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Immigrant Parents and Children: An Analysis of Decisions Related to Return Migration

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Abstract

It is not unusual for immigrants to leave the host country and resettle permanently in their country of origin. This paper examines the interaction among some of the key factors that influence the return decision of immigrant households. These include purely economic variables such as wages of the two countries and the costs and benefits of accumulating country-specific human capital, but also subjective factors such as the intensity of the locational preferences of immigrant parents and children and of their desire to remain together in a single location. The analysis is conducted under alternative assumptions with respect to the role of parents and children in the household's decision-making process.

1. Introduction

The theoretical literature on international migration draws a clear distinction between models of temporary migration and those of permanent migration. In many cases, however, what is initially intended to be temporary turns out to be permanent. Similarly, migrants with intentions to settle permanently in the host country may decide to move back to their country of origin (or a third country) after a certain period of time. In the case of the United States, roughly 30% of immigrants admitted between 1908 and 1957 have subsequently emigrated (Borjas and Bratsberg, 1996; Warren and Peck, 1980). A recent Census Bureau study by Mulder et al. (2002) provides estimates of the number of foreign-born individuals emigrating from the United States and relates it to the number of legal immigrants for each decade from 1900 to 1989. Their estimates, reproduced in Table 1, show an average ratio of foreign-born emigrants to immigrants of 0.32, with the high of 0.93 during the decade of the Great Depression and a low of 0.17 during the period of strong economic expansion in the 1950s.

In an earlier study, Borjas and Bratsberg (1996) calculated out-migration rates for immigrants to the United States from 70 countries. They found significant differences in these rates across nationalities. Only 3.5% of Asian immigrants who arrived in the United States after 1975 had left the country by 1980, compared to 18.4% of European immigrants, 24.8% of South American immigrants and 34.5% of North American immigrants. Stay rates in the United States are particularly high for nationals of the relatively poor countries and geographically distant countries. The majority of immigrants who emigrated, did so within the first five years of residence.[1]

Changes in the plans of immigrants with respect to their intended length of stay are bound to occur as the immigrant family accumulates information in the host country and gets accustomed to its new environment.[2] Both assimilation and a more complete information set on the costs and benefits of working, consuming, and residing in the

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Table 1. The Number of Foreign-Born Emigrants and Immigrants by Decade: 1900–89

Period	*Foreign-Born Emigrants from the USA (Thousands)*	*Immigrants to the USA (Thousands)*	*Ratio of Emigrants to Legal Immigrants*
1980–89	1,950	7,869	0.25
1970–79	1,176	4,334	0.27
1960–69	900	3,213	0.28
1950–59	425	2,500	0.17
1940–49	281	858	0.33
1930–39	649	699	0.93
1920–29	1,685	4,295	0.39
1910–19	2,157	6,348	0.34
1900–09	3,008	8,203	0.37

Source: Mulder et al. (2002, p. 44).

host country can tip the balance in favor of a longer or shorter stay. Unanticipated changes in the conditions prevailing in the country of origin or destination can similarly trigger an adjustment of plans.

In explaining changes in the return intentions of immigrants, it is also important to take into account the evolution over time in the structure of the decision-making process within the immigrant household. At the moment of departure from the source country, an immigrant may be a young, unmarried man or woman, making decisions on an individual basis or in conjunction with the objectives of his or her parents and perhaps other family members.[3] As the immigrant subsequently marries and has children, decisions related to return migration might come under the influence of the spouse or factors that the immigrant couple considers as important to the future of their children. As the children grow and mature, their own views concerning return migration may take center stage in the family's decision-making process. This can occur as the desire to keep the family united compels immigrant parents to pay increasingly more attention to the individual preferences and objectives of their offspring.

What complicates matters is not only that the weight of individual members within the decision-making process changes as the immigrant household matures, but also that the attitudes of immigrant parents and children with respect to return migration may diverge over time. Immigrant children typically assimilate to the host country society in various dimensions at rates that tend to be higher than those of their parents (Djajić, 2003). In consequence, immigrant children may rapidly develop a strong desire to stay permanently in the host country. If the parents intend to return, then the family faces the prospect of being divided.

It is usually in the interest of immigrant parents to keep the family united, as it makes it possible for them to enjoy more fully the companionship, care, and support that children normally offer to their elderly parents. At the same time, it is in the interest of the parents to see their children realize their economic and social potential to the full extent possible. Should that potential be greater in the host country than in the source country, the return decision of immigrant parents, who plan to resettle in the source country, becomes more complex. The purpose of this paper is to analyze the interaction among some of the elements affecting this decision, including expected earnings of immigrant parents and children in the two countries, the intensity of their preferences

for living in one or the other location, and the desires of parents and children not to be separated.

2. To Go Back or Not to Go Back

In order to simplify the analysis of the immigrant family's return problem, we shall assume that the parents have only one child. There are two countries to choose from: the host country (H), where the family currently resides, and the source country (S).[4] The price of the standard consumption bundle is assumed to be the same in both countries, while the earnings potential of the parents, as well as that of the child, is greater in the host country. The parents, as will be defined more precisely below, are assumed to have a locational preference for their country of origin, while the child prefers to remain in the host country.[5] The family then has three different options:

1. Option SS: The parents return with the child to the source country, as dictated by the locational preferences of the parents, in spite of the child's locational preference for the host country.
2. Option HH: The parents remain with the child in the host country in spite of the locational preference of the parents to return to the source country.
3. Option SH: The parents return to the source country while the child stays in the host country.

In order to analyze the conditions that give rise to these distinct outcomes, we need to specify further the structure of the problem facing the immigrant family. Let us assume that time can be divided into three periods. In the first period the entire family is located abroad. The parents are working while the child is growing up and assimilating to the host country society. A point is eventually reached at the beginning of period 2, and that is the starting point of our analysis, when the parents and the child have to decide on their future. The family faces two interrelated questions: what type of human capital should the child accumulate in the immediate future (period 2) and should the family or some of its members remain in the host country in the more distant future (period 3).

