

## Portuguese Emigration 1958–1985: Some Empirical Evidence<sup>1</sup>

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*Abstract:* Supplying work in the home country or abroad must be seen as the result of the same decisional process. If that is true, the same set of variables should be used to explain the participation in the labor market and the emigration rates.

Based upon empirical results, we discuss some of the traditional conclusions of the economic literature. Our empirical results, for example, show that: 1) there is a strong support for considering home wages and the wages in the country of destination asymmetrically, 2) imperfections in the capital markets seem to play an important role when workers must pay for their moving expenses and 3) there is a differential in coefficients between the period before 1974 and after that date, as 1974 is the year most of the Central European countries changed their immigration policies.

The results also point to the existence of a large stock of potential emigrants in Portugal. The actual emigration will depend to a great extent on expectations regarding the evolution of real wages in Portugal and in the EC partners. If workers do not expect a rapid growth at home, we will see a large outflow due to the differential of wage levels.

*JEL Classification System-Numbers:* J61, F22

### Introduction

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 Carnations). Nevertheless, the stock of Portuguese emigrants in EC countries currently stands at more than one million persons<sup>2</sup>, representing close to 10% of the current Portuguese population.

In this paper we study the Portuguese emigration (particularly to France) and labor supply, pointing to the structural break which occurred in 1974. Based on the empirical results we discuss some of the traditional results of the economic

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<sup>2</sup> 1,071,000 according to estimates of the State Department for Portuguese Communities.

literature. We test and reject the hypothesis that wages in the home and destination countries should be treated symmetrically. The wage used as the explanatory variable is that of the expected real wage, meaning that it should take the possibility of unemployment into consideration.

In the case where workers have to pay for their moving expenses, as has been the case in Portugal since 1974, the wages at home constitute not only an opportunity cost for the migrants but also a means of financing the moving costs, as shall be seen in the results below. The situation regarding the dimension of Portuguese emigration, had there been no structural break in 1974, is addressed as well.

The paper is organized in the following way. 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<sup>3</sup>

According to the neoclassical theory, the decision to migrate depends on: 1) the value of wages in the home and the destination country and 2) the cost of moving, as the worker is making a decision that will change his/her life cycle budget constraint. The welfare attained depends upon the degree to which living in a foreign country affects it.

The decision to participate in the labor market or not, and whether and when to migrate or not, are made simultaneously by the worker who as usual is maximizing his life cycle utility (Berninghaus and Seifert-Vogt 1988). This is not a simple decisional process and because of this, most of the theoretical models in the literature deal with only parts of the problem.

The above theory concludes that the emigration rate should be a function of the wages at home and at the destination countries and the cost of migrating.

Faced with the aggregate data we have, it seems important to see how our data can answer some of the questions posed by the theory. The empirical issues addressed in this paper are the following:

- i) should we treat the home wages and the host wages symmetrically in the emigration equation?
- ii) should we consider real wages (in local purchasing power) over time or nominal wages?
- iii) how to consider future wages? How to consider the possibility of unemployment?

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<sup>3</sup> 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.

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

To test the first issue we use the wages in the home country and in the host country independently, as explanatory variables in the emigration equation.

Most articles in the literature use real wages as the explanatory variable, but Djajic (1989) suggests that the guest worker's decision to migrate depends on the real and nominal difference of wages. If there is a large difference in the price levels between home and host country, the worker can migrate from the low wage/low price country even if real wages are the same, as the worker may save in the host country and consume in the home country.

We explored 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<sup>4</sup>.

The latter issue (see Harris and Todaro 1970) has been answered by most authors by considering the unemployment rates in the home and host countries as explanatory variables (some of them treating them symmetrically, therefore using their difference). 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 that of 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 coming three future periods.

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 out 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 and their family ties. An additional reason for considering the stock of emigrants has to do with search costs

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<sup>4</sup> 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.

and information (Vishwanath 1991). People from the same country can help each other and spread information.

With regard to 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 of the above-mentioned variables 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  $t$  emigration 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<sup>5</sup>.

*Variables:*

*wh* – real home wages – Portuguese nominal wages divided by the price index and multiplied by the probability of employment.

*ewh* – expected home wages – This variable is constructed as a weighted average of wages over the coming three periods; weights are estimated.

$$ewh(t) = b_1 wh(t + 1) + b_2 wh(t + 2) + b_3 wh(t + 3)$$

where

$$b_1 + b_2 + b_3 = 1$$

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*), as industrialized countries were the main destination of the emigrants during this period.

