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Migration policy and labor market integration

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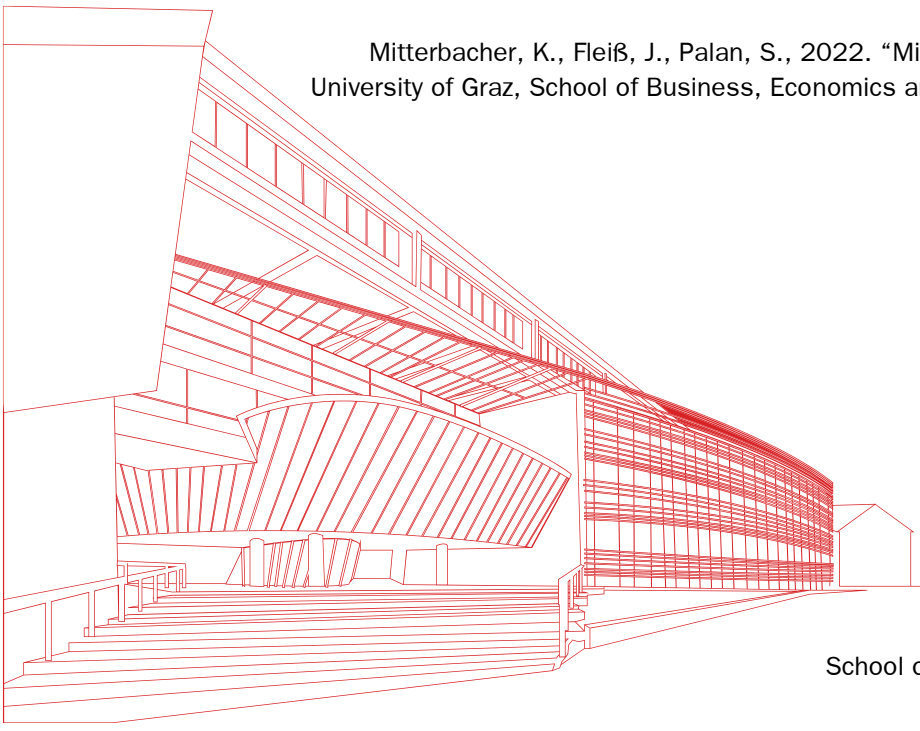

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Keywords: economic migration, labor market integration, location choice, migration policy
JEL: I38, J61, O15, C91, C72

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Migration policy and labor market integration[☆]

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Abstract

We experimentally study economic migrants' willingness to relocate to, and take up work in, the destination country, and, in turn, destination country citizens' willingness to allow economic migrants to relocate to and pursue formal work in their country. In doing so, we focus on economic migrants coming from less developed countries and citizens of more developed destination countries. We find clear evidence for a reciprocal relationship between the individuals in these roles. The labor market participation of economic migrants co-moves with destination countries' openness to welcoming them. However, open migration polices without the threat of facing restrictive policies reduce migrants' willingness to work. At the same time, while the existence of such a threat gets migrants to work, the actual implementation of restrictive policies has the same effects as open migration policies. We conclude that supporting economic migrants in early labor market attachment is crucial to support mutually beneficial co-existence in society.

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1. Introduction and Background

Migration and migration policy issues are at the forefront of many political agendas. One driver of this attention is the increasing flow of migrants and refugees from less developed countries (LDCs) into more developed countries (MDCs), which is often associated with integration challenges in labor markets (Borjas, 1991; Pedersen and Smith, 2002; Bratsberg

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et al., 2017; Brell et al., 2020). These challenges arise from cultural, educational, and linguistic differences (Wimark et al., 2019; Bevelander, 2020). Destination country residents thus are often concerned that migratory inflows burden the welfare state (Blinder and Markaki, 2019) or imperil their own job security (Dias-Abey, 2021). Despite this negative perception, research finds that migration generally neither harms the welfare system (OECD, 2014) nor locals' job prospects (OECD, 2017).

In 2019, 272 million people worldwide lived outside their respective countries of origin, a number that was projected to grow to 281 million by 2020 (IOM, 2021). 120 million of these 272 million *international migrants* originally lived in LDCs (UNDESA, 2021). Furthermore, 169 million or 69.0 percent of the 2019 international migrant population of working age (15 years and older) take up employment in their destination countries (ILO, 2021), averaging 4.9 percent of the labor force in these countries. As such *international migrant workers* are an integral part of the world economy (IOM, 2022).

International labor migration, i.e., cross-border movements for the purpose of employment, benefits not only migrant workers but also countries of origin and countries of destination. Migrant workers relocating from LDCs to MDCs, for instance, are estimated to gain a 125% increase in net income (Kennan, 2013). Countries of origin reap benefits through remittances, reduced unemployment, transferred skills and international contacts by returning migrants (IOM, 2017). Destination countries, in turn, benefit from their growing economies as migrants fill both vacancies and skill gaps, help increase exports, and promote innovation (Hatzigeorgiou, 2010; Ozgen et al., 2013; IOM, 2017).

Migration policies are often used to manage labor migration (Tani, 2020). In a nutshell, as defined by the IZA (2022), migration policies address issues of 'national and international mobility, such as supply and demand of workers, naturalization and citizenship, and the treatment and integration of refugees and other migrant categories (e.g., economic and family migrants)'. Our research presented in this paper focuses on economic migrants, in particular on those migrating from LDCs to MDCs.[1] Economic migrants leave their home with the aim of improving their economic outlook (IOM, 2011). Mitterbacher (2021) provides a recent review of their motives.

Generally, migration policies can be mapped onto a scale ranging from open to restrictive (Natter, 2018). *Open migration policies* favor open borders and thus free migration, like in the EU's Schengen Area (European Commission, 2022), where EU nationals can migrate without restrictions (BMAS, 2021). (Kosyakova and Brücker, 2021) corroborates that open policies boost migrants' participation in the labor market. *Restrictive migration policies*, on the other hand, imply controlling borders more tightly, like in the US (Baxter and Nowrasteh, 2021). Western countries in particular tend to introduce restrictive policies to limit the number and/or type of migrants they allow to enter (Epstein and Nitzan, 2006). Tani (2020) identifies the increasing importance of labor market concerns in destination countries as one reason. However, Juárez et al. (2019) find that introducing restrictive policies promotes xenophobic sentiment by limiting migrants' opportunities in favor of pro-

[1] In our experiment, LDCs are modelled as a developing country with a relatively low GDP while MDCs are modelled as a developed country with a relatively high GDP.

moting social cohesion.

Our study reports on an experiment in the context of economic migration, modeling a society with two groups: economic migrants and destination country citizens. We tap into the debate whether open or restrictive migration polices are more effective in terms of labor market integration and study possible effects on the welfare system. de Haas et al. (2019) point out that arguments about the effectiveness of migration policies often rely on mere statistical associations between migration policies and migration trends that do not demonstrate a causal relationship. We thus follow a new approach by resorting to a laboratory experiment. This method allows us to abstract from many of the confounding factors that affect empirical research. In particular, we can cleanly isolate the impact of migration policies on labor market participation.

The present paper contributes to the literature on experimental and political economy, sociology, and social psychology; methodologically, it primarily contributes to the nascent literature on migration studies using laboratory experiments. Studies closely related to ours are Baláž et al. (2016), Barnett-Howell (2018), and Batista and McKenzie (2020). Baláž et al. demonstrate that wages and migration costs are the main factors influencing migration destination choice. However, non-economic factors, such as language difficulty or personal freedom, also matter. Barnett-Howell report that the lack of information about the individual benefits of migration is a significant factor in deciding not to migrate. Finally, Batista and McKenzie show that migration costs and unemployment risk negatively affect a destination's prospects when migrants choose between countries. We extend the existing studies by providing insights into the behavior of societies faced with the possibility of migratory inflow into their respective labor markets and welfare systems. In particular, we draw conclusions regarding destination countries' migration policies and their impact on international labor migration from LDCs to MDCs. Our research question are:

Research question 1) How do destination country citizens' decisions whether or not to vote for policies making relocation for economic migrants harder (i.e., costly) affect these migrants' willingness to relocate to, and participate in, the labor market of the destination country?
Research question 2) How does economic migrants' willingness to relocate to, and participate in, the labor market of the destination country affect destination country citizens' decisions whether or not to vote for policies which make relocation for economic migrants harder (i.e., costly)?

In the remainder of this paper, section 2 contains our hypotheses, section 3 lays out our method, section 4 presents the results, and section 5 concludes.

2. Hypotheses

We turn our research questions into 5 testable hypotheses as outlined in the following paragraphs. We use migration costs to operationalize the restrictive nature of migration policies, while we use monetary contributions to the destination country's welfare system to operationalize migrants' participation in this country's labor market. For the sake of simplicity,

we – from now on – refer to economic migrants coming from less developed countries as 'migrants' and refer to more developed destination country citizens as 'citizens'.

The impact of restrictive policies on migrants' relocation behavior is the basis of Hypothesis 1. Generally, de Haas et al. (2018) find that migration policies have become less restrictive over time. The authors explain this trend partly by the continued growth of low- and high-skilled migrant workers programs. Yet the results regarding these policies' effectiveness are mixed (Ulceluse and Kahanec, 2021; Czaika et al., 2021). Carling (2002) and Geddes and Scholten (2016), for example, find that restrictive policies dampen migration flows. Castles (2004), Czaika and de Haas (2013) and Hollifield et al. (2014), conversely, argue that restrictive migration policies are ineffective because they encourage illegal migration channels instead of limiting migration flows. Additionally, de Haas et al. (2019) conclude that international migration is rising despite the restrictive policies, yet they concede that migration could be even higher without the restrictions. Furthermore, a decline in migration flows could also be caused by, for instance, an economic downturn in the destination countries.[2] Against this background, our first hypothesis is:

Hypothesis 1 *The threat and implementation of policies imposing costs on migration affect the relocation behavior of migrants.*

Although migrants decide to relocate for a variety of reasons, a characteristic phenomenon results from their relocation decisions: migrant clusters (Bauer et al., 2002; Pamuk, 2004). Bauer et al. (2002) identify two factors that promote the formation of such clusters. These are, first, migration networks and, second, herding. Migration networks refer to the concentration of migrants with migration-related knowledge and resources, while herding refers to the behavior of following other migrants. There is a large literature studying network (see, e.g., Gottlieb, 1987; Böcker, 1994; Chiswick and Miller, 1996; Munshi, 2003; Bauer et al., 2007) and herd effects (see, e.g., Scharfstein and Stein, 1990; Banerjee, 1992; Epstein, 2002; Epstein and Gang, 2004; Warin and Blakely, 2012) on migration flows. Networks help migrants with employment or social integration, while herds signal a good choice made by others based on (unobserved) superior information (Epstein, 2008). Yet they share the requirement of greater numbers of individuals migrating to the same destination. We thus formulate our second hypothesis as follows:

Hypothesis 2 *The probability that a migrant relocates to the MDC increases in the proportion of other migrants who relocated in the (recent) past.*

Besides the positive effects of networks on employment, the literature extensively documents the effects of migration policies on labor supply (Tani, 2020). For example, Borjas (1991) points out that immigrants from LDCs are less skilled and less successful in the labor

[2]Although the impact of illegal migration channels and economic downturns in destination countries on migratory flows are interesting topics in their own rights, our experimental design does not cover them. Controlling for factors such as these allows us to cleanly isolate the effect of (the threat of) migration regulation on migrants' relocation decisions.

market than immigrants from industrialized countries. As a result, countries like Australia and Canada restrict immigration by tightening their admission criteria to attract (temporary) migrant workers to fill the economy's need for skilled labor (Charteris, 1927; Tani, 2020; Borjas, 1991). However, Borjas (1991) finds that such restrictions do not attract more skilled workers per se but rather change the national origin mix (i.e., the composition of the countries that skilled workers originate from). This change in the national origin mix, however, implicitly leads to more skilled workers, since workers from high-income countries are more likely to possess greater skills. More recently, Helbling et al. (2020) confirmed Borjas' findings and added that restrictive immigration policies lead to the selection of immigrants with higher integration potential. In light of these findings, we formulate our third hypothesis as follows:

Hypothesis 3 *The higher the costs of migration planned in the restrictive policy, the more migrants contribute to the MDC's welfare system.*

Haaland and Roth (2020) report that information showing that immigration does not harm the labor market significantly increases public support for immigration. This evidence is in line with Tani (2020), who shows that destination countries often introduce restrictive policies due to labor market concerns. From the (rational) point of view of citizens, our design captures a situation where restrictive polices are attractive when they serve to attract [deter] migrants who are [not] willing to contribute to the MDC welfare system. If migrants are willing to contribute, citizens have no (monetary) incentives to introduce the restrictive policy. From the (rational) point of view of migrants, our design captures a situation where relocation to the MDC is attractive when it is free or cheap, but, when it is expensive, is attractive only when migrants can free-ride on others' contributions.[3] We thus specify our fourth and fifth hypotheses as follows:

Hypothesis 4 *The number of migrants who decide to relocate and contribute to the welfare system of the MDC decreases in the number of MDC citizens who voted for the restrictive migration policy in the (recent) past.*

Hypothesis 5 *The probability that a citizen votes for the restrictive policy decreases in the number of migrants who contributed to the MDC welfare system in the (recent) past.*

3. Method

We test our hypotheses with data collected in a laboratory experiment. We thus forego a strong focus on some aspects of culture, or details of a particular legal code, in favor of being able to cleanly isolate certain behavioral regularities that drive decisions in the context of migration policy and labor market integration.

