Nevertheless, since Albania is adjacent to Greece, we strongly believe that our assumption holds for the vast majority of young female immigrants. Unfortunately, there is no data to support our conviction.

It should be noted that certain variables might be correlated with each other. Tests performed[15] showed that this is the case only for age and age squared/100, which is of course expected. The results from the correlation matrix of the variables used allow the use of these variables without serious doubts about multicollinearity contaminating the results.

4. Results

The results presented in Table 4 include seven separate regressions. The first four columns (1-4) report the regressions' results for the entire sample and separately for Greek young females and for Albanian young females. The next four columns (5-8) report the regressions' results for the sample before the recession, i.e. 2004Q1-2008Q4. The next four columns (9-12) report the regressions' results for the sample during the recession, i.e. 2009Q1-2013Q4, while the last two columns (13-14) report the regressions' results for the sample during the recession, but this time considering the effect of the female labour force participation rate (FLFPR) in the home country at the time the immigrant left her country to come to Greece. The results are reported in odds ratios (O. Ratios), so that their interpretation is straightforward: the odds ratios reflect *ceteris paribus* how much more probable is the outcome of concern (participation) to happen compared with the alternative outcome (no participation).

In general, it seems that the regression fits the data for the sample of Greeks better, since both the Log pseudolikelihood is higher (in absolute terms) and the PseudoR^2 is also twice as high compared to the Albanians' sample. In addition, the variables that do not have a statistically significant effect are many more in the case of the Albanian young female sample. Given that they are dummy variables, this only means of course that their effect is not statistically different from the effect of the reference group in each case.

Age seems to be very important in the decision to participate in the labour market. Each year increases the probability of participating by four times in the case of Greeks and almost two and a half times in the case of Albanians, while the relationship seems to be monotonically decreasing (the coefficient of the square term is negative and the odds ratio is lower than unity), which means that participation increases with age, but at a decelerating pace. Educational attainment becomes more and more important in the decision to participate as education level increases in both ethnic groups, but its effect is stronger for Greeks (always with regard to upper secondary graduates), with the exception of compulsory education and tertiary technical. It is worth noting that having a university degree does not seem to differentiate the probability of participating in the case of female Albanians (statistically insignificant coefficient). Among probable explanations are first, the small number of Albanian female immigrants who actually hold a university degree[16] and, second, the disbelief of the Greek labour market towards a university degree from Albania, in the cases that it was acquired there and not in Greece, or third a discriminatory behaviour which excludes Albanian young females from positions that require a university degree. The latter seems a

[15] We calculated the correlation matrix for our variables and rejected the possibility of severe multicollinearity which could contaminate our coefficients. In addition, the coefficients have reasonable values and so do their standard errors. If severe multicollinearity was present STATA would have dropped the problematic variables and standard errors and odds ratios would be unusually high. See http://www.ats.ucla.edu/stat/stata/webbooks/logistic/chapter3/statalog3.htm.

[16] The reader should be informed that there are no female Albanian youth who hold a Master's or PhD degree in the sample.

plausible explanation when comparing university graduates' odds ratios: female young Greeks have twice as high odd ratio compared with female young Albanians.

Being married makes a difference for both groups. In the case of Greek nationals it is 80% less probable to participate in the labour market when married, while it is nearly 90% less probable in the case of Albanians. Being widowed or divorced, on the other hand, also has a stronger effect on young Albanian females (70% less probable vs. 40% for Greeks). Generally, it seems that marital status impacts more on the decision of Albanians than of Greeks to participate in the labour market, perhaps reflecting a stronger attachment to the traditional division of labour between genders for Albanians compared with Greeks. Being a student (*Student*) absolutely eliminates the probability of participating in the labour market, which is not surprising, given that the usual practice in Greece excludes working or looking for a job when studying. Being a household head (*HHhead*) inceases the probability of young females to participate in the labour market, much more in the case of Albanians, probably reflecting a stronger social net for Greeks, since Albanians are away from home, i.e. family, relatives, friends, etc., that might provide some kind of support, if necessary.

The number of household members (*HHsize*) matters for both Greeks and Albanians; each additional member increases the probability of participating in the labour market by approximately 15% and 20% respectively. The presence of children in the household (*Kids(6y.o.)*) has no statistically significant effect for Greeks, while it is not applicable to Albanians[17]. On the other hand, the presence of household members over the age of 64 (*Elder(>64y.o.)*) decreases the probability of Greeks to participate in the labour market, perhaps through increasing responsibilities at home (i.e. home production), but it has no effect on young female Albanians. Last but not least, the presence of another employed household member (*Employed HHmemb*) in both groups has no statistically significant effect, although it is marginally positive for Greeks and negative for Albanians signalling a divergent effect based on national origin.