It is assumed that the entire family remains in the host country in period 2, which is just long enough for the child to accumulate the desired type of human capital. There are two distinct types: K_H, which is specific to the local labor market of country H, and K_S, which is appropriate only for the labor market of S. The child is assumed to devote its maximum effort throughout period 2 to the accumulation of one of these types of human capital. Exogenously given amounts of public educational resources, P_H and P_S are available to the child in the host country to support its accumulation of K_H or K_S, respectively.[6] Public resources may include subsidies for academic and training programs, provision of educational infrastructure, scholarships, and other means of support. Finally, accumulation of human capital by the child depends on parental support. This may involve payment of tuition fees, provision of a supportive learning environment in the family home, etc. We may think of it as a given package of assistance referred to below as "standard" support. Let us denote by R_i the present value of resources that parents may provide as standard support for their child's accumulation of K_i for $i = H, S$. We assume that R_H and R_S are constant, but not necessarily equal to each other and that the technology of human capital accumulation is such that it is not in the interest of the parents to support an activity that the child chooses to ignore. Accordingly, the parents will choose to support at most one of the human capital accumulation activities.

If the child decides to return to S, it will specialize in the accumulation of K_S in period 2, with or without the support of the parents. Its human capital endowment at the beginning of period 3 is then given by K_{SR} if the child receives standard support R_S and K_{So} if it does not receive support. Human capital of type S generates income in period 3 only if the child returns to country S. The discounted value of this income is given by C^*_{So} if the human capital endowment is K_{So} and $C^*_{So} + C^*_{SR}$ if it is K_{SR}. Thus C^*_{SR} represents the portion of the child's discounted income in S that may be attributed to the educational support of the parents.

Alternatively, if the child decides to stay permanently in H, it will specialize in the accumulation of K_H in period 2. It will acquire K_{HR} units if the parents grant support and K_{Ho} if they do not. The discounted value of the child's period 3 income in H is then C^*_{Ho} when $K_H = K_{Ho}$ and $C^*_{Ho} + C^*_{HR}$ if $K_H = K_{HR}$. Thus C^*_{HR} is the component of the child's income in H that may be attributed to the support of the parents. As we shall see below, whether the parents support one or the other of the human capital accumulation activities depends not only on the costs and benefits of accumulating K_H or K_S, but also on the preferences of the parents and the child and the structure of the decision-making process within the immigrant household.

2.1 Utility of the Parents

Let us assume that utility of the parents, W, depends on the discounted value of their own income stream, as well as that of their child. It also depends on whether they spend period 3 in the host country or in the source country and whether or not they are in the same country as the child. A very simple, separable form of a utility function including these elements may be written as

$$W = C - R + \alpha C^* + T + L, \tag{1}$$

where $C - R$ is the discounted value of the income earned by the parents over periods 2 and 3, net of any resources R expended on their child's education. $C = C_S$ if the parents return to S in period 3 and $C = C_H$ if they stay permanently in H. We assume that $C_H > C_S$. C^* is the discounted value of the child's period 3 income arising from the standard educational support of the parents: $C^* = C^*_{HR}$ if the supported child stays in country H and $C^* = C^*_{SR}$ if it returns to S. αC^* is the present value of what the child is expected to pay back to the parents in period 3 in return for the educational support it received in period 2.[7] We assume that the fraction α is sufficiently large so that $\alpha C^*_{iR} - R_i \geq 0$, $i = S, H$, and that parental support is more effective when applied to the accumulation of K_H than it is when applied to the accumulation of K_S in the sense that $\alpha(C^*_{HR} - C^*_{SR}) - (R_H - R_S) > 0$.[8]

The variable T represents the value parents attach to being together with the child in period 3. It is positive if the family remains united and zero if the parents and the child separate by settling in different countries. T may reflect the satisfaction enjoyed by the parents as a result of being in proximity of their child, but also the potentially lower cost of conducting transactions and enforcing long-term implicit contracts between the parents and the child. Similarly, L reflects the intensity of the parents' locational preference for the source country. It takes on a positive value if the parents return to S and zero otherwise. The magnitude of L takes into account both the advantages and the disadvantages of returning to S, except for considerations related to income which are incorporated in the value of C.[9]

We assumed earlier that the price of the standard consumption bundle is identical in H and S. In general, prices of goods and services tend to be lower in the source country,

especially if S is a poor developing economy. This is particularly true for many of the services required by the elderly. Any such cost-of-living differentials that may exist between the two countries can be captured by the locational preference variable L.

2.2 Utility of the Child

At the beginning of period 2, the child's expected utility, V, depends on variables that are similar to those that affect the parents. Our focus, however, is exclusively on period 3 as the utility of the child in period 2 is essentially determined by actions of the parents that the child considers to be beyond its control. On the assumption that the child transfers to the parents a fraction α of its period 3 income C^* that can be attributed to standard educational support,

$$V = C_o^* + (1-\alpha)C^* + T^* + L^*, \tag{2}$$

where $C_o^* = C_{Ho}^*$ if the child without educational support from its parents accumulates K_H and remains in H and $C_o^* = C_{So}^*$ if it accumulates K_S and returns to S. A child that benefits from parental support earns an additional amount $C^* = C_{HR}^*$ if it stays in H and $C^* = C_{SR}^*$ if it returns to S. We shall assume in what follows that the earnings effectiveness of the child's educational efforts is greater when applied to accumulation of K_H than it is when applied to accumulation of K_S. More specifically, $C_{Ho}^* > C_{So}^*$ and $C_{Ho}^* + C_{HR}^{**} > C_{So}^* + C_{SR}$. T^* is the value to the child of not being separated from the parents and L^* is the value of spending period 3 in country H, its preferred location, rather than in country S. L^* reflects only the locational preferences of the child and not any income considerations which affect only the value of $C_o^* + C^*$. All expected future income streams are appropriately discounted and thus dimensionally consistent with the variables entering the utility function of the parents.

3. Family Welfare under Different Educational and Return Strategies

The levels of utility enjoyed by the parents and the child depend on the educational strategy pursued by the family and whether some, all, or none of the family members return to the source country. In the discussion below, superscripts SS, HH, and SH signify, respectively, that both the parents and the child return to country S, both stay in country H, and the family splits with the parents settling in S while the child remains in H.