[3]Our design models, on the one hand, *open migration policies* that mimic (1) free, no-cost migration, and, on the other hand, two different levels of *restrictive policies* that mimic (2) cheap, low-cost migration and (3) expensive, high-cost migration. For details, see section 3.2.

3.1. Setup

156 students from all fields of study participated in an online experiment between February and March 2021, in 26 sessions with 6 students each. The sessions averaged 75 minutes. The participants' average age was 25 years ($SD = 4.55$, age range: 18 to 46), 62 percent were female, 3 percent were of non-binary gender, and 74 percent were of Austrian nationality. We recruited through ORSEE (Greiner, 2015) to make sure that no individual could participate in the experiment more than once. We paid participants in euros, via bank transfer, using an exchange rate from experimental points (P) to euros of $34\,\mathrm{P} = 1$ euro. The average earnings per participant were 18.98 euros ($SD = 5.07$, payment range: 6.70 to 27.80).

We programmed the experiment in z-Tree and conducted it using z-Tree unleashed (Fischbacher, 2007; Duch et al., 2020).

3.2. Experimental design

We choose a between-participants design based on a linear club goods game conducted in groups of six participants. We announce that interactions are restricted to members of the same matching group throughout the entire experiment (partner matching). Each matching group has two fixed subgroups of three participants, formed via the over- and underestimator minimal group task of Tajfel (1970), as modified by Böhm et al. (2013): For 0.5 seconds, participants see a random number of between 5 and 30 'X' symbols on their screens. After having seen the symbols, they estimate how many they saw. We repeat this task five times. Thereafter, we calculate the individual deviations from the true number of symbols and evenly divide the cohort into two groups at the median score, breaking ties randomly. According to Böhm et al. (2013), groups formed using this procedure behave similarly across experiments. Furthermore, members of one group feel 'closer' to each other than to members of the other group. Furthermore, Balliet et al. (2014) show that studies using groups formed with minimal group tasks yield results that are comparable to those from natural groups. In our experiment, we privately inform participants of their respective group memberships immediately after the two subgroups have been formed.[4] These subgroups represent, respectively, economic migrants and destination country citizens, as outlined in section 1. The over- and the underestimator groups are randomly assigned the roles of citizens and migrants.

Conceptually, migrants and citizens automatically participate in the labor market in their respective home countries. Migrants choose whether or not they wish to relocate to the more developed destination country, i.e., the MDC, possibly facing costs of relocating. Upon relocating, migrants leave the labor market and the welfare system of their less developed home country, i.e., the LDC, and become residents in the MDC. In return, they obtain access to payments from the MDC's welfare system. However, they contribute to this system only if they choose to enter the MDC's labor market. Consequently, in contrast to migrants and to MDC citizens that reside in their respective home country (both of

[4]Our post-experiment questionnaire verifies that our participants have developed a sense of group identity. See online appendix A for details.

whom automatically participate in the labor market and thus automatically contribute to the welfare system in that country), migrants that reside in the MCD choose whether or not they wish to contribute to the MCD system, but are by default entitled to benefits from this system, regardless of their contribution choice.[5] In line with real-world procedures in many countries, the employer directly transfers part of the employees' wages to the welfare system. Regardless of their employment status, both migrants and citizens receive welfare benefits in their respective countries of residence. The benefits paid out by the welfare system in the MDC are greater than those in the LCD, conceptually because the same amount of labor creates more economic value in the MDC than in the LDC. This difference reflects the better infrastructure and greater labor productivity (due to, e.g., more capital-intensive production processes) in the MDC.[6] The benefits from the welfare systems are shared equally among all residents within (but not between) each of the two countries. However, the final payoff of an individual participant depends on three factors: first, the experimental treatment; second, the migrants relocation and contribution decisions; and third, the citizens' migration policy decisions.

Figure 1 illustrates the experimental design and the action space of migrants and citizens. For the sake of simplicity, we eliminate the period subscript and refer to the 'MDC' as the rich (destination) country and to the 'LDC' as the poor (home) country. We further refer to the 'citizens' as members of the Mandatory Contribution Group, Rich Country (MCG_R). We variably refer to the 'migrants' as members of the Mandatory Contribution Group, Poor Country (MCG_P) when residing in the LCD and as members of the Voluntary Contribution Group (VCG) when residing in the MDC. The design and action spaces of migrants and citizens are the following: In all treatments, individuals receive the same endowment E at the beginning of each period and decide simultaneously in the role of MCG and VCG members. Members of the MCG automatically contribute E to the jointly created club good (i.e., the welfare system). However, MCG_P members can choose to migrate to the rich country by accepting migration costs $c_P^x \cdot E$, where $x \in \{\textsc{Free}, \textsc{Cheap}, \textsc{Expensive}\}$ and $c_P^{\textsc{Free}} = 0.0$, $c_P^{\textsc{Cheap}} = 1.2$ and $c_P^{\textsc{Expensive}} = 2.0$.

The migration costs c_P (suppressing the exponent x to make a general statement) are monetary costs and conceptually reflect, e.g., payments to facilitators like people smugglers, who help migrants move past barriers to migration. With migration, the concerned participants' group status changes from MCG_P to VCG. VCG members have to bear c_P and can decide whether or not to contribute to the welfare system of the rich country. Their contribution decision is binary, either all or nothing. Therefore, the total contributions in the rich country, C_R, increase in increments of E for each VCG member who chooses to contribute to the welfare system. We denote the number of MCG_R members by n_{MR}, the number of MCG_P members by n_{MP} and the number of VCG members by n_V, such that $n_{MR} = 3$ and $n_{MP} \leq 3 \geq n_V$. We further denote the number of contributing VCG

[5]Using this design, we follow Mitterbacher et al. (2021) and limit our study to citizens who are active in the labor market. We furthermore exclude issues such as tax evasion.

[6]The McKinsey Global Institute estimates migrants' contribution to the global GDP of \$6.7tn to be about 81%, or \$3tn, greater because these individuals work in a high GDP country than it would be if they were to work in their (low GDP) home countries (MGI, 2016).

members by $n_V^+ \leq n_V$. Thus, C_R is a function of n_{MR}, of n_V^+, and of each participant's endowment E, in that $C_R = \left(n_{MR} + n_V^+\right) \cdot E$. In the poor country, the corresponding total contributions C_P are a function of n_{MP} and of each participant's endowment E, in that $C_P = n_{MP} \cdot E$. Conceptually, total contributions C (we drop the indices for rich and poor countries to make a general statement) represent contributions of labor and thus of citizens' and migrants' time and effort. Nonetheless, for experimental convenience (and following the majority of the related literature), we treat C as if it were monetary contributions. We multiply these contributions by the growth factor F to yield the total pot $P = C \cdot F$. F_R in the rich country is greater than F_P in the poor country. Thus, the jointly created welfare system in the rich country generates a greater return on contributions than that in the poor country. Specifically, and depending on group size, the growth factor in the rich country is $F_R \in \{2.5, 2.9, 3.3, 3.7\}$ for population sizes of $n_R \in \{3, 4, 5, 6\}$.[7] The growth factor in the poor country is constant at $F_P = 1.5$.[8] Conceptually, the difference between the two growth factors is motivated by lower capital intensity, political instability, corruption, high unemployment and similar factors more frequently being present in less developed countries. The total pot P is shared equally among all members within (but not between) each of the two countries. Specifically, it will amount to $\pi_R = P_R/(n_{MR} + n_V)$ for all members in the rich country and to $\pi_R = P_P/n_{MP}$ for all members in the poor country.[9] We deduct c_P from VCG members' earnings. If a VCG member does not contribute, these earnings correspond to the participant's endowment plus his or her share of the payments from the welfare system in the rich country ($E + \pi_R$). If a VCG member does contribute, these earnings correspond to the participant's share from this welfare system alone (π_R). Following each period, we inform MCG and VCG members about each other participant's contribution and payoff.

Our treatments model migration policies differing in the migration costs that are deducted from migrants' period earnings. Relocation of migrants to the MDC is always free of cost in our baseline treatment (Free). The two remaining treatments (Cheap and Expensive) allow citizens to introduce costs for relocation. Citizens can impose either a low or a high cost on migrants for relocating to the MDC. We thus model a situation where

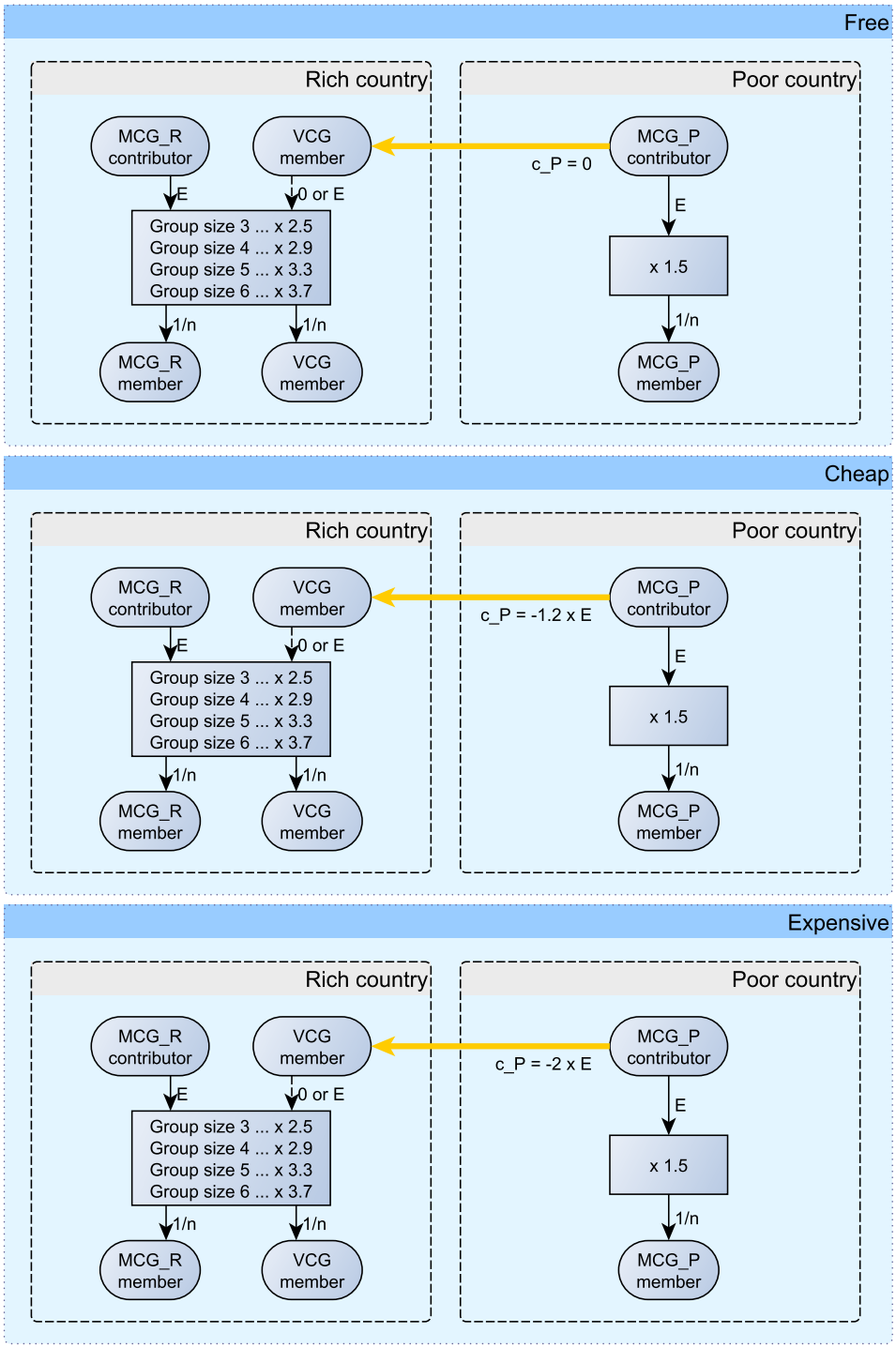
[7] We vary F_R depending on group size in order to capture economies of scale. Individual MCG_R members' payoffs from the welfare system slowly increase in the number of contributing VCG members, but quickly shrink in the number of non-contributing VCG members. This also reflects the incentives many developed and industrialized countries face: due to ageing native populations, these countries rely on migration to fill job openings particularly in construction, outpatient care, household maintenance and other labor-intensive professions (McDonald and Kippen, 2001; Stough et al., 2018).

[8] We model the growth factor in the poor country as being constant in order to rule out a confound. If we were to reflect migration-induced reductions in economies of scale due to lower population sizes in the poor country, we could no longer distinguish migration motives stemming from (1) the 'pull factor' of a greater growth factor in the rich country from (2) the 'push factor' of the diminishing growth factor in the poor country. Translated to our experiment, MCG_R members might relocate because they are attracted by the higher growth factor in the rich country, or because they wish to flee the decreasing growth-factor in their poor home country. Furthermore, poor countries are often characterized by high unemployment, such that emigration does not necessarily lead to losses in economies of scale (IOM, 2017; OECD, 2018; Remeikiene and Gaspareniene, 2019).