Splitting the sample to "before the recession" and "during the recession" yields some interesting results. For instance, age plays a more important role among the Greeks during the recession, but the opposite is true for Albanians. In either case, though, age continues to increase the probability of participation and more so for Greeks. On the other hand, the effect of education is weaker during the recession for Greek young females, which could be the result of a stronger motive to reap returns of their investment in education despite the recession which limits employment opportunities[18]. On the contrary, despite the fact that education seems to be much less important in the participation decision of young female Albanians compared with Greeks, odds ratios for tertiary education, both technical and university, are higher after the recession.

Further, married young females continue to have a lower probability of participating in the labour market compared with single young females of both nationalities during the recession. Similarly, being widowed or divorced makes no difference for Greeks as the economic situation deteriorates, but the recession seems to have an impact on young Albanians, i.e. the

[17] Apparently, there is no female young Albanian leaving in a household with young children.
[18] In other words, the participation decision of young females seems to depend less on their education level, perhaps because the need to work is stronger during the recession, e.g. because their spouse or other household members have lost their job or/and are having trouble finding a new one.

effect is no longer statistically significant. Being a household head has the same impact for Greeks irrespective of the recession, but it seems to change due to the recession for young female Albanians as it increases in size and becomes significant. Similar changes for female young Albanians take place regarding household size (it increases in size and becomes statistically significant).

In the last two columns of Table 4 lies the answer to the central question of this study, namely whether cultural background reflected in the female labour force participation rate (*FLFPR*) in the country of origin impacts decisively on the decision to participate in the labour market of the host country. In order to account for the effect of tradition and culture in the home country, we introduce as an independent variable the labour force participation rate of females in Albania for the year the immigrant came to Greece. First of all, the inclusion of FLFPR does not change the effect of the other variables, apart from a few negligible changes in the size of the odds ratios: tertiary technical education is most affected. Second, the effect is highly statistically significant and positive. This means that young Albanian females tend to participate more in the labour market when the female labour force participation rate in their home country the year they left was higher. To be precise, the results indicate that a one percentage point increase in the female labour force participation rate increases the probability of participating in the labour force of Greece by 22%. This is an indication that young female Albanians carry culture and values with them, as is the case in the literature examining the behaviour of immigrants towards the labour market in many other countries worldwide.

5. Conclusions

This paper compares the labour force participation of young women aged 15-29 of Greek and Albanian nationality and investigates the corresponding determining factors. The data show that among the younger age cohort, containing women aged 15-21, Albanian females are more likely to participate in the labour market than their Greek counterparts. On the contrary, among women aged 22-29, Albanian nationals are much less likely to participate in the labour force than Greek nationals. As years of stay in Greece increase, female Albanian nationals, irrespective of age, tend to converge to the LFP patterns of their Greek counterparts and often to surpass them. Further, young female Albanians differ from natives in key characteristics. Importantly, they are more likely to be married and are usually less educated, while a relatively larger proportion of the group reside in Athens compared to Greek nationals. Our main contribution is the use of the female labour force participation rate in Albania at the time of immigration to Greece. Following the literature, we believe the relationships ascertained may indicate the effect of culture of the source country on the choice of immigrants to participate or not in the labour market of the host country, while at the same time allowing for the impact of institutional arrangements concerning access to residence permits for foreign nationals in Greece, which together with prevailing cultural norms concerning gender roles, favour early marriage for women so that they can gain stay permits as spouses.

In an effort to examine possible consequences of the recession on the choice of females to participate in the labour market we split the sample into “before the recession” and “after the recession” for both groups of nationals. The results, which are in accordance with the literature, show that the recession did not have a crucial impact on the determining factors of

female participation. In any case, the choice of variables to include seems to fit the sample of Greeks better. Both age and education play an important positive role in females' decision to participate in the labour market which is more pronounced amongst young Greek females. Being married, on the other hand, decreases the probability of participating and especially in the case of young female Albanians, while having a husband who is employed also has a similar effect. In combination, these findings appear to indicate a more traditional division of labour between genders among Albanian households. Last but not least, the effect of female labour force participation in the home country at the time of arrival in Greece is positive and statistically significant: each percentage point increase in the female LFP rate increases the probability of participation in the Greek labour force by approximately 22%.

To our knowledge, this is the first study in Greece which attempts to examine the role of immigrants' culture on the behaviour of females in the host country. The results are in accordance with the literature. Of course, certain assumptions had to be made. For instance, it was assumed that females came directly from Albania to Greece. Further, our sample was limited by the fact that information on years of stay in Greece was available for part of our data, which mainly referred to the "during the recession" period. A further step could involve using panel data estimation techniques, in order to be able to isolate individual specific effects. Another step could involve a field survey in order to determine the years of education the female Albanian nationals had in Greece as opposed to Albania, a piece of information which could prove useful in interpreting the negligible differentiation of university graduates from upper secondary graduates among Albanian nationals with respect to their decision to participate in the labour market ascertained in our results. These remain topics for further research.