If the entire family returns to S in period 3, the levels of welfare enjoyed by the parents and the child are given by

$$W^{SS} = C_S - R_S + \alpha C_{SR}^* + T + L, \quad \text{and} \tag{3}$$

$$V^{SS} = C_{So}^* + (1-\alpha)C_{SR}^* + T^*, \tag{4}$$

respectively, assuming that the parents provide standard support for the child's accumulation of K_S in period 2. If they provide no support, $R_S = 0$, the child acquires less K_S, gets a lower income in period 3, and there is no informal loan for the child to repay to the parents. The levels of utility enjoyed by the parents and the child are then given by

$$W^{SSo} = C_S + T + L, \quad \text{and} \tag{5}$$

$$V^{SSo} = C_{So}^* + T^*. \tag{6}$$

If the entire family decides to remain in the host country in period 3, and the parents provide standard support for the child's accumulation of K_H,

$$W^{HH} = C_H - R_H + \alpha C^*_{HR} + T, \quad \text{and} \tag{7}$$

$$V^{HH} = C^*_{Ho} + (1-\alpha) C^*_{HR} + T^* + L^*. \tag{8}$$

Alternatively, if the parents do not offer support, the child's income in H is correspondingly lower and there is no loan to repay to the parents in period 3. The levels of utility enjoyed by the parents and the child are then

$$W^{HHo} = C_H + T, \quad \text{and} \tag{9}$$

$$V^{HHo} = C^*_{Ho} + T^* + L^*. \tag{10}$$

Should the family decide to split up, with the child settling in H and the parents in S, this split can occur with the parents either supporting or not supporting the child's accumulation of K_H. If support is provided, utilities of the parents and the child are

$$W^{SH} = C_S - R_H + \alpha C^*_{HR} + L, \quad \text{and} \tag{11}$$

$$V^{SH} = C^*_{Ho} + (1-\alpha) C^*_{HR} + L^*. \tag{12}$$

If the parents do not support the child's accumulation of K_H, we have instead

$$W^{SHo} = C_S + L, \quad \text{and} \tag{13}$$

$$V^{SHo} = C^*_{Ho} + L^*. \tag{14}$$

As it is suboptimal for the child to move to S while the parents remain in H under our assumptions on earnings potential and locational preferences, equations (3)–(14) summarize the relevant payoffs enjoyed by the parents and the child under the principal educational and return strategies. Which one is chosen obviously depends on the opportunities available to the parents and the child in the two locations, but also on the intensity of their preferences for specific locations and for remaining united. The role of locational preferences has been examined in the context of "guest worker" migration by Djajić and Milbourne (1988), Hill (1987), and others, while the intensity of the desire to keep the family united is a new element in the analysis of return decisions of immigrant households.[10] The purpose of the next section is to examine the interactions among economic opportunities and preferences of immigrant parents and children in determining their behavior with respect to return migration.

4. Analysis

Our analysis of return decisions is conducted below under alternative assumptions on the preferences of the parents and the child, as well as on the structure of the decision-making process within the household.

4.1 Parents Speak, Child Listens

Let us assume that decisions in our immigrant household are dominated by the parents. They understand the child's preferences as well as the opportunities and constraints

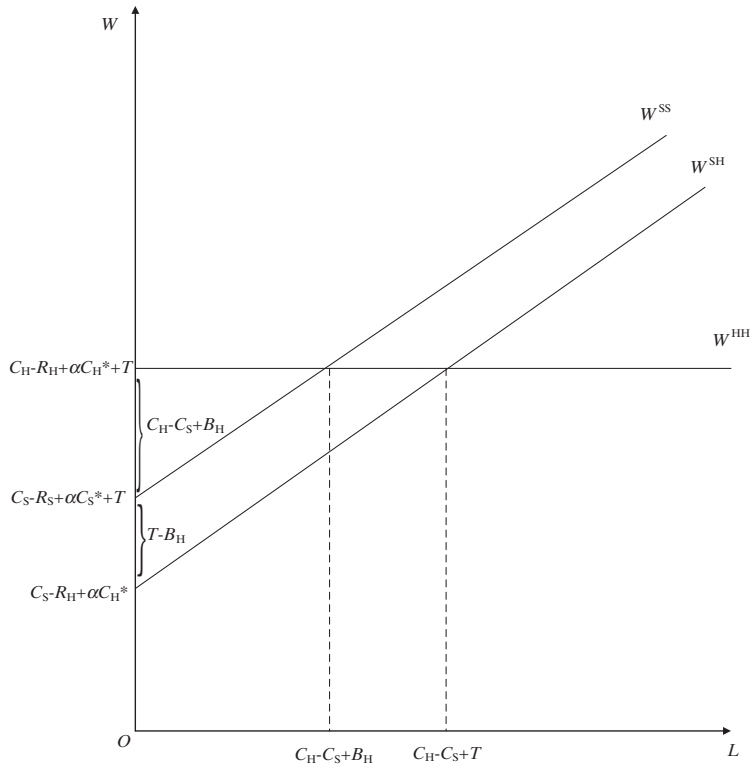

Figure 1. Utility of the Parents

facing the child. The child also has complete information concerning its parents. At the beginning of period 2, the parents decide whether or not to provide educational support to the child, whether that support should go for the accumulation of K_H or K_S, and whether the parents will stay in H or return to S in period 3. The child takes these decisions as given and reacts to maximize its own utility, without trying to manipulate the parents into taking decisions that would provide it with a higher level of welfare. We refer to this as the "parents speak, child listens" scenario.

We shall initially assume that both the parents and the child have a relatively strong desire to keep the family united. In particular, we assume that $T > B_H$ and $T^* > B_H^*$, where $B_H = \alpha(C_H^* - C_S^*) - (R_H - R_S) > 0$ and $B_H^* = C_{Ho}^* - C_{So}^* + (1-\alpha)(C_H^* - C_S^*) > 0$. B_H is the net benefit for the parents of supporting the child's accumulation of K_H rather than K_S when the child chooses to settle in H rather than S in period 3, and B_H^* represents the net economic benefits that the child expects to enjoy in H relative to S, assuming that its educational efforts are supported by the parents.

