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Integration as a catalyst for assimilation

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Abstract

We draw a distinction between the social integration and economic assimilation of migrants, and study an interaction between the two. We define social integration as blending into the host country's society, and economic assimilation as acquisition of human capital that is specific to the host country's labor market. We show that a non-integrated migrant finds it optimal to acquire a relatively limited quantity of human capital; with fellow migrants constituting his only comparison group, a non-integrated migrant does not have a relative-deprivation-based incentive to close the income gap with the natives. However, when a migrant is made to integrate, his social proximity to the natives exposes him to relative deprivation, which in turn prompts him to form more destination-specific human capital in order to increase his earnings and narrow the income gap with the natives. In this way, social integration becomes a catalyst for economic assimilation.

Keywords: Assimilation; Integration; Social proximity; Interpersonal comparisons; Relative deprivation; Human capital formation

JEL Classification: D01; F22; J15; J24; J61; O15; Z10

1. Introduction

In the literature on international migration, the terms "assimilation" and "integration" are often used interchangeably; both refer to the incorporation of migrants into the host country's social-economic fabric. Yet the two are not the same; each is associated with a different mode of adaptation.

In this paper we differentiate between economic assimilation and social integration, taking them to refer to the acquisition of different types of capital in the destination country.[1] We define economic assimilation as the acquisition of destination-specific human capital: skills, the processes and protocols of production, the knowledge of how to do things, and other productive assets and attributes. The more economically assimilated a migrant, the higher his productivity and earnings in the host country. Naturally, the acquisition of human capital requires effort, and effort is costly. We define social integration as the acquisition of destination-specific social capital - blending into the host country's society, mingling and interacting with the native population.[2]

Metaphorically, we can think of economic assimilation as a move in the economic sphere, and of social integration as a move in the social space. The latter move brings about proximity to the natives and intensifies earnings comparisons with them. Because the earnings of the natives are typically higher than those of migrants, this comparison inflicts a painful sense of relative deprivation. In a way, social integration is a revision of identity; a migrant gradually ceases to perceive himself as a "migrant" and, instead, increasingly perceives himself as part of the majority society.[3]

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[1] For example, Dustmann and Fabbri (2003) differentiate between "economic assimilation" and "social integration," although they do not provide a definition of "social integration." Borjas et al. (1992) use the term "assimilation" in the context of acquiring "location-specific human capital."

[2] The German Federal Ministry of the Interior put it like this: "Integration means living together as one society, not in separate worlds[, ...] feeling part of a community and developing a common understanding of how to live together in society."
http://www.bmi.bund.de/EN/Themen/MigrationIntegration/Integration/IntegrationPolicy/Integration_policy_node.html

[3] Akerlof and Kranton (2000) note that an individual's social identity can affect, or determine, his economic behavior.

Considerable evidence across countries and over time indicates that quite often both assimilation and integration are partial, and that sometimes integration does not occur at all.[4] In this paper we delineate a causal relationship between assimilation and integration. In a nutshell, our argument is as follows: in a given community of migrants, in the absence of exogenously imposed integration, migrants halt their acquisition of destination-specific human capital at the point at which the cost of assimilation starts to overshadow the utility gain from the consequent increase in their income. Migrants do not assimilate more or fully in the economic sphere because, for example, living in concentrated communities or enclaves, not integrating with the natives, insulates them from exposure to relative deprivation. In turn, such disassociation "shields" migrants from an additional incentive to boost their earnings by means of accumulating more destination-specific human capital. However, when such migrants are forced or encouraged to become more integrated, then the ensuing relative deprivation encourages them to assimilate more intensively.[5,6] In a way, given our definitions of integration and assimilation, integration creates a positive assimilation externality.

2. Modeling the assimilation behavior of migrants

Consider a population of homogeneous migrants who arrive in the host country with no destination-specific human capital. (The possibility that migrants arrive in the destination country already with some human capital that is applicable in that country is studied in the

[4] McManus et al. (1983), Tainer (1988), Shields and Price (2002), Chiswick and Miller (2002, 2005), and others present evidence on the lack of migrants' proficiency in the host country's language, and argue that this paucity has a negative effect on earnings. At the same time, it can be assumed that a lack of proficiency in the host country's language implies limited contacts with the natives. Moreover, Chiswick and Miller (1995) and Lazear (1999, 2005) argue that low levels of assimilation occur when migrants live in concentrations (enclaves).

[5] Following the fourth (2010) "Integration Summit" organized by the German government, Chancellor Merkel stated bluntly: "the approach [...] that integration was not something that needed to be addressed, that people would live side-by-side and that it would sort itself out by itself [...] turned out to be false. What in fact is needed is a political effort and an effort by society as a whole to make integration happen." http://www.thelocal.de/national/20101103-30921.html

[6] We make an implicit assumption here that a migrant who faces "compulsory integration" does not choose an outside option such as migrating to yet another country or returning home.