[9] Our experiment requires MCG_R members to be passive participants in Free such that payoffs in treatment Free depend only on VCG members' decisions.

citizens can decide whether or not to implement a migration policy that makes migration costly, regardless of migrant's relocation and contribution decisions. A session of the study comprises 20 periods. Each session starts with five training periods (in which all participants are already aware of the policy that will become available for implementation from period 6 onwards—if any). These training periods are intended to familiarize participants with the experimental task and to establish choice patterns which participants can condition their later choices on. They also allow for measuring the causal effect of migrants' initial behavior on citizens' policy decisions. Starting with period 6, citizens at the beginning of each period participate in a majority vote on whether or not they wish to implement the same migration policy as in FREE (*open policy*) or, alternatively, a policy under which migrants who decide to relocate incur migration costs (*restrictive policy*).

Figure 1:
Experimental treatments of the study



Note: Solid edges specify progression without participant choice, dashed edges specify participant choices. The figure illustrates the treatments under the assumption that MCG_R members choose to impose migration costs in treatments CHEAP and EXPENSIVE; if they do not impose migration costs, the same illustration as in FREE applies throughout.

3.3. Procedure

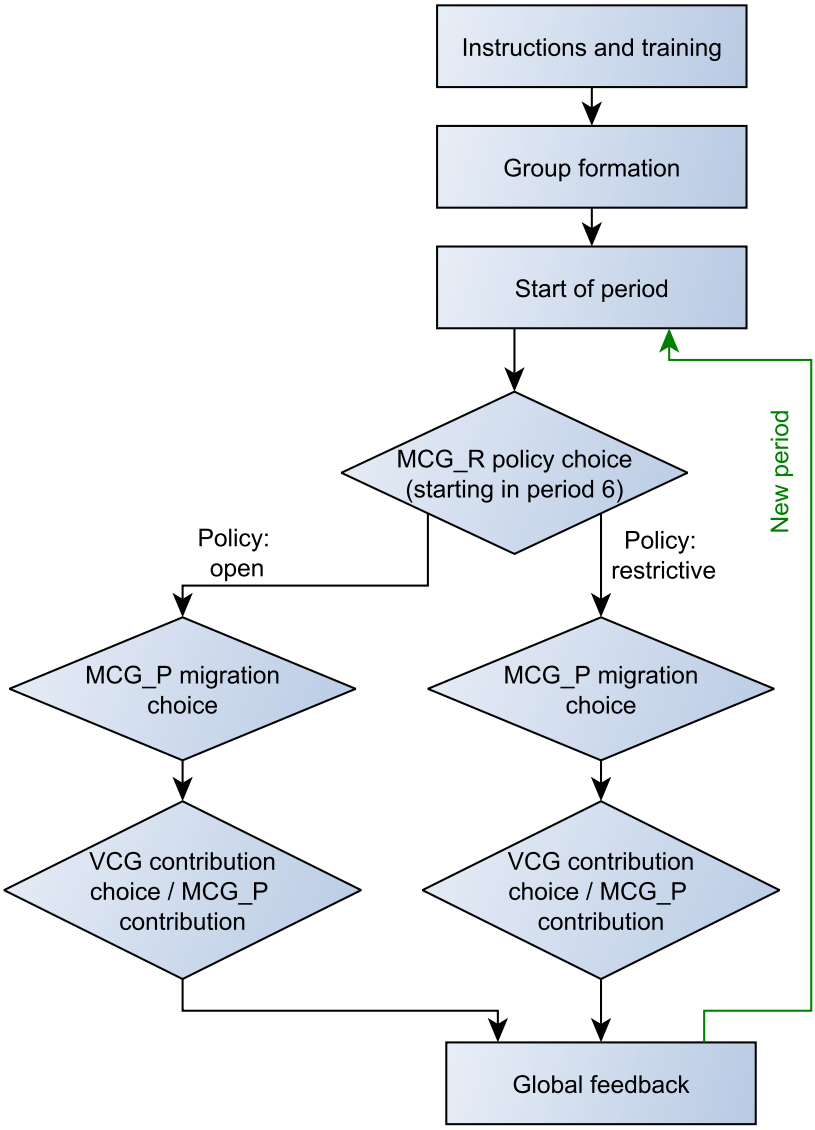
Figure 2 illustrates the experimental procedures. At the beginning of an experimental session, participants meet in an online room where they can communicate with the experimenter. At the designated starting time, the experimenter welcomes the participants, publicly posts a link to the instructions of the experiment and privately sends each participant a link to enter the experiment itself. The experimenter then asks the participants to open the link to the instructions and press a button in the online room when finished. Following the instruction phase, the experimenter starts the experiment and the participants open the link to the experiment. The remainder of the session then consists of two parts. Part A commences with a check that everybody has read the laboratory rules sent per e-mail before participating in the experiment. Participants then proceed to the group formation task (and its manipulation check), which is the basis for assigning them to the roles they assume in Part B: economic migrants and destination country citizens. Note that we refer to these roles as blue country citizens and green country citizens, respectively, in the experiment. We display the instructions for this part on participants' screens (See online appendix section D.A for the instructions for Part A and Part B).

After completing Part A, participants are informed about whether they are over- or underestimators. The experimenter then asks them to open the instruction link again in order to read the instructions for Part B and confirm completion of this task by pressing a button. After answering any remaining questions, the experimenter starts Part B of the experiment, beginning with a hands-on training and the comprehension questions. After all participants have successfully passed the training and correctly answered the questions, the computer rolls a virtual die to assign the over- and underestimators to the roles of migrants and citizens. The experimenter then starts the main experimental task, a series of 20 periods. In each of these 20 periods, migrants decide whether or not they wish to relocate to the MDC and whether they wish to contribute to the welfare system there. In each period starting in period 6, citizens decide by majority vote whether they wish to implement the open policy or the restrictive policy.

In treatments Cheap and Expensive, the policy vote is a binary decision for either the open policy that imposes no migration cost factor ($c_P^{\text{Free}} = 0.0$), or the restrictive policy that imposes migration cost factors of $c_P^{\text{Cheap}} = 1.2$ or $c_P^{\text{Expensive}} = 2.0$, respectively. In treatment Free, instead, citizens put themselves in migrants' shoes and submit hypothetical choices of whether they would relocate to and/or contribute to the welfare system of the MDC. Treatment Free thus allows us to observe migrants' relocation decisions and contribution decisions in the absence of the threat of migration costs. Citizens' decisions are solely meant to keep these participants occupied while migrants make their decisions. Of course, treatment Free citizens are aware that their choices are hypothetical.

Upon having entered all decisions, a results screen reveals the payoffs of each participant and the citizens' policy decisions in the given period (including how many of the three citizens voted for the policy). Each period reveals the previous periods' results as a 'payoff history'. At the end of the 20 periods, one period is randomly chosen for payment. Once again the computer publicly rolls a virtual die, whose result sets the payoff-relevant period for all participants. Afterward, participants see their payments displayed on their screens.

Figure 2:
Experimental procedures in the study



Note: Ovals specify the start and the end point of the procedure, diamonds specify participant choices, and rectangles specify progression without participant choice. MCG_R and VCG members decide simultaneously and interact for 20 periods.

Finally, participants fill in a computerized questionnaire that elicits sociodemographic characteristics and participants' perceptions of migrants' impacts on the labor market and welfare system of the country they live in. The questionnaire furthermore includes a field for bank data (for the experimental payments) and an item checking the success of the group manipulation task. (See online appendix section D.B for details.) They participants have to

wait until every participant has completed the questionnaire. The experimenter then bids them farewell and informs them that they will be paid via bank transfer.

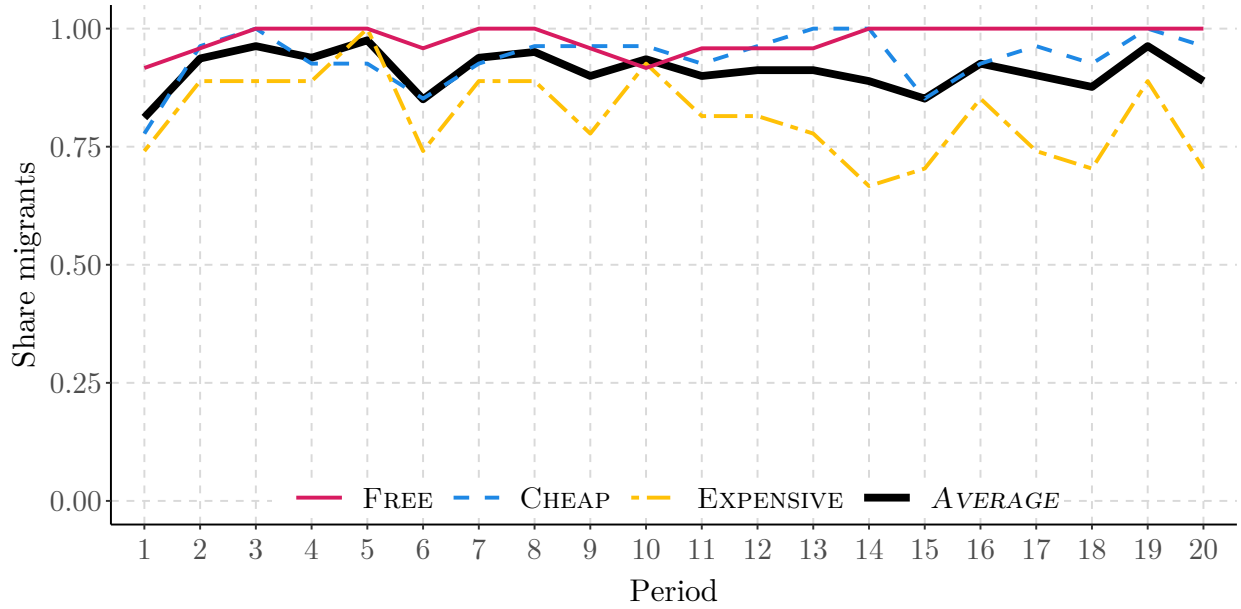
4. Results

We begin our analysis by looking into both the relocation and contribution behavior of economic migrants, before reporting on the voting behavior of destination country citizens.[10] Our results are robust even after we account for participant characteristics (see online appendix section B for details).

4.1. Economic Migrant behavior

Figure 3 displays the average share of migrants relocating to the MDC (which, due to the binary coding of relocation, equals average relocation rates) by period, both averaged over all three treatments and separately for each.

Figure 3:
Time path of average share of migrants relocating to the more developed country



Note: Solid lines indicate the average share of migrants relocating to the MDC under the open policy (FREE) and averaged for all policies/treatments (*AVERAGE*); dashed lines indicate shares under the restrictive policies (CHEAP and EXPENSIVE). Average relocation rates in a given matching group and period are 0, 1/3, 2/3 or 1, depending on the number of migrants in the matching group who relocated to the MDC.

[10]We analyze our data using *R-4.0.5* (R Core Team, 2017) and using the *ztree* package to read in the data (Kirchkamp, 2019). We conduct multilevel probit regressions using the `glmer` function from the lme4 package (Bates et al., 2020) and create our regression tables using the *texreg* package (Leifeld, 2013). We use *kableExtra* (Zhu et al., 2020) for the remaining tables and *ggplot2* (Wickham, 2016) for the figures.

We do not observe a clear time trend across treatments; the majority of migrants overwhelmingly relocates with no clearly visible trends over time. Relocation rates start at 81.2 percent in period 1 and end at 88.9 percent in period 20. In line with expectations, treatment FREE has the highest relocation rate. In fact, all migrants in this treatment relocate in every period after period 13. Conversely, treatment EXPENSIVE has the lowest relocation rates. Nevertheless, over all treatments at least two-thirds of the migrants relocate in every period, showing that the modal migrant in our experiment prefers relocating to the more developed destination country rather than staying in their less developed home country.

Table 1 lists the average relocation rates and the number of sessions per treatment. We find the highest relocation rates in FREE, followed closely by CHEAP. We observe relatively lower rates in EXPENSIVE. These treatment differences are statistically significant when we use participants' average relocation rates from periods 1–20 as the independent observations in a one-way, between-participants ANOVA ($F(2, 75) = 16.44$, $p < .0001$). Pairwise comparisons with t-tests and Holm correction show that the average relocation rates in EXPENSIVE are significantly lower than those in both FREE ($t = -5.4384$, $p < .0001$) and CHEAP ($t = -4.2319$, $p = .0001$), while the latter two do not differ significantly ($t = 1.3328$, $p = .1866$). This result suggests an impact of very restrictive policies only. However, observing statistically significant differences in average relocation rates in the different treatments would not yet allow us to determine whether the differences stem from the mere availability of such policies or their actual implementation. We are interested in the interdependence between relocation decisions, contribution decisions, policy treatment variations and policy voting decisions of citizens. To understand how these factors interact, we continue our analysis at the participant×period level using the multilevel probit regressions reported in Table 2.

Table 1:
Treatment summary for migrants relocating to the more developed country

Treatment	**Sessions**	**Average relocation rates**
FREE	8	97.9
CHEAP	9	93.9
EXPENSIVE	9	81.5

Note: The table presents the number of sessions and average relocation shares over all periods, i.e., 1 through 20, separately for each treatment.

