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RECENT PORTUGUESE EMIGRATION: SOME EMPIRICAL EVIDENCE

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Abstract

Supplying work in the home country or abroad must be seen as a single decision. A study of the joint determinants of labor supply and emigration therefore enhances our knowledge about the allocation of time within an individual's life-cycle.

Our empirical results show that there is a strong support for not considering symmetrically home wages and wages in country of destination. Imperfections in the capital markets seem to play an important role when workers have to finance their cost of moving.

The results point to the existence of a large stock of potential emigrants in Portugal. The actual emigration will depend a lot on expectations about the evolution of real wages in Portugal and in the EEC partners. If workers do not believe in a rapid growth at home we will see a large outflow due to differential of wage levels.

Introduction

The stock of Portuguese emigrants in EC countries currently stands at more than one million persons[1], representing close to 25% of the current Portuguese employment.

During the second half of the 1960s and first half of the 70s there were large flows of emigration to the EC countries (more than 100,000 people per year). After 1974 emigration came to a virtual halt due to the emigration policies of the destination countries and the Portuguese 25th of April revolution (revolution of the cloves).

In this paper we study the Portuguese emigration (and in particular to France) and labor supply, pointing to the differential in coefficients between the period before 1974 and

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[1] 1,071,000 according to estimates of the State Department for Portuguese Communities.

after that date. Based on the empirical results we discuss some of the traditional results of the economic literature.

The empirical results show that the activity rate (rate of participation in the labor market) is significantly influenced by the stock of emigrants, what can support the idea that emigration and labor force participation , as economic decisions, belong to a single process.

We confirm that wages in the home country and the destination country should not be treated symmetrically as the emigration rate increases with the increase in Portuguese wages after 1974 what can be explained by imperfections in the capital markets and the need of the workers to finance their moving costs with their incomes.

We confirm also the existence of a large stock of potential emigrants. The actual emigration will depend a lot on expectations about the evolution of real wages in Portugal and the EC partners. If workers do not believe in a rapid growth at home we will see a large outflow due to differential of wage levels.

This paper is organized as follows. First, some conceptual issues are discussed. Second, the data and the empirical models are presented. Third, the results are examined. The paper ends with a brief conclusion.

I - Conceptual Issues[2]

The decision to migrate depends on the present value of wages in the home and the destination country (Hicks 1932) as the worker is taking a decision that will change his life cycle budget constraint.

The worker is not only deciding to migrate or not, he is also deciding to enter the labor market or not and when and for how long to migrate (Berninghaus and Seifert-Vogt 1988). This is not a simple decisional process so the theoretical models presented so far deal with parts of the problem.

Faced with the quality of the data we have it does not seem important to try construct a more detailed model, but to see what our data can answer to questions posed by the theory.

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[2]In this part we do not present an exhaustive survey of the literature, but refer only to some papers which have contributed to the discussion.

The first question we should address is: Are the home wages and the host wages to be treated symmetrically in the emigration equation?

Some authors (Geary and Gráda 1989, Erikson 1989) following a long tradition treat them symmetrically. Others (Vanderkamp 1971) point the dual role of the wage in the home country as an income foregone due to migration and as a source of financing of the cost of movement; this latter aspect is going to be very important when workers are not going be asked by the employers of the host country to move (paying part of the migration costs) but are themselves paying the cost.

To test this point we use as explanatory variables in the emigration equation the wages in the home country and the wage in the host country independently.

A second question is: Should we consider real wages over time or nominal wages?

Most of articles use real wages as the explanatory variable,

but Djajic (1989) points that the guest worker's decision to migrate depends on the real and nominal difference of wages, as the worker can save in the host country and consume in the home country.

We tried several specifications of the emigration equation where the nominal wages and the price levels were considered independently. The regressions did not improve when compared with the ones where we used the real wages; so, even if there is a theoretical support for not considering real wages, our data did not support it (as explained by Djajic 1989, the greater the concavity of the utility function, the less freedom the worker has in choosing his country of consumption).

As the decision is taken considering the life-cycle we have two more questions: How to consider future wages? How to consider the possibility of unemployment?