*ewd* – expected wages in the destination countries – See above for *ewh*.

*a* – families' financial wealth at constant prices – Calculated by Cartaxo and Santos (1984).

*em* – emigration rate – We calculated this as the number of emigrants divided by total population, as only estimates exist for Portuguese population aged 15–65 from 1981 on<sup>6</sup>.

<sup>5</sup> 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 a member of the EC, therefore another structural break had to be considered and we have insufficient data to be able to treat it statistically.

<sup>6</sup> As suggested by one of the reviewers, we should consider the population at risk, mainly aged 15 to 65.

*emf* – emigration rate towards France – We calculated this as the number of emigrants to France divided by total population.

*act* – participation in the labor market rate – This was calculated as the active population divided by the total population.

*se* – stock of all emigrants (previous period) – as there were no good data concerning France, we use this value in that case, as well.

As there is a strong presumption of a 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 up until 1973 and 1 thereafter (*d* is the corresponding dummy variable). The variable *x\_d* is zero until 1973 and *x* thereafter. A letter “*l*” preceding a variable name indicates that it is a logarithm.

We use log-linear forms to make it easier to interpret the results, as these forms show constant elasticities.

We end up estimating the following model:

$$lact = \beta_1 + \beta_2 lwh + \beta_3 lewh + \beta_4 lwd + \beta_5 lewd + \beta_6 lse + \beta_7 la + \beta'_1 d + \beta'_2 lwh\_d + \beta'_3 lewh\_d + \beta'_4 lwd\_d + \beta'_5 lewd\_d + \beta'_6 lse\_d + \beta'_7 la\_d + \varepsilon$$

$$lem = \gamma_1 + \gamma_2 lwh + \gamma_3 lewh + \gamma_4 lwd + \gamma_5 lewd + \gamma_6 lse + \gamma_7 la + \gamma'_1 d + \gamma'_2 lwh\_d + \gamma'_3 lewh\_d + \gamma'_4 lwd\_d + \gamma'_5 lewd\_d + \gamma'_6 lse\_d + \gamma'_7 la\_d + v$$

$$lemf = \eta_1 + \eta_2 lwh + \eta_3 lewh + \eta_4 lwdf + \eta_5 lewdf + \eta_6 lse + \eta_7 la + \eta'_1 d + \eta'_2 lwh\_d + \eta'_3 lewh\_d + \eta'_4 lwdf\_d + \eta'_5 lewdf\_d + \eta'_6 lse\_d + \eta'_7 la\_d + \vartheta$$

where *d* is a dummy variable with the value of 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 to be not significantly different from zero in any equation (10% level) were deleted from the equations, with the exception of the real home wage, which was retained, as its expectation was significantly different from zero. 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* (2.2)	.971* (2.8)	3.102* (8.9)
<i>lwh</i>	.085 (1.3)	-.404 (.48)	-.461 (.27)
<i>lwh_d</i>	-.083 (1.3)	2.140* (2.3)	3.001 (1.6)
<i>lwd</i>	.181 (1.4)	11.486* (5.1)	
<i>lwdf</i>			9.680* (4.9)
<i>lewh</i>	.247* (2.7)	-9.163* (6.1)	-19.264* (7.5)
<i>lewh_d</i>	-.069 (.87)	9.670* (8.6)	11.577* (5.6)
<i>lewd</i>	-.054 (.59)	-1.830* (1.0)	
<i>lewd_d</i>	.209* (2.5)	-12.436* (11.)	
<i>lewdf</i>			-5.714 (1.8)
<i>lewdf_d</i>			-15.714* (6.7)
<i>la</i>	-.065* (2.3)	1.838* (4.1)	4.316* (6.7)
<i>la_d</i>	.129* (3.6)	-.768 (1.5)	-.843 (.71)
<i>lse(-1)</i>	-.107* (3.3)	-.325 (.66)	3.187* (6.5)
<i>lse(-1)_d</i>	.015* (2.4)	.097 (1.1)	-.393* (2.1)
-2			
R	.997	.993	.992

\* shows that *t* values are greater than 2

Because of the way in which 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 summation appear in the table below.

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

\* shows that the *t* ratios are greater than two

The weights in the expectation formation were

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

\* shows that the *t* ratios are greater than two

The results of the estimation procedure show:

- 1) The influence of the wages in the destination countries remains the same throughout the whole period, as the variables *lwd\_d* and *lwdf\_d* (dummy variables for the wages in the destination countries) were dropped from the equations.
- 2) 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.

