Social Status and Public Attitudes: Self–Selection of High–Skilled Migrants

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Abstract

We analyze public attitudes about migrants' provision of work effort as a driving force in the self–selection process of high–skilled migrants. We adopt and extend Piketty's (1998) theoretical framework of social status and work out how country–specific public attitudes affect the migrants' choice about their country of destination. As a result, we relate Germany's attested low attractiveness for high–skilled immigrants to its society's attitudes towards immigrants. We develop measures to increase Germany's attractiveness in the competition about talents.

Keywords: immigration, social status

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1 Introduction

In light of its demographic evolution, countries like Germany fear a shortage especially in its supply of skilled labor in the near future. Immigration of skilled labor from abroad is widely considered as a promising solution to counter that development.[1] But contrary to other highly industrialized countries like the US or the UK, Germany – although being apparently highly attractive for low–qualified immigration – seems to have considerable problems in attracting qualified labor both at a sufficient scale and for permanent stay (cf. OECD, 2013). Recent migration reports confirm these assessments by revealing that numbers of high–skilled migrants remain on a comparably low level although the financial crises and labor market liberalizations have raised Germany's attractiveness for skilled immigration from some struggling EU partner countries and from third countries in the last decade (cf. Federal Office for Migration and Refugees, 2015, and SVR, 2015). Especially the so called Blue Card that should promote access to German labor markets for high–skilled migrants from third countries failed to come up to the expectations of its proponents. Obviously, reductions in migration costs brought about by this measure are not sufficient to compensate for other disadvantages that particularly apply to high–skilled immigrants..[2] In the related public debate, politicians and media often attribute Germany's limited attractiveness for high–skilled workers to the general attitude of its society towards immigrants. High reservations of the native German population impose serious problems for immigrants to attain social status in their new environment that adequately re-

[1] This view prevails because states cannot completely rely on internal solutions. Fertig et al. (2009) show for example in an empirical study for Germany that there is only limited scope for higher accumulation of human capital to compensate for the demographic decline in the number of highly educated young persons.

[2] Empirical studies clearly document an adverse self–selection of migrants in Germany. Geis et al. (2011) show that Germany cannot match the US in terms of number and share of immigrants with tertiary education. Peri (2005) emphasizes that Germany is attracting particularly low–skilled immigrants and the US–American V–shape – i.e., high shares of foreign–born both in the group of low and high–skilled workers while there are low shares of foreign–born in the group of medium–skilled workers – is not observable there. This fact cannot be explained by the development of worldwide flows of migrants. On the contrary, numbers of international migrants and their skill level increased: during the 1990s, the number of high–skilled immigrants living in OECD countries grew by more than 70 % whereas the number of low skilled immigrants grew by only 30 % (cf. Docquier and Rapoport, 2012).

flects their smartness or abilities.. As a result, Germany is a rather unattractive place to move to and/or to live especially for the most talented migrants. In order to counter this adverse self–selection effect and to improve Germany's position in the global competition for talents, politicians such as the current vice chancellor Sigmar Gabriel, repeatedly called for a "welcoming attitude" towards immigrants (cf. Federal Ministry for Economic Affairs and Energy, 2014). The idea is to generate more social acceptance of immigrants and to improve their chances to attain social status.

We take up that strand of argument and provide a theory that explains how attaining social status is especially severe for high–skilled immigrants in Germany compared to countries like the US. To that end, we adopt and extend the social–status framework developed by Piketty (1998) in order to address the self selection of high–skilled migrants. Piketty argues that individuals not only care about their economic success but also about their social status reflecting their individual abilities or individual smartness. Since abilities or smartness are not directly observable, the public has to infer information about the individuals' abilities or their smartness from their economic performance. In such a setting of information extraction, Piketty explores how self–fulfilling public beliefs in a society affect the social status of individuals. The individuals' concern about their social status may then give rise to multiple equilibria with self–fulfilling expectations of public beliefs. It is this multiplicity of equilibria associated with self–fulfilling beliefs that serves as the basis for the migrants' self–selection once public beliefs in potential host countries differ (for whatever reason). Specifically, on the basis of differences in public expectations about the work effort of high–skilled immigrants[3] and the resulting impact on immigrants' social status in their potential host country we derive a theoretical explanation of the observed self–selection effect. Thus, our approach complements classical migration theory that explains self–selection of immigrants mainly by existing differentials in the returns to skills, different income distributions between host and sending country, and migration costs (see, e..g., Borjas, 1987; Chiswick, 1999).

The remainder of our paper is organized as follows. The next section introduces the basic model of individuals that care about their social status and applies

[3]Note that this expectations will be self–fulfilling in the sense that equilibrium effort will indeed be high in countries where it should be high according to public beliefs.

it to the problem of immigration. Section 3 then analyzes the immigrants choice of their host country and relates that decision to country–specific self–fulfilling beliefs and/or other parameters of the model. In Section 4 we discuss means to overcome the adverse–selection problem caused by differences in public beliefs and extensions of our basic approach. Section 5 concludes.

2 The Model

Basic Assumptions

We consider how individuals – i.e., immigrants or potential immigrants – attain utility in their host country. We concentrate on high–skilled individuals and do not consider low–skilled ones explicitly. Individuals differ with respect to their innate abilities β which are distributed according to some density function $f(\beta)$ among the population (all potential migrants) with mean $\bar{\beta}$ and variance σ^2. Each migrant i is assumed to derive utility from income he obtains, y_i, and his perceived social status, i.e., the public beliefs μ_i about the migrant's ability β_i. Exertion of effort, e_i reduces migrant i's utility as captured by some cost function $C(e_i)$ that can be interpreted to include migration costs (see below). The objective function of migrant i is specified as

$$U_i = (1-\lambda)y_i + \lambda\beta_i^P - C(e_i)\,, \qquad \lambda \in [0,1]\,, \tag{1}$$

where β_i^P is the expected ability of i according to the public beliefs μ_i, and thus measures the social status of migrant i. We explicitly allow for special cases where migrants derive no utility from perceived abilities (the case of no status preferences at all with $\lambda = 0$), and where migrants exclusively care about social status ($\lambda = 1$).

In order to keep the analysis tractable, we assume that there are only two possible income levels $y_1 > y_0 \geq 0$. Both income levels are interpreted as after tax income. The probability that migrant i obtains the high income y_1 depends positively on his acquired skills π_i, his ability β_i, and the effort e_i he chooses:

$$Prob\{y_i = y_1\} = \pi_i + \theta\beta_i e_i\,.$$

Here, $\pi_i \geq 0$ measures the extent to which a high income is attained independently from the migrants' abilities or effort. In the basic setting, we assume $\pi_i = \pi$ for

all skilled migrants. Eventually, $\theta \geq 0$ measures the extent to which effort and ability translates into a higher probability of attaining a high income.

Of course, probabilities range by definition between 0 and 1. We assume that the model's parameters are such to guarantee this condition; specifically, we impose an upper bound for effort E and for innate abilities B that ensure

$$\pi + \theta BE < 1\,. \tag{A1}$$

(A1) is a sufficient condition ensuring that all probabilities are in the admissible range.

Social status is modeled as the public beliefs about a migrant's ability. We assume that the distribution of abilities is public information; additionally, individual income is also publicly observable, as well as the acquired skills. On the other hand, we assume that individual effort levels and, of course, abilities are not publicly observable.