Appendix.) Working in the host country's economy requires acquisition of such human capital which, in turn, necessitates exertion of costly effort. We denote by *x* the quantity of human capital that a migrant can acquire, and we assume that $x \in [0,1]$ where $x = 1$ is the quantity of human capital of a native which, if acquired by a migrant, denotes his full assimilation, while $x = 0$ is the starting level of the destination-specific human capital of migrants. For the sake of convenience, we assume that the acquired human capital is converted into earnings on a one-to-one basis. This assumption enables us to refer to *x* both as the migrant's quantity of human capital and as his earnings (income).

A migrant chooses the quantity of human capital that maximizes his utility function, which is assumed to be

$$u(x) = Y(x) - RD(x) - cC(x), \tag{1}$$

where the function $Y(x)$ denotes the utility that the migrant derives from his income such that $Y'(x) > 0$ and $Y''(x) < 0$ for $x \in (0,1)$, and $\lim_{x \to 0} Y'(x) = \infty$; $RD(x)$ denotes the relative deprivation experienced by the migrant, which depends on the differences between the average income of each of his reference groups and his own income;[7] and the parameter $c > 0$ and the function $C(x)$, such that $C'(x) > 0$ and $C''(x) \geq 0$ for $x \in (0,1)$ and $\lim_{x \to 1} C'(x) < \infty$, describe the cost of exerting effort to assimilate. We denote $Y_1 \equiv \lim_{x \to 1} Y'(x)$, and $C_1 \equiv \lim_{x \to 1} C'(x)$. Obviously, $Y_1 \geq 0$, and $C_1 > 0$.

By a "reference group" we mean the "comparison group," namely, the individuals who co-occupy the migrant's social space and to whose incomes the migrant compares his own. For a set of reference groups *J*, the relative deprivation sensed by the migrant is the sum of the levels of relative deprivation over the set, namely,

$$RD(x) = \sum_{j \in J} RD_j(x), \tag{2}$$

[7] The hypothesis that an individual's sense of wellbeing is affected adversely by unfavorable relative income comparisons (but is not measurably impacted by favorable ones) traces back to Veblen (1924). Measures of relative deprivation were proposed by Becker (1974), Yitzhaki (1979), and others. For evidence on the significance of relative deprivation in human affairs see, for example, Stark and Taylor (1989), Walker and Smith (2002), Eibner and Evans (2005), Luttmer (2005), and Clark et al. (2008).

where $RD_j(x)$ is the relative deprivation with respect to the mean income of group $j \in J$, X_j, that is,

$$RD_j(x) = F(X_j - x),$$

such that for $z > 0$ we have that $F(z) > 0$, $F'(z) > 0$, $F''(z) \geq 0$, $0 < \lim_{z \to 0^+} F'(z) < \infty$;[8] and for $z \leq 0$ we have $F(z) = 0$. We denote $F_0 \equiv \lim_{z \to 0^+} F'(z)$.

2.1. A non-integrated community of migrants

We first present the polar case in which migrants are not integrated with the native population, say they live in an enclave or in a concentrated community such that fellow migrants constitute the migrants' exclusive reference group. Denoting the group of migrants by *M*, we have that in this case $J = \{M\}$ and therefore

$$RD(x) = RD_M(x) = F(X_M - x).$$

From our assumption that the population of migrants is homogenous it follows that they all acquire the same quantity of destination-specific human capital and, therefore, we have that $X_M = x$, and thus $RD_M(x) = 0$. Consequently, the utility function (1) reduces to

$$u_{NI}(x) = Y(x) - cC(x),$$

where subscript "*NI*" stands for "non-integrated."

We denote by x^*_{NI} the quantity of human capital that maximizes the function $u_{NI}(x)$ for $x \in [0,1]$. For the sake of notational clarity, we extend the range of parameter *c* to include 0, and we define $c_{NI} = \sup\left\{c \geq 0 : x^*_{NI} = 1\right\}$. Thus, c_{NI} is the maximum level of the cost parameter at which a non-integrated migrant assimilates fully.

Because $u_{NI}(x)$ is strictly concave with respect to *x*,[9] for *c* such that

[8] The requirement that the right hand side derivative of function *F* is greater than zero draws on a similar property of a widely-used measure of individual deprivation - the fraction of individuals in the population whose incomes are higher than the income of the reference individual, times their mean excess income (see, for example, Stark 2010).