3) Expected future income abroad and the emigration rate are negatively related. As people are deciding not only whether or not to migrate but also when to migrate, one of the possible explanations for this result is that people postpone emigration if they expect wages to increase within the future in the destination countries. This effect is significant following 1974, as the host countries were not inviting more foreigners in and the Portuguese workers were considering the date of their emigration.

4) The emigration rate and the wages in the home country are positively related following 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 in paying the moving expenses during the period when the employers were not subsidizing a portion of those costs.

5) 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 prior to 1974 with a value of 9.2 for total emigration and 19.3 for the emigration to France. Following 1974 the effect within total emigration disappears almost altogether, while to France it remains negative.

6) Wealth has a negative influence on the participation in the labor market rate (leisure is a normal good) and a positive influence on the emigration rate; again a result which supports the idea of the existence of imperfect labor markets, in the sense that the worker cannot use future wages to pay for the cost of moving.

7) The stock of emigrants in the previous period negatively influences the participation in the labor market rate and positively influences the emigration rate to France. The positive influence in the emigration rate has been explained above. An explanation of the negative influence on the participation rate may be found in the influence of the migration on the age and sex composition of the population. This must be investigated with additional disaggregated data.

8) 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 might explain why in most cases the third weight is seen to be greater than the others.

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

9) The emigration rate shows a much higher elasticity in relation to future wages than the participation rate. This indicates that the way in which people perceive the future is very important when studying the evolution of the emigration.

With the results above, we construct Graphs I and II below



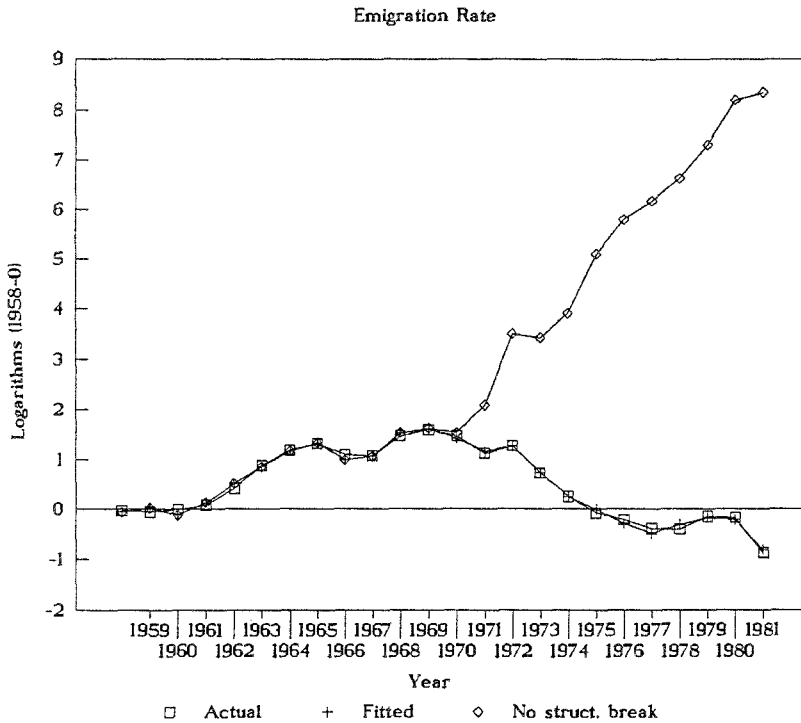


Fig. 1.

In these graphs we represent the evolution of the emigration rate (emigration rate in 1958 equal to one), the fitted value and the evolution it would have taken had there been no structural break. From the graphs we see that the emigration would have achieved very large values if there had been no structural break. It was not sustainable, in the sense that the structure of the Portuguese population would have changed rapidly in number and composition.

The graphs call our attention to the following question: If the emigration should have gone up and failed to for external reasons, what happened to those potential emigrants? One possible answer is that a number of these people are still preparing to migrate when the external barrier falls, meaning that in 1985, there was a strong pressure to migrate.