Information Extraction

Before observing the income of a migrant i, the public belief μ_i about migrant i's income is derived solely from the density function $f(\beta)$. *Ex ante*, the social status of each migrant thus is $\bar{\beta}$. After observing the migrant's income, however, this *ex–ante* social status is adjusted according to Bayes rule. Assuming that everybody expects migrants to choose an effort level e_0, we obtain the updated public belief about a migrant's ability with income $y_i = y_1$ as

$$\mu_i(\beta|y_i = y_1) = \frac{\pi + \theta\beta e_0}{\pi + \theta\bar{\beta}e_0} f(\beta)\,. \tag{2}$$

Rational updating means that society attaches higher (lower) value to above (below) average abilities for those migrants that have realized an income y_1 (y_0). As a result of this Bayesian updating of beliefs we obtain the ability expected by the public β_i^P as

$$\beta_i^P = \int \beta \frac{\pi + \theta\beta e_0}{\pi + \theta\bar{\beta}e_0} f(\beta)\, d\beta\,.$$

Solving the integral and applying the standard definitions of expected value and variance from statistics, we get the following value of expected ability for migrant i:

$$\beta_i^P = \bar{\beta} + \frac{\theta e_0}{\pi + \theta\bar{\beta}e_0}\sigma^2\,. \tag{3}$$

Let us now denote the social status of a migrant that has been observed to earn a high income given in (3) by β_1^P. By applying the same procedure we can derive the social status of a migrant that has been observed to earn an income $y_i = y_0$. We have:

$$\beta_1^P = \bar{\beta} + \frac{\theta e_0}{\pi + \theta\bar{\beta}e_0}\sigma^2 \tag{4}$$

$$\beta_0^P = \bar{\beta} - \frac{\theta e_0}{1 - \pi - \theta\bar{\beta}e_0}\sigma^2 \,. \tag{5}$$

From our status measures in (4) and (5) we finally obtain a measure of the status differentials that reflects the difference in status for migrants earning high or low income:

$$\beta_1^P - \beta_0^P = \frac{\theta e_0 \sigma^2}{(\pi + \theta\bar{\beta}e_0)(1 - \pi - \theta\bar{\beta}e_0)} > 0. \tag{6}$$

Note that our assumption (A1) ensures that (6) defines the status differential as a function of e_0 for all admissible $e_0 \leq E$.

Choice of Effort

Migrants will now choose their effort level in order to maximize their utility function given by (1) taking as given the public belief about their social status (i.e., taking as given the status measures in (4) and (5)). Additionally we simplify the analysis by assuming (i) that *ex ante* migrants do not know their exact ability but share the public belief, and (ii) by specifying the cost of effort as $C(e_i) = e_i^2/2a$, with $a > 0$. Note that we may interpret a as a parameter reflecting costs of migration as far as they are relevant for the choice of effort; an example of these kind of effort–related migration costs may be language problems that are usually interpreted as a component of migration costs, but that may also affect effort exertion.

A migrant i then solves the following problem:

$$\max_{e_i} = \left[\pi + \theta\bar{\beta}e_i\right]\left[(1-\lambda)y_1 + \lambda\beta_1^P\right] + \left[1 - \pi - \theta\bar{\beta}e_i\right]\left[(1-\lambda)y_0 + \lambda\beta_0^P\right] - e_i^2/2a \,. \tag{7}$$

The first–order condition for an interior solution of this problem reads

$$e_i = a\theta\bar{\beta}\left[(1-\lambda)(y_1 - y_0) + \lambda(\beta_1^P - \beta_0^P)\right] . \tag{8}$$

As long as the solution to this first–order condition is feasible, migrants choose effort according to (8); otherwise they supply the full effort $e_i = E$. Furthermore, since all migrants (i) solve the same problem and (ii) are confronted with the same social status in case of high income ($y_i = y_1$) resp. low income ($y_i = y_0$), all migrants will choose the same effort level in equilibrium.[4] Additionally, assume that

$$\tilde{e} = a\theta\bar{\beta}(y_1 - y_0) < E\,. \tag{A2}$$

Assumption (A2) guarantees that in the absence of a status motive (i.e., $\lambda = 0$) migrants choose an admissible value of effort.

Characterization of the Equilibrium

In equilibrium, the migrants' optimal selection of effort levels given either by (8) in the case of an interior solution or by E in the case of a corner solution has to be consistent with the effort level e_0 expected by the public and used in (6). For the interior solution (8), the equilibrium is obtained by substituting for status differentials in (8) from (6):

$$e = g(e) \equiv a\theta\bar{\beta}[(1-\lambda)(y_1 - y_0) + \lambda\theta\sigma^2 h(e, \mathbf{v})]\,, \tag{9}$$

where $h(e, \mathbf{v}) \equiv e/[(\pi+\theta\bar{\beta}e)(1-\pi-\theta\bar{\beta}e)]$, and $\mathbf{v}$ denotes the vector of parameters: $\mathbf{v} = (\pi, \bar{\beta}, \theta)$.

In order to discuss the properties of the equilibrium – existence and uniqueness –, we illustrate (9) as a function of e. The graph of the lhs in (9) corresponds to the 45–degree line. With respect to the graph of the rhs of (9), let us first look at the function $g(e)$, ignoring the restriction for effort at the moment. The function $g(e)$ cuts the vertical axis at $K \equiv (1-\lambda)\tilde{e}$ with $0 < K < E$ for all $\lambda \in [0, 1)$, while $K = 0$ in case of $\lambda = 1$, i.e., if migrants only care about status.. Furthermore, $g(e)$ is monotonically increasing in e; since $g'(e) = A\partial h(e, \mathbf{v})/\partial e$, with $A > 0$ as some constant, monotonicity can be shown by calculating the partial derivative of h:

$$\frac{\partial h(e, \mathbf{v})}{\partial e} \;=\; \left[\frac{h(e, \mathbf{v})}{e}\right]^2 [\pi - \pi^2 + (\theta\bar{\beta}e)^2] > 0\,,$$

[4]Note that (6) defines the status differential as a function of e_0 for all admissible $e_0 \leq E$; in turn, (8) determines the effort level as a function of the status differential for all admissible $e \leq E$.

where the inequality is ensured by $\pi \in (0,1)$. For the curvature of the graph of $g(e)$ we also calculate the second derivative as $g''(e) = A\partial^2 h(e,\mathbf{v})/\partial e^2$. We obtain

$$\frac{\partial^2 h(e,\mathbf{v})}{\partial e^2} \;=\; 2\left[\frac{h(e,\mathbf{v})}{e}\right]^2 \left\{\left[\frac{\partial h(e,\mathbf{v})/\partial e}{h(e,\mathbf{v})} - \frac{1}{e}\right]\left[\pi - \pi^2 + (\theta\bar{\beta}e)^2\right] + \theta^2\bar{\beta}^2 e\right\}.$$

A sufficient condition for g being convex in e is that

$$\frac{\partial h(e,\mathbf{v})/\partial e}{h(e,\mathbf{v})} - \frac{1}{e} > 0\,.$$

Calculating that condition gives:

$$1 - 2\pi < 2\theta\bar{\beta}e\,.$$

This condition is always fulfilled for $\pi > 1/2$. As a result, both g and h are convex functions of e for $\pi \geq 1/2$. As in Piketty, that sufficient condition is assumed to hold in the following. So we implicitly assume that the probability of high–skilled migrants to be economically successful is at least $1/2$, independently of their choice of effort.[5]

As an illustration of the rhs of (9), the function $g(e)$ only applies for all admissible $e \in [0,E]$ if $g(E) < E$. This is illustrated in Fig. 1 (cf. the appendix for the figures). Obviously, due to the curvature of the g–function, there exists exactly one point of intersection of the graph of g and the 45–degree line that establishes the unique equilibrium $e^* < E$ in that case (Case 1 in the following). On the other hand, if $g(e_1) \equiv E$ for some $e_1 < E$, the graph of $g(e)$ applies for all $e \in [0,e_1]$, while we have $e = E\,\forall\, e > e_1$, i.e., $g(e)$ has a kink at $e = e_1$. In that case (Case 2 in the following), several types of equilibria are possible:[6]

- Case 2a): two interior solutions e^* and e^{**} to (9) where the graph of $g(e)$ intersects the 45–degree line plus one corner solution with maximum effort E (cf. Fig. 2).