Our models account for our data being nested in the three hierarchical levels of participants (level 1), periods (level 2) and matching groups (level 3).

Our first model regresses a migrant's binary relocation decision $RelocateOwn_t$ (1 = relocate) on dummy variables for the three treatments FREE, CHEAP, and EXPENSIVE (thus omitting the constant) as well as on their interactions with the period variable P. This allows us to account for treatment effects and the time variation therein. To test for model fit, we use a log-likelihood ratio test to compare Model 1 to the empty NULL-Model and find a significant improvement ($\chi^2(5) = 32.8297, p < .0001$). AIC also decreases from 755.42 in the NULL-Model to 732.59 in Model 1, indicating increased model fit due to the variables included in Model 1. Comparing the three significant treatment coefficients to each

Table 2:
Multilevel probit regression for a migrant relocating to the more developed country.

Dependent Variable: $RelocateOwn_t$				
	(1)	**(2)**	**(3)**	**(4)**
FREE (0.0)	2.26***	1.55**		
	(0.00)	(0.51)		
CHEAP (-1.2)	1.86***	1.25**	2.18**	1.84**
	(0.00)	(0.41)	(0.68)	(0.69)
EXPENSIVE (-2.0)	1.60***	1.14**	1.50**	1.60**
	(0.00)	(0.37)	(0.52)	(0.53)
FREE:P	0.04***	0.05		
	(0.00)	(0.03)		
CHEAP:P	0.01***	0.02	0.02	0.02
	(0.00)	(0.02)	(0.04)	(0.04)
EXPENSIVE:P	−0.04***	−0.04**	−0.05	−0.05
	(0.00)	(0.01)	(0.02)	(0.02)
$RelocateOwn_{t=1}$		0.46*	0.77*	0.76*
		(0.20)	(0.31)	(0.31)
$RelocateOwn_{t-1}$		0.31	0.23	0.25
		(0.17)	(0.22)	(0.22)
$ContribOwn_{t-1}$		0.12	0.11	0.08
		(0.14)	(0.20)	(0.20)
$RelocateOthers_{t-1}$		−0.30*	−0.53**	−0.53**
		(0.13)	(0.17)	(0.17)
$ContribOthers_{t-1}$		0.32***	0.62***	0.61***
		(0.10)	(0.14)	(0.14)
$Policy_{t-1}$			−0.88***	
			(0.18)	
CHEAP:$Policy_{t-1}$				−0.36
				(0.31)
EXPENSIVE:$Policy_{t-1}$				−1.08***
				(0.20)
AIC	732.59	716.29	442.34	440.73
ΔAIC	−22.83	−16.30	−26.11	−27.72
Log Likelihood	−357.30	−344.15	−208.17	−206.36
Num. obs.	1482	1482	756	756
Num. groups: ID	78	78	54	54
Num. groups: R.S	26	26	18	18
Num. groups: Period	19	19	14	14

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Note: The dependent variable, $RelocateOwn_t$, is migrant i's binary decision to relocate (1) to the MDC in period t or not (0). We use dummy variables for all treatments (FREE, CHEAP, EXPENSIVE), thus estimating the models without constant. We also include the full set of treatment interactions with the period number P to check for a time trend. $RelocateOwn_{t=1}$ is migrant i's (non-)relocation in period 1. $RelocateOthers_{t-1}$ is the once-lagged share of migrants other than migrant i who chose to relocate; it is 0 if no other migrant relocated, 1 if one, and 2 if both other migrants relocated. $ContribOwn_{t-1}$ is migrant i's once-lagged (non-)contribution to the MDC welfare system; it equals 1 [0] if migrant i did [not] relocate and contribute. $ContribOthers_{t-1}$ is the once-lagged share of migrants other than migrant i who contributed to the MDC welfare system; it equals 0 if no other migrant contributed, 1 if the other migrant (out of a total of two) or all other migrants (out of a total of three) contributed and 2 if all other migrants (out of a total of three) contributed. $Policy_{t-1}$ is a dummy variable for whether the restrictive policy was implemented in the previous period (1) or not (0), starting with period 6 in which voting for the restrictive policy first becomes available. We drop treatment FREE when we add $Policy_{t-1}$ since there is no option to restrict migration in this treatment. We finally add the full set of treatment interactions with $Policy_{t-1}$ to test whether policy decisions affect subsequent relocation decisions differently in the two treatments that allowed citizens to vote for policies. Furthermore, our use of lagged variables and data on citizens' voting decisions (available from period 6) result in a limited sample period. To facilitate comparison between Model 1 and Model 2, we remove period 1 in Model 1. Thus, both Model 1 and Model 2 use dependent variable observations from periods 2 through 20, and Model 3 and Model 4 use observations from periods 7 through 20. We report standard errors in parentheses.

other using pairwise Tukey post-hoc tests reveals significant treatment differences for all pairs ($p < .0001$). The coefficients of CHEAP ($z = -279.3265$, $p < .0001$) and EXPENSIVE ($z = -460.3105$, $p < .0001$) are significantly lower than that of FREE, indicating that restrictive policies significantly lower migrants' probability to relocate to the MDC. This result is consistent with the average contribution rates shown in Table 1. When considering the treatment dummies' interactions with the period variable, all coefficients are statistically significant ($p < .0001$). While the coefficients of FREE and CHEAP are positive, we find a negative time trend in migrants' relocation probability in treatment EXPENSIVE ($b = -0.04$, $z = -43.2172$, $p < .0001$), which supports the picture painted by Figure 3. Nevertheless, none of the coefficients is of sufficient size to indicate a strong upward or downward time trend in any of the treatments.

In addition to the independent variables already used in Model 1, Model 2 includes variables capturing the migrant's own relocation decisions in both the first period ($RelocateOwn_{t=1}$) and in the period preceding the period of observation ($RelocateOwn_{t-1}$). We interpret the former as a proxy of the participant's inherent propensity to migrate, and we interpret the latter as capturing short-run path-dependency in relocation decisions. Model 2 also includes the migrant's own contribution decision in the previous period ($ContribOwn_{t-1}$) and the migration and contribution decisions of the other migrants in the previous period ($RelocateOthers_{t-1}$ and $ContribOthers_{t-1}$). AIC decreases from 732.59 in Model 1 to 716.29 in Model 2, which together with a significant log-likelihood ratio test indicates increased model fit ($\chi^2(5) = 26.2997, p < .0001$). We do not observe any qualitative changes of the coefficients of the variables that were already included in Model 1. Of the newly included variables, only the migrant's own relocation behavior in the first period and the variables capturing the behavior of the other migrants in the previous period yield significant coefficients. The probability of migrating is higher for migrants who decided to relocate in the first period ($b = 0.46$, $z = 2.2812$, $p = .0225$), which we read as a level difference between different participants' inherent propensities to migrate. The probability of migrating is also higher for migrants faced with other migrants who *contributed* in the previous period ($b = 0.32$, $z = 3.3600$, $p = .0008$). The *migration* choices of the other migrants in the previous period seem to have the opposite effect: migrants' relocation probability decreased in the number of other migrants who had relocated in the previous period ($b = -0.30$, $z = -2.2236$, $p = .0262$). However, $RelocateOthers_{t-1}$ captures the effect of other migrants relocating, but not contributing. The effect of migrants who contribute is captured by the combined effects of $RelocateOthers_{t-1}$ and $ContribOthers_{t-1}$ – which is positive in all specifications. We thus conclude that observing other migrants who relocate but free-ride reduce a migrant's probability of relocating, while observing other migrants who relocate and contribute increases a migrant's probability of relocating.

We include $Policy_{t-1}$ in Model 3, indicating whether the restrictive policy was implemented in the preceding period. We finally include the interactions for the implementation of the restrictive policy with the treatments, CHEAP:$Policy_{t-1}$ and EXPENSIVE:$Policy_{t-1}$, in Model 4. Since no restrictive policy was available in treatment FREE, we estimate Models 3 and 4 without data from this treatment. To evaluate model fit, we compare Models 3 and 4 to a Model 2', containing the same variables as Model 2, but estimated with the obser-

vations from treatments CHEAP and EXPENSIVE only. We find that AIC decreases from 468.45 in Model 2' to 442.34 in Model 3 and to 440.73 in Model 4. Likelihood ratio tests also show a significantly increased model fit for both Model 3 ($\chi^2(1) = 28.1064, p < .0001$) and Model 4 ($\chi^2(2) = 31.7248, p < .0001$), compared to Model 2'. Model 3 diagnoses a decrease in migration probability in the period following the implementation of the restrictive policy ($b = -0.88$, $z = -5.1484$, $p < .0001$). Model 4 paints a more nuanced picture, revealing that the effect observed in Model 3 is mostly driven by treatment EXPENSIVE ($b = -1.08$, $z = -5.2611$, $p < .0001$), since the coefficient for the interaction between policy implementation and CHEAP is substantially smaller and not statistically significant ($b = -0.36$, $z = -1.1632$, $p = .2448$).

Having discussed our findings, we turn to consider our hypotheses. Hypothesis 1 captured our expectation that restrictive policies would affect migrants' willingness to relocate to the MDC. Both the ANOVA results comparing the average relocation rates in the different treatments and the pairwise comparisons for the coefficients of the treatment dummies in Model 1 lend support to Hypothesis 1.

Result Hypothesis 1 *Restrictive policies reduce migration.*

More precisely, we find that more restrictive policies have a greater impact than less restrictive ones. Migrants' relocation behavior, however, decreases only slightly in response to the mere availability of restrictive policies; only their actual implementation sharply decreases relocations. Our first additional result therefore is:

Side result 1 *The more restrictive policy is more effective than the less restrictive policy. Furthermore, the mere availability of restrictive policies of any kind are less effective than their actual implementation.*

Hypothesis 2 stated that migrants' probability to relocate increases in the number of migrants that relocated in the (recent) past. The joint effect of migrants' relocation and contribution behavior' documented in Models 2 through 4 support our expectation. We thus accept our second hypothesis.

Result Hypothesis 2 *Migrants' probability to relocate increases in the number of migrants that relocated in the previous period.*

Models 2 through 4 also controlled for the other migrants' contribution behavior. Here, we find a positive effect on relocation probability and thus formulate our second side result.

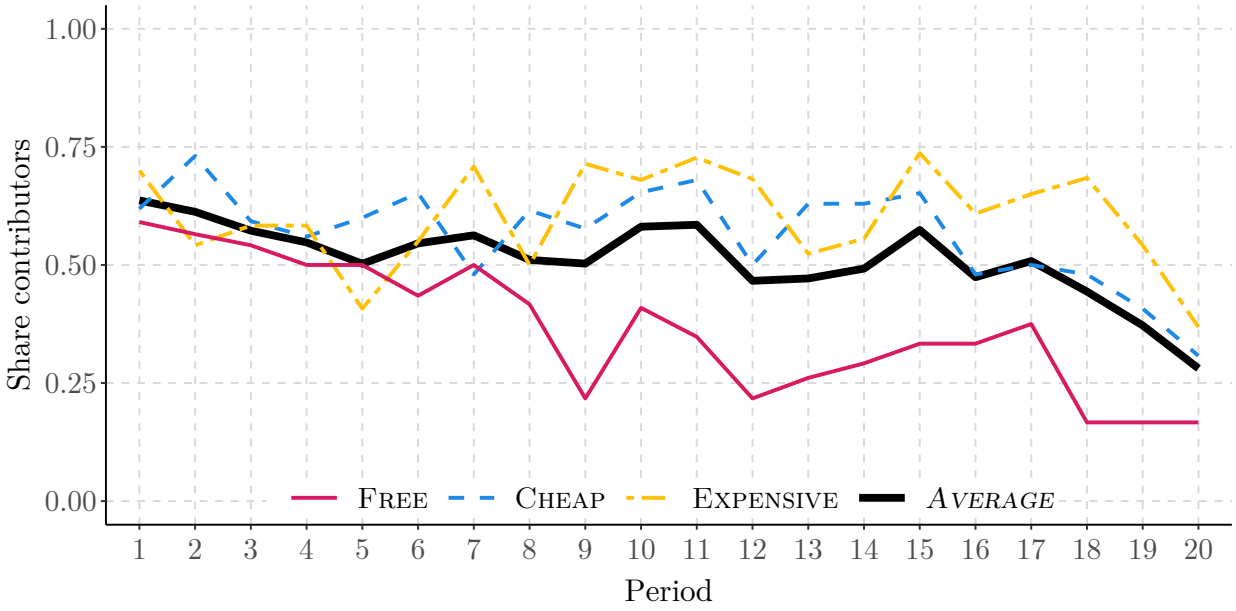
Side result 2 *Migrants' probability to relocate increases in the number of migrants that chose to contribute in the MDC in the previous period.*

We continue our analysis of economic migrants' behavior by studying average contribution rates in the MDC and their development over time. Figure 4 plots the average share of migrants contributing to the MDC welfare system (which again, due to the binary nature of contributions, equals average contribution rates) by period, both averaged over the three

treatments and separately for each. All-treatment average contribution rates start declining more noticeably beginning with period 18, in what may be an endgame effect (Stoecker, 1983; Selten and Stoecker, 1986).