$$\lim_{x\to 1^-}\left[Y'(x)-cC'(x)\right]=Y_1-cC_1\geq 0$$

the maximum is obtained at the right border of the range $x\in[0,1]$. Noting that Y_1-cC_1 is a linear expression that decreases with respect to *c*, with $Y_1\geq 0$, and with $C_1>0$, we get that c_{NI} is the solution of

$$Y_1-cC_1=0 \tag{3}$$

and, if $c_{NI}>0$,[10] we will have that for $c\in(0,c_{NI}]$, the optimal level of human capital of a non-integrated migrant is $x^*_{NI}=1$. For $c>c_{NI}$, the optimal level of human capital, given by the first order condition $u'_{NI}(x)=0$, solves

$$Y'(x^*_{NI})-cC'(x^*_{NI})=0, \tag{4}$$

which, recalling the definition of c_{NI}, implies that $x^*_{NI}<1$.[11]

Thus, migrants will find it optimal to choose the maximal level of human capital that is equal to the level of human capital of natives only if $c\leq c_{NI}$. And if the cost of exerting assimilation effort is higher than c_{NI}, the community of non-integrated migrants will remain not fully assimilated, and migrants' earnings will be lower than those of members of the native population who, by definition, are fully "assimilated."

We next show that the stress from experiencing relative deprivation, which is brought about by the integration of migrants with the native population, acts as an incentive to acquire more destination-specific human capital, namely, to assimilate more, and thereby narrow the income gap with the natives.

2.2. An integrated community of migrants

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[9] $u''_{NI}(x)=Y''(x)-cC''(x)<0$.

[10] The specification of functions *Y* and *C* does not rule out the possibility that $\lim_{x\to 1}\left[Y'(x)-cC'(x)\right]<0$ for any $c>0$, in which case $c_{NI}=0$.

[11] From the concavity of the function u_{NI}, the assumptions that we have made regarding the functions *Y* and *C*, and the definition of c_{NI}, it follows that x^*_{NI} exists, is unique, and is strictly positive.

Suppose that migrants are made to treat natives as a reference group. This can be brought about, for example, by a housing policy combating the spatial segregation of migrants, compulsory language acquisition programs, or mandatory learning of the history and culture of the host country, stimulating interactions between migrants and the native population,[12] and contributing to strengthening the identification of migrants with the native population. Then, migrants will have two reference groups: themselves, *M*; and the natives, *N*, namely, $J=\{M,N\}$. As already noted, the quantity of human capital and the income of each native worker are normalized at one, and thus $X_N=1$. Consequently, $RD_N(x)=F(1-x)$. And because the migrant population is homogeneous, we have, as before, that $RD_M(x)=F(0)=0$, and thus $RD(x)=RD_M(x)+RD_N(x)=F(1-x)$. Therefore, the utility function of an integrated migrant takes the form

$$u_I(x)=Y(x)-F(1-x)-cC(x).$$

In a manner analogous to that of Subsection 2.1, we denote by x_I^* the level of human capital that maximizes $u_I(x)$ for $x\in[0,1]$, and we denote by c_I the maximal level of the cost parameter for which an integrated migrant assimilates fully, that is, $c_I=\sup\left\{c\geq 0: x_I^*=1\right\}$.

Because $u_I(x)$ is strictly concave with respect to *x*,[13] then for *c* such that

$$\lim_{x\to 1^-}\left[Y'(x)+F'(1-x)-cC'(x)\right]=Y_1+F_0-cC_1\geq 0$$

the maximum is obtained at the right border of the range $x\in[0,1]$. Noting that $Y_1+F_0-cC_1$ is a linear expression that decreases with respect to *c*, with $Y_1\geq 0$, $C_1>0$, and $F_0>0$, we get that c_I is the solution of

$$Y_1+F_0-cC_1=0 \tag{5}$$

and we have that for $c\in(0,c_I]$ it holds that $x_I^*=1$,[14] whereas for $c>c_I$ the optimal quantity

[12] For example, the Irish government supports "welcome" meetings, intercultural events such as social evenings, and sports days for newly-arrived migrants (Spencer and di Mattia, 2004).

[13] $u_I''(x)=Y''(x)-F''(1-x)-cC''(x)<0$.

[14] Because $Y_1+F_0>0$ and $C_1<\infty$, we get that $c_I>0$.

of human capital, given by the first order condition $u_I'(x)=0$, solves[15]

$$Y'(x_I^*)+F'(1-x_I^*)-cC'(x_I^*)=0. \tag{6}$$

We now state and prove the following Claim.

Claim 1.

(a) $x_I^* \geq x_{NI}^*$ for any $c>0$;

(b) $c_I > c_{NI}$;

(c) $x_I^* > x_{NI}^*$ for $c > c_{NI}$.

Claim 1 states that a socially integrated migrant will always assimilate in the economic sphere at least as much as a non-integrated migrant. Moreover, an integrated migrant will find it optimal to assimilate fully at a cost that is higher than that accepted by a non-integrated migrant ($c_I > c_{NI}$). In addition, at a cost of assimilation such that a non-integrated migrant does not find it optimal to assimilate fully ($c > c_{NI}$), an integrated migrant will assimilate more than a non-integrated migrant will.