[5]Note that a similar assumption is rather implausible for low–skilled immigrants. As a result, the functions g and h may have concave parts for sufficiently low values of e or even be concave for all admissible values of e. As argued below, this explains why the self–selection of high–skilled migrants may occur while no self–selection effects apply to unskilled migrants in equilibrium.

[6]Piketty's proposition 1 (p. 124) proves that a unique effort equilibrium exists for sufficiently low values of λ (Case 1) and that the case of multiple–effort equilibria (Case 2) exists for sufficiently high values of λ.

- Case 2b): one interior solution e^{**} to (9) where the graph of $g(e)$ is tangential to the 45–degree line plus one corner solution with maximum effort E (cf. Fig. 3).
- Case 2c): no interior solution to (9), but one corner solution with maximum effort E (cf. Fig. 4).

Eventually, there exists a third case (Case 3) with $g(E) = E$ where the graph of $g(e)$ intersects the 45–degree line for $e = e^*$ and $e = E$ (cf. Fig. 5). Note that Case 2b) and Case 3 are knife–edge cases in the sense that their existence rests on very specific parameter constellations, and any change in the parameters of the model generate a regime switch: Case 2b) either switches to 2a) or to 2c), Case 3 either switches to Case 2a) or to Case 1.

As a result, whatever value of effort the public expects (i.e., for each admissible $e_0 \in [0, E]$), an individual's best answer is determined by the corresponding point on the respective graph of $g(e)$. All best answers on the 45–degree line then are a Nash equilibrium of the model. Following the usual proceeding we ignore unstable effort equilibria where $g(e)$ cuts the 45–degree line from below or is tangential to the 45–degree line.

Ranking of Equilibria

Before deriving the migrants' choice about their country of destination from this model, let us rank the multiple equilibria by their utility values. First, note that the first–best effort can be obtained by substituting in (7) for β_1^P and β_0^P from (4) and (5); thus we get the first–best effort as

$$e_{FB} = a\theta\bar{\beta}(1-\lambda)(y_1 - y_0)\,. \tag{10}$$

From (9) and (10) we derive that for every $\lambda > 0$ the effort level e_{FB} is less than any solution of $e = g(e)$. Since expected utility is concave in effort, we obtain that equilibria are always less inefficient the lower the equilibrium effort level. So multiple equilibria can always be ranked in terms of effort: the lower effort, the higher expected utility. The economic intuition is given by Piketty (1998: 124): as long as all migrants choose the same effort level, expected utility derived from the status motive is always $\bar{\beta}$. Seeking for status induces solely a 'rat race' in effort.

3 Migrants' Choice and Self–Selection Effects

We apply the basic model in order to show the impact of public attitudes that affect the social status of skilled migrants on their self–selection into different host countries. We specifically concentrate on migration of high–skilled workers from a given source country who have the option of migrating to two host countries: Germany (GER) and the US. Thus, migrants face country–specific expected utilities. For reasons of simplicity, reservation utility in the source country is normalized to zero.

In order to isolate the role of public attitudes, we assume that both countries are structurally identical; this means that all parameters of the model characterizing the destination country – the values of a, θ, π, y_1 and y_0 – are identical for both countries. Moreover, we assume that both countries have identical information about the potential immigrants' abilities summarized by the density function $f(\beta)$. It is only public expectations about migrants' effort, where the countries may differ. Of course, this presupposes that the parameter values support the case of multiple equilibria (Case 2a)) on which we will focus in the following. The case of multiple equilibria requires that high–skilled migrants have sufficiently high status preferences ($\lambda >> 0$). On the other hand, if status preferences λ are sufficiently low or even in the absence of the status motive ($\lambda = 0$), there exists a unique solution of equilibrium expectations that generate unique solutions in equilibrium effort consistent with migrants choice of effort, and thus there is no scope for differences in public attitudes to emerge. Then, high–skilled migrants (as well as low–skilled migrants) would be indifferent and equally distribute themselves over different host countries. From this follows that preferences for social status are essential and decisive for migrants' decisions to select into one specific destination country.

Concerning expected utility in the case of multiple effort equilibria our analysis of the ranking of equilibria immediately shows that migrants' expected utility is the higher, the lower the equilibrium effort. A self–selection effect arising solely from the migrants' care about social status then presupposes that migrants expect that the public in the US expects a low effort from them ($e_{US} = e^*$) whereas the public in Germany expects from them a high effort ($e_{GER} = E$). As these expectations are self–fulfilling, we will end up with the respective differences in equilibrium effort that are associated with the asserted differences in expected

utilities that favor migration to the US only.

Germany's lack of attractiveness is then the problem that migrants believe that they have to exert excessive work effort to meet the high expectations of the German public with respect to their effort in order to realize the same social status $\bar{\beta}$ they can attain with less effort in the US. These beliefs of migrants can be based on population surveys that examine public attitudes towards immigrants in different destination countries. Although these surveys have a very general character and, e.g., lack a distinction of public attitudes towards different skill groups of migrants, they can give a potential empirical evidence of the modeled differences in expectations about the work effort of skilled–migrants. More concretely, empirical studies referring to these population surveys indicate that public attitudes in the US are less anti–immigrant than in Germany (cf. Mayda, 2006, and O'Rourke and Sinnott, 2006).[7] Thus, we argue that immigrants have to overcompensate anti–immigrant attitudes in Germany with extremely high effort. Consequently, Germany is relative unattractive as a host country compared to the US.[8]

4 Measures to Counter Adverse Self–Selection

The question arises how Germany might overcome this disadvantage in its attractiveness vis à vis the US and counter an adverse self–selection effect as analyzed in section 3. Within our framework, there are three potential ways of increasing the attractiveness:[9]

1. *Higher skill transferability via an increase in* π: Mechtenberg and Strausz (2012) show that the imperfect human capital transferability within the

[7] Bauer et al. (2000) confirm this result concerning the survey question if immigration should be limited or not – but they show a more differentiated view while assessing further survey questions reflecting natives' attitudes towards immigration.

[8] Our model exclusively focuses on the migrants decision where to migrate. Thus, it is not possible to infer from country–specific ex–ante probabilities to earn the high income to the ex–post economic performance of skilled migrants (see, e.g., Algan et al., 2010; Card, 2005, for the latter).

[9] Germany could also improve its attractiveness if public attitudes concerning the work effort of migrants would change. However, this fundamental change of attitudes would always require a coordination of expectations which we cannot describe in the framework of our model.

EU makes immigration from third countries into the EU less attractive – especially for more talented individuals. Thus, Germany can raise its attractiveness if high–skilled migrants could better transfer the skills they have acquired in their home countries to the German labor market. A recognition of educational attainments would allow high-skilled migrants to apply for positions at their skill level and therefore, positively affect their probability of being economically successful.

2. *Higher income level via an increase in y_1 or y_0*: Germany could also compensate its competitive disadvantage by improving the economic situation of high–skilled migrants. This can be achieved by, e.g., lowering the taxation of migrants' income so that after tax incomes (regardless of which level) rise.

