How do migrants care for their elderly parents? Time, money, and location [#]

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Abstract: Using a rich data set on immigrants living in France, we explore the substitutability of time and monetary transfers from middle aged individuals to their elderly parents. We show that, after controlling for the potential endogeneity of parental location, larger duration of immigration is associated with prevalence of time, as opposed to monetary upward transfers. That parents in poor health or with low incomes receive more help is consistent with an altruistic transfer motive.
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1/ Introduction

The shrinking labour market of aging economies is facing researchers with two related dilemmas. On the one hand, rising dependency ratios are threatening not only growth, but also the fiscal sustainability of the PAYG pension system (Börsch-Supan, 2001, Beetsma et alii, 2003). On the other hand, increasing need for elderly care reduces the labour supply of middle-aged care providers (Stern, 1995, Ettner, 1995, 1996). Although sustained inflow of immigrants is seen as potential panacea for these problems (MacDonald and Kippen, 2001), the case in favour of immigration is overshadowed by prospects of fiscal losses, especially given the evidence of clustering of immigrants with poor employment potential in jurisdictions with high welfare benefits (Borjas, 1999, Nannestad, 2004).

We use a rich data set on immigrants in France to address the ignored possibility of substitution of informal care with monetary transfers in studies that link informal care and labour supply. This is important in view of the stylized neoclassical fact that efficient reallocation of resources should ensure informal upward care donation by less productive individuals, while substitution of money for time ensures the continued, and indeed

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increased labour force participation by middle-aged donors. The case study of immigrants is especially interesting as part of the conflict between stylized theories of immigrant pressure on destination countries' welfare systems and evidence that search for a better future while keeping in mind the well-being of families left behind is likely to increase the economic incentives of immigrants who help their parents through remittances (Rapoport and Docquier, 2005). We explore this conflict by considering the characteristics of migrants and their parents by type if transfer provided, after controlling for the potential endogeneity of location.

2/ An altruistic model of upstream transfers

Let us consider a theoretical model of private transfers from a middle-aged child k to a parent p. The child maximizes a utility function $u(C_k)$, which depends on its own level of private consumption C_k, with $u_1 > 0$, and chooses how much time and money to devote to the parent. We assume altruistic as opposed to exchange behavior (Laferrère and Wolff, 2005), based on the evidence of altruistically behaving migrants in France. Wolff et alii, 2005) show for instance that parents are more likely to help their less well-off children.

Let β_k be the caring parameter, which indicates the weight of the parental satisfaction in the child's extended utility function (Becker, 1991). The parent's utility function $v(C_p, s_k)$, with $v_1 > 0$ and $v_2 > 0$, depends on his private consumption C_p and on the amount of informal care s_k.

The child allocates his total time L_k between paid work H_k and upstream services s_k, i.e. $H_k + s_k = L_k$. His income is given by the sum of exogenous income Y_k and paid work hours wH_k, where w is the hourly wage rate. The gross revenue is devoted to consumption and to financial transfers T_k to the parent, so that $C_k = wH_k + Y_k - T_k$. The parent's resources are exogenous, as they stem from labor decisions made in the past. They include his personal income Y_p and the gift T_k, so that $C_p = Y_p + T_k$. Furthermore, we impose the non-negativity constraints $T_k \geq 0$ and $s_k \geq 0$, so that both transfers necessarily flow upwards.

The problem for the child is to maximize the augmented utility function subject to the different resource constraints :

$$\max_{s_k,T_k} u(Y_k + wL_k - ws_k - T_k) + \beta_k v(Y_p + T_k, s_k) \quad (1)$$

The first-order conditions with respect to T_k and s_k are :

$$-u_1 + \beta_k v_1 = 0 \quad (2)$$

$$-wu_1 + \beta_k v_2 = 0 \quad (3)$$

First, the financial transfer is such that the marginal cost for the child of transferring resources (due to a lower private consumption) is equal to the marginal benefit from the increase in parental well-being. Second, the marginal loss involved by a lower income for the child is equal to the marginal benefit from helping the parent, weighted by the caring parameter. Hence, using (2) and (3), the optimal allocation of resources within the family is:

$$v_1 = v_2 / w \quad (4)$$

In other words, time and money transfers are substitutable, depending on the marginal product of labor. Differentiating the first-order conditions allows us to determine the effects of the exogenous variables w, Y_k, Y_p and β_k on the choice variables s_k and T_k. It is straightforward to show that a poor child is less likely to provide money to the parent, while the probability to help the parent is higher for a poor parent. At the same time, a high wage increases the child's capacity to give time to the parent, but it also increases the opportunity cost of his time. The key feature of this model is that transfers are substitutable and depend on the child and parent's economic position.