In Figure 1, the vertical axis measures the utility levels enjoyed by the parents under various arrangements defined by equations (3), (7), and (11), as functions of the intensity of the parents' desire to return to the source country. For low values of L (i.e., $L < C_H - C_S + B_H$), their desire to return to S is dominated by the economic benefits of keeping the entire family in H. Utility of the parents is then maximized by providing standard support for the child's accumulation of K_H and remaining in H with the child in period 3. However, if the desire of the parents to return to S is sufficiently large (i.e., if $L > C_H - C_S + B_H$), the best solution for the parents is to help the child accumulate K_S

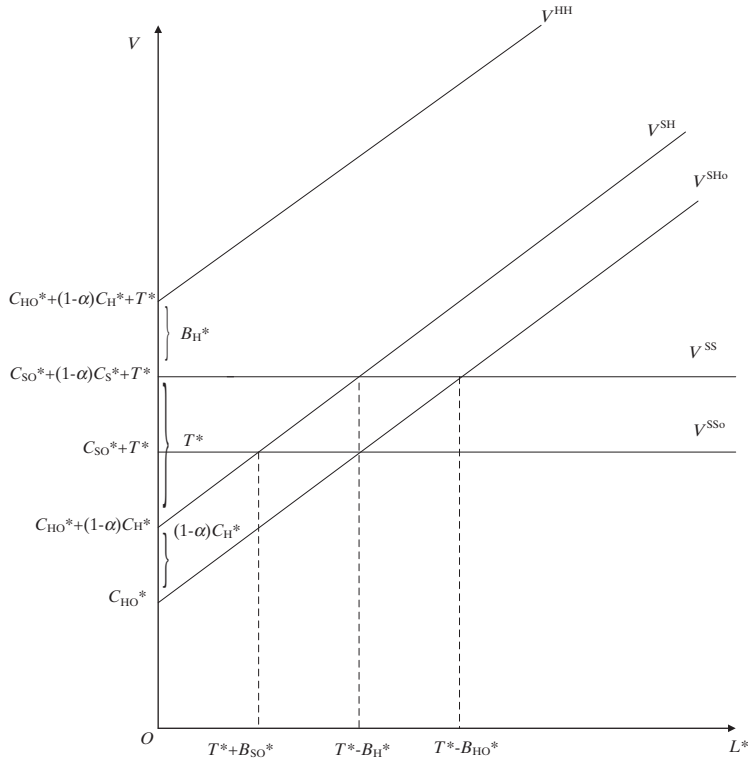

Figure 2. Utility of the Child

in period 2 and for the entire family to return to S in period 3. As we shall see below, this may or may not be acceptable to the child.

Figure 2 illustrates the levels of utility enjoyed by the child under various arrangements as functions of L^*. Its most preferred solution is HH. However, if the parents wish to return to S so that HH is unavailable, the figure also shows that the child is willing to accept SS if its desire to remain together with the parents dominates the economic and other advantages of staying in country H. This is the case when $L^* < T^* - B_H^*$. The child then agrees to acquire K_S and return to S with the parents in period 3, although it would prefer to accumulate K_H and remain with the parents in country H. Alternatively, if $L^* > T^* - B_H^*$, the benefits of staying in H dominate the child's desire to be with the parents in period 3. It wants to remain in H without the parents, provided it can get standard support in its efforts to accumulate K_H. If the parents are willing to support only accumulation of K_S, the best option for the child is to accept that support and return with the parents to S as long as $L^* \leq T^* - B_{Ho}^*$, where $B_{Ho}^* = C_{Ho}^* - C_{So}^* - (1-\alpha)C_{SR}^*$ is the child's net economic benefit of choosing a career in H *without* parental support rather than the one in S *with* the support of the parents. B_{Ho}^* may be either positive or negative.

For $L^* > T^* - B_{Ho}^*$, the child is better off accumulating K_H on its own and the provision of standard support for the accumulation of K_S is no longer sufficient to induce the child to accept SS. From the perspective of the parents, however, having to stay with the child in country H (by accepting HH) or being separated from the child (by accepting SH), entails a loss of utility when $L > C_H - C_S + B_H$. How much of a loss in relation to W^{SS} depends on the value of L. As may be seen in Figure 1, for

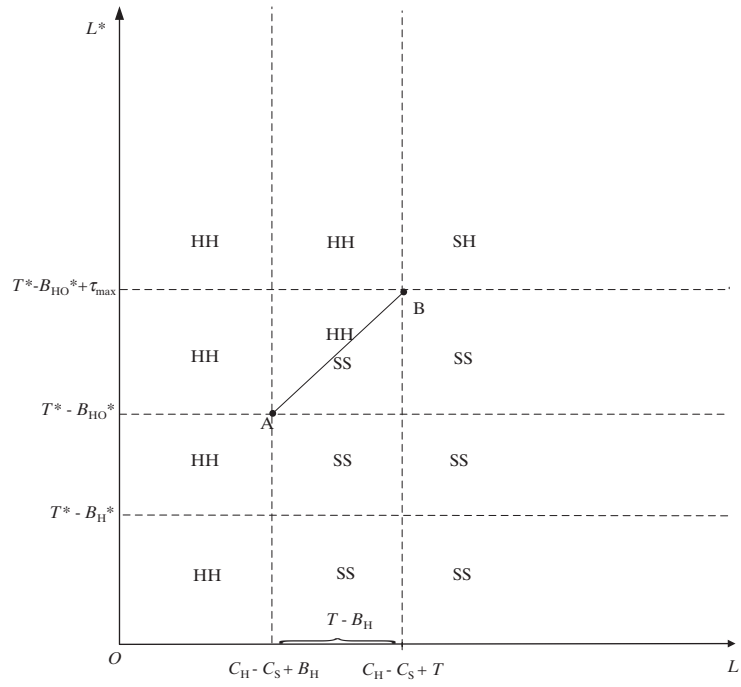

Figure 3. Solution Adopted by the Family

$C_H - C_S + B_H < L < C_H - C_S + T$, the next best option for the parents is HH. The loss is then given by $W^{SS} - W^{HH} = L - C_H + C_S - B_H$. For $L > C_H - C_S + T$, the best option after SS is SH, with $W^{SS} - W^{SH} = T - B_H$.

If a transfer τ from the parents to the child (in addition to the standard support for the accumulation of K_S) can help them attain SS instead of one of the less attractive alternatives, they should be willing to offer such a transfer up to the amount of the above mentioned loss. The magnitude of τ that the parents are willing to make available, if necessary, increases from zero to a maximum of $T - B_H$ as L increases from $C_H - C_S + B_H$ to $C_H - C_S + T$. The impact of such a transfer on the child's country S utility, and hence willingness to accept the solution SS, is reflected in an upward shift of the V^{SS} schedule in Figure 2 by the amount τ. If $\tau \geq L^* + B^*_{Ho} - T^*$, the child welcomes the transfer and accepts the solution SS over SH. If the transfer is inadequate (i.e., $\tau < L^* + B_{Ho}{}^* - T^*$), the child chooses to remain in H. It is then in the interest of the parents to provide the child with standard support for the accumulation of K_H and either stay with the child in H (if $C_H - C_S + B_H < L < C_H - C_S + T$) or return to S without the child (if $L > C_H - C_S + T$).