Proof: For any $x \in (0,1)$, we have that $F'(1-x)>0$ and thus

$$u_{NI}'(x)=Y'(x)-cC'(x)<Y'(x)+F'(1-x)-cC'(x)=u_I'(x). \tag{7}$$

Consequently, because $u_{NI}(x)$ and $u_I(x)$ are strictly concave, we get, for x_{NI}^* and x_I^* as defined above, that $x_{NI}^* \leq x_I^*$ for any $c>0$, which completes the proof of part (a).

Because $F_0>0$, it follows that $Y_1+F_0-cC_1>Y_1-cC_1$, therefore (recalling (3) and (5)) $c_I > c_{NI}$, which completes the proof of part (b).

For $c \in (c_{NI}, c_I]$ we have that $x_I^*=1$, whereas $x_{NI}^*<1$. For $c>c_I$, using (7) we get that x_{NI}^*, which is (implicitly) defined by (4), is smaller than x_I^*, which is (implicitly) defined by (6). This completes the proof of part (c). □

[15] From the concavity of the function u_I, the assumptions that we have made regarding the functions *Y* and *C*, and the definition of c_I, it follows that x_I^* exists, is unique, and is strictly positive.

Claim 1 informs us that, other than in a situation in which assimilation comes about relatively effortlessly to the migrant, integration promotes assimilation. In particular, policy-imposed unpleasing income comparisons with natives that migrants experience when they are made to integrate with the host country's society, motivate them to exert more assimilation effort than when they are detached from the natives. In a way, the mandated walk in social space intensifies movement in the economic sphere.

2.3. An illustration

Let the utility function in (1) take the following specific form:

$$u(x) = \sqrt{x} - RD(x) - cx, \tag{8}$$

namely, we let $Y(x) = \sqrt{x}$ and $C(x) = x$; and recalling (2), we set $RD_j(x) = \max\{X_j - x, 0\}$. It is easy to verify that in this case, $c_{NI} = 1/2$ and $c_I = 3/2$, and that the solutions to (4) and (6) are, respectively,

$$x_{NI}^* = \frac{1}{4c^2}$$

for $c > 1/2$, and

$$x_I^* = \frac{1}{4(c-1)^2}$$

for $c > 3/2$.

Then, if the cost of assimilation is such that a non-integrated migrant does not find it optimal to assimilate fully ($c > 1/2$), an integrated migrant will assimilate more extensively, and will assimilate fully if $c \leq 3/2$. Figure 1 depicts the relationship between x_{NI}^* and *c*, and between x_I^* and *c* for the specific utility function of a migrant given by (8).