3. *Lower migration costs via an increase in a*: Lowering effort-related migration costs by, e.g., a free language course or an easier and faster access to German citizenship, also reduce barriers for high–skilled immigrants and thus, make Germany more attractive.

All three measures have not only the potential to attract high–skilled migrants, but additionally to improve their economic performance and their integration into the labor market and into society in general once they arrive in the destination country. In the following we will study the impact of each of these three policy measures by a comparative–static analysis of the model. Thereby, we will describe how these policy measures affect equilibrium effort and expected utility in the case of multiple equilibria, i.e if effort and expected utility rise or fall. As we cannot calculate if and under which parameter constellations expected utility in Germany can be raised to such an extent that Germany becomes more attractive for high–skilled migrants than the US ($EU(e_{GER}) > EU(e_{US})$), we will complement our results by a numerical analysis. We will show if a single measure can overcompensate Germany's disadvantage in the competition about talents or if a bundle of measures is necessary.

4.1 Higher skill transferability

4.1.1 Impact on equilibrium effort

The impact of a change in the skill transferability π on (the graph of) g is determined by its impact on h. Writing $h - h(e, \mathbf{v}) = 0$ as an implicit function, we get:

$$\begin{aligned} \frac{dh}{d\pi} &= \frac{-e}{[(\pi + \theta\bar{\beta}e)(1 - \pi - \theta\bar{\beta}e)]^2}[(1 - \pi - \theta\bar{\beta}e) - (\pi + \theta\bar{\beta}e)] \\ &= \frac{-e}{[(\pi + \theta\bar{\beta}e)(1 - \pi - \theta\bar{\beta}e)]^2}[1 - 2(\pi + \theta\bar{\beta}e)]\,. \end{aligned}$$

The assumption $\pi > 1/2$ is sufficient for ensuring $dh/d\pi > 0$. For two alternative values $\pi_1 > \pi_0$ we thus have $g(e, \pi_0) < g(e, \pi_1)$ for all $e \in (0, E]$, while the intersection with the vertical axis, however is not affected: $g(0, \pi_0) = g(0, \pi_1)$, i.e. g rotates upwards. For the case of multiple equilibria (Case 2a)) the following comparative–static results emerge: the stable low–effort optimum e^* increases while the stable corner–solution equilibrium $e = E$ is unaffected by an increase in π. For a sufficiently high increase in π we will observe a regime switch to the case of the unique high–effort equilibrium $e = E$ (Case 2c)).[10]

4.1.2 Impact on expected utility

By rearranging (7) we obtain equilibrium expected utility consistent with correct expectations about effort as

$$V(\lambda, \pi, \theta, y_1, y_0, \bar{\beta}, \sigma) \equiv (\pi + \theta\bar{\beta}\hat{e})(1 - \lambda)(y_1 - y_0) + (1 - \lambda)y_0 + \lambda\bar{\beta} - \hat{e}^2/2a\,. \quad (11)$$

Thereby, we denote equilibrium effort which we already described in (8) by $\hat{e} \equiv \phi(\lambda, \pi, \theta, y_1, y_0, \bar{\beta}, \sigma)$ with its value, of course, depending on all the parameters of the model. From (11) we derive the effect of a change in the skill transferability π on expected utility as

$$\frac{\partial V(.)}{\partial \pi} = (1 - \lambda)(y_1 - y_0) + \left[\theta\bar{\beta}(1 - \lambda)(y_1 - y_0) - \frac{\hat{e}}{a}\right]\frac{\partial \phi(.)}{\partial \pi}\,. \quad (12)$$

[10] To complete the picture, an increase in π increases the unique effort equilibrium e^* in Case 1 and can lead for a sufficiently high increase in π to a regime switch to all other cases. The unique high–effort equilibrium $e = E$ in Case 2c) is unaffected. The knife–edge cases 2b) and 3) are associated with regime switches: Case 2b) switches to Case 2c) while Case 3) can switch to all other cases except to Case 1).

As a result, $\partial V(.)/\partial\pi$ is positive for the stable solutions in effort: the first term on the rhs of (12) cannot become negative,[11] the term in the square brackets is positive as can be seen from (8) and (6), and eventually the last term is positive for stable effort solutions (cf. comparative–static results of e wrt π). If we concentrate on stable solutions, expected utility increases in π. Note that this also holds for corner solutions with $e = E$ because in this case the second term in (12) vanishes as $\partial\phi(.)/\partial\pi = 0$. This means that an increase in the skill transferability π in Germany increases expected utility $EU(e_{GER})$ at an unchanged maximum effort level $e_{GER} = E$.

The need to increase the skill transferability has well been recognized at the European level leading to the Bologna and Lisbon Process (cf. Mechtenberg and Strausz, 2012). On the contrary, the harmonization of educational systems and the increase of labor mobility on an international level – especially in order to attract high–skilled migrants from non–EU states – still needs to be improved.[12]

4.2 Higher income level

4.2.1 Impact on equilibrium effort

An increase in after tax income levels y_1 or y_0 only affects the intersection of $g(e)$ with the vertical axis, i.e. $g(e)$ shifts upwards for an increase in y_1 and downwards for an increase in y_0. As with changes in π, we obtain qualitatively the same result of an unchanged German high–effort equilibrium $e_{GER} = E$. Furthermore, an increasing high income level y_1 leads to an increasing stable low–effort optimum e^*. Vice versa, e^* declines for an increase in the low–income level y_0. If changes in y_1 are sufficiently high, a regime switch from the case of multiple equilibria (Case 2a)) to the case of a unique high–effort equilibrium (Case 2c)) takes place while the high–effort equilibrium $e_{GER} = E$ remains unchanged. However, for the purpose of our analysis, the increase in y_0 should be sufficiently small to guarantee Case 2a) because otherwise, we switch to the case of a unique low–

[11] The first term is always positive if we exclude maximum status preferences ($\lambda = 1$) which reflects that it is very unlikely that migrants exclusively care for social status and not at all for income. This assumption also holds for 4.2 and 4.3.

[12] A change in θ has qualitatively the same impact on equilibrium effort and expected utility as a change in π. But we will not follow this line of argument as political measures that directly influence the effort decision of migrants are not obvious.

effort equilibrium (Case 1) and the German high–effort equilibrium $e_{GER} = E$ would disappear.

4.2.2 Impact on expected utility

Consider a change in the high–income level y_1 first:

$$\frac{\partial V(.)}{\partial y_1} = (\pi + \theta\bar{\beta}\hat{e})(1-\lambda) + \left[\theta\bar{\beta}(1-\lambda)(y_1 - y_0) - \frac{\hat{e}}{a}\right]\frac{\partial \phi(.)}{\partial y_1}\,. \tag{13}$$

$\partial V(.)/\partial y_1$ is positive for the stable solutions in effort: the first term on the rhs of (13) cannot become negative, the term in the square brackets is positive as can be seen from (8) and (6), and eventually the last term is positive for stable effort solutions (cf. comparative–static results of e wrt y_1). If we concentrate on stable solutions, expected utility increases in y_1. Note that this also holds for corner solutions with $e_{GER} = E$ because in this case the second term in (13) vanishes as $\partial\phi(.)/\partial y_1 = 0$.