3/ Empirical estimations

The impact of exogenous variables on the reallocation of monetary and time transfers is explored with the use of the Passage à la Retraite des Immigrés (PRI) data set collected by the Caisse Nationale d'Assurance Vieillesse in Paris during 2002-2003. This is a representative sample of diverse nationalities of immigrants in France at ages 45-70, accounting for 90% of the immigrants in this age group. It includes rich information on the elderly immigrants, their parents, spouses and children, such as age, educational and professional attainment, transfers of time and money, migration history, health status and

wealth. As we are interested in exploring the behaviour of potentially active migrants who have living parents, we place the age of 60 as the upper bound for our sample.

According to the data, 28% of the migrants' parents reside in France and most of the parents (72%) reside in the country of origin. As expected, we find that the former group attracts the bulk of the upward transfers of time, while the second of these groups attracts the bulk of the upward financial transfers. In the whole population, the frequencies of transfers are respectively equal to 10.3% for informal care and 20.6% for cash gifts. When parents live in the origin country, these figures are respectively equal to 4.7% and 26.5%. Conversely, when parents live in France, the proportion of respondents giving money is only equal to 5.1%, but the proportion of informal helper is much higher (24.8%).

As indicated in Section 2, transfers of both money and time are a function of the wage rate of the donor and the income levels of both donor and recipient and we therefore estimate a bivariate Probit model of the transfers of money and time as a function of these variables. As data on wages is not available, we follow the stylized empirical literature in including factors influencing the wage (like education, age and gender) directly into the structural transfer equations (see the discussion in Ettner, 1996). In addition, we control for factors like duration of migration, marital status and children of both donor and recipient.

There are two possible locations for the migrant's parent: he can reside either in the origin country or in France. Although our model does not explicitly account for the possible endogeneity of location (Konrad et alii, 2002, Pezzin and Schone, 1999), we correct for it as a special case in our estimation. Our empirical analysis proceeds in two steps. First, we estimate a bivariate Probit model of the upward transfers of money and time, while treating the foreign location of the parent as an exogenous variable. Next, we instrument the foreign location of the parent with variables such as parental location at the time of the respondent's migration (i.e. large town, small town or village), a dummy variable indicating whether the respondent suffered from discrimination or persecution in the origin country, a dummy variable for respondent's parents' activities during the respondent's childhood, and a dummy variable equal to one if at least one of the parents was born in France.

The results from our estimations treating parental location as exogenous are presented in columns one and two of Table 1, while the results from our estimations accounting for the endogeneity of location are reported in columns three and four of Table 1. The former set of results indicate that while better educated children faced higher

probability of providing both time and monetary transfers, older individuals were more likely to provide a time transfer and daughters were less likely to provide a monetary transfers. At the same time, the pattern of both monetary and time transfers is consistent with the altruistic motive for transfers in that richer parents are less likely to receive a monetary transfer and parents with health problems are more likely to receive a time transfer. When economic position of the parent is either fair or rich (very poor is the reference category), the proportion to receive some money from the respondent is strongly reduced. Finally, the foreign country location of the parent has a negative impact on informal care and a positive impact on financial transfers.

A comparison of these results with those accounting for the endogeneity of foreign location provides some interesting insights. Specifically, while the instrumented foreign location has the same positive impact on money transfers and negative impact on time transfers and both types of transfers continue to be altruistically driven, there are changes in the significance of the human capital characteristics of the donor. Although higher education of the donor continues to have a positive impact on the provision of time, the education variable loses its significant in the money transfer equation. At the same time, the donor's age, and hence higher experience, has positive impact on the provision of financial transfers and a negative impact on the provision of time transfers. Importantly, higher duration of migration has a positive impact on the provision of time and negative impact on the donation of money. In view of the theory that higher tradeoff of time for money transfers is associated with a lower marginal product of labour and hence lower level of labour supply, this evidence suggests that continuous fresh inflow of immigrants in ageing developed countries' markets should be encouraged.