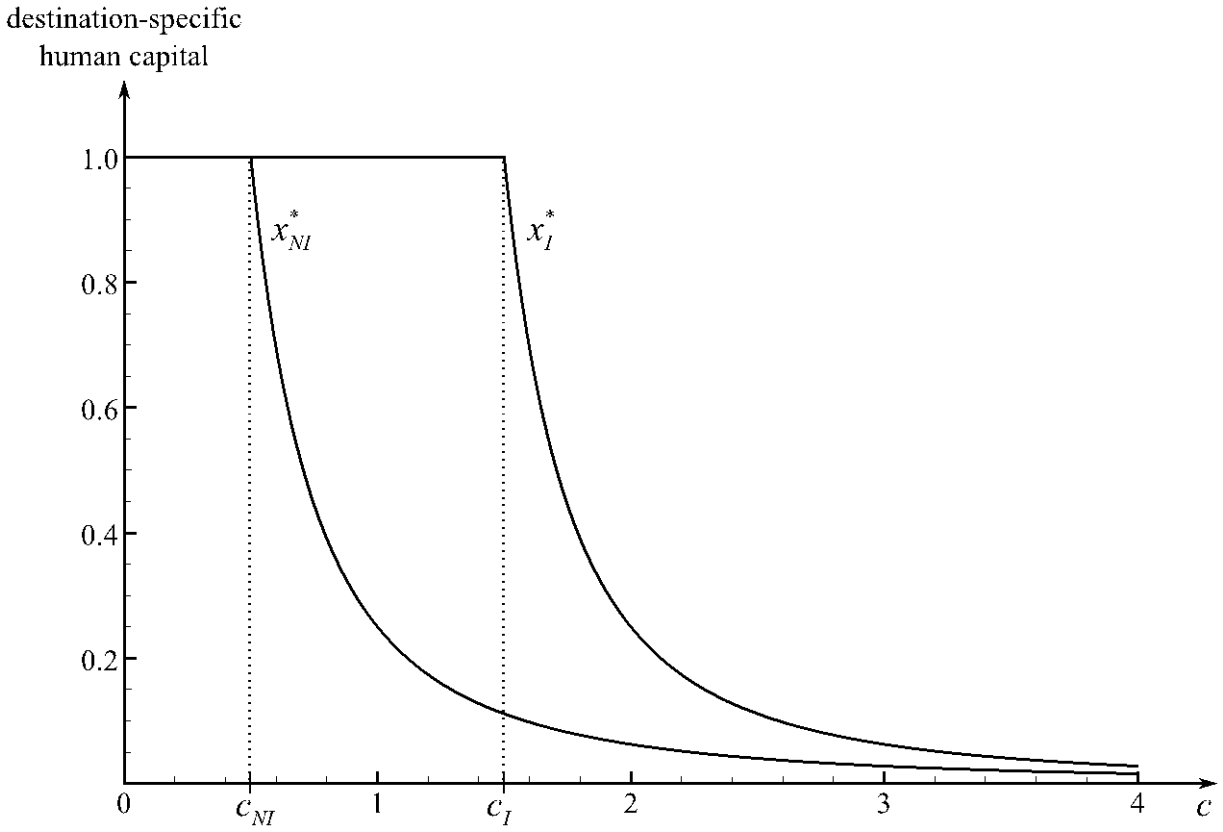

Figure 1: x^*_{NI} (the optimal level of destination-specific human capital acquired by a non-integrated migrant), and x^*_I (the optimal level of destination-specific human capital acquired by an integrated migrant) as functions of the cost parameter *c*, for the utility function given in (8).

3. Conclusion

When the government of a host country supports and subsidizes migrants' language acquisition and the learning of the history, culture, and values of the host society, it stimulates the social integration of migrants and seeks to relocate them in the social space of the host country's society. As we have argued in this paper, this intensified social integration exposes migrants to a revised structure of incentives: they are thereby encouraged to acquire human capital assets that increase their productivity and boost their earnings. In sum, migration policies that bring migrants closer to natives in social space can make them better equipped in the market place.

Our finding contributes also to the rich literature examining the impact of host-country language acquisition on migrants' earnings. Seen from the perspective proposed in this paper, language acquisition is not only a direct channel to increased earnings (a productivity-enhancing tool), as the received literature maintains; it also opens an indirect channel to

increased earnings (a motivation to acquire additional tools). The literature that measures the gain in earnings conferred on migrants by language acquisition thus underestimates the overall effect: setting in motion a process by which (additional) human capital assets are acquired encourages assimilation and productivity.

Although hitherto we have referred to international migration, our argument is not confined to that form of migration. Consider the management of rural-to-urban migration in China. In urban China, migrants from the rural areas have limited access to the social services to which urban hukou holders are entitled.[16] For example, in 2010, 20 percent of the migrants had access to health insurance, as opposed to 87 percent of workers with urban hukou (Meng 2012); migrant children are often denied access to public schools; and so on. As a result of institutional discrimination, "[t]he labor markets for urban hukou workers and migrant workers are *segregated*" (Meng 2012, p. 92, emphasis added). This regime and the policy stance forging it are tantamount to institutional non-integration (social non-integration) which, as we have argued, curbs an incentive to assimilate in the economic sphere and increase productivity. There is concomitant evidence of an earnings gap: hourly wages of urban hukou workers are double those of migrants (Meng 2012). This segregation, reinforced by the hukou policy, could be why migrants do not feel the heat of this gap. Had they been exposed, it would have instilled in them an assimilation-type drive to narrow the earnings gap.

[16] *Hukou* is the residential status of a Chinese citizen. It records whether an individual was born in the countryside ("agricultural" or "rural hukou") or in a city ("nonagricultural" or "urban hukou"). The opportunities to change hukou status after migrating from the countryside to a city are severely limited (cf. Meng 2012, p. 75).

Appendix: Transferable human capital

In the main text we assumed that a migrant enters the host country with no destination-specific human capital ($x = 0$), and that in order to obtain a positive level of income, he has to exert some assimilation effort. In this Appendix, we consider a more general case in which part of the human capital acquired in the migrant's home country is applicable as destination-specific human capital, that is, a migrant enters the host country with some positive level of destination-specific human capital which we denote by $x_0 \in (0,1)$. We show that as long as the cost of acquiring human capital, characterized by parameter *c*, is such that an integrated migrant will find it optimal to have more human capital at destination than x_0, the qualitative findings presented in Claim 1 continue to hold.

Specifically, a migrant who "starts" with some positive level of human capital in the destination country, $0 < x_0 < 1$, chooses to acquire an additional quantity of human capital in the range $x \in [0,1-x_0]$, such that his income becomes $x + x_0$. The utility function of such a migrant is

$$u(x) = Y(x + x_0) - RD(x + x_0) - cC(x), \tag{A1}$$

where the functions *Y*, *C*, and *RD*, and the parameter *c* are defined as in Section 2.