The latter question (see Harris and Todaro 1970) was answered by most authors considering the unemployment rates in the home and host countries (some of them treating them symmetrically, and therefore using their difference) as explanatory variables. Our

results showed that there was no improvement in the regressions if we considered the unemployment rates independently when compared with the ones we obtained considering the expected wages, that is the ones where the explanatory variable was the wages multiplied by the probability of being employed.

Concerning the expectations formation there are various possibilities. We decided to consider a three year expectation formation (due to the quality and quantity of data available) and tried adaptative and rational expectations. The results from the estimations with rational expectations were better, so the expected wage is a weighted average of the wages of the three periods ahead.

As workers can finance their movement costs out of their wealth and not only their wages we considered the real wealth as an explanatory variable.

Finally (as pointed by Lundborg 1991) one of the costs of migration is the cost of trips to see friends and relatives back home. This need to travel and be back in contact with one's own culture decreases with the dimension of the number of emigrants

already in the host country.

Another reason to consider the the stock of emigrants has to do with search costs and information (Vishanath 1991); people from the same country can help each other and spread information.

Concerning the estimation procedure we used three stages least squares as the wage in Portugal is an endogenous variable to the model (Mathur and Stein 1991). We used as instruments all the variables above with the exception of the wage in Portugal, plus time and time squared. To assure the independence of the instruments and the residuals we used the stock of emigrants in time t-1 in the explanation of time t emigrantion flow.

II - Data and Estimation Procedure

Most of the data we have used in this paper is taken from publications of the INE (National Institute of Statistics), Banco de Portugal, IMF, ILO and the State Department for Emigration. The period under study is 1958 to 1985[3].

Variables:

wh - real home wages - Portuguese nominal wages divided by the price index and multiply by the probability of employment.

ewh - expected home wages - this variable is constructed as a weighted average of wages in the next three periods.

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[3]We used data from the period between 1958 and 1985 because data for 1986 and later is not directly comparable with the data up to 1985. Moreover, in 1986 Portugal became one of the members of the EC and therefore another structural break had to considered.

$$ewh(t) = b1\ wh(t+1) + b2\ wh(t+2) + b3\ wh(t+3)$$

where

$$b1 + b2 + b3 = 1$$

The coefficient for wh(t+3) can be considered as representing the whole future.

wd - wages in the destination countries - we have used real wages in France multiplied by the probability of employment for the emigration towards that country (wdf) and the real per-capita income in the industrialized countries as a proxy for this variable in the case of total emigration (wd).

ewd - expected wages in the destination countries - see above for ewh.

a - families' financial wealth at constant prices - as calculated by Cartaxo and Santos (1984).

em - emigration rate - calculated as the number of emigrants

divided by total population.

emf - emigration rate towards France - calculated as the number of emigrants to France divided by total population.

act - activity rate - calculated as the active population divided by the total population.

se - stock of all emigrants (previous period); as there was no good data concerning France we use this value in that case too.

As there is a strong presumption of structural break in 1974 (due to the above-mentioned changes in emigration policies of the main European countries), we have estimated the equations allowing for the possibility of changes in the coefficients in 1974.

This means that we have created variables having the value zero until 1973 and 1 thereafter (d is the corresponding dummy variable). The variable x_d is zero until 1973 and x thereafter. An "l" behind a variable name means it is a logarithm.

We end up estimating the following model:

$$\text{lact} = \beta_1 + \beta_2\ \text{lwh} + \beta_3\ \text{lewh} + \beta_4\ \text{lwd} + \beta_5\ \text{lewd} + \beta_6\ \text{lse} + \beta_7\ \text{la} + \beta_1'\text{d} + \beta_2'\ \text{lwh\_d} + \beta_3'\text{lewh\_d} + \beta_4'\text{lwd\_d} + \beta_5'\ \text{lewd\_d} + \beta_6'\ \text{lse\_d} + \beta_7'\ \text{la\_d} + \varepsilon$$