Figure 3 provides a concise summary of the solutions adopted by the family for the various levels of locational preference of the parents and the child. For low values of L the entire family remains in H, as illustrated by the areas HH to the left of $L = C_H - C_S + B_H$. For $L > C_H - C_S + B_H$, the parents prefer to return with the child to S. They can achieve that objective by providing standard support for the child's acquisition of K_S if $L^* < T^* - B^*_{Ho}$. Accordingly, for $L > C_H - C_S + B_H$ and $L^* < T^* - B^*_{Ho}$, the family chooses SS in Figure 3. For higher values of L^*, the parents must offer $\tau > 0$ in addition to standard support for the accumulation of K_S in order to obtain SS. As noted earlier, the magnitude of the transfer available from the parents increases from zero to

the maximum of $\tau_{max} = T - B_H$ as L increases from $C_H - C_S + B_H$ to $C_H - C_S + T$. The transfer supports the child's willingness to accept SS for $L^* > T^* - B^*_{Ho}$, up to the level of $L^* = T^* - B^*_{Ho} + \tau_{max}$, as illustrated by the line AB in Figure 3. Thus for $C_H - C_S + B_H < L < C_H - C_S + T$, the line AB separates the region SS (where the available transfer is sufficient to induce the child to return with the parents), from the region HH (where it is insufficient and the parents are obliged to accept their next best option of remaining in H with the child).

For values of $L > C_H - C_S + T$, the parents are willing to offer τ_{max}, if necessary, in addition to standard support for the child's accumulation of K_S. If that is sufficient to bring the child back to country S, as when $L^* \leq T^* - B^*_{Ho} + \tau_{max}$, the family chooses SS. If it is not sufficient, the family splits up as the parents return to S and the child stays in H with the standard support for the accumulation of K_H. Thus, for values of $L > C_H - C_S + T$ and $L^* > T^* - B^*_{Ho} + \tau_{max}$, the only solution is SH as the conflict between the locational preferences of the child and the parents dominates their desire to keep the family united.

4.2 Child Speaks, Parents Listen

Consider next an immigrant household in which the child is permitted to decide on matters related to its future, announcing at the beginning of period 2 its intentions with respect to human capital accumulation and return migration. The parents are then assumed to react to the initiatives of the child so as to maximize their own utility without trying to use their resources to influence the decisions of the child. As assumed earlier, the child's utility is maximized by accumulating K_H with the support of the parents and settling with them in H over the entire planning horizon. Provided that the desire of the parents to return to S is sufficiently weak (i.e., $L < C_H - C_S + T$), the child achieves this by choosing to accumulate K_H. Then the best strategy for the parents is to support that process and remain in H with the child in period 3. This is illustrated by the areas HH in Figure 4 for all values of $L < C_H - C_S + T$.

If $L > C_H - C_S + T$, the parents intend to go back to S, with or without the child. Should that materialize, the child that stays alone in H sustains the loss T^* of being separated from its parents. On the other hand, a return to S with the parents entails a loss of the advantages $L^* + B^*_H$ of staying in H. As shown in Figure 2, for $L^* = 0$ the child prefers by the amount B^*_H the option HH over SS. If necessary, it is therefore willing to offer a period 3 transfer τ^* of up to B^*_H units to the parents for agreeing to remain in H. Such an offer is acceptable to the parents provided that $L \leq C_H - C_S + T + B^*_H$. For $L > C_H - C_S + T + B^*_H$ it is not. The child then chooses to accumulate K_S, with the support of the parents, and the entire family returns to S in period 3. This puts the family in the zone SS along the horizontal axis of Figure 4.

For $0 < L^* \leq T^* - B^*_H$, the child is willing to transfer $L^* + B^*_H$ to the parents (up to the amount T^*) in exchange for agreeing to stay in H. On these terms, HH is acceptable to the parents for as long as $L \leq C_H - C_S + T + L^* + B^*_H$. For larger values of L, the transfer is not sufficient to induce the parents to remain in H and the child is compelled to accept SS. As the transfer available from the child increases one for one with L^* for as long as $L^* \leq T^* - B^*_H$, the HH and SS zones in Figure 4 are separated by the 45° line EF. For combinations of L and L^* to the right of EF, the maximum transfer available from the child is insufficient to induce the parents to stay in H and the family ends up in the zone SS. To the left of EF, the transfer is sufficient and the family chooses HH. Finally, if both $L > C_H - C_S + T + T^*$ and $L^* > T^* - B^*_H$, the locational preferences of the child and the parents are so far apart that no agreement for staying together in either H or

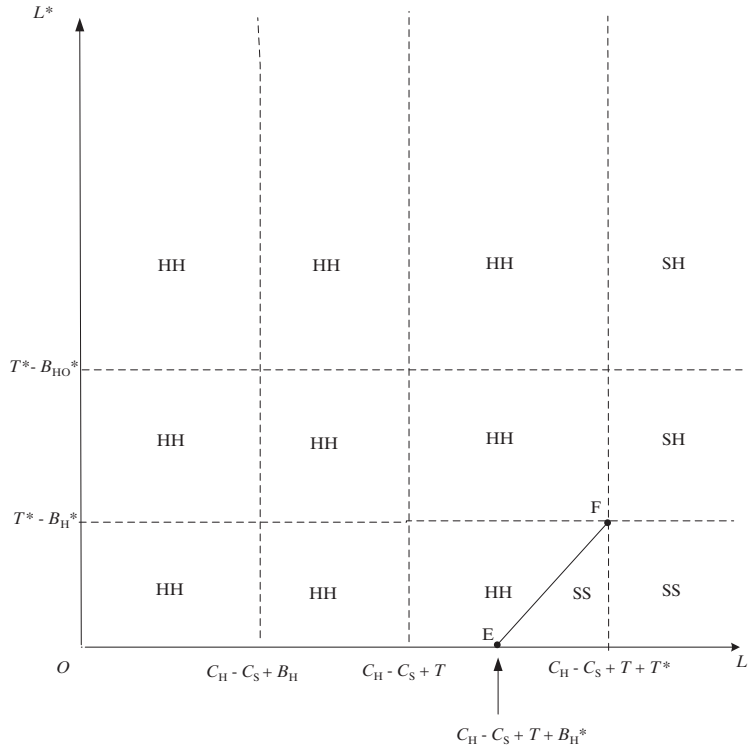

Figure 4. Solution Adopted by the Family when the Child Decides

S is possible under our assumptions. The family then finds itself in the zone SH of Figure 4.