Analogously to Subsection 2.1, we can write the utility function of a non-integrated migrant as

$$u_{NI}(x) = Y(x + x_0) - cC(x).$$

We denote by x_{NI}^* the quantity of human capital that maximizes the function $u_{NI}(x)$ for $x \in [0,1-x_0]$, and we define $c_{NI}^0 = \sup\left\{c \geq 0 : x_{NI}^* > 0\right\}$, that is, the maximal level of the cost parameter for which the non-integrated migrant finds it optimal to exert a positive level of assimilation effort. From the properties of functions *Y*, *C*, and *RD*, this happens for *c* such that

$$\lim_{x \to 0}\left[Y'(x + x_0) - cC'(x)\right] = Y'(x_0) - c\lim_{x \to 0} C'(x) > 0,$$

therefore, either $c_{NI}^0 = \infty$ (in the case $\lim_{x \to 0} C'(x) = 0$) or c_{NI}^0 is the solution of

$$Y'(x_0) - c\lim_{x \to 0} C'(x) = 0. \tag{A2}$$

Next, analogously to Subsection 2.1, we define $c_{NI}^1 = \sup\left\{c \geq 0 : x_{NI}^* = 1 - x_0\right\}$, that is, c_{NI}^1 is the maximal level of the cost parameter for which a non-integrated migrant assimilates fully ($x_{NI}^* + x_0 = 1$). Obviously, this happens for *c* such that

$$\lim_{x \to (1-x_0)^-} \left[Y'(x + x_0) - cC'(x)\right] = \lim_{x \to 1^-} \left[Y'(x)\right] - cC'(1 - x_0) = Y_1 - cC'(1 - x_0) \geq 0,$$

where, as before, $Y_1 \equiv \lim_{x \to 1} Y'(x)$. Noting that $Y_1 - cC'(1 - x_0)$ is a linear expression that decreases with respect to *c*, with $Y_1 \geq 0$, and with $C'(1 - x_0) > 0$, we get that c_{NI}^1 is the solution of

$$Y_1 - cC'(1 - x_0) = 0, \tag{A3}$$

and, due to the concavity of *Y* and the convexity of *C*, we have that $c_{NI}^1 < c_{NI}^0$.

Thus, for $c \geq c_{NI}^0$, we have that a non-integrated migrant does not find it optimal to acquire more human capital than his "starting" level x_0 and, therefore, $x_{NI}^* = 0$. For $c \in (c_{NI}^1, c_{NI}^0)$, the optimal level of human capital, given by the first order condition $u_{NI}'(x) = 0$, solves

$$Y'(x_{NI}^* + x_0) - cC'(x_{NI}^*) = 0, \tag{A4}$$

which, due to the definitions of c_{NI}^1 and c_{NI}^0, implies that $0 < x_{NI}^* < 1 - x_0$, while for $c \in (0, c_{NI}^1]$ we have that $x_{NI}^* = 1 - x_0$.

Analogously to Subsection 2.2, the utility function of an integrated migrant is

$$u_I(x) = Y(x + x_0) - F(1 - x - x_0) - cC(x).$$

We denote by x_I^* the quantity of human capital that maximizes the function $u_I(x)$ for $x \in [0, 1 - x_0]$, and we define $c_I^0 = \sup\left\{c \geq 0 : x_I^* > 0\right\}$. Analogously to the case of a non-integrated migrant, either $c_I^0 = \infty$ (in case $\lim_{x \to 0} C'(x) = 0$) or c_I^0 is the solution of

$$Y'(x_0) + F'(1 - x_0) - c \lim_{x \to 0} C'(x) = 0. \tag{A5}$$

We define $c_I^1 = \sup\left\{c \geq 0 : x_I^* = 1 - x_0\right\}$ and, similarly as for a non-integrated migrant, we get that c_I^1 is the solution of

$$Y_1 + F_0 - cC'(1-x_0) = 0, \tag{A6}$$

and, due to the concavity of the function *Y*, and the convexity of the functions *C* and *F*, we have that $c_I^1 < c_I^0$.

Thus, for $c \geq c_I^0$, we have that an integrated migrant does not find it optimal to acquire more human capital than his "starting" level x_0 ($x_I^* = 0$). For $c \in (c_I^1, c_I^0)$, the optimal level of human capital, given by the first order condition $u_I'(x) = 0$, solves

$$Y'(x_I^* + x_0) + F'(1 - x_I^* - x_0) - cC'(x_I^*) = 0, \tag{A7}$$

which, due to the definitions of c_I^1 and c_I^0, implies that $0 < x_I^* < 1 - x_0$, whereas for $c \in (0, c_I^1]$, we have that $x_I^* = 1 - x_0$.

We now state and prove the following Claim which for a non-zero starting human capital level of migrants replicates the findings of Claim 1.

Claim A1.

(a) $x_I^* \geq x_{NI}^*$ for any $c > 0$;

(b) $c_I^1 > c_{NI}^1$;

(c) $x_I^* > x_{NI}^*$ for $c \in (c_{NI}^1, c_I^0)$.

Proof: The proofs of parts (a) and (b) follow the same steps as those of the corresponding parts of Claim 1.

