

## Are Immigrants Favorably Self-Selected?

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One of the standard propositions in the migration literature is that migrants tend to be favorably “self-selected” for labor-market success. That is, economic migrants are described as tending on average to be more able, ambitious, aggressive, entrepreneurial, or otherwise more favorably selected than similar individuals who choose to remain in their place of origin. Economic migrants are those who move from one place of work and residence to another, either within a country or across international boundaries, primarily because of their own economic opportunities. The favorable selectivity for labor-market success of migrants would be less intense among those for whom other motives are important, such as tied movers, refugees, and ideological migrants.

In recent years there have been challenges to the general proposition of the favorable selectivity of migrants. In addressing this issue, this paper considers alternative specifications of the migration model that are relevant for the issue of migrant selectivity.

### I. The Human-Capital Migration Model

Consider a simple human-capital model of investment in migration (Larry A. Sjaastad, 1962; Gary S. Becker, 1964). Assume that wages in the origin and destination do not

vary with the level of labor-market experience. That is, for simplicity of exposition, it is assumed there is no on-the-job training and that there are no post-migration human-capital investments after the investment period. Also assume that there is a very long (infinite) work life and that the costs of migration occur in the first period. These migration costs include forgone earnings ( $C_f$ ) and direct or out-of-pocket costs ( $C_d$ ). Migration costs are defined broadly to include not merely the airfare or bus ticket and time in transit, but the full costs of relocating and adjusting both consumption and labor-market activities from the origin to the destination. The rate of return from migration can then be written (approximately) as

$$(1) \quad r = \frac{W_b - W_a}{C_f + C_d}$$

where  $W_b$  represents earnings in the destination and  $W_a$  represents earnings in the origin. Migration occurs if the rate of return in the investment in migration ( $r$ ) is greater than or equal to the interest cost of funds for investment in human capital ( $i$ ). The interest costs of funds is lower the greater the person’s wealth and access to the capital market.

Assume first that there are two types of workers, low-ability and high-ability workers, and that these ability levels are known without cost to the workers and potential employers. The more able may have more innate ability or merely more schooling. Ability may have many dimensions including ambition, entrepreneurial skills, aggressiveness, tenacity, and so on. Let  $r_\ell$  be the rate of return from migration to a low-ability person and let  $r_h$  be the rate of return to a high-ability person. If the low- and high-ability individuals have the

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same interest cost of funds, the person with the higher rate of return from migration will have the greater propensity to migrate. As a first step, assume that in the origin and destination wages are  $100k$  percent higher for the more able; that is, the ratio of wages in the destination to wages in the origin is independent of level of ability. Then,

$$(2) \quad W_{b,h} = (1 + k)W_{b,\ell}$$

$$W_{a,h} = (1 + k)W_{a,\ell}$$

It is assumed that direct costs do not vary with ability,  $C_{d,h} = C_{d,\ell}$ . Also assume that greater ability has no effect on efficiency in migration, but it does raise the value of forgone earnings. Then  $C_{f,h} = (1 + k)C_{f,\ell}$ . The rate of return to the high-ability person can be written as

$$(3) \quad r_h = \frac{(1 + k)W_{b,\ell} - (1 + k)W_{a,\ell}}{(1 + k)C_{f,\ell} + C_d}$$

$$= \frac{W_{b,\ell} - W_{a,\ell}}{C_{f,\ell} + \frac{C_d}{(1 + k)}}$$

Thus,  $r_h$  is greater than  $r_\ell$  as long as earnings increase with ability ( $k > 0$ ) and there are positive out-of-pocket costs of migration ( $C_d > 0$ ).

If there were no out-of-pocket costs associated with migration ( $C_d = 0$ ), then  $r_h = r_\ell$ , and there would be no selectivity in migration on the basis of ability. Alternatively, if there were no labor-market premium for a higher level of ability or a particular dimension of ability (i.e., if  $k = 0$ ), then  $r_h = r_\ell$ , and there is no selectivity in migration on the basis of this dimension of ability. The smaller are the direct costs of migration ( $C_d$ ) relative to the wage premium for higher levels of ability  $(1 + k)$ , the smaller is  $C_d/(1 + k)$ , and hence the smaller is the differential in the rate of return to those of higher ability relative to those of lesser ability.

Now add another assumption: the more able are also more efficient in migration. Just as higher ability enhances productivity in the labor market, these same characteristics may enhance efficiency in investment in human

capital. The same investment in migration may require fewer units of time or fewer units of out-of-pocket costs for the more able.