Average contribution rates do not follow a clear time trend, as shown by the line labeled *Average*. They decline from 63.7 percent in period 1 to 50.8 percent in period 17. Irrespective of a possible endgame effect, we find that over all periods and treatments, around half of the migrants contribute to the welfare system, with around two thirds contributing at the beginning and one third at the end. For Free we observe the lowest—and declining—contributions over time, followed by Cheap and Expensive.

Figure 4:
Time path of average share of migrants contributing to the welfare system of the more developed destination country



Note: Solid lines indicate the average share of migrants contributing to the MDC welfare system under the open policy (Free) and pooled for all policies/treatments (*Average*); dashed lines indicate shares under the restrictive policies (Cheap and Expensive). Average contribution rates in a given matching group and period are 0, 1/3, 0.5, 2/3 or 1, depending on the number of migrants in the matching group who relocate and contribute to the MDC welfare system.

We report average contribution rates along with the number of sessions per treatment in Table 3. The treatment differences are statistically significant when we use participants' average contribution rates from periods 1–20 as the independent observations in a one-way, between-participants ANOVA ($F(2, 75) = 3.83$, $p = .0260$). Pairwise comparisons with t-tests and Holm correction for multiple testing show that average contributions in Free are significantly lower than in both Cheap ($t = -2.3296$, $p = .0450$) and Expensive ($t = -2.5020$, $p = .044$), while the latter two do not differ significantly ($t = -0.1777$, $p = .8594$). These results indicate the positive impact of the availability of restrictive policies

on contribution rates. However, observing statistically significant differences in average contribution rates in the different treatments would again not yet allow us to determine whether the differences stem from the mere availability of such policies or from their actual implementation. To understand how the relocation decisions, contribution decisions, policy treatment variations and policy voting decisions of citizens interact, we continue our analysis at the participant×period level using multilevel probit regressions. Table 4 presents the results.

Table 3:
Treatment summary for migrants contributing to the welfare system of the more developed country

Treatment	**Sessions**	**Average contribution rates**
FREE	8	36.6
CHEAP	9	56.6
EXPENSIVE	9	60.0

Note: The table presents the number of sessions and average contribution shares over periods 1 through 20, by treatment.

Our models again account for our nested data structure at the participant (level 1), period (level 2) and matching group (level 3) levels. Model 5 regresses the binary contribution decisions of migrants in the MDC, i.e., $ContribOwn_t$ (1 = migrated and contributed) on the treatment dummies FREE, CHEAP, and EXPENSIVE as well as on their interactions with the period variable P. Here, the treatment dummies are neither significantly different from zero ($p > .05$) nor from each other (Tukey post-hoc tests for all pairwise comparisons $p > .05$). We do, however, find significant interaction terms with the period in both FREE ($b = -0.08$, $z = -5.7465$, $p < .0001$) and CHEAP ($b = -0.04$, $z = -2.9762$, $p = .0029$), indicating that the contribution rates in these two treatments decrease over time. A log-likelihood ratio test comparing Model 5 to the empty NULL-Model finds increased model fit ($\chi^2(5) = 36.2117, p < .0001$). Similarly, AIC decreases from 1631.93 in the NULL-Model to 1605.72 in Model 5, again indicating increased model fit stemming from the addition of the variables included in Model 5.

Model 6 extends Model 5 by including dummy variables for a migrant's own relocation and contribution decisions both in the first period ($RelocateOwn_{t=1}$, $ContribOwn_{t=1}$) and in the previous period ($RelocateOwn_{t-1}$, $ContribOwn_{t-1}$). We also include variables capturing the other migrants' relocation and contribution decisions in the previous period ($RelocateOthers_{t-1}$, $ContribOthers_{t-1}$). We find a significant, positive effect in terms of the migrant's own contribution in the first period ($b = 0.98$, $z = 4.6755$, $p < .0001$) and in the previous period ($b = 0.42$, $z = 4.1730$, $p < .0001$) as well as in terms of the other migrants' relocations in the previous period ($b = -0.27$, $z = -2.47867$, $p = .0132$) and contributions in the previous period ($b = 0.47$, $z = 6.3701$, $p < .0001$). Regarding model fit, we find that AIC decreases from 1605.72 to 1525.54 for Model 6, indicating increased model fit stemming from the additional predictors. A significant likelihood-ratio test confirms this finding ($\chi^2(6) = 92.1776, p < .0001$).

Model 7 includes a dummy variable coding whether citizens voted to implement the restrictive policy in the previous period ($Policy_{t-1}$). This variable obtains a significant,

Table 4:
Multilevel probit regression for a migrant contributing to the welfare system in the more developed destination country.

Dependent Variable: $ContribOwn_t$				
	(5)	**(6)**	**(7)**	**(8)**
FREE (0.0)	0.28	−0.11		
	(0.34)	(0.38)		
CHEAP (-1.2)	0.49	0.07	0.96*	0.73
	(0.31)	(0.35)	(0.48)	(0.49)
EXPENSIVE (-2.0)	0.09	−0.30	0.47	0.55
	(0.31)	(0.34)	(0.46)	(0.47)
FREE:P	−0.08***	−0.06***		
	(0.01)	(0.01)		
CHEAP:P	−0.04**	−0.03*	−0.06**	−0.05*
	(0.01)	(0.01)	(0.02)	(0.02)
EXPENSIVE:P	−0.02	−0.02	−0.05*	−0.05*
	(0.01)	(0.01)	(0.02)	(0.02)
$RelocateOwn_{t=1}$		−0.51	−0.36	−0.35
		(0.26)	(0.33)	(0.35)
$RelocateOwn_{t-1}$		0.04	0.11	0.08
		(0.16)	(0.21)	(0.21)
$ContribOwn_{t=1}$		0.98***	1.00***	1.03***
		(0.21)	(0.30)	(0.30)
$ContribOwn_{t-1}$		0.42***	0.41**	0.41**
		(0.10)	(0.16)	(0.16)
$RelocateOthers_{t-1}$		−0.27*	−0.47**	−0.47**
		(0.11)	(0.14)	(0.15)
$ContribOthers_{t-1}$		0.47***	0.56***	0.57***
		(0.07)	(0.11)	(0.11)
$Policy_{t-1}$			−0.81***	
			(0.13)	
CHEAP:$Policy_{t-1}$				−0.46*
				(0.19)
EXPENSIVE:$Policy_{t-1}$				−1.18***
				(0.20)
AIC	1605.72	1525.54	746.15	741.24
ΔAIC	−26.21	−80.18	−35.86	−40.77
Log Likelihood	−793.86	−750.14	−360.14	−356.50
Num. obs.	1482	1482	756	756
Num. groups: ID	78	78	54	54
Num. groups: R.S	26	26	18	18
Num. groups: Period	19	19	14	14

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Note: The dependent variable, $ContribOwn_t$, is migrant i's binary decision to relocate and contribute (1) to the welfare system of the MDC in period t or not (0). Our regressors include dummy variables for all treatments (FREE, CHEAP, EXPENSIVE), thus estimating the models without constant. We also include the full set of treatment interactions with the period variable P to control for a time trend. $RelocateOwn_{t=1}$ is migrant i's (non-)relocation in period 1. $RelocateOwn_{t-1}$ is migrant i's once-lagged (non-)relocation decision. $RelocateOthers_{t-1}$ is the once-lagged share of migrants other than migrant i who chose to relocate; it equals 0 if no other migrant relocated, 1 if one, and 2 if both other migrants relocated. $ContribOwn_{t=1}$ is migrant i's (non-)contribution in period 1, conditional on relocation. $ContribOwn_{t-1}$ is migrant i's once-lagged (non-)contribution decision, conditional on relocation. $ContribOthers_{t-1}$ is the once-lagged share of migrants other than migrant i who chose to relocate and contribute; it equals 0 if no other migrant contributed, 1 if the other migrant (out of a total of two) or all other migrants (out of a total of three) contributed and 2 if all other migrants (out of a total of three) contributed. $Policy_{t-1}$ is a dummy variable for whether the restrictive policy was implemented in the previous period (1) or not (0), starting with period 6, in which voting for the restrictive policy first becomes available. We drop treatment FREE when we include $Policy_{t-1}$, since there is no option to restrict migration in this treatment. We finally include the full set of treatment interactions with $Policy_{t-1}$ to test whether policy decisions affect subsequent relocation decisions differently in the two treatments that allowed citizens to vote for policies. Furthermore, our use of lagged variables and data on citizens' voting decisions (available from period 6) result in a limited sample period. To facilitate the comparison between Model 6 and Model 7, we exclude period 1 in Model 6. Thus, Model 6 and Model 7 use dependent variable observations from periods 2 through 20, and Model 8 and Model 9 from periods 7 through 20. We report standard errors in parentheses.

negative coefficient ($b = -0.81$, $z = -6.0186$, $p < .0001$), indicating that the implementation of the restrictive migration policy decreases the probability of migration and subsequent contribution to the welfare system. To investigate whether the two different migration costs in CHEAP and EXPENSIVE have different effects, Models 8 includes the interactions of the policy implementation in the previous period with the two treatments. This reveals that, while there is still a significant negative effect for the implementation in CHEAP ($b = -0.46$, $z = -2.4881$, $p = .0128$), the effect is more strongly significant in EXPENSIVE ($b = -1.18$, $z = -5.8924$, $p < .0001$). As the inclusion of the policy decision forces us to exclude observations from treatment FREE, where such a decision was not possible, we replicate Model 6 with the sample used in both Models 7 and 8 to investigate model fit. Compared to the AIC of 782.01 for the replicated Model Model 6', AIC decreases to 746.15 and 741.24 in Models 7 and 8, respectively. Likelihood-ratio tests confirm the increased model fit for both Model 7 ($\chi^2(1) = 37.8569, p < .0001$) and Model 8 ($\chi^2(2) = 44.7745, p < .0001$).

Our results have mixed implications for Hypothesis 3, which stated that the looming possibility of the implementation of policies imposing migration costs increases the probability of migrants contributing to the MDC welfare system. While we find significant differences in contribution rates between treatments using an ANOVA, these overall differences disappear when we control for the overall time trend and for interactions between treatments and time.

Hypothesis 3 posits that the mere availability of (more) restrictive policies motivates (more) migrants to contribute to the MDC welfare system. Overall period average contribution rates would support this hypothesis, as average contribution rates are highest in EXPENSIVE (60.0 percent), followed by CHEAP (56.6) and by FREE (36.6 percent). However, pairwise comparisons reveal significant difference in contribution rates only between FREE and both CHEAP and EXPENSIVE; the latter two do not differ significantly. Furthermore, Tukey post-hoc tests detect no significant differences In light of these findings, we formulate our third result in favor of a modified third hypothesis:

Result Hypothesis 3 *The mere availability of restrictive policies motivates migrants to contribute, yet the extent of restrictiveness available in the policies does not affect contribution rates significantly.*

Probing deeper, however we find a slight downward trend in contributions over time, which is significant for FREE and CHEAP, as demonstrated by Model 5. We thus formulate our third side result as follows:

Side result 3 *Migrants' contributions decline over time, with a lower rate of decline in more restrictive policy environments.*

Hypothesis 4 captures our expectation that migrants who are willing to contribute will not relocate to the MDC under restrictive policies. Models 7 and 8 support this hypothesis for both treatments. Migrants' contribution rates are higher when restrictive policies are available for implementation, yet they are significantly lower when these policies actually get implemented. In other words, migrants condition their willingness to contribute on citizens abstaining from voting for restrictive policies. We thus find support for our fourth hypothesis.