What this analysis illustrates is the importance of the immigrant household's decision-making mechanism in determining the pattern of return migration. If the mechanism is dominated by the parents, the pattern of return migration is quite different from the one which emerges when the child plays a decisive role in determining its future. As may be seen by comparing Figures 3 and 4, conditions under which the entire family returns to S when the parents play the role of the leader, can become the conditions under which the family chooses to stay in H or split up if the child is entitled to move first with respect to its decision on human capital accumulation.

4.3 Child has a Weak Desire to be with the Parents ($T^* < B_H^*$)

The analysis above is conducted under the assumption that $T^* > B_H^*$. By contrast, if $B_H^* > T^*$, the child's desire to be with the parents is dominated by the net economic benefits of staying in H. Provided it can get standard support for the accumulation of K_H, the child does not wish to go back to S, even if it means staying alone in H. As we shall see below, this implies that the child never goes back to S if it plays the role of the leader in the decision-making process, while it is obliged to do so under certain conditions if the parents play the leading role.

In the "parents speak, child listens" scenario, the analysis is identical to that corresponding to Figure 3. The only difference is that the lower part of the figure, corresponding to $L^* \leq T^* - B_H^*$, disappears below the horizontal axis, as now

$T^* - B_H^* < 0$. Thus, for $L < C_H - C_S + B_H$, the entire family remains in H, while for $L > C_H - C_S + B_H$, all three outcomes are possible, depending on the values of L and L^*.

Similarly, in the "child speaks, parents listen" scenario, the analysis is identical to that corresponding to Figure 4. The only difference is that $T^* - B_H^* < 0$, so that the region in which $L^* < T^* - B_H^*$ now lies below the horizontal axis. In consequence, SS is not observed in the "child speaks, parents listen" scenario when the child has a weak desire to be with the parents in period 3. What we observe instead, is that the family stays united in the host country for $L < C_H - C_S + T + T^*$ and chooses solution SH for $L > C_H - C_S + T + T^*$.

4.4 Parents have a Weak Desire to be with the Child ($T < B_H$)

Our discussion so far is based on the assumption that the desire of the parents to remain together with the child dominates their benefits of having the child pursue a career in H rather than in S. If instead $B_H > T$, the utility levels enjoyed by the parents under various arrangements are illustrated in Figure 5. Now the parents want either the solution HH (if $L < C_H - C_S + T$) or SH (if $L > C_H - C_S + T$). Assuming that parents control the decision-making process, the child is then given standard support for the accumulation of K_H when $L < C_H - C_S + T$ and the family stays in H, as shown in Figure 6. For $L > C_H - C_S + T$, the parents want to return to S, but prefer to leave the child in H rather than bring it along, because the economic benefits of doing so are now greater for the parents than the value of being together with the child. For $L^* > T^* - B_H^*$, the child is satisfied with that solution and accepts SH. For $T^* - B_H^* > L^* > T^* + B_{So}^* > 0$, where