Consider second a change in the low–income level y_0:

$$\frac{\partial V(.)}{\partial y_0} = -(\pi + \theta\bar{\beta}\hat{e})(1-\lambda) + (1-\lambda) + \left[\theta\bar{\beta}(1-\lambda)(y_1 - y_0) - \frac{\hat{e}}{a}\right]\frac{\partial \phi(.)}{\partial y_0}\,. \tag{14}$$

The first term on the rhs of (14) cannot become negative because $(1-\lambda) > (\pi + \theta\bar{\beta}\hat{e})(1-\lambda)$. The term in the square brackets is also positive as can be seen from (8) and (6). The last term now becomes negative for stable effort solutions (cf. comparative–static results of e wrt y_0) and thus, we get no clear result for $\partial V(.)/\partial y_0$. But if we concentrate exclusively on the German stable corner solution $e_{GER} = E$, expected utility increases with changes in y_0 because in this case the second term in (14) vanishes as $\partial\phi(.)/\partial y_0 = 0$. As a result, either increasing the high income level y_1 or the low income level y_0 raises Germany's attractiveness for high–skilled immigrants.

This result of higher after tax income possibilities for high–skilled migrants goes in line with the empirical finding that countries like the US with a comparably high income in the upper part of the income distribution succeed to attract more high–skilled migrants than e.g. Germany. This does not mean that we suggest to widen the overall income gap in Germany but to establish tax advantages on the income of high–skilled migrants (for which we assume that even the lower income level y_0 corresponds to e.g., the median equivalized disposable income) in order to attract them at all.

4.3 Lower migration costs

4.3.1 Impact on equilibrium effort

Finally, an increase in a that leads to lower effort-related migration costs for high–skilled migrants has also a positive impact on g. Changes in a affect the intersection of the graph of g with the vertical axis as well as the slope of g, i.e. g shifts and rotates upwards. We obtain qualitatively the same results as with changes in π and y_1, especially the German equilibrium effort level $e_{GER} = E$ remains unchanged.

4.3.2 Impact on expected utility

For a change in effort-related migration costs applies

$$\frac{\partial V(.)}{\partial a} = \frac{\hat{e}^2}{2a^2} + \left[\theta\bar{\beta}(1-\lambda)(y_1 - y_0) - \frac{\hat{e}}{a}\right] \frac{\partial \phi(.)}{\partial a}\,. \tag{15}$$

Again, we can conclude that expected utility increases in a as $\partial V(.)/\partial a$ is always positive for stable solutions in effort. This means that lower migration costs increase expected utility for high–skilled migrants in Germany as $\partial V(.)/\partial a = E^2_{GER}/2a^2 > 0$ for $e_{GER} = E$.

A political attempt to lower effort-related migration costs in Germany is the already described Blue Card. Its acceptance with less than 5.000 recipients in the introductory phase 2013 is relatively disappointing but more current evaluations remain to be seen, especially if information among employers about the Blue Card will be improved.

Studying the comparative–static analysis has shown that all three measures, a higher skill transferability as well as a higher after tax income level and lower effort-related migration costs, increase expected utility in Germany at an unchanged maximum effort level. Thus, Germany can raise with each measure its attractiveness for high–skilled migrants. As this analysis cannot provide a comparison between expected utility in the US-American and the German effort equilibrium after political measures have been implemented in Germany, we will apply a numerical analysis instead.

4.4 Numerical analysis

The numerical analysis reveals that the function of expected utility is an inverse u–shaped function that increases for low effort levels $e < e_{FB}$ and declines for $e > e_{FB}$. Before showing to what extent expected utility can be raised by a change in π, y_1, y_0 and/or a we will describe our proceeding and the selection of parameters: we choose $\pi = 0.5$ as a starting point of all analyses because it guarantees the convexity of $g(e)$. We further define parameters that remain unchanged throughout the analysis: the upper bound of abilities $B = 1$, the variance of the ability distribution $\sigma^2 = \frac{1}{12}$[13] and the maximum equilibrium effort applying to Germany $e_{GER} = E = 1$. For the remaining parameters λ, θ, y_0, y_1 and a we calculate basic values that are compatible with the case of multiple equilibria (Case 2a)). Thereby, values for λ have to be sufficiently high and income levels are initially set to $y_1 = 2$ and $y_0 = 1$.[14] Then, we check whether the equilibrium is feasible (i.e., whether there is no conflict with corner solutions, probabilities that exceed unity, the limitation of effort, etc.).. Once we have found an equilibrium constellation, we calculate the maximum value $\tilde{\pi}$ that either preserves Case 2a) or that leads to a regime switch to Case 2c). Finally, we calculate expected utility as a function of π for all $\pi \in [0.5, \tilde{\pi}]$. We repeat the last two steps for changes in y_1, y_0 and a as well as for a bundle of the measures.

Let us first sum up under which conditions multiple equilibria occur at all and which type of migrant in terms of social status can be attracted in general by immigration countries. The numerical analysis shows that multiple equilibria only occur if the combination of π, θ, a and λ ensures that the slope of $g(e)$ is sufficiently high for the maximum effort level $e = E$, i.e. that $g'(E)$ is at least sufficiently close to or higher than 1. Thereby, status preferences of migrants λ play an important role as they need to be sufficiently high: for $\pi = 0.5$ and low or medium values of θ, multiple equilibria only occur if the status motif of migrants is very high (e.g. $\lambda \geq 0.999$ for $\theta = 0.1$, $\lambda \geq 0.99$ for $\theta = 0.2$, $\lambda \geq 0.9$

[13] A variance of $\frac{1}{12}$ implicitly assumes a uniform distribution of β on $[0, 1]$ for an interval $[0, 1]$.

[14] We do not calibrate the model but assume parameter values that fit the assumptions of the model. Nevertheless, a high income level twice as high as the low income level can be substantiated by the assumption that the low income y_0 of high–skilled migrants corresponds to the median equivalized disposable income which we normalize to 1. The high income $y_1 = 2$ represents 200 % of the median equivalized disposable income which is a common threshold for relative wealth (see e.g. Federal Ministry of Labour and Social Affairs, 2013).

for $\theta = 0.3$, see Tab. 6 in the appendix).[15] For $\pi = 0.5$ and high values of θ, multiple equilibria also occur if status preferences are significantly lower (e.g., $\lambda \geq 0.5$ for $\theta = 0.4$) resulting in migrants being indifferent between income and social status. In this context, we interpret θ which measures the extent to which effort and ability translates into a higher probability of attaining a high income as a direct discriminating factor regarding effort of migrants, i.e. discrimination of migrants' effort is high if θ is low and vice versa.

As a result, we can conclude that it is especially the status motif that generates multiple equilibria in effort at all. For multiple equilibria and if discrimination of migrants' effort is relatively high, only highly status–oriented migrants can be attracted. If discrimination of migrants' effort is ceteris paribus relatively low, immigration countries can also attract high–skilled migrants with medium status preferences. This can be explained by the fact that migrants with higher income preferences face a higher probability to earn the high income in case of low discrimination of migrants' effort.

Another finding is that already minor changes in π,a, y_1 and y_0 lead to a regime switch – concerning the first three parameters to the case of a unique high–effort equilibrium (Case 2c)) and concerning the last parameter to the case of a unique low–effort equilibrium (Case 1), i.e.. the case of multiple equilibria is defined for very specific parameter values. But as far as the German equilibrium effort level remains unchanged at the maximum level $e_{GER} = E$ we can still calculate the corresponding expected utility.

The following numerical results emerge for each policy measure separately and for a mix of the measures. Thereby, we determine the magnitude of the increase in expected utility in Germany $EU(E)$ due to the three described policy measures and compared the increase with a ceteris paribus unchanged expected utility $EU(e^*)$ in the US.