Result Hypothesis 4 *Migrants' probability of contributing to the MDC's welfare system decreases in the period following the implementation of the restrictive policy.*

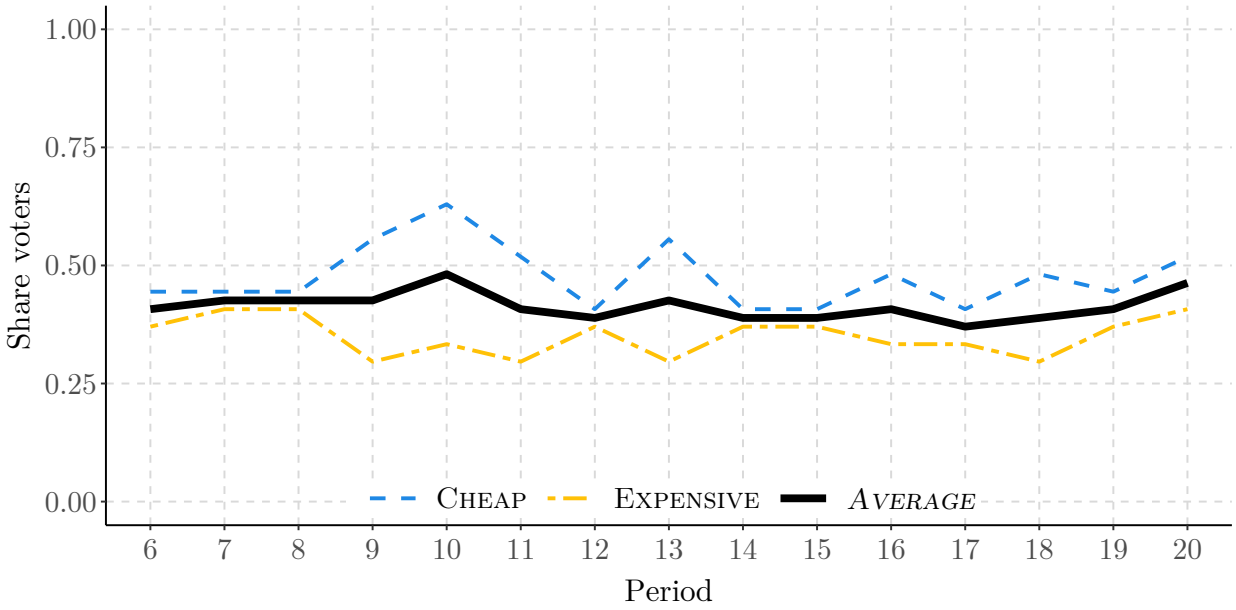
Furthermore, we find that migrants are significantly more likely to contribute to the MDC's welfare system when they and other migrants in their matching group contributed in the past. However, when the restrictive policy gets implemented, migrants' probability of contributing tends to significantly decrease in the number of other migrants relocating to the MDC. We thus formulate our final side result as follows:

Side result 4 *Migrants condition their contribution behavior not only on citizens' voting behavior but also on other migrants' behavior in their matching group. Thus, their contribution depends on their own and others' past contributions. Furthermore, citizens implementing the restrictive policy depresses migrants' probability of both relocating and contributing thereafter.*

4.2. Destination country citizen behavior

We complete our analysis by studying citizens' average and time-varying rates of voting for restrictiveness, depicted both as the overall average and separately by treatment, in Figure 5. Note that as policy implementation requires a majority vote (i.e., two of the tree citizens voting in favor), implementation rates differ slightly from voting rates (but they exhibit the same trends, as documented by online appendix Figure OA.1). We do not observe an endgame effect in the form of a material increase in the share of citizens voting for the implementation of the restrictive policy. Both for this reason and in the interest of consistency with the results regarding the migrants, we thus do not exclude any periods from our further analyses of citizen behavior.

Figure 5:
Time path of the average share of citizens voting for the implementation of the restrictive policy



Note: The solid line indicates the average share of citizens voting for the implementation of the restrictive policy, averaged over all treatments (*AVERAGE*); dashed lines indicate shares under the restrictive policies (CHEAP and EXPENSIVE). Average voting rates are 0, 1/3, 2/3 or 1, depending on the number of citizens in a matching group that vote for implementing the restrictive policy.

Similar to migrants' relocation and contribution behavior, we do not observe a clear time trend in citizens' voting behavior. The overall share of citizens voting for the implementation of the restrictive policy starts at 40.7 percent in period 6 and ends at 46.3 percent in period 20. However, we see clearly lower voting rates throughout the experiment in treatment EXPENSIVE, with rates starting at 37.0 percent in period 6 and ending at 40.7 percent in period 20. In EXPENSIVE, citizens on average vote for the implementation of the restrictive policy in 35.1 percent of all votes. In contrast, in CHEAP they voted for the implementation in 47.7 percent of all votes. However, a one-way, between-participants ANOVA of participant average voting rates in periods 6 through 20 does not indicate a significant difference ($F(1, 52) = 2.00$, $p = .1636$). This result suggests that EXPENSIVE and CHEAP citizens do not differ significantly in their use of the restrictive policy. In general, migrants' higher average contribution rates in CHEAP and EXPENSIVE compared to FREE would be consistent with restrictive policies having a positive impact on average contribution rates. However, similar to the analysis of migrants, observing differences in average voting rates in the different treatments alone does not allow us to pin down whether the differences arise from the mere availability of such policies or from their actual implementation. We thus again turn to studying the interdependence between relocation decisions, contribution decisions, policy treatment variations, and policy voting decisions.

We analyze predictors of citizen voting behavior using multilevel probit regressions and

Table 5:
Multilevel probit regression for a citizen voting for implementation of the restrictive policy.

Dependent Variable: $VoteOwn_t$				
	(9)	**(10)**	**(11)**	**(12)**
CHEAP (-1.2)	0.09^{***}	-0.83^{*}	-0.83^{*}	-0.88
	(0.00)	(0.33)	(0.33)	(0.69)
EXPENSIVE (-2.0)	-0.53^{***}	-1.22^{***}	-1.22^{***}	-1.70^{***}
	(0.00)	(0.32)	(0.32)	(0.45)
CHEAP:P	-0.02^{***}	-0.01	-0.01	-0.03
	(0.00)	(0.02)	(0.02)	(0.02)
EXPENSIVE:P	-0.00	0.00	0.00	0.00
	(0.00)	(0.02)	(0.02)	(0.02)
$VoteOwn_{t=6}$		1.10^{***}	1.10^{***}	1.18^{***}
		(0.24)	(0.24)	(0.24)
$VoteOwn_{t-1}$.		0.78^{***}	0.78^{***}	0.78^{***}
		(0.14)	(0.17)	(0.18)
$Policy_{t-1}$			-0.00	-0.11
			(0.15)	(0.16)
CHEAP:$RelocateShare_{t-1}$				0.35
				(0.23)
EXPENSIVE:$RelocateShare_{t-1}$				0.52^{***}
				(0.13)
CHEAP:$ContribShare_{t-1}$				-0.44^{***}
				(0.10)
EXPENSIVE:$ContribShare_{t-1}$				-0.54^{***}
				(0.12)
AIC	798.18	746.13	748.13	712.92
ΔAIC	4.05	-52.05	2	-35.21
Log Likelihood	-392.09	-364.07	-364.07	-345.27
Num. obs.	756	756	756	756
Num. groups: ID	54	54	54	54
Num. groups: R.S	18	18	18	18
Num. groups: Period	14	14	14	14

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Note: The dependent variable, $Vote_t$, is citizen i's binary decision whether to vote for (1) or against (0) the restrictive policy in period t. Our regressions contain dummies for both treatments with actual voting (CHEAP, EXPENSIVE), such that the models are estimated without constant. We also insert the full set of treatment interactions with the period variable P to control for a time trend. $Vote_{t=6}$ is citizen i's vote in period 6. $Vote_{t-1}$ is citizen i's once-lagged vote. $Policy_{t-1}$ is a dummy variable for whether the restrictive policy was implemented in the previous period (1) or not (0). We also insert the full set of treatment interactions with $RelocateShare_{t-1}$ to test whether relocations affect subsequent policy votes. $RelocateShare_{t-1}$ equals 0 if no migrant relocates, 1 if one does, 2 if two migrants do and 3 if all three migrants relocate. We finally include the full set of treatment interactions with $ContribShare_{t-1}$ to test whether contributions affect subsequent restriction votes. $ContribShare_{t-1}$ is the once-lagged share of migrants who chose to relocate and contribute; depending on how many migrated, it equals 0 if no migrant contributed, 1 if one migrant contributed, 2 if two migrants contributed, and 3 if all migrants contributed. Our use of lagged variables causes data loss at the beginning of the observation period. We therefore, an in the interest of comparability, exclude period 6 from the data used for both Models 9 and 10. Thus, all models comprise dependent variable observations from periods 7 through 20 (the possibility to vote on restriction becomes available in period 6). We report standard errors in parentheses.

present the results in Table 5. We again account for the nested data structure at the participant (level 1), period (level 2) and matching group (level 3) levels.

Model 9, our first regression model analyzing citizen voting behavior, regresses the binary voting decision $VoteOwn_t$ (1 = for the restrictive policy) on variables for the restrictive policy treatments CHEAP and EXPENSIVE as well as on their interactions with the period variable P. We use a log-likelihood ratio test to compare Model 9 to the empty NULL-Model, yet find no significant difference ($\chi^2(3) = 1.9495, p = .5829$). AIC increases from 794.13 in the NULL-Model to 798.18 in Model 9. We find that both treatment dummies show a significant impact on citizens' voting behavior that is positive for CHEAP ($b = 0.09$, $z = 60.7209$ $p < .0001$) and negative for EXPENSIVE ($b = -0.53$, $z = -364.0836$ $p < .0001$). The Tukey post-hoc test that the difference between the two dummies' coefficients is statistically significant ($z = -300.0180$, $p < .0001$). At the same time, the interaction of CHEAP with the period variable P indicates a significant decrease in the strength of the treatment effect over time ($b = -0.02$, $z = -10.7903$, $p < .0001$).

Model 10 adds two once-lagged variables capturing citizens' own past voting behavior: their voting behavior in the first voting period (i.e., period six) $VoteOwn_{t=6}$ and in the previous period $VoteOwn_{t-1}$. Both variables have a significant, positive effect, which indicates path-dependency in citizens' votes for restrictive measures ($b = 1.10$, $z = 4.5268$, $p < .0001$ and $b = 0.78$, $z = 5.6307$, $p < .0001$, respectively). Compared to Model 9, AIC decreases from 798.18 to 746.13, which together with a significant log-likelihood ratio test once more indicates increased model fit ($\chi^2(2) = 56.0512, p < .0001$).

Model 11 includes a once-lagged dummy variable for the implementation of a policy $Policy_{t-1}$. Interestingly, this variable does not seem to affect citizen's voting behavior ($b = -0.00$, $z = -0.0055$ $p < .9956$), suggesting that citizens make decisions mostly based on their own past behavior, not on the aggregate of all citizens' behaviors in their matching group. AIC also increases from 746.13 in Model 10 to 748.13 in Model 11 and the log-likelihood ratio test similarly suggests that Model 11 does not improve upon Model 10 ($\chi^2(1) = 0.0000, p = .9969$).

Our analysis of citizens' voting behavior comes to a close with Model 12. We include once-lagged treatment interactions in both the relocation $RelocateShare_{t-1}$ and contribution $ContribShare_{t-1}$ aspects of migrants' behavior in order to analyse the interdependence between these migrants' and citizens' behaviors. Apart from the interaction of CHEAP with migrants' relocation behavior, all interaction terms are significant (all $p < .0001$). Despite the lack of significance in CHEAP for a moment, migrants' past relocation to the MDC seems to increase the probability of a citizen voting in favor of the restrictive policy in both treatments CHEAP ($b = 0.35$, $z = 1.5419$ $p = .1231$) and EXPENSIVE ($b = 0.52$, $z = 3.9313$ $p < .0001$). However, when migrants who relocated to the MDC contributed to the welfare system there, citizen became significantly less likely to vote in favor of the restrictive policy in both treatments, CHEAP ($b = -0.44$, $z = -4.2613$ $p < .0001$) and EXPENSIVE ($b = -0.54$, $z = -4.4208$ $p < .0001$). The decrease in AIC from 748.13 in Model 11 to 712.92 in Model 12 as well as the log-likelihood ratio test ($\chi^2(4) = 43.2098, p < .0001$) indicate increased model fit.

Hypothesis 5 captured our expectation that citizen votes for the restrictive policy de-

crease with the number of migrants who contributed to the MDC welfare system in the (recent) past. Both the increased model fit when moving from Model 11 to Model 12 and the significant positive impact on the treatment interactions with migrants' contribution behavior lend support to Hypothesis 5. We thus formulate our fifth result as follows:

Result Hypothesis 5 *Citizens' probability of voting for the restrictive policy decreases with the number of migrants who contributed to the MDC welfare system in the previous period.*

We furthermore find that citizens condition their voting behavior on their own past behavior only; they do not react to other citizens' votes. In addition, we detect a significant effect of migrants' relocation behavior on citizens' voting behavior. In light of this findings, we formulate the following side result.

Side result 5 *The behavior of citizens is path-dependent. Other citizens' decisions are not decisive, while relocating migrants drive subsequent votes for the restrictive policy.*

5. Conclusion

Migration and migration policies are major issues dominating world politics. Over 90 percent of all migrants are economic migrants (Ratha, 2014), i.e., people leaving their homes for a better economic outlook. Yet, economic migrants are often viewed by destination countries as a social and economic burden. Therefore countries, especially Western countries, tend to spend significant resources towards limiting the number and/or type of immigrants they allow to enter their borders.

Our study concentrates on one particular point of contention in this major debate. We investigate the effectiveness of restrictive migration policies in terms of economic migrants' willingness to relocate from a less developed country (LDC) to a more developed country (MDC) and participate in this country's labor market. We find a clear, reciprocal relationship between migrant and citizen behavior. Migrants relocate to, but do not contribute to the MDC welfare system when citizens have implemented the restrictive policy in the recent past. However, when citizens only threaten to implement the restrictive policy, migrants' willingness to contribute to the system increases. Citizens implement the restrictive policies when they observe that migrants relocate to their country, especially when a very restrictive policy is available; but they refrain from implementation when they observe migrants contributing. In the short run, the implementation of restrictive policies thus seems to be an effective way to get migrants to contribute, since contributions are significantly lower under open migration policies. In the long run, however, restrictive policies lose their power and lead to a downward trend in migrants' contributions; this, indeed constitutes a poor basis for migrants' and citizens' beneficial co-existence in the destination country.

Probing deeper into our data, we find that the behavioral regularities are more complex. Migrants condition their relocation behavior on their own inherent type (represented by their first relocation decision) as well as on the relocation and contribution decisions of other migrants. The relocations and contributions of others thus have a positive effect. In terms of their contribution behavior, migrants strongly condition their decisions on their

own and other migrants' contribution behavior. Again, others relocating has a positive effect. Unlike migrants, citizens do not condition their behavior on their peers. Our results suggest that only their own characteristics and past decisions have explanatory power for their future choices.