Since the opportunity cost of migration ( $C_f$ ) is the product of time units ( $t$ ) involved in migration multiplied by the value of time in the origin ( $W_a$ ), opportunity costs can be written as  $C_f = tW_a$ . Efficiency can be expressed as the more able needing fewer time units to accomplish the task ( $t_h < t_\ell$ ). Then,  $C_{f,\ell} = t_\ell W_{a,\ell}$  and  $C_{f,h} = t_h W_{a,h} = t_h(1 + k)W_{a,\ell}$ , where  $t_h < t_\ell$ . Note that, even if there are no out-of-pocket costs ( $C_d = 0$ ), if the more able are more efficient in using time, there is favorable selectivity in migration. That is, if  $C_d = 0$ , and  $t_h < t_\ell$ , using equation (3), when  $C_{f,\ell} = t_\ell W_{a,\ell}$  and  $C_{f,h} = t_h(1 + k)W_{a,\ell}$ , then it follows that  $r_h > r_\ell$ .

The more able may also be more efficient in utilizing out-of-pocket expenditures ( $C_{d,h} < C_{d,\ell}$ ) incurred in migration. If direct costs exist and they are smaller for the more able ( $C_{d,h} < C_{d,\ell}$ ), the difference in the rate of return from migration is even greater than if there were no ability differences in migration. If  $C_{d,h} = (1 + \lambda)C_{d,\ell}$  where  $\lambda$  is a direct cost-efficiency parameter, and  $\lambda < 0$ , then

$$(4) \quad r_h = \frac{W_{b,\ell} - W_{a,\ell}}{C_{f,\ell} + \frac{C_{d,\ell}(1 + \lambda)}{(1 + k)}}$$

and  $r_h$  is larger relative to  $r_\ell$  the greater the efficiency in handling direct costs (the larger is  $\lambda$  in absolute value).

It is reasonable to assume, however, that migrants will differ in the combination of own time (forgone earnings) and purchased inputs (direct costs) in the migration and readjustment process. The greater the value of forgone earnings (wages) and the greater a person's efficiency in using purchased inputs relative to own time, the greater will be the relative use of purchased inputs over own time. Thus, high-ability migrants will appear to spend more on the migration process (out-of-pocket expenditures) and to use less time than those of lesser ability.

The model can be extended to consider situations in which the relative wage differentials are not the same across countries. Assume that

there are no direct costs of migration ( $C_d = 0$ ) and that ability (human capital) does not affect efficiency in time use in migration ( $t_h = t_\ell$ ). Then,

$$(5) \quad r_\ell = \frac{W_{b,\ell} - W_{a,\ell}}{tW_{a,\ell}} = \frac{1}{t} \left( \frac{W_{b,\ell}}{W_{a,\ell}} - 1 \right)$$

$$(6) \quad r_h = \frac{W_{b,h} - W_{a,h}}{tW_{a,h}} = \frac{1}{t} \left( \frac{W_{b,h}}{W_{a,h}} - 1 \right).$$

Thus, the ratios of wages in the destination relative to the origin determine migration incentives. If the ratios of wages are the same for low- and high-ability individuals, the rates of return are the same, and there is no skill selectivity in migration. If the ratio of wages across regions is greater for the high ability, that is, if  $W_b/W_a$  is greater for high-ability than for low-ability individuals, then those with high ability have a greater incentive to migrate. If on the other hand, the ratio of wages across regions is greater for low-ability individuals, they would have a greater propensity to migrate, other things being the same.

Several implications follow from this human-capital model regarding the favorable selectivity of economic migrants, that is, of those basing their migration decision on the conventionally measured rate of return from migration. The larger are the out-of-pocket costs of migration, the lower is the propensity to migrate, but also the lower is the return migration rate and the greater the propensity for favorable selectivity in migration. This propensity for favorable selectivity is intensified if those who are more able in the labor market are also more efficient in the migration and adjustment process (Theodore W. Schultz, 1975).

The favorable selectivity of migrants is even greater if the wage differential between the destination and origin (the ratio of wages in the destination to those in the origin) is greater for the high-ability workers. The favorable selectivity is less intense if the ratio of wages in the destination to those in the origin is smaller for the high-ability workers. Only if this latter effect is sufficiently large to offset the favorable selectivity effects of out-of-pocket costs and greater efficiency in the migration process

will there be no selectivity in migration. In this framework, for there to be negative selectivity in migration even more compressed wage differentials across regions are required for the high-ability relative to the low-ability workers.

## II. Alternative Models

Several alternatives to the simple human-capital model presented in Section I have appeared in the literature to address the issue, either directly or indirectly, of the favorable selectivity of migrants. These include models based on asymmetric information, temporary migration, the Roy model, and noneconomic determinants of migration.

Eliakim Katz and Oded Stark (1987) present a model of asymmetric information. Suppose that potential migrants know their true productivity and that employers in the origin have, over time, learned each worker's true productivity. Employers in the destination, however, cannot differentiate among high-ability and low-ability migrants. Employers in the origin pay workers wages in accordance with each worker's true productivity, while those in the destination pay workers according to the expected (average) productivity of migrants. High-ability workers will experience a smaller wage differential and higher forgone earnings than low-ability workers, and they will therefore have a smaller incentive to migrate. If employers can never detect true ability differences among migrant workers there would be adverse selection. The increase in low-ability migration relative to high-ability migration would drive down the expected wage of migrants in the destination, further discouraging high-ability migration.