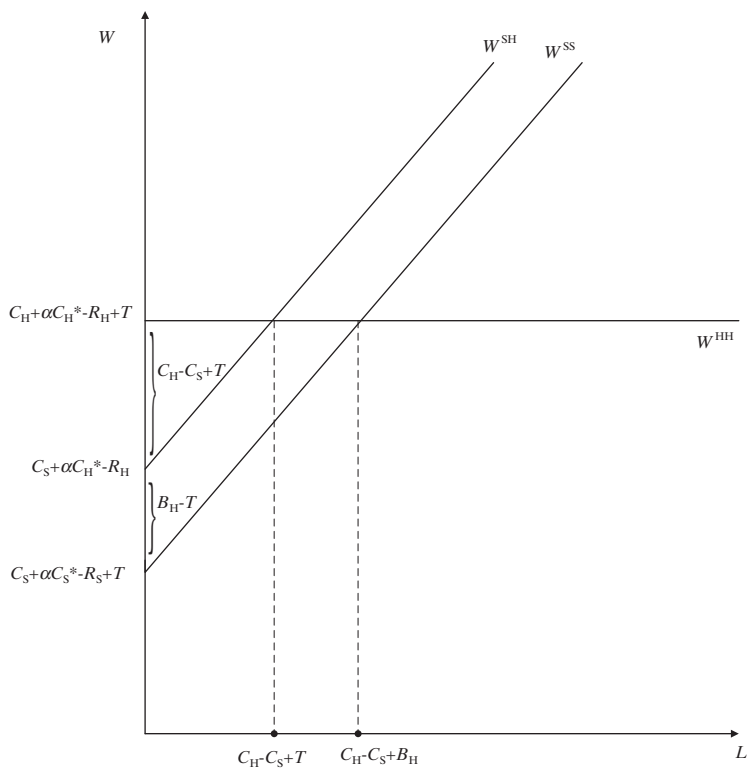

Figure 5. Utility of the Parents when $B_H > T$

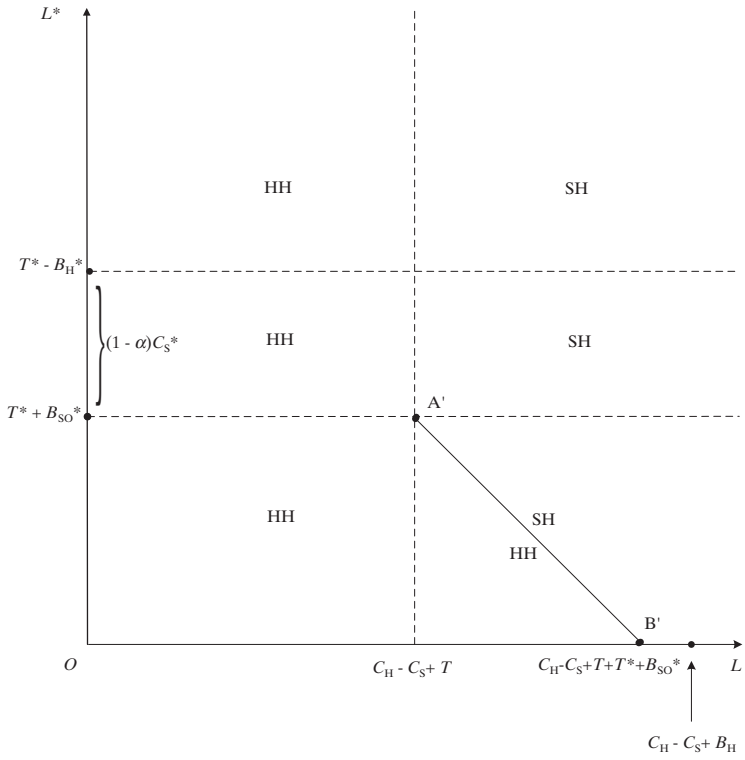

Figure 6. Solution Adopted by the Family when $B_H > T$ and the Parents Decide

$B^*_{So} = C^*_{So} - C^*_{Ho} - (1-\alpha)C^*_H < 0$, it prefers to go back with the parents, provided they offer standard support for the accumulation of K_S. The parents, in this case, offer support only for the accumulation of K_H, compelling the child to remain in H.

For $L^* < T^* + B^*_{So}$, the child wants to return with the parents even if no support is provided for the accumulation of K_S. As may be seen in Figure 5, however, SS is not an attractive solution from the perspective of the parents. When $L > C_H - C_S + T$, they prefer to either remain with the child in H, and lose $L - C_H + C_S - T$ units of utility, or give the child a transfer τ_H (up to a maximum of $B_H - T$), in addition to providing R_H, in order to induce the child to accumulate K_H and accept the solution SH. Whether the parents choose one or the other of these two options depends on which one is less costly. The cost of the two options is equalized for the parents along the 45° line A′B′ in Figure 6. To the right of A′B′, accepting HH requires greater sacrifice for the parents than the strategy of offering a sufficient transfer, $\tau_H = T^* + B^*_{So} - L^*$, to induce the child to accept SH. To the left of A′B′, the desire of the parents to go back to S is relatively weaker. They prefer to stay in H with the child rather than to seek the solution SH by providing τ_H.[11]

We have assumed until now that $T^* + B^*_{So} > 0$. Since $B^*_{So} < 0$, for sufficiently low values of T^* it is also possible that $T^* + B^*_{So} < 0$. The child then finds it unattractive to return with the parents to S without at least the standard support for the accumulation of K_S. In that case the parents are never confronted with the prospect of having to stay in H just to prevent the child from coming along with them to S. Nor do they ever have to provide a transfer τ_H to induce the child to remain alone in H. Very simply, for $L < C_H - C_S + T$, the family chooses HH and for $L > C_H - C_S + T$, it chooses SH.

4.5 Child Speaks, Parents Listen and have a Weak Desire to be with the Child ($T < B_H$)

We now turn to an immigrant household in which the child plays the role of the leader with respect to decisions related to its future. Let us initially assume that the child has a strong preference for being together with the parents as defined by $T^* > B_H^*$ and that $B_H^* > B_H - T$. The objective of the child, once again, is to achieve HH. This arrangement can be realized by the child if it chooses to accumulate K_H, provided that the desire of the parents to go back to S is sufficiently weak (i.e., $L < C_H - C_S + T$). By contrast, for $L > C_H - C_S + T$, the parents prefer to spend period 3 alone in S, rather than remain in H with the child. Should they go back to S, the child suffers a loss of T^* units of utility if it accepts SH or $L^* + B_H^*$ units if it accepts SS. The child therefore has an incentive to offer a transfer to the parents in exchange for staying in H. The necessary transfer increases one for one with the value of L for $L > C_H - C_S + T$. On the other hand, as may be seen in Figure 2, the willingness of the child to pay a transfer in order to attain HH instead of SS increases with L^* from an amount B_H^* when $L^* = 0$ to a maximum of T^* when $L^* = T^* - B_H^*$. For higher values of L^*, the child is willing to offer T^* for HH instead of SH. The solutions that emerge in this scenario are therefore identical to those of Figure 4. The only difference here is that the magnitudes $C_H - C_S + B_H$ and $C_H - C_S + T$ appear in the opposite order along the horizontal axis.

4.6 Immigrants Without Children

In order to highlight the role of children in the process of return migration, it is useful to compare the decisions of households with children and those of households without children. In the absence of children, our immigrant household would choose to stay in the host country only if $L < C_H - C_S$. This is in sharp contrast to the higher critical values of L (see Figures 3, 4, and 6) for which immigrant *parents* choose to return to the source country either with their child (solution SS) or without their child (solution SH). Immigrants without children are never compelled to remain in the host country for reasons related to the earnings potential of a child or its preference for living in the host country.[12]

5. Implications of the Analysis and Concluding Remarks

The analysis conducted in the previous section provides a number of empirically testable implications.

First, with the fall of transport and communications costs over the decades, the values of T and T^* have likely diminished to a significant extent. For both the parents and the child, settling together in the same location is less important when transportation and communications costs are low. This suggests that the frequency of observing SH in a population of immigrants should be greater in the latter part of the twentieth century than it was in the earlier parts. At the same time, the proportion of immigrant families choosing SS or HH should be correspondingly lower.[13]

Second, when the geographic distance between H and S is relatively short and transport costs relatively low, immigrant parents are also more likely to maintain strong social and family ties in the source country. This contributes to a relatively larger value of L than would be the case when the distance and transport costs are large and the scope for short visits back to S more limited. Thus, when H and S are (are not) in close

proximity to each other, we should expect to see a relatively high (low) proportion of SH and SS households and a correspondingly smaller (larger) proportion of HH.

Third, for migrants from countries where customs and traditions give the parents the dominant role in the family's decision-making process, we should expect to see greater frequency of SS relative to HH and SH when $T > B_H$. Alternatively, when $T < B_H$, we should expect to observe a greater frequency of SH relative to SS and HH.

Fourth, for migrants from countries with very different cultures and traditions in relation to those of the host country, we should expect to see large values of L and therefore a tendency for the parents to return to S with a relatively small proportion of immigrant families choosing HH.[14] In such cases we should also expect to see a large L^*, reflecting the difficulty that a child growing up in H may expect to have while adjusting to life in S. With large values of L *and* L^*, we should observe a relatively large proportion of immigrant families choosing SH over the other alternatives.