In light of our findings it may be beneficial to intensify efforts into investigating theories of public policy-making to develop appropriate migration or employment policies. We believe that the goal must be to find ways to manage and make productive use of economic migration, in order to boost social inclusion and economic growth in destination countries. For example, Australia tightened its migration policy in late 1990 by demanding better English language skills from migrants and by delaying migrants' access to welfare benefits by 2 years. The aim was to attract labor market-ready economic migrants. Indeed, Australia's policy change contributed significantly to productive efficiency such that the economic performance leveled up (Nahm and Tani, 2015); the policy change, however, had no significant impact on improving migrants' skill utilization in the labor market. In particular, the quality of the occupation-education match did not improve (Tani, 2020) because social integration depends on destination countries' abilities to provide migrants with access to labor market opportunities and to reward the human capital supplied by economic migrants (Nahm and Tani, 2015). Considering our findings, we recommend that policy-makers adapt migration policies to promote socially fair outcomes. This is of particular relevance for economic migrants coming from less developed countries, where clear regulations are often absent or do not get enforced. We thus argue that economic migrants may have less difficulty committing themselves to social fairness than to fulfilling strict regulations.

Policy makers can contribute to tackling the global problem of aging societies by implementing open migration policies, while instituting rules that threaten incoming migrants with consequences if they are not willing to integrate into society. Global estimates show that the developed world may run out of workers to maintain its current standard of living by the end of this century – a problem which is particularly severe for Northern America and Europe (UNDESA, 2020). Both are, however, in the fortunate position of being the destinations of choice for many economic migrants (World Bank Group, 2019).

Future research will hopefully be able to use our experimental task to test various other policies, such as anti-discrimination policies. Despite the idea of having a close-to-reality method for testing and designing different decision-making processes of citizens and migrants, we are aware that our design simplifies the world. For example, we believe that our results should be corroborated by follow-up studies with real economic migrants; in addition to our results from students playing the role of economic migrants, real economic migrants may provide further insights. Both migrants and destination country citizens deserves research efforts that carries the potential to improve their respective lives.

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Online Appendix to 'Migration Policy and Labor Market Integration'

Kerstin Mitterbacher, Stefan Palan, Jürgen Fleiß

A. Manipulation check of group identity

Using a group identity scale developed by Doosje et al. (1995), we measure whether our group manipulation is successful, i.e., whether participants feel that they belong to their group of over- or underestimators in Part A and to their group of economic migrants or citizens in Part B. (Note that we term what we call 'economic migrants' in the paper as 'blue citizens' in the experiment, and what we term 'citizens' in the paper as 'green citizens' in the experiment.) We adapt Böhm et al.'s (2013) measure for our experimental setting and create the following four items: 'I see myself as an overestimator', 'I am glad to be an overestimator', 'I feel strong ties with overstimators', 'I identify with other overestimators', for participants that belong to the overestimator group. For the group of underestimators, migrants, and citizens, we use an analogous version. During the estimation task, we present the items for the over- and underestimators, and during the post-experiment questionnaire, the items for economic migrants and citizens. Participants rate each item on a scale from 1 (totally disagree) to 7 (totally agree). We use participants' ratings as independent observations for calculating our results. The first measurement of group identity (using 'over- and underestimators') shows a mean value of 3.88 ($SD = 1.02$). This is consistent with earlier experiments (Thielmann and Böhm, 2016; Weisel and Böhm, 2015; Mitterbacher et al., 2021), which we take as evidence for the identity manipulation of the group having been successful. The second measurement of group identity (using 'migrants' and 'citizens' instead of 'over- and underestimators') shows a slightly lower mean value of 3.46 ($SD = 1.55$) for economic migrants and a higher mean value of 4.84 ($SD = 1.57$) for citizens. As Mitterbacher et al. (2021) argue, these differences may stem from the different modes of decision-making in the experiment. While citizens make policy decisions collectively in their group, migrants make their relocation and contribution decisions individually. Furthermore, the citizen role in the experiment may have been perceived as having higher social status such that participants may have been happier to identify with it.

B. Robustness checks

We include participant characteristics as control variables to ensure the effect on the results is unaffected by these characteristics. As mentioned in the paper, our robustness checks indicate broad agreement with our reported results – with the exceptions that we lay out in this section.

Table OA.1 presents the multilevel regressions for migrants' relocation behavior including participant characteristics. Our main effects do not change signs and their coefficients remain comparable in size to Table 2 in the main paper in all specifications.

Table OA.2 presents the multi-level regressions for migrants' contribution behavior. Only Social Dominance Orientation (*SDO*) significantly impacts all models ($p < .05$ in all specifications). The treatment dummy coefficients switch signs in Model OA6. *MigrantPerception* has a significant impact on the dependent variable $Own.Contrib_t$ in Model OA7 ($b = -0.37$, $z = -2.2027$, $p = .0276$) and in Model OA8 ($b = -0.34$, $z = -2.0036$, $p = .0451$); additionally, the treatment dummy coefficients become significant in Model OA7. Furthermore, $Gender_{female}$ is found to be significantly related to $Own.Contrib_t$ in Model OA8, ($b = -0.53$, $z = -2.0689$, $p = .0386$).

Finally, Table OA.3 presents the multilevel regressions for citizens' voting behavior. Only in Model OA9 do participant characteristics make a difference. In particular, *MigrantPerception* is found to be significantly related to $Own.Vote_t$ ($b = -0.43$, $z = -2.0282$, $p = .0425$). Furthermore, the coefficient for the treatment dummy EXPENSIVE switches sign and becomes insignificant.

Table OA.1:
Robustness check of the multilevel probit regression for a migrant relocating to the more developed destination country.

	Dependent Variable: RelocateOwn$_t$			
	OA(1)	**OA(2)**	**OA(3)**	**OA(4)**
FREE (0.0)	2.66*	2.58*		
	(1.11)	(1.01)		
CHEAP (-1.2)	2.22*	2.23*	3.90*	3.48*
	(1.04)	(0.93)	(1.59)	(1.58)
EXPENSIVE (-2.0)	1.95	2.15*	3.25*	3.32*
	(1.00)	(0.90)	(1.49)	(1.47)
FREE:*P.*	0.04	0.06		
	(0.03)	(0.04)		
CHEAP:*P*	0.01	0.02	0.02	0.02
	(0.02)	(0.02)	(0.04)	(0.04)
EXPENSIVE:*P*	−0.04**	−0.04**	−0.04	−0.04
	(0.01)	(0.01)	(0.02)	(0.02)
$RelocateOwn_{t=1}$		0.54*	0.98**	1.01**
		(0.21)	(0.35)	(0.34)
$RelocateOwn_{t-1}$		0.31	0.23	0.24
		(0.17)	(0.22)	(0.23)
$ContribOwn_{t-1}$		0.13	0.13	0.11
		(0.14)	(0.20)	(0.20)
$RelocateOthers_{t-1}$		−0.30*	−0.52**	−0.52**
		(0.13)	(0.17)	(0.18)
$ContribOthers_{t-1}$		0.33***	0.61***	0.59***
		(0.10)	(0.14)	(0.14)
$Policy_{t-1}$			−0.88***	
			(0.18)	
CHEAP:$Policy_{t-1}$				−0.35
				(0.31)
EXPENSIVE:$Policy_{t-1}$				−1.09***
				(0.21)
$Nationality_{domestic}$	−0.07	−0.21	−0.06	−0.06
	(0.27)	(0.23)	(0.36)	(0.35)
Age	0.02	−0.01	−0.05	−0.06
	(0.03)	(0.02)	(0.04)	(0.04)
$Gender_{female}$	0.09	0.19	0.04	0.05
	(0.23)	(0.20)	(0.33)	(0.33)
SDO	−0.29	−0.22	−0.08	−0.03
	(0.18)	(0.15)	(0.28)	(0.28)
PoliticalInterest	0.06	0.09	0.02	0.02
	(0.08)	(0.07)	(0.11)	(0.11)
MigrantPerception	−0.16	−0.15	0.10	0.13
	(0.15)	(0.13)	(0.20)	(0.20)
MigrantSocialSystem	0.03	−0.02	−0.16	−0.18
	(0.16)	(0.14)	(0.21)	(0.20)
MigrantLaborMarket	−0.12	−0.18	−0.25	−0.25
	(0.16)	(0.14)	(0.21)	(0.21)
AIC	743.93	725.79	454.07	452.07
Log Likelihood	−354.96	−340.90	−206.04	−204.03
Num. obs.	1482	1482	756	756
Num. groups: ID	78	78	54	54
Num. groups: R.S	26	26	18	18
Num. groups: Period	19	19	14	14

$^{***}p < .001$; $^{**}p < .01$; $^{*}p < .05$

Note: The dependent variable, $Own.Relocat_t$, is migrant i's binary decision whether (1) or not (0) to relocate to the MDC in period t. Besides the independent variables listed in Table 2, we include a number of participant variables as control variables to evaluate the robustness of our results. $Nationality_{domestic}$ is a dummy variable which is either 1 if the participant is of Austrian nationality or 0 if not. $Gender_{female}$ is a dummy variable which is either 1 if the participant is female or 0 if the participant is male or of non-binary gender. *SDO* represent the participant's level of social dominance orientation according to Pratto et al. (1994). It displays the mean value of the 16-item SDO scale where items are rated on a 5-point scale, with 0 = strongly disagree to 4 = strongly agree. *PoliticalInterest* represent the participant's political interest. It is a numerical value that ranges from 0 = not at all to 4 = very much. The three variables *MigrantPerception*, *MigrantSocialSystem*, *MigrantLaborMarket* represent the participants' perception concerning migrants' coming to the destination country (resp. Austria) and their impact on the country's welfare system and labor market. These variables are also numerical with values ranging from 0 = Very negative to 4 = Very positive for *MigrantPerception* and for the others from 0 = burden a lot to 4 = unburden a lot. We report standard errors in parentheses.

Table OA.2:
Robustness check of the multilevel probit regression for a migrant contributing to the welfare system in the more developed country.

	Dependent Variable: $ContribOwn_t$			
	OA(5)	**OA(6)**	**OA(7)**	**OA(8)**
FREE (0.0)	1.54	1.30		
	(1.06)	(0.90)		
CHEAP (-1.2)	1.74	1.48	3.81^{**}	3.65^{**}
	(1.03)	(0.87)	(1.22)	(1.25)
EXPENSIVE (-2.0)	1.25	0.99	3.17^{**}	3.32^{**}
	(1.00)	(0.84)	(1.17)	(1.20)
FREE:P	-0.08^{***}	-0.05^{***}		
	(0.01)	(0.01)		
CHEAP:P	-0.04^{**}	-0.03^{*}	-0.06^{**}	-0.05^{*}
	(0.01)	(0.01)	(0.02)	(0.02)
EXPENSIVE:P	-0.02	-0.02	-0.05^{*}	-0.05^{*}
	(0.01)	(0.01)	(0.02)	(0.02)
$RelocateOwn_{t=1}$		-0.55^{*}	-0.36	-0.32
		(0.27)	(0.33)	(0.33)
$RelocateOwn_{t-1}$		0.05	0.13	0.11
		(0.16)	(0.20)	(0.21)
$ContribOwn_{t=1}$		0.92^{***}	0.83^{**}	0.84^{**}
		(0.21)	(0.27)	(0.28)
$ContribOwn_{t-1}$		0.42^{***}	0.41^{**}	0.41^{**}
		(0.10)	(0.16)	(0.16)
$RelocateOthers_{t-1}$		-0.28^{*}	-0.45^{**}	-0.46^{**}
		(0.11)	(0.14)	(0.15)
$ContribOthers_{t-1}$		0.48^{***}	0.61^{***}	0.61^{***}
		(0.07)	(0.11)	(0.10)
$Policy_{t-1}$			-0.83^{***}	
			(0.13)	
CHEAP:$Policy_{t-1}$				-0.50^{**}
				(0.18)
EXPENSIVE:$Policy_{t-1}$				-1.18^{***}
				(0.20)
$Nationality_{domestic}$	-0.05	0.05	-0.24	-0.21
	(0.27)	(0.22)	(0.31)	(0.28)
Age	-0.03	-0.02	-0.03	-0.04
	(0.03)	(0.02)	(0.03)	(0.03)
$Gender_{female}$	-0.39	-0.27	-0.50	-0.53^{*}
	(0.24)	(0.20)	(0.27)	(0.26)
SDO	-0.39^{*}	-0.34^{*}	-0.60^{**}	-0.60^{*}
	(0.18)	(0.15)	(0.23)	(0.24)
PoliticalInterest	-0.02	-0.02	-0.00	-0.01
	(0.09)	(0.07)	(0.09)	(0.09)
MigrantPerception	0.02	-0.11	-0.37^{*}	-0.34^{*}
	(0.16)	(0.13)	(0.17)	(0.17)
MigrantSocialSystem	-0.15	-0.07	-0.02	-0.04
	(0.16)	(0.13)	(0.17)	(0.17)
MigrantLaborMarket	0.14	0.05	0.06	0.08
	(0.16)	(0.13)	(0.17)	(0.18)
AIC	1611.63	1533.38	746.47	742.13
Log Likelihood	-788.82	-743.69	-351.23	-348.07
Num. obs.	1482	1482	756	756
Num. groups: ID	78	78	54	54
Num. groups: R.S	26	26	18	18
Num. groups: Period	19	19	14	14

$^{***}p < .001$; $^{**}p < .01$; $^{*}p < .05$

Note: The dependent variable, $Own.Contrib_t$, is migrant i's binary decision whether (1) or not (0) to relocate and contribute to the welfare system of the MDC in period t. Besides the independent variables listed in Table 4, we include a number of participant variables as control variables to evaluate the robustness of our results. $Nationality_{domestic}$ is a dummy variable which is either 1 if the participant is of Austrian nationality or 0 if not. $Gender_{female}$ is a dummy variable which is either 1 if the participant is female or 0 if the participant is male/of non-binary gender. *SDO* represent the participant's level of social dominance orientation according to Pratto et al. (1994). It displays the mean value of the 16-item SDO scale where items are rated on a 5-point scale, with 0 = strongly disagree to 4 = strongly agree. *PoliticalInterest* represent the participant's political interest. It is a numerical value that ranges from 0 = not at all to 4 = very much. The three variables *MigrantPerception*, *MigrantSocialSystem*, *MigrantLaborMarket* represent the participants' perception concerning migrants' coming to the destination country (resp. Austria) and their impact on the country's welfare system and labor market. These variables are also numerical with values ranging from 0 = Very negative to 4 = Very positive for *MigrantPerception* and for the others from 0 = burden a lot to 4 = unburden a lot. We report standard errors in parentheses.