To prove part (c), we first note from (A2) and (A5) that $c_I^0 \geq c_{NI}^0$, where equality can hold only in the case $c_I^0 = c_{NI}^0 = \infty$. Depending on the relationship between c_{NI}^0 and c_I^1, there are two possibilities to consider.

First, if $c_{NI}^0 \leq c_I^1$, then for $c \in (c_{NI}^1, c_{NI}^0)$ we have that $x_I^* = 1 - x_0$ whereas $0 < x_{NI}^* < 1 - x_0$; and for $c \in [c_{NI}^0, c_I^0)$ we have that $x_{NI}^* = 0$ while $x_I^* > 0$. This case, under the assumption that $c_I^0 < \infty$, is depicted in Figure A1.

Second, we discuss the complementary case $c_{NI}^0 > c_I^1$, which is depicted in Figure A2. For $c \in (c_{NI}^1, c_I^1]$, we have that $x_I^* = 1 - x_0$, whereas $0 < x_{NI}^* < 1 - x_0$. For $c \in (c_I^1, c_{NI}^0)$, noting that for any $x \in (0, 1 - x_0)$

$$u'_{NI}(x) = Y'(x + x_0) - cC'(x) < Y'(x + x_0) + F'(1 - x - x_0) - cC'(x) = u'_I(x),$$

we get that x_{NI}^*, which is (implicitly) defined by (A4), is smaller than x_I^*, which in turn is (implicitly) defined by (A7). Lastly, for $c \in [c_{NI}^0, c_I^0)$ we have that $x_{NI}^* = 0$ while $x_I^* > 0$. This completes the proof of part (c). □

If $c_I^0 = \infty$, then Claim A1 is equivalent to Claim 1: transferability of pre-migration possessed human capital does not qualitatively change our findings. If $c_I^0 < \infty$, then compared to the findings in the main text, the range of the cost parameter *c* for which $x_I^* > x_{NI}^*$ is bounded from above for the case of transferable human capital. However, using (A5), the concavity of the function *Y*, and the convexity of the function *F*, we get that, treated as a function of x_0, c_I^0 is decreasing, namely the lesser the extent of the transferability of human capital, the more likely the human capital gain from policies aimed at promoting the integration of migrants.