Fifth, to the extent that HH solutions involve cases in which the child persuades the parents to remain in H by offering a period 3 transfer over and above αC_H^*, and to the extent that SS solutions involve some cases in which the parents provide additional transfers to children to induce them to accumulate K_S and choose the solution SS, we should expect to see a tendency for HH children to transfer a larger total amount of their earnings to parents in period 3 relative to the total amount of earnings transferred to the parents by the children in SS families.

Sixth, for immigrant families from relatively poor countries of origin, the values of $C_H - C_S + B_H$ and B_H^* are relatively large, resulting in relatively more frequent observations of HH and correspondingly less frequent observations of SS for any given locational preferences of the parents and the child.

Seventh, although our analysis is based on the assumption that the family has only one child, one can easily imagine the implications of expanding the number of children to 2, 3, or n. One may expect that the larger the number of children in an immigrant household, the more likely it is that the locational preferences of children and their economic objectives have a greater weight in the immigrant family's return decision. In addition, the greater the number of children, the smaller the loss, from the perspective of the parents, of being separated from any one child. We should therefore expect to observe a high frequency of HH and SH (defined to indicate that *some* family members remain in H and others return to S) and a low frequency of SS in multi-child immigrant households.

Finally, some host countries provide immigrant children with public support, P_S, for the accumulation of human capital specific to country S. We should expect in these countries, other things being equal, a greater propensity for immigrant families to choose the solution SS over HH or SH.

Empirical testing of these implications and further theoretical work along these lines are important items on the agenda for future research. One of the shortcomings of the existing literature is that, in explaining decisions related to return migration, it focuses primarily on the individual migrant, rather than on the family unit. As the analysis of this paper suggests, such a narrow approach may fail to capture a number of key variables that have a significant influence on the pattern of return migration. These variables should be given closer attention in future research.

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Notes

1. Outmigration of immigrants is even more significant in other advanced host countries. Edin et al. (2000) reported that more than 25% of immigrants to Sweden from 1970 to 1990 emigrated within five years. It is the least economically successful who leave. They also found that, in comparison with economic immigrants, "political" immigrants are much less likely to emigrate from Sweden. For the year 2004, OECD reports that foreign population outflows were 44% of inflows in Austria, 36% in Finland, 91% in Germany, 75% in Japan, 85% in Luxembourg, 36% in the Netherlands, 32% in Norway, 34% in Sweden, and 50% in Switzerland (see tables A.1.1 and A.1.2 of OECD, 2005).

2. A number of studies suggest that return decisions of migrants can be explained in part by forecasting errors. See, e.g., Blejer and Goldberg (1980), Borjas and Bratsberg (1996), Da Vanzo (1983), and Pessino (1991).

3. See Stark (1991) for a discussion on the role of the family in explaining emigration decisions.
4. For simplicity, we consider only the case of legal (documented) immigration. The problem confronting illegal aliens is somewhat different, as they face greater uncertainty with respect to their expected income stream and in some cases the risk of deportation and loss of investment in country-specific human capital. To the extent that these factors lower the expected benefits of residing in H, illegal aliens are more likely to return to S when compared with legal immigrants with similar characteristics. On the other hand, if "illegal" status primarily raises the cost of moving back and forth across the border, while only having a small effect on the immigrant family's earnings in the host country, then the family's ties with country S can be adversely affected, *reducing* the likelihood of return migration.
5. The assumption that the parents have a locational preference for the source country reflects our focus on economically motivated emigration rather than departure from S to avoid religious or political persecution.
6. The role of public support in Germany for the accumulation of K_S by immigrant children is examined by Katseli (2000).
7. In a more general setting, assuming that $\alpha > 0$ may reflect either a degree of altruistic behavior on the part of the parents, in the sense that the parents derive utility from additional income earned by their child (see Becker, 1991) or pure self-interest. For expositional simplicity, we focus only on the case of pure self-interest, where αC^* represents the repayment of an informal loan that enabled the immigrant child to secure a better education. When the immigrant child remains in the host country and the parents return to the source country, the loan repayment takes the form of a remittance flow (see Brown, 1997; Lucas and Stark, 1985; Piorine, 1997; Stark and Lucas, 1988, among others).
8. One reason might be that the general level of wages is higher in H than it is in S, implying a higher return on K_H than on K_S. Another possibility is that public and private educational resources (P and R, respectively) may be complementary inputs in the capital accumulation functions for K_H and K_S. Thus, if $P_H > P_S$, as is the case in most of the host countries, parental resources, R, have a higher marginal productivity when applied to the accumulation of K_H than they do when applied to the accumulation of K_S.
9. Note that under our assumptions the parents do not care about the locational preference of their offspring. As noted by Becker (1991, p. 298), "Even altruistic parents do not merely accept the utility functions of young children who are too inexperienced to know what is good for them." We assume that to be true even in the case of an older child when its parents feel that it is inadequately informed about the quality of life in the source country.
10. See, however, the pioneering work of Mincer (1978) where the costs and benefits of remaining together are considered in an analysis of geographic mobility of married couples in the United States.
11. Figure 6 is drawn under the assumption that $B_H - T$ is greater than the amount of extra support needed to increase the child's country H income by $T^* + B^*_{So}$ units. Should it be smaller, solution SS also emerges for values of $L > C_H - C_S + B_H$ and $L^* < T^* + B^*_{So} - B_H + T$. In that case, the maximum transfer available from the parents ($B_H - T$) is not sufficient to induce the child to remain alone in H. Then the best strategy for the parents is to support the child's accumulation of K_S and accept the solution SS.
12. Dustmann (2003) finds that in a sample of immigrants in Germany, the average number of children within the households of *returning* immigrants is clearly lower than that of the entire sample (0.773 as opposed to 1.194). Moreover, he finds that 59% of those who return have no children, while only 41% of the sampled immigrants have no children. Thus, the study concludes that return is more likely in the case of immigrant households without children.
13. In terms of Figure 3, reduction of T and/or T^* results in the expansion of the SH region at the expense of the HH and SS regions. That is to say, given our assumptions on locational preferences, return migration of the parents is more likely, while that of the child is less likely than would be the case with relatively higher transport costs.
14. Dustmann (2000) uncovers some evidence of this on the basis of data on return intentions of immigrants residing in Germany.