$$\text{lem} = \gamma_1 + \gamma_2\ \text{lwh} + \gamma_3\ \text{lewh} + \gamma_4\ \text{lwd} + \gamma_5\ \text{lewd} + \gamma_6\ \text{lse} + \gamma_7\ \text{la} + \gamma_1'\text{d} + \gamma_2'\ \text{lwh\_ d} + \gamma_3'\ \text{lewh\_d} + \gamma_4'\text{lwd\_d} + \gamma_5'\text{lewd\_d} + \gamma_6'\ \text{lse\_d} + \gamma_7'\ \text{la\_d} + v$$

$$\text{lemf} = \eta_1 + \eta_2\ \text{lwh} + \eta_3\ \text{lewh} + \eta_4\ \text{lwdf} + \eta_5\ \text{lewdf} + \eta_6\ \text{lse} + \eta_7\ \text{la} + \eta_1'\text{d} + \eta_2'\ \text{lwh\_d} + \eta_3'\ \text{lewh\_d} + \eta_4'\ \text{lwdf\_d} + \eta_5'\ \text{lewdf\_d} + \eta_6'\ \text{lse\_d} + \eta_7'\ \text{la\_d} + \vartheta$$

where d is a dummy variable that is zero until 1973 and 1 thereafter.

The three equations above were estimated simultaneously by three stages least squares and the significance of all the parameters was tested. All those which appeared not significantly different from zero (10% level) were deleted from the equations. These were simplified to

$$lact = b_1 + b_2\ lwh + b_3\ lewh + b_4\ lwd + b_5\ lewd + b_6\ lse + b_7\ la + b_2'\ lwh\_d + b_3'lewh\_d + b_5'\ lewd\_d + b_6'\ lse\_d + b_7'\ la\_d + \varepsilon$$

$$lem = g_1 + g_2\ lwh + g_3\ lewh + g_4\ lwd + g_5\ lewd + g_6\ lse + g_7\ la + g_2'\ lwh\_d + g_3'lewh\_d + g_5'\ lewd\_d + g_6'\ lse\_d + g_7'\ la\_d + \varepsilon$$

$$lemf = n_1 + n_2\ lwh + n_3\ lewh + n_4\ lwdf + n_5\ lewdf + n_6\ lse + n_7\ la + n_2'\ lwh\_d + n_3'lewh\_d + n_5'\ lewdf\_d + n_6'\ lse\_d + n_7'\ la\_d + \varepsilon$$

The following variables were used as instruments:

lwd,lewd,lewd_d,lwdf,lewdf,lewdf_d,d,la,lse,la_d,

lse_d,t,t^2

where t is time and se is the stock of emigrants in the previous period.

III - Empirical Results

The results from the non-linear estimation procedure are (absolute t values within parentheses)

	lact	lem	lemf
constant	-.042	.971	3.102
	(2.2)	(2.8)	(8.9)
lwh	.085	-.404	-.461
	(1.3)	(.48)	(.27)
lwh_d	-.083	2.140	3.001
	(1.3)	(2.3)	(1.6)
lwd	.181	11.486	
	(1.4)	(5.1)	
lwdf			9.680
			(4.9)
lewh	.247	-9.163	-19.264
	(2.7)	(6.1)	(7.5)
lewh_d	-.069	9.670	11.577
	(.97)	(8.6)	(5.6)
lewd	-.054	-1.830	
	(.59)	(1.0)	
lewd_d	.209	-12.436	
	(2.5)	(11.)	
lewdf			-5.714
			(1.8)
lewdf_d			-15.714
			(6.7)
la	-.065	1.838	4.316
	(2.3)	(4.1)	(6.7)
la_d	.129	-.768	-.843
	(3.6)	(1.5)	(.71)
lse(-1)	-.107	-.325	3.187
	(3.3)	(.66)	(6.5)
lse(-1)_d	.015	.097	-.393
$\bar{R}^2$	.997	.993	.992

Because of the way we defined our variables we have to add the coefficients of variable x to variable x_d to know the influence of the variable after 1974. The results of the sum appear in the table below.