Employers in the destination would, of course, have an incentive to develop tests or techniques for distinguishing high-ability from low-ability workers. The lower the cost and the shorter the time interval for identifying ability, the lower the adverse selection from asymmetric information. Asymmetric information would appear to be most compelling for low-skilled jobs with a short duration that do not involve repeat occurrences. High-wage jobs would warrant investment in information about ability, if only through a trial investment/working period. This might take the

form of hiring immigrant workers at low wages until true ability levels are revealed. Employers would then be able to discern the ability level of workers for jobs that have a long tenure or that involve repeat occurrences.

The model developed in Section I assumed, for simplicity, that workers remained in the destination for a long period of time, and it implicitly assumed away location-specific human capital. Suppose, however, that there is a short expected duration in the destination because of high expectations of voluntary return migration (guest worker or sojourner migration) or involuntary return migration (deportations) (Chiswick 1980, 1986). Then, migrants who made investments in destination-specific human capital would experience a capital loss when they leave the destination, and their origin-specific human capital would have depreciated during their sojourn. Therefore, sojourner migrants or illegal aliens who are concerned about apprehensions and deportations would tend to avoid country-specific human-capital investments and would tend to invest in internationally transferable human capital or very little human capital. This would result in less positive self-selectivity among short-term migrants (sojourners, guest workers, and illegal aliens) compared to permanent legal migrants.

In a series of studies on selectivity in migration George J. Borjas (1987, 1991) presents the Roy model (A. D. Roy, 1951) as an alternative specification of the human-capital model. It is implicitly assumed that all migration costs are a constant proportion of forgone earnings, there are no fixed (out-of-pocket) costs, and ability has no effect on efficiency in migration. As a result, migration incentives are a function of the ratio of wages in the destination to the origin, as shown above in equations (5) and (6).

This application of the Roy model is a special case of the human-capital model (see Section I above). For a given wage structure (relative skill differentials) in the destination, a larger relative skill differential in the lower-income origin implies a smaller destination-to-origin wage differential for higher-skilled workers, and hence a smaller incentive to migrate compared to lower-skilled workers. The reverse follows if there is a smaller relative

skill differential in the origin. As shown above, a larger skill differential in the origin than in the destination does not necessarily imply negative selectivity, but rather only less favorable selectivity.

In an empirical test of this model, Borjas (1987) regresses initial immigrant earnings and the improvement in immigrant earnings, as well as the emigration rate from the origin, on a measure of relative skill differentials in the origin. This actually does not test for the effect of income inequality on positive or negative selectivity in international migration, but only for whether inequality in income is associated with a greater or lesser degree of selectivity, after controlling for other variables that reflect the effects of positive selectivity on earnings in the United States. The measure of relative skill differentials is the "Ratio of household income of the top 10 percent of the households to the income of the bottom 20 percent of the households" (Borjas, 1987 p. 545). This measure of household income inequality may be poorly related to relative skill differentials. Controlling for other variables, the coefficient on the inequality variable is not statistically significant in analyses of immigrant earnings in the United States, and in half of the specifications it has a positive rather than the expected negative sign. The test does not offer support for the hypothesis that immigrants from countries with greater inequality constitute the least able members of the origin labor force.

Conventionally defined economic variables are not the only determinants of migration. People also move for "noneconomic" reasons, including the desire to accompany or join family members ("tied movers"), escape from real or perceived threats to their freedom or safety because of their class, religion, race, or other characteristics ("refugees"), and ideological (including religious) reasons. The favorable self-selectivity for labor-market success would be expected to be less intense among those for whom migration is based primarily on factors other than their own labor-market success. Studies of tied movers and refugees in comparison to economic migrants indicate that the former have higher unemployment rates and lower earnings than statistically comparable economic migrants

(Chiswick, 1978, 1979; Jacob Mincer, 1978). The earnings disadvantages of tied movers and refugees are greater initially and diminish with duration of residence, but generally they do not disappear.

### III. Summary and Conclusions

This paper has explored the conceptual issues regarding the selectivity of migrants. The analysis indicates a tendency toward the favorable self-selection (supply) of migrants for labor-market success on the basis of a higher level of ability, broadly defined. The favorable selectivity is more intense the greater the out-of-pocket (direct) costs of migration and return migration, the greater the effect of ability on lowering the costs of migration, and the smaller the relative skill differentials in the lower-wage origin relative to the higher-wage destination. Favorable selectivity for labor-market success can be expected to be less intense for noneconomic migrants, such as refugees, tied movers, and ideological migrants, and for sojourners (short-term migrants) and illegal aliens.

The analysis in this paper applies only to the supply of immigrants and not to observed outcomes. The determinants of the demand for immigrants are also relevant for international migration, as all nation states have selection criteria for whom they will admit. The overall favorable selectivity of immigrants therefore depends on the favorable selectivity of the supply of immigrants and the criteria used to ration admissions.

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