Table 4. Regressions results: odds ratios

	Greeks*, all		Albanians, all		Greeks*, before the recession		Albanians, before the recession		Greeks*, during the recession		Albanians, during the recession I		Albanians, during the recession II	
	O. Ratios (1)	P>z (2)	O. Ratios (3)	P>z (4)	O. Ratios (5)	P>z (6)	O. Ratios (7)	P>z (8)	O. Ratios (9)	P>z (10)	O. Ratios (11)	P>z (12)	O. Ratios (13)	P>z (14)
Age	4.20	0.000	2.38	0.000	3.87	0.000	2.87	0.000	4.85	0.000	2.00	0.009	2.05	0.012
$Age^2/100$	0.97	0.000	0.98	0.000	0.98	0.000	0.98	0.000	0.97	0.000	0.99	0.043	0.99	0.038
Compulsory	0.51	0.000	0.73	0.007	0.51	0.000	0.84	0.279	0.50	0.000	0.62	0.003	0.67	0.014
Post-Secondary	2.71	0.000	2.05	0.034	3.15	0.000	2.23	0.101	2.16	0.000	1.87	0.158	1.99	0.108
Tert. Vocational	3.46	0.000	3.58	0.021	3.57	0.000	2.96	0.113	3.28	0.000	4.29	0.073	3.31	0.113
Tert. University	2.65	0.000	1.15	0.698	2.88	0.000	1.09	0.866	2.37	0.000	1.29	0.595	1.55	0.324
Master/PhD	3.48	0.000			3.71	0.000			3.21	0.000				
Married	0.20	0.000	0.12	0.000	0.20	0.000	0.13	0.000	0.20	0.000	0.11	0.000	0.14	0.000
Widowed/divorced	0.62	0.005	0.29	0.027	0.62	0.038	0.19	0.044	0.65	0.095	0.35	0.138	0.37	0.142
Student	0.01	0.000	0.01	0.000	0.01	0.000	0.01	0.000	0.01	0.000	0.01	0.000	0.01	0.000
HHhead	1.20	0.009	2.00	0.042	1.22	0.029	1.13	0.806	1.27	0.024	3.30	0.018	3.13	0.014
HHsize	1.15	0.000	1.20	0.015	1.20	0.000	1.12	0.271	1.09	0.007	1.27	0.020	1.24	0.041
Kids(<6 y.o.)	0.36	0.470			0.32	0.416								
Elder(>64y.o.)	0.80	0.000	1.03	0.933	0.85	0.037	1.46	0.419	0.73	0.002	0.72	0.558	0.82	0.759
Employed HHmemb	1.02	0.740	0.81	0.167	1.20	0.009	0.69	0.347	0.85	0.023	0.81	0.213	0.75	0.102
FLRPR													***1.22***	***0.000***
Log likelihood	-52,073.3		-5,628.3		-30,983.8		-2,712.0		-20,861.0		-2,861.6		-2712.5	
Pseudo R^2	0.616		0.291		0.594		0.247		0.648		0.340		0.330	
N of obs	196,158		12,097		110,286		5,490		85,872		6,607		6,076	

* Includes citizens of both Greece and Cyprus

Notes: 1. Dependent variable equals 1 if the young female participates in the labour force and 0 otherwise. 2. Reference group for education is upper secondary (Lyceum). 3. There are no young Albanian females who hold either a Master or a PhD. 9. 4. There are additional twelve dummies for region of residence (Attika is the reference group), four dummies for degree of urbanity (regional areas is the reference group), dummies for year of interview (the number depends on the period) and three dummies for quarter (the second quarter is the reference quarter) 5. When P>z statistic is smaller than 0.010, then the respective coefficient is statistically significant at the 1%, if P>z statistic is greater than 0.010 and smaller than 0.050, then the respective coefficient is statistically significant at the 5% and if P>z statistic is greater than 0.050 and smaller than 0.100, then the respective coefficient is statistically significant at the 10% confidence interval. Last but not least, to save space the complete results are available upon request.

Appendix

Table A1. Testing for appropriateness: Logit vs. Probit (Greeks)

Model	Obs	ll(null)	ll(model)	df	AIC	BIC
logit1	196,158	-135,531.8	-52,073.3	44	104,234.5	104,682.7
probit1	196,158	-135,531.8	-52,315.8	44	104,719.5	105,167.7

Note: N=Obs used in calculating BIC.

Since both AIC and BIC are marginally lower for the logit model, we should choose logit.

Table A2. Testing for appropriateness: Logit vs. Probit (Albanians)

Model	Obs	ll(null)	ll(model)	df	AIC	BIC
logit2	12,097	-7,940.5	-5,628.3	42	11,340.5	11,651.4
probit2	12,097	-7,940.5	-5,626.9	42	11,337.8	11,648.6

Note: N=Obs used in calculating BIC.

Since both AIC and BIC are marginally lower for the probit model, we should choose probit.

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