[15]For reasons of simplicity and comparison we calculated effort equilibria and respective expected utility with parameter values of λ in 0.1–steps and for very high status preferences we distinguished between $\lambda = 0.9$, $\lambda = 0.99$ and $\lambda = 0.999$. The exact parameter value of λ for which multiple equilibria occur might be slightly lower.

4.4.1 Higher skill transferability

We start with the lowest possible value of $\pi = 0.5$, high discrimination of migrants' effort expressed by a low value of $\theta = 0.1$, a corresponding high status motif $\lambda = 0.999$ and migration costs e_i^2/a with $a = 281$.[16] We control whether probabilities to earn the high income are in the admissible range (A1).

π	θ	λ	a	$A1$	$g(e_{US})$	$g(e_{GER})$	$EU(e_{US})$	$EU(e_{GER})$
0.5	0.1	0.999	281	0.6	0.52	1	**1.00007**	0.99882
0.89				0.99		1		**0.99921**

Table 1: Higher skill transferability ($\pi \uparrow$) in the scenario of high discrimination of migrants' effort ($\theta = 0.1$)

$(B = 1,\ E = 1,\ \sigma^2 = \frac{1}{12},\ y_1 = 2,\ y_0 = 1)$

The analysis shows that the increase in π is limited due to (A1) and therefore expected utility in Germany does not rise sufficiently enough to exceed expected utility in the US (see Tab. 1). This means for this specific set of parameters including high discrimination of migrants' effort and high status preferences of migrants that the increase in skill transferability alone is not a sufficient policy measure for Germany to attract high–skilled migrants.

Consider next a set of parameters with low discrimination of migrants's effort (e.g., $\theta = 0.4$). As in this scenario multiple equilibria not only occur for very high status preferences but also for lower status preferences of migrants, we get fundamentally different results. Now, high–skilled migrants with lower status preferences ($\lambda = 0.5$) receive a higher expected utility in Germany than in the US if the skill transferability increases (see Tab. 2).

This result holds analogeously for an also relatively low discrimination of migrants' effort of $\theta = 0.3$ in combination with relatively high but not maximum status preferences of $\lambda = 0.9$ (cf. Tab. 6 in the appendix). However, if status preferences of migrants are higher ($\lambda = 0.99$ for $\theta = 0.3$ and $\lambda = 0.8$ for $\theta = 0.4$), expected utility in Germany can not be raised sufficiently enough to change the destination decision of migrants in favor to Germany. This means that an increase

[16] Migration costs can range between 281 and 282 to ensure multiple equilibria (Case 2a)) but we only display here and in the following scenarios the respective lower bound of a as this view is more conservative.

π	θ	λ	a	$A1$	$g(e_{US})$	$g(e_{GER})$	$EU(e_{US})$	$EU(e_{GER})$
0.5	0.4	0.5	3.65	0.9	0.94	1	**1.31678**	1.31301
0.59				0.99		1		**1.35801**

Table 2: Higher skill transferability ($\pi \uparrow$) in the scenario of low discrimination of migrants' effort ($\theta = 0.4$)

($B = 1$, $E = 1$, $\sigma^2 = \frac{1}{12}$, $y_1 = 2$, $y_0 = 1$)

in the skill transferability is only efficient in attracting high–skilled migrants to Germany if these migrants are not extremely interested in social status and if discrimination of migrants' effort is already relatively low. This result is reducible to the impact of the status motif. The higher the status motif of migrants, the higher is the difference in effort equilibria: if high–skilled migrants expect that expectations of the German public about their work effort differ significantly from expectations of the US–American public, Germany can hardly overcompensate its competitive disadvantage. Only lower status preferences of migrants have the desired impact as they can lead to two stable effort equilibria, US and Germany, that are relatively close by.

4.4.2 Higher income level

Both income levels, y_1 and y_0, can be increased by tax reductions without limitations regarding (A1). The numerical analysis shows that in the scenario of high status preferences–high discrimination of migrants' effort a doubling of the high income level y_1 is necessary to attract high–skilled migrants to Germany, whereas increasing the low income level y_0 is not a sufficient measure (cf. Tab. 3). The latter follows from the fact that the increase in y_0 is limited, i.e. a higher value of $y_0 = 1.2$ already leads to a regime switch to Case 1 with a loss of the multiplicity in effort equilibria. We get qualitatively the same results in the scenario of medium status preferences–low discrimination of migrants' effort but the necessary increase in y_1 needs to be significantly lower which seems to be plausible as a result. In general applies that Germany can only counter the adverse self-selection effect with an increase in the high income level y_1 and thus, via a higher income gap.

Let us consider an increase in y_1 as complementary measure to the increase

π	θ	λ	y_1	y_0	a	$g(e_{US})$	$g(e_{GER})$	$EU(e_{US})$	$EU(e_{GER})$
0.5	0.1	0.999	2	1	281	0.52	1	**1.00007**	0.99882
			4.1				1		**1.00008**
				1.1			1		**0.998861**
0.5	0.4	0.5	2	1	3.65	0.94	1	**1.31678**	1.31301
			2.1				1		**1.35801**
				1.1					**1.31801**

Table 3: Higher income levels ($y_1 \uparrow$ and $y_0 \uparrow$) in the scenarios of high and low discrimination of migrants' effort ($\theta = 0.1$ and $\theta = 0.4$)
($B = 1$, $E = 1$, $\sigma^2 = \frac{1}{12}$)

in the skill transferability. In the first scenario of high status preferences–high discrimination of migrants' effort, a bundle of the two measures now increases expected utility in Germany sufficiently high to attract high–skilled migrants. Thereby, only a lower increase in y_1 is necessary. In the second scenario of medium status preferences–low discrimination of migrants' effort, the higher attractiveness of Germany vis à vis the US can be raised even further.

π	θ	λ	y_1	y_0	a	$g(e_{US})$	$g(e_{GER})$	$EU(e_{US})$	$EU(e_{GER})$
0.5	0.1	0.999	2	1	281	0.52	1	**1.00007**	0.99882
0.89							1		**0.99921**
0.89			2.9				1		**1.0001**
0.5	0.4	0.5	2	1	3.65	0.94	1	**1.31678**	1.31301
0.59							1		**1.35801**
0.59			2.1				1		**1.40751**

Table 4: Higher high income level ($y_1 \uparrow$) as complementary measure
($B = 1$, $E = 1$, $\sigma^2 = \frac{1}{12}$)

4.4.3 Lower migration costs

Finally, we analyze the magnitude of the effect of lower effort-related migration costs on expected utility for high–skilled migrants in Germany. Again, there do not exist limitations regarding (A1). Thus, lower migration costs can always

raise expected utility in Germany to such an extent that high–skilled migrants can be attracted. The only difference is that in the first scenario of high status preferences–high discrimination of migrants' effort the necessary reduction in migration costs is higher than in the second scenario of low discrimination of migrants' effort which goes in line with our findings concerning a higher income y_1. Reducing migration costs as a complementary measure to an increase in the skill transferability leads to analogeous results:

π	θ	λ	a	$g(e_{US})$	$g(e_{GER})$	$EU(e_{US})$	$EU(e_{GER})$
0.5	0.1	0.999	281	0.52	1	**1.00007**	0.99882
0.89					1		**0.99921**
0.89			550		1		**1.0008**
0.5			960		1		**1.0008**
0.5	0.4	0.5	3.65	0.94	1	**1.31678**	1.31301
0.59					1		**1.35801**
			5.4351		1		**1.35801**
0.59			5.4351		1		**1.40301**

Table 5: Lower migration costs ($a \uparrow$)
($B = 1$, $E = 1$, $\sigma^2 = \frac{1}{12}$, $y_1 = 2$, $y_0 = 1$)

Tab. 5 shows that expected utility in Germany can exceed expected utility in the US in the scenario of high status preferences–high discrimination of migrants' effort. Thereby, the amount of an increase in a is far lower if migration costs would be reduced additionally as if they would be reduced alone. In the scenario of medium status preferences–low discrimination of migrants' effort Germany is already more attractive than the US via an increase in the skill transferability alone, thus, lower migrations costs increase this advantage even further. A combination of an increasing income level and lower migration costs stands for policies that mutually reinforce each other. Both measures go in the same direction and make Germany more attractive for high–skilled migrants than the US.