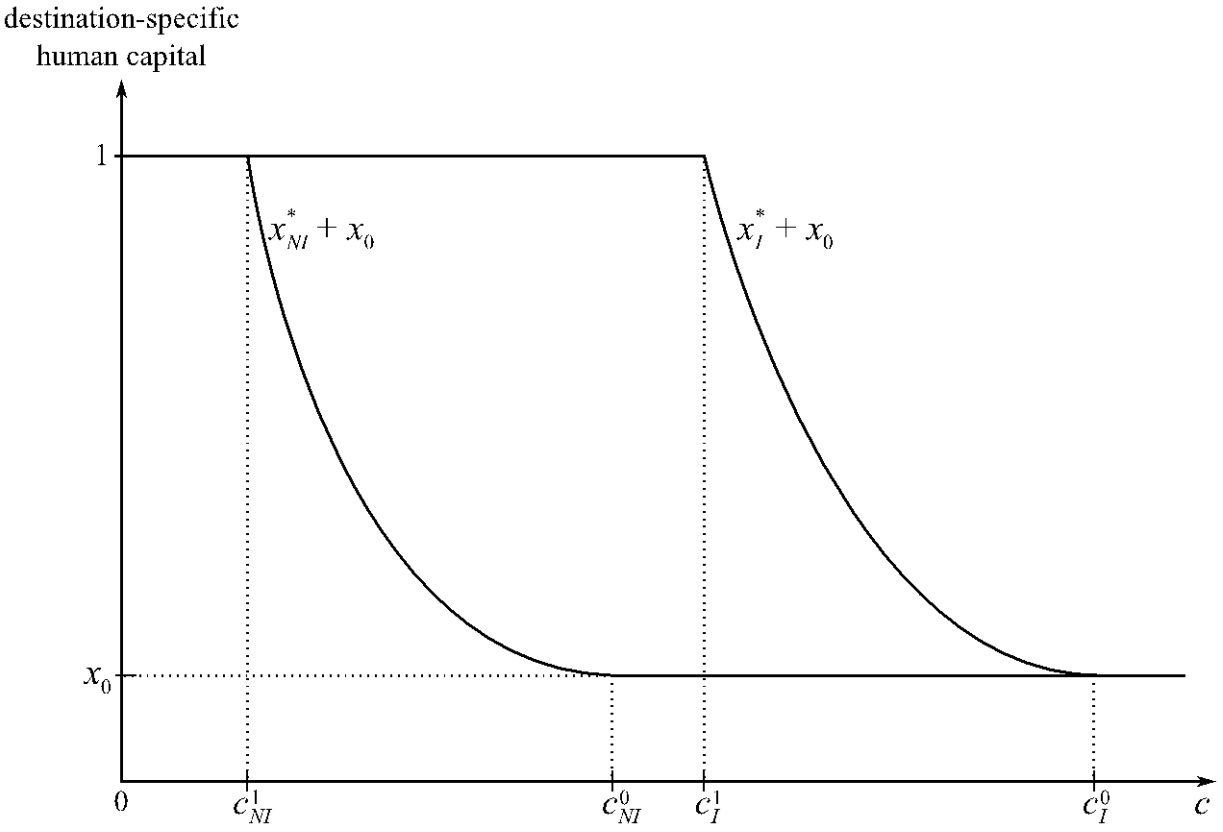

Figure A1: $x_{NI}^{*} + x_0$ (the optimal level of destination-specific human capital of a non-integrated migrant), and $x_I^{*} + x_0$ (the optimal level of destination-specific human capital of an integrated migrant) as functions of the cost parameter *c*, for the utility function given in (A1), and for the case in which $c_{NI}^{0} \leq c_I^{1}$ and $c_I^{0} < \infty$.

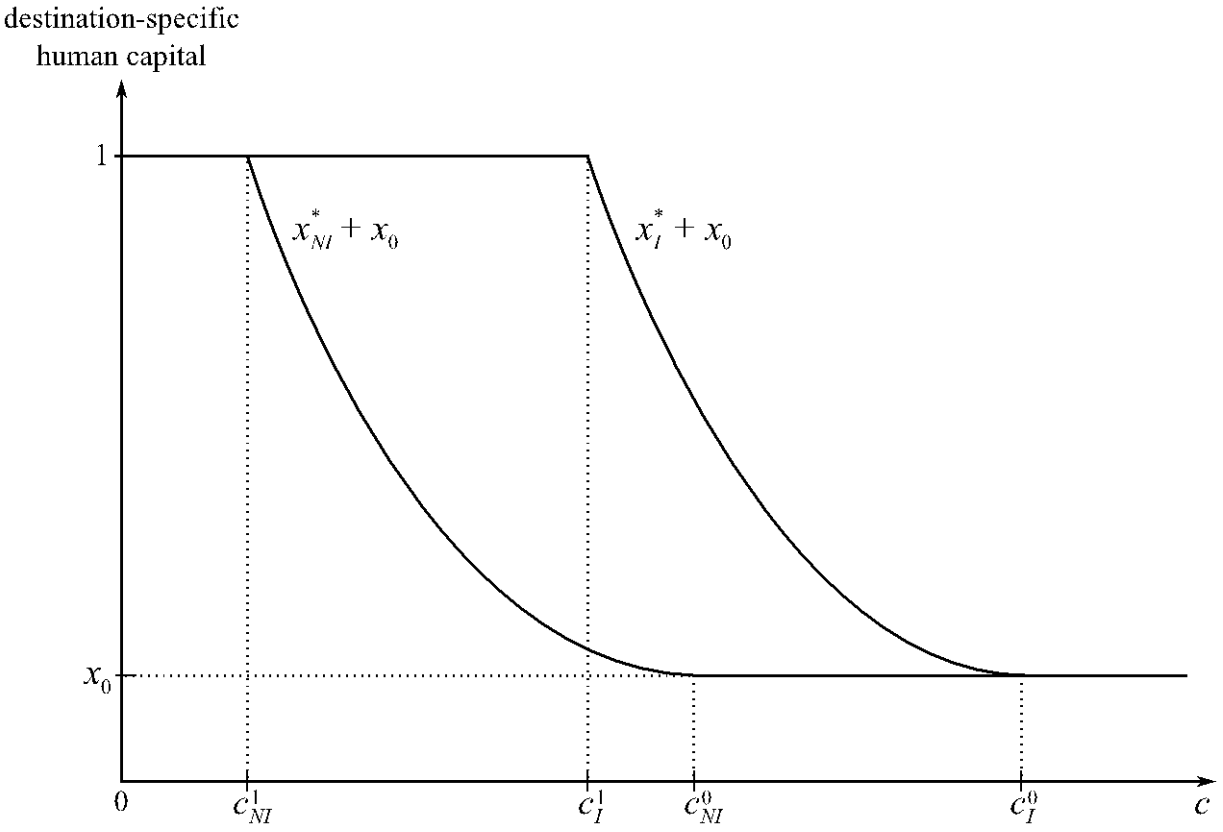

Figure A2: $x_{NI}^{*} + x_0$ (the optimal level of destination-specific human capital of a non-integrated migrant), and $x_I^{*} + x_0$ (the optimal level of destination-specific human capital of an integrated migrant) as functions of the cost parameter *c*, for the utility function given in (A1), and for the case in which $c_{NI}^{0} > c_I^{1}$ and $c_I^{0} < \infty$.

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