5/ Conclusion

As migrants grow older, especially in European countries, caring for parents becomes an important issue for both the labour market and public policy. In this paper, we account for both the informal care provided by middle-aged migrants to their elderly parents and the possibility of substitution of money for time.

Our results are consistent with an altruistic motive for upward transfers, as poorer parents are more likely to receive cash gifts from their children and time transfers mainly benefit parents in poor health. Parental location is a significant predictor of transfers. When

parents live France, they mainly receive time-related resources, while migrants send primarily cash gifts when parents live in the origin country. Importantly, after controlling for the potential endogeneity of location, we find that higher duration of migration has a positive impact on the provision of time and negative impact on the donation of money. In view of the theory that higher trade-off of time for money transfers is associated with a lower marginal product of labour and hence lower level of labour supply, this evidence suggests that continuous fresh inflow of immigrants in ageing developed countries' markets should perhaps be encouraged.

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Table 1. Bivariate Probit estimates of time and financial transfers

Variables	(1)		(2)	
	Money	Time	Money	Time
Constant	-1.464***	-2.610***	-1.851***	-1.873***
	(2.90)	(4.18)	(3.67)	(3.08)
Respondent's characteristics				
Female	-0.206***	0.120	-0.240***	0.146*
	(3.06)	(1.49)	(3.65)	(1.87)
Age	0.000	0.026**	0.016*	-0.001
	(0.02)	(2.25)	(1.75)	(0.05)
Lives with a partner	0.093	-0.030	0.127	-0.082
	(0.95)	(0.26)	(1.31)	(0.75)
Number of children at home	-0.002	-0.042	0.004	-0.053*
	(0.10)	(1.39)	(0.17)	(1.79)
Number of children outside	-0.062**	-0.056	-0.062**	-0.050
	(2.22)	(1.54)	(2.27)	(1.41)
Years of education	0.013*	0.026**	0.005	0.033***
	(1.70)	(2.57)	(0.66)	(3.36)
Health problem	0.066	0.009	0.054	0.002
	(0.84)	(0.10)	(0.70)	(0.02)
Duration of migration	0.002	0.000	-0.013***	0.024***
	(0.36)	(0.06)	(3.37)	(5.21)
Household's income (10^e-5)	0.838***	0.296	0.772***	0.294
	(4.28)	(0.51)	(4.00)	(0.61)
Household's income (10^e-10)	-0.096**	-0.359	-0.081**	-0.302
	(2.48)	(0.63)	(2.13)	(0.69)
Home ownership	-0.080	-0.014	-0.127*	0.057
	(1.11)	(0.15)	(1.80)	(0.66)
Parental characteristics				
Number of siblings	0.019*	-0.032**	0.021**	-0.034**
	(1.80)	(2.31)	(1.97)	(2.52)
Both parents alive	-0.029	-0.096	-0.039	-0.082
	(0.41)	(1.14)	(0.57)	(1.00)
Health problems	0.105	0.809***	0.087	0.783***
	(1.62)	(8.91)	(1.38)	(8.96)
Financial status (reference: very poor)				
Poor	-0.088	0.012	-0.098	0.034
	(0.89)	(0.10)	(1.02)	(0.29)
Fair	-0.242***	-0.176	-0.268***	-0.139
	(2.62)	(1.52)	(2.94)	(1.23)
Rich	-0.387***	-0.143	-0.378***	-0.126
	(3.26)	(0.96)	(3.23)	(0.87)
Location				
Foreign country				
Exogenous	0.997***	-1.001***		
	(9.58)	(10.08)		
Endogenous			1.067***	-0.748***
			(5.16)	(3.19)
Coefficients of correlation	0.245***		0.099*	
	(3.82)		(1.69)	
Log likelihood	-1696.0		-1788.8	

Survey PRI 2003.

Bivariate Probit model. The number of observations is 2487, and the regressions also include a set of dummy variables indicating migrant's country of origin. Absolute values of t-statistics are in parentheses. Significance levels are respectively 1% (*), 5% (**) and 10% (*). Instruments for the parental location variable are indications on the parental location at time of the respondent's migration (living in a large town, in a small town, or in a village), a dummy variable indicating whether the family respondent was suffering from discrimination or persecution in the origin country, dummy variables for the respondent's father and mother type of activity, and a dummy variable equal to one when one of the parents was born in France.