To sum up, in the case of multiple equilibria (Case 2a)) which is the relevant case for the choice of high–skilled migrants where to migrate, an increase in the skill transferability of migrants (π) make Germany more attractive in the scenario of medium status preferences–low discrimination of migrants' effort, whereas the

impact on expected utility is not sufficiently high in the scenario of high status preferences–high discrimination of migrants' effort. An increase in the high income level y_1 via tax advantages and a reduction in effort–related migration costs sufficiently raises Germany's attractiveness in both scenarios with a lower political effort in the scenario of medium status preferences–low discrimination of migrants' effort. Additionally, a higher high income level or lower migration costs can also be introduced concurrently with an increase in the skill transferability and then, they play a decisive role and change the migration decision of high-skilled migrants in favor of Germany. The respective political effort to implement these complementary measures is far lower as if they would stand alone. In all these described scenarios, the political measures raise the expected utility of high–skilled migrants in Germany while they still have to invest the same maximum effort $e_{GER} = E$. Invested effort would only be reduced if expectations regarding public attitudes about the work effort of high-skilled migrants would change, i.e. if high-skilled migrants believe that the German public would expect less effort from them which can only be realized in the medium or long run so that both equilibria – Germany and the US – converge or even coincide into one equilibrium.

5 Conclusion

We applied the framework of Piketty (1998) to analyze the impact of country-specific public attitudes that affect the social status of high–skilled migrants on their self–selection into different immigration countries, namely the US and Germany. We were able to explain a lower attractiveness of Germany vis à vis the US by comparably higher public expectations about the work effort of high–skilled migrants. As both countries are structurally identical in our model, the self–selection effect arises solely from the status motif: high–skilled migrants believe that the German public expects from them an enormous work effort in order to attain the same social status they can realize with less effort in the US. Consequently, they migrate to the US only. Our contribution is thus to give a new theoretical explanation for the adverse self–selection effect we currently observe for Germany. Our model links expectations of status–seeking high–skilled migrants concerning public attitudes in potential host countries to their decision

where to migrate. As the potential of multiple equilibria is higher for high–skilled migrants than for low–skilled migrants our social–status model can also explain a situation in which Germany is as attractive as the US for low–skilled migrants but less attractive for high–skilled migrants.

Furthermore, we were able to show in a comparative–static analysis that Germany can compensate the adverse self–selection effect by economic policy measures – even if the high expectations about the work effort of high–skilled migrants and thus, the multiplicity of equilibria persist. The subsequent numerical analysis then finally indicated that high–skilled migrants will change their decision and migrate to Germany instead of the US if they can better transfer their acquired skills to Germany, if they can achieve relatively higher income levels via, e.g., tax incentives and/or if they face relatively lower migration costs. Thereby, a bundle of measures is more efficient in raising expected utility of high–skilled migrants in Germany as if each measure would stand alone.

Alternatively, German politicians could also combat the high expectations about the work effort of high–skilled migrants and establish a "welcome attitude". Such a change in public attitudes will reduce these expectations and thus, can make Germany more attractive for high-skilled migrants than the US. This approach can also be pursued if Germany and the US are not structurally identical but already differ in the initial setting, e.g., if the US have a higher skill transferability, higher income levels and/or lower migration costs than Germany or if parameter values are such that both countries are situated in the unique high–effort equilibrium which means that high–skilled migrants believe that they have to invest enormous effort in Germany and the US.

Changing public attitudes or implementing the three modeled measures will finally not only help to attract high–skilled migrants but also to better integrate them into society and to improve their labor market performance which will contribute to economic growth in the immigration country in the long run.

Appendices

A. Curvature of the Functions g and h in Case of Low–Skilled Migrants

In our analysis of the self–selection effects for high–skilled migrants we assumed that the functions g and h are convex in e for all admissible $e \in [0, E]$. As we have shown in section 4, comparative–static results depend crucially on that convexity property. In order to preserve that property, we assumed $\pi \geq 1/2$ to hold as sufficient condition for convexity.. Although it is highly plausible to introduce that assumption for high–skilled migrants, it is hardly plausible to assume $\pi_u \geq 1/2$ for the unskilled as well. Thus, convexity is not guaranteed for low–skilled migrants.. As a result, the functions g_u and h are either concave for all admissible effort values, or the functions g_u and h being concave for effort levels below some threshold $t \in (0, E]$, and convex for $e_u > t$. Let us shortly discuss the consequences of these properties.

If the functions g and h are concave for all admissible effort levels, there either exists a unique interior solution for the optimal effort e_u^* or a unique corner solution $e_u = E$. Multiple equilibria are not possible in that case.

If the functions g and h are concave for $e_u < t$ and convex for $e_u > t$, then things are a bit more complicated. Comparative–static results imply that an increase in $\pi_u - \pi_1 > \pi_0$ – has the following consequences with threshold t evaluated at the initial equilibrium:

- The intersection with the vertical axis is not affected.
- At $e_u = t$ we have: $g_u(e_u, \pi_1) = g_u(e_u, \pi_0)$.
- For all $e_u < t$ we have: $g_u(e_u, \pi_1) < g_u(e_u, \pi_0)$.
- For all $e_u > t$ we have: $g_u(e_u, \pi_1) > g_u(e_u, \pi_0)$.
- Additionally, t declines as $\pi - u$ increases.

Consider now the case of identical values $\bar{\beta}$ for both skill groups. At effort level $e = e_u = 0$, both the functions $g(e)$ and $g_u(e_u)$ are identical. For all effort levels below the threshold t, our comparative–static results about changes in π

imply that $g(e) < g_u(e)$, whereas for $e > t$ we have $g(e) > g_u(e)$. As the convex part of the graph of the function g_u for the unskilled lies always below the graph of the function $g(e)$, the case of multiple equilibria for unskilled migrants can only occur if there are multiple equilibria for the high–skilled as well. On the other hand, multiple equilibria for the high skilled may occur while there is a unique equilibrium for the low skilled. Our argument of self–selection of high–skilled migrants going in hand with no such self–selection effects for the low skilled is based on that asymmetry of the model. That asymmetry becomes even more pronounced if we allow for group–specific distributions of abilities with group–specific means.