Table OA.3:
Robustness check of the multilevel probit regression for a citizen voting for implementation of the restrictive policy.

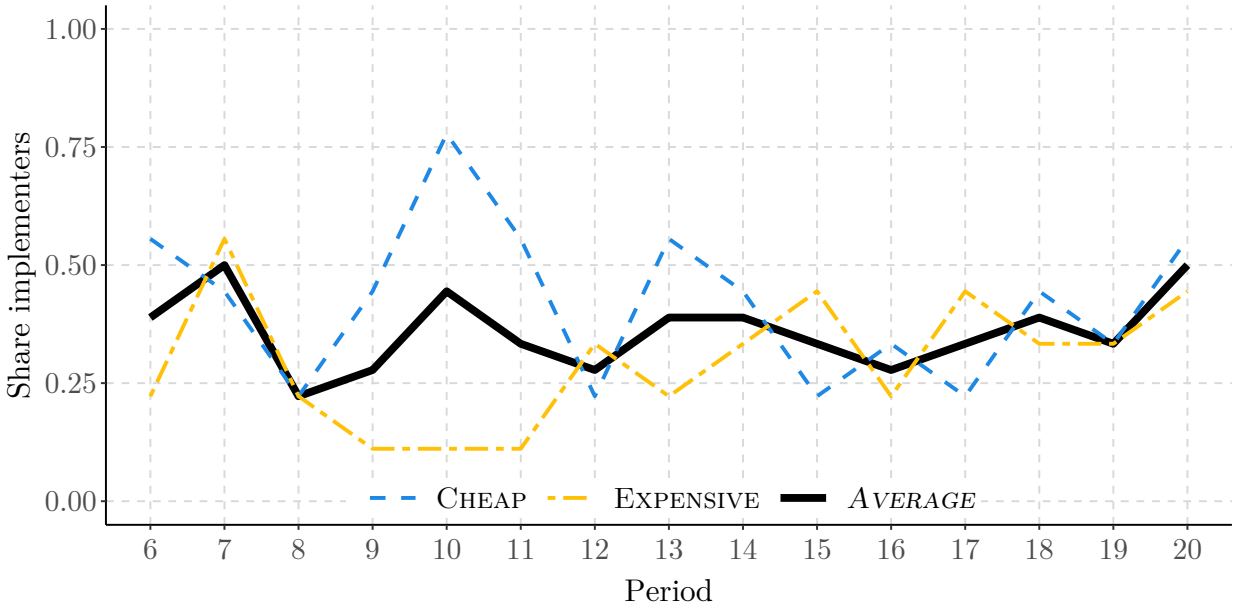
	Dependent Variable: $VoteOwn_t$			
	OA(9)	**OA(10)**	**OA(11)**	**OA(12)**
CHEAP (-1.2)	1.28	−0.82	−0.81	−1.66
	(1.47)	(0.98)	(0.98)	(1.11)
EXPENSIVE (-2.0)	0.81	−1.13	−1.14	−2.44*
	(1.48)	(0.98)	(0.98)	(0.99)
CHEAP:P	−0.02	−0.01	−0.01	−0.03
	(0.02)	(0.02)	(0.02)	(0.02)
EXPENSIVE:P	−0.00	0.00	0.00	0.00
	(0.02)	(0.02)	(0.02)	(0.02)
$VoteOwn_{t=6}$		1.05***	1.04***	1.22***
		(0.25)	(0.25)	(0.25)
$VoteOwn_{t-1}$		0.79***	0.81***	0.81***
		(0.14)	(0.17)	(0.18)
$Policy_{t-1}$			−0.03	−0.14
			(0.15)	(0.16)
CHEAP:$RelocateShare_{t-1}$				0.32
				(0.23)
EXPENSIVE:$RelocateShare_{t-1}$				0.51***
				(0.13)
CHEAP:$ContribShare_{t-1}$				−0.44***
				(0.11)
EXPENSIVE:$ContribShare_{t-1}$				−0.58***
				(0.12)
$Nationality_{domestic}$	−0.30	−0.13	−0.13	0.06
	(0.42)	(0.26)	(0.26)	(0.25)
Age	0.03	0.03	0.03	0.04
	(0.04)	(0.02)	(0.02)	(0.02)
$Gender_{female}$	−0.27	−0.10	−0.10	0.06
	(0.43)	(0.27)	(0.27)	(0.25)
SDO	−0.22	0.11	0.11	0.19
	(0.39)	(0.24)	(0.24)	(0.23)
PoliticalInterest	−0.15	−0.09	−0.09	−0.05
	(0.19)	(0.12)	(0.12)	(0.11)
MigrantPerception	−0.43*	−0.08	−0.08	0.09
	(0.21)	(0.14)	(0.14)	(0.13)
MigrantSocialSystem	0.08	−0.08	−0.08	−0.12
	(0.23)	(0.14)	(0.14)	(0.14)
MigrantLaborMarket	0.01	−0.02	−0.02	−0.11
	(0.21)	(0.13)	(0.13)	(0.12)
AIC	806.57	757.23	759.18	723.46
Log Likelihood	−388.28	−361.61	−361.59	−339.73
Num. obs.	756	756	756	756
Num. groups: ID	54	54	54	54
Num. groups: R.S	18	18	18	18
Num. groups: Period	14	14	14	14

$^{***}p < .001$; $^{**}p < .01$; $^{*}p < .05$

Note: The dependent variable, $Own.Vote_t$, is citizen i's binary decision whether (1) or not (0) to for the implementation of the restrictive policy in period t. Besides the independent variables listed in Table 5, we include a number of participant variables as control variables to evaluate the robustness of our results. $Nationality_{domestic}$ is a dummy variable which is either 1 if the participant is of Austrian nationality or 0 if not. $Gender_{female}$ is a dummy variable which is either 1 if the participant is female or 0 if the participant is male/of non-binary gender. *SDO* represent the participant's level of social dominance orientation according to Pratto et al. (1994). It displays the mean value of the 16-item SDO scale where items are rated on a 5-point scale, with 0 = strongly disagree to 4 = strongly agree. *PoliticalInterest* represent the participant's political interest. It is a numerical value that ranges from 0 = not at all to 4 = very much. The three variables *MigrantPerception*, *MigrantSocialSystem*, *MigrantLaborMarket* represent the participants' perception concerning migrants' coming to the destination country (resp. Austria) and their impact on the country's welfare system and labor market. These variables are also numerical with values ranging from 0 = Very negative to 4 = Very positive for *MigrantPerception* and for the others from 0 = burden a lot to 4 = unburden a lot. We report standard errors in parentheses.

C. Supplemental information on the empirical analysis

Figure OA.1:
Time path of average share of citizens implementing the restrictive policy



Note: The solid line shows the average share of citizens implementing the restrictive policy pooled for all policies/treatments (*AVERAGE*); dashed lines show shares under the migration policies (CHEAP and EXPENSIVE). Average implementation rates are binary; they equal 1 if citizens implemented the policy and 0 if not.

D. Experimental procedures

A. Experimental instructions

[Part A: Estimation task, instructions on screen]

Test to classify you as an over-/underestimator

We first determine whether you are an over- or an underestimator. To do so, we use a short test.

You will see a black bar in the middle of the screen. After a short delay, this bar will disappear, and you will see **multiple "X"s in a row** in its stead. The number of "X"s varies **between 5 and 30**. You will only see these "X"s for a short time period, such that it will be difficult to determine the exact number. After the "X"s were briefly visible, they will again be covered by a black bar.

Your task is to estimate the number of "X"s as precisely as possible.

The result of this estimation task is used solely for determining your role in Part B. Apart from that, it has no further influence on Part B. The estimation result may of course play a role in daily life. Depending on the situation, over- or underestimators may have an advantage, e.g., when judging positive or negative life events.

Please click "Continue" to get to the examples. Note that you will see each page only once – you cannot "go back"!

[Next screen]

Here you see some examples for possible numbers of "X"s:

XXXXX

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

These examples illustrate the minimum and the maximum numbers of "X"s that you may encounter. The upper example consists of 5 "X"s, the lower example consists of 30 "X"s.

Please concentrate now and focus on the middle of the screen.

Please click "Continue" to begin commence the test.

[End of this part of the instructions]

[Part B: Decision-making experiment, instructions on YouTube]

FREE: https://youtu.be/n9dbtgJFuEg

CHEAP: https://youtu.be/rutmT0daCx8

EXPENSIVE: https://youtu.be/6Tp4uOoIsic

[Note: The original language of the YouTube videos is German. However, subtitles are available by clicking the gear icon underneath the YouTube video.]

B. Post-experiment questionnaire

Question screen 1a

To what extent do you agree with the following statements?
(0 = “Not at all ” …6 = “Fully“

1. I feel a sense of similarity between myself and the green citizens.
2. I am glad to belong to the green citizens.
3. I feel a sense of connection to the other green citizens.
4. I identify with the green citizens.

Question screen 1b

To what extent do you agree with the following statements?
(0 = “Not at all ” …6 = “Fully“

1. I feel a sense of similarity between myself and the blue citizens.
2. I am glad to belong to the blue citizens.
3. I feel a sense of connection to the other green citizens.
4. I identify with the blue citizens.

[New screen]

Question screen 2

To what extent do you agree with the following statements?
(0 = “Not at all” …4 = “Strongly”)

1. Some groups of people are simply inferior to other groups.
2. In getting what you want, it is sometimes necessary to use force against other groups.
3. It's OK if some groups have more of a chance in life than others.
4. To get ahead in life, it is sometimes necessary to step on other groups.
5. If certain groups stayed in their place, we would have fewer problems.
6. It's probably a good thing that certain groups are at the top and other groups are at the bottom.
7. Inferior groups should stay in their place.
8. Sometimes other groups must be kept in their place.
9. It would be good if groups could be equal.
10. All groups should be given an equal chance in life.

11. Group equality should be our ideal.

12. We should do what we can to equalize conditions for different groups.

13. Increased social equality.

14. We would have fewer problems if we treated people more equally.

15. We should strive to make incomes as equal as possible.

16. No one group should dominate in society.

[Note: Items taken from Pratto, F., Sidanius, J., Stallworth, L. M., and Malle, B. F., 1994. Social dominance orientation: A personality variable predicting social and political attitudes. Journal of Personality and Social Psychology 67 (4), 741-763. DOI 10.1037/0022-3514.67.4.741. Items 9-16 reverse-coded.]

[New screen]

Question screen 3

1. Do you perceive people from poorer countries coming to Austria to improve their lives as negative or as positive?
   (0 = “Very negative” …4 = “Very positive”)

[New screen]

Question screen 4

1. When people from poorer countries come to Austria to improve their lives, does this burden or unburden Austria’s social system?
   (0 = “Burden a lot“ …4 = “Unburden a lot”)

2. When people from poorer countries come to Austria to improve their lives, does this burden or unburden Austria’s labor market?
   (0 = “Burden a lot“ …4 = “Unburden a lot”)

[New screen]

Question screen 5

1. Generally speaking: How interested are you in politics?
   (0 = “Not at all” …4 = “Very much”)

Which political party would you vote for today in Austria's elections to the National Council, if you were allowed to vote?
(“[Party 1]”, […], “[Party n]”, “Other party”, “Invalid vote”, “No vote”, “No comment”)

[New screen]

Question screen 6

1. Your age:
   (Integer between 17 and 99)

2. Your gender:
   (“Male”, “Female”, Non-binary”)

3. Your nationality:
   (“Austrian”, “Non-Austrian”)

4. Native language:
   (“German”, “Other”)

5. If you chose “Other” – what is your native language:
   (Open text)

6. What is your major:
   ([list of studies], “Other”)

7. If you chose “Other” – what is your major:
   (Open text)

[New screen]

5: Room for comments

1. If you have comments or suggestions for improving the experiment, please write them here:
   (Open text)

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