	lact	lem	lemf
constant	-.042	.971	3.102
	(2.2)	(2.8)	(8.9)
lwh+lwh_d	.002	1.737	2.540
	(.03)	(2.3)	(1.8)
lwd	.181	11.486	
	(1.4)	(5.2)	
lwdf			9.680
			(4.9)
lewh+lewh_d	.178	.505	-7.687
	(3.3)	(.56)	(4.9)
lewd+lewd_d	-.155	-14.267	
	(1.7)	(6.5)	
lewdf+lewdf_d			-21.428
			(5.6)
la+la_d	.065	1.070	3.473
	(1.0)	(1.6)	(1.8)
lse(-1)+lse(-1)_d	-.092	-.228	2.794
	(2.7)	(.48)	(6.1)

The weights in the expectation formation were

Period	(+1)	(+2)	(+3)
home wages			
before 1973	-.006	.457	.549
	(.07)	(5.4)	(7.3)
after 1973	.257	.276	.467
	(3.6)	(4.2)	(4.9)
destination wages			
before 1973	-.252	1.113	.139
	(.63)	(2.2)	(.44)
after 1973	.305	.319	.376
	(5.9)	(6.2)	(5.3)

The results of the estimation procedure show:

1) income in the destination country and emigration rate are positively related with an elasticity of 11.5. The emigration rate to France is positively related to wages with an elasticity of 9.7. This influence does not seem to be affected by the structural break.

2) expected future income abroad and the emigration rate are negatively related. This can show that people postpone emigration if they expect wages to increase within the future in the destination countries. This effect is significant after 1974, as the host countries were not inviting more foreigners in and the

Portuguese workers were deciding the time to move.

3) the emigration rate and the wages in the home country are positively related after 1974 (up until 1973 the relationship was negative but not significantly different from zero at a 10% level). This can show the importance of home income to finance the moving in the period when the employers were not subsidizing part of the moving costs.

4) expected future wages at home and the emigration rate are negatively related. As workers expect their situation in the home country to improve they will tend to stay in their home country instead of emigrating. The relevant elasticity was estimated to be very high before 1974 with a value of 9.2 for total emigration and 19.3 for the emigration to France.

After 1974 the effect within total emigration almost disappears while to France it is still negative.

5) wealth negatively influences the activity rate (leisure is a normal good) and positively the emigration rate; again a result to support the idea of the existence of imperfect labor markets.

6) the stock of emigrants in the previous period negatively influences the activity rate. Remittances were not considered in this model but they may be increasing the reservation wages of those who stay.

7) As mentioned above, expectations should encompass the entire future, but due to the sample size, we have restricted the mechanism to be estimated to only three coefficients. In this case, the third coefficient was restricted and should be understood to be the sum of all the coefficients referring to time $\geq$ t+3. Of course, in this way, meaningful information about longer-term dynamics may be lost if other coefficients for time > t+3 are significant. This can explain why the third weight is greater than the other in most cases.

Negative weights were never significantly different from zero at a 10% level.

8) The emigration rate shows a much higher elasticity in relation to future wages than the participation rate.

IV – Conclusions

From the results obtained in this paper a number of important conclusions can be drawn. In fact, the results forecast that if the immigration policies of the Northern European EC countries change (for instance, as a consequence of the Single Act), a substantial emigration towards these countries will occur; there was a substantial increase on the negative effect of expected wages in the host country on emigration rate.

This can be the result of Portuguese workers postponing their decision to migrate creating a large stock of potential emigrants. Straubhaart (1984) and Pereira and Seabra (1991) using different assumptions arrive at the same conclusions.

In the long run, Portuguese emigration will depend on perceptions of the evolution of wages and living conditions both at home and abroad. If wages in Portugal are expected to increase quickly or living conditions abroad to decrease (due to racism) this may counter the "level effect" which constitutes the emigration movement resulting from current wage differences. If,

on the other hand, wages are expected to catch up only gradually there may be important labor flows across EC, to France in particular.

As wages increase in Portugal it can happen that emigration increases in a first phase as workers are getting the possibility to finance their moving costs. This was also verified in other empirical work (Vanderkamp, 1971).

A point we did not address in our study was the role of relative deprivation as the economic growth process Portugal is creating new inequalities. This (Stark and Taylor 1991) may create more international migration.

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