B. Figures

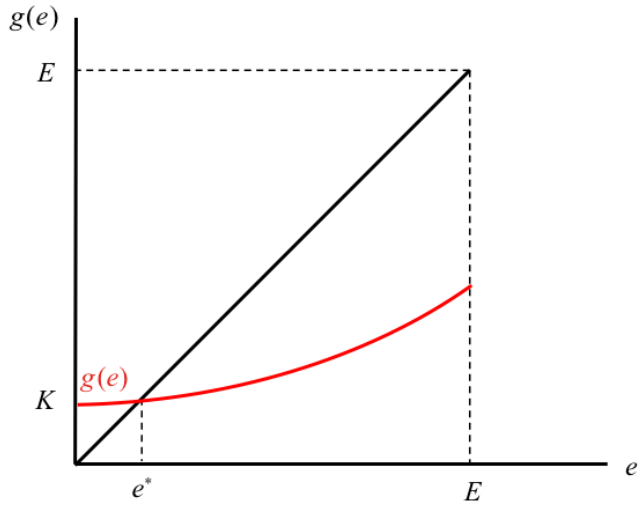

Figure 1: Case 1): one unique stable interior equilibrium e^*

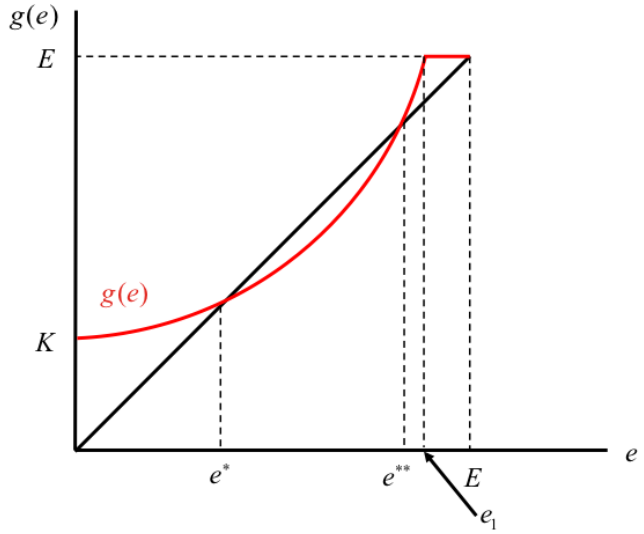

Figure 2: Case 2a): two stable equilibria e^* and E, one unstable equilibrium e^{**}

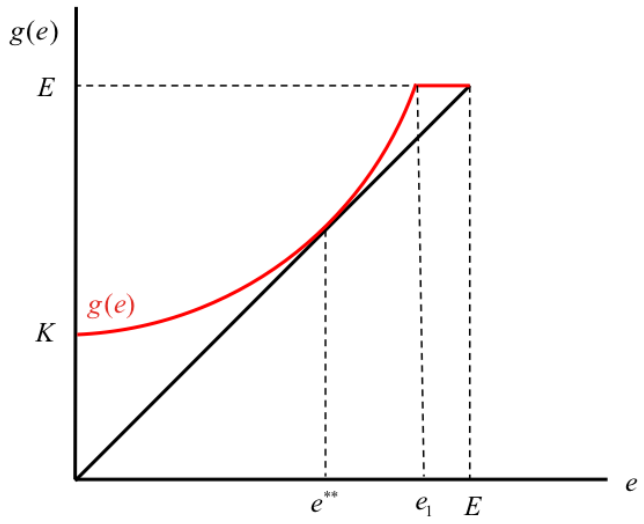

Figure 3: Case 2b): one stable equilibrium E, one unstable equilibrium e^{**}

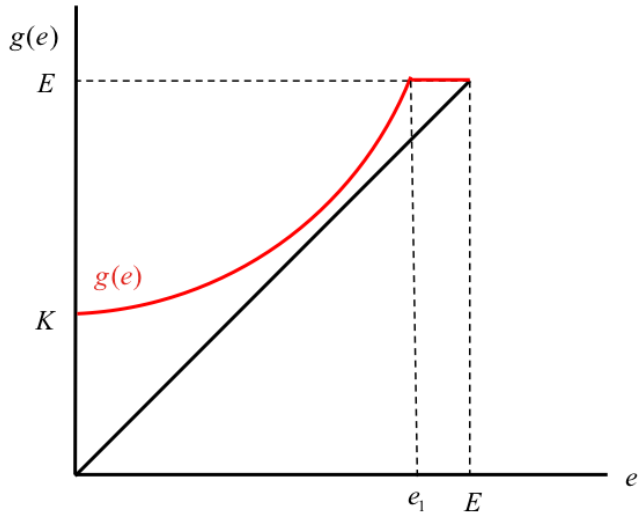

Figure 4: Case 2c): one unique stable equilibrium E

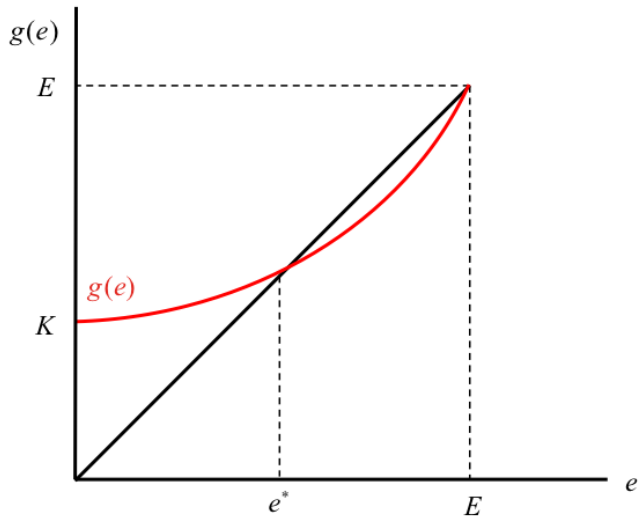

Figure 5: Case 3): one stable equilibrium e^*, one unstable equilibrium E

C. Numerical Analysis

π	θ	λ	a	$A1$	$g(e_{US})$	$g(e_{GER})$	$EU(e_{US})$	$EU(e_{GER})$
0.5	0.1	0.999	281	0.6	0.52	1	**1.00007**	0.99882
0.89			281	0.99		1		**0.99921**
0.5	0.2	0.99	57	0.7	0.54	1	**1.00351**	0.99823
0.79			57	0.99		1		**1.00113**
0.5	0.2	0.999	63	0.7	0.08	1	**1.00047**	0.99276
0.79			63	0.99		1		**0.99305**
0.5	0.3	0.9	13.86	0.8	0.82	1	**1.05024**	1.04329
0.69			13.86	0.99		1		**1.06292**
0.5	0.3	0.99	21	0.8	0.17	1	**1.00482**	0.98419
0.69			21	0.99		1		**0.98609**
0.5	0.3	0.999	22	0.8	0.02	1	**1.0005**	0.97807
0.69			22	0.99		1		**0.97826**
0.5	0.4	0.5	3.65	0.9	0.94	1	**1.31678**	1.31301
0.59			3.65	0.99		1		**1.35801**
0.5	0.4	0.6	4.02	0.9	0.84	1	**1.24661**	1.23562
0.59			4.02	0.99		1		**1.27162**
0.5	0.4	0.7	4.5	0.9	0.72	1	**1.17872**	1.15889
0.59			4.5	0.99		1		**1.18589**
0.5	0.4	0.8	5.1	0.9	0.56	1	**1.11403**	1.08196
0.59			5.1	0.99		1		**1.09996**
0.5	0.4	0.9	6	0.9	0.35	1	**1.05381**	1.00667
0.59			6	0.99	0.39	1		**1.01567**
0.5	0.4	0.99	7	0.9	0.04	1	**1.00504**	0.93757
0.59			7	0.99	0.05	1		**0.93847**
0.5	0.4	0.999	7	0.9	0.004	1	**1.0005**	0.92947
0.59			7	0.99	0.005	1		**0.92956**

Table 6: Parameter choices reflecting the case of multiple effort equilibria (Case 2a)) and impact of higher skill transferability ($\pi \uparrow$) on expected utility of high–skilled migrants in Germany

$$(B = 1,\ E = 1,\ \sigma^2 = \tfrac{1}{12},\ y_1 = 2,\ y_0 = 1)$$

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