#### IV Conclusions

The empirical results show that the rate of participation in the labor market is significantly influenced by the stock of emigrants, which may in turn support the

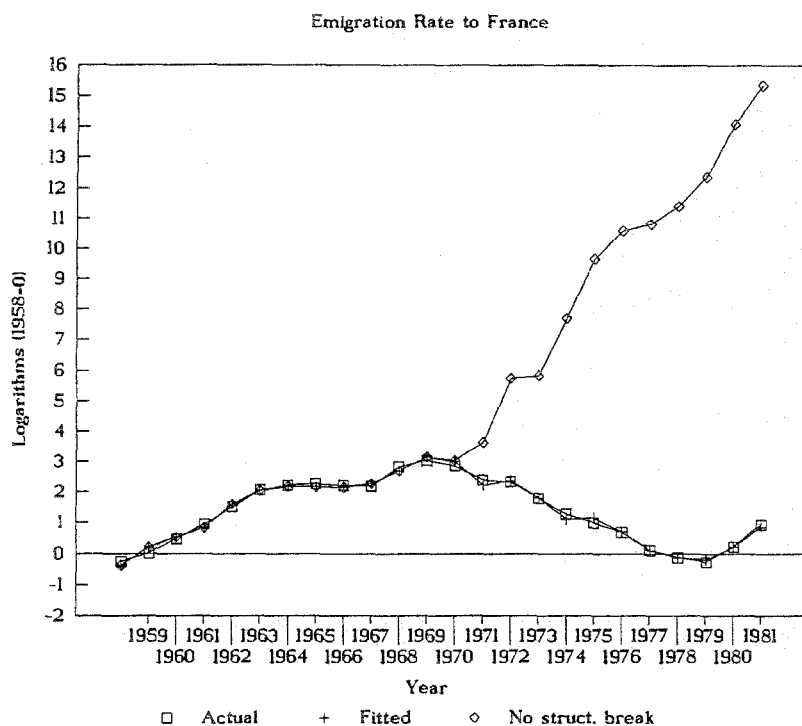


Fig. 2.

notion 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 following 1974. This may be explained by imperfections in the capital markets and the need of the workers to finance their moving expenses with their incomes.

We also confirm the existence of a large stock of potential emigrants in 1985. The actual emigration<sup>7</sup> will depend to a great extent on expectations about the evolution of real wages in Portugal and the EC partners. If workers do not expect to see a rapid growth at home, we will see a large outflow due to the differential of wage levels.

In fact, the results forecast that if the immigration policies of the Northern European EC countries change (as a consequence of the Single Act, for instance), a substantial emigration towards these countries will occur. There has

<sup>7</sup> There is a large real wage differential between Portugal and the EC partners, which leads us to believe that what was true in 1985 is still true today.

been a substantial increase in the negative effect of expected wages in the host country on emigration rate. This may be the result of Portuguese workers postponing their decision to migrate, creating a large stock of potential emigrants. Straubhaar (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, for example) 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 in Portugal, there may be important labor flows across the EC, to France in particular. As wages will increase in Portugal it may happen that emigration increase in a first phase, as workers have the possibility of financing their moving costs. This has been verified in other empirical work (Vanderkamp, 1971), as well.

## References

- Berninghaus S, Seifert-Vogt HG (1988) Temporary vs. permanent migration: A decision theoretical approach. *Journal of Population Economics* 1:195–211
- Cartaxo R, Santos EA (1984) Estimativas anuais da riqueza financeira das famílias para o período 1958–1981. Documento de trabalho 8, Banco de Portugal
- Djajić S (1989) Migrants in a guest-worker system: A utility maximizing approach. *Journal of Development Economics* 31:327–339
- Erickson T (1989) International migration and regional differentials in unemployment and wages: Some empirical evidence from Sweden. In: Gordon, Thirlwall (ed) *European Factor Mobility – Trends and Consequences*, MacMillan London 59–73
- Geary P, Gráda CO (1989) Post war migration between Ireland and the United Kingdom: Models and estimate. In: Gordon, Thirlwall (ed) *European Factor Mobility – Trends and Consequences*, MacMillan London 53–58
- Harris JR, Todaro M (1970) Migration, unemployment and development: A two sectors analysis. *American Economic Review* 60:139–149
- Lundborg P (1991) An interpretation of the effects of age on migration: Nordic migrants' choice to settle in Sweden. *Southern Economic Journal* 58:392–405
- Mathur VK, Stein SH (1991) A dynamic theory of migration and population growth. *Land Economics* 67:292–298
- Pereira P, Seabra MC (1991) Reflexões sobre a política microeconómica do estado face a 1992. *Economia XV*: 245–255
- Straubhaar T (1984) The accession of Spain and Portugal to EC from the aspect of free movement of labour in an enlarged common labour market. *International Migration Quarterly* 22:228–238
- Vanderkamp J (1971) Migration flows, their determinants and the effect of return migration. *Journal of Political Economy* 1012–1031
- Vishwanath T (1991) Information flow, job search and migration. *Journal of Development Economics* 36:313–335