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Workers Without Borders? Culture, Migration and the Political Limits to Globalization

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Culture, Migration and the Political Limits to Globalization*

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Abstract

This paper examines the role of cultural factors in driving the politics and shape of migration policy. We show that there exists a broad *political* failure that results in inefficiently high barriers restricting the import of temporary foreign workers and also admitting an inefficiently large number of permanent migrants, but not enough to fill any labor shortage in the economy. We show that countries that are poor at cultural assimilation are better positioned to take advantage of short-term foreign worker programs than more culturally diverse and tolerant countries. A striking implication is that relaxing restrictions on the mobility of migrant workers across employers has the potential to raise host country welfare even though it increases migrant wages and lowers individual firm's profits. We also demonstrate the existence of multiple equilibria: some countries have mostly temporary migration programs and see a low degree of cultural assimilation by the migrants, while other countries rely more on permanent migrants and see much more assimilation.

Keywords: International migration; political economy; culture; assimilation; temporary workers.

JEL Classification Codes: D72; F22; J61.

1 Introduction

The single international policy reform that will arguably yield the largest welfare gains, is an easing of restrictions on international worker mobility.[1] Indeed, given these potential benefits Rodrik (2002), Kremer and Watt (2008) and Freeman (2006) have advocated programs that promote greater mobility of workers across borders. Nevertheless, if the gains really are as large as suggested, then the issue is why such extreme barriers to international worker mobility persist. We suggest that an answer perhaps lies in the impact of such migration on a country's culture, religion and ethnicity. Accordingly, in this paper we take a first step in dissecting the role of cultural factors in influencing migration policy. We ask how does concern about cultural factors influence the politics as well as size and pattern (temporary or permanent) of migration? We further ask why a government fails to reap the large economic gains from freer worker mobility, *even if* such a policy had no adverse distributional impact and where the repatriation of these workers could be costlessly enforced? Finally, we examine whether simple policy innovations can result in higher *politically* sustainable levels of cross-border worker mobility.

Much of the migration literature has focused on its economic and distributional consequences (for a recent example, see Ottaviano and Peri (2008); Hanson (2008) provides a comprehensive survey).[2] However, such distributional effects are not unique to labor; they also occur with the increased movement of goods and capital. We argue that what is distinctive about the politics of migration is that in popular perception it has the potential to affect a country's culture and identity. Until very recently, there has been a sharp distinction between economic approaches to the analysis of immigration on the one hand, and those centred on culture on the other. A recent exception is Pritchett (2006) who argues that "Of all the ideas that limit migration perhaps the most important is the idea that there is a national 'culture' and that increased labor mobility threatens that culture". This view is echoed by Freeman (2006), according to whom "...public opinion and national policies toward immigration seem to rest on issues well beyond gains and losses in the labor market. Some natives worry that immigrants will present a cultural threat to their way of life and reduce social cohesion". Recent work by Card, Dustmann and Preston (2009) empirically demonstrate the importance of cultural factors in determining attitudes towards immigration. Indeed they argue that cultural factors are far more important than economic factors

[1] See, for instance, Klein and Ventura (2006), Pritchett (2006) and Walmsley and Winters (2005).

[2] For a systematic analysis of the political economy of immigration also see Dolmas and Huffman (2004), Razin, Sadka and Swagel (2002) and Facchini and Mayda (2009).

in driving the hostility towards migrants.[3] Accordingly, in this paper we examine systematically the impact of cultural factors not just on the *size* of migration, but also its pattern. For instance, temporary guest-worker programs may be viewed as less threatening to a country's culture, identity and ethnic make-up. On the other hand, permanent migration may result in larger economic gains, but their cultural impact is also likely to be higher.

We construct a simple dynamic political economy framework where we explore this tension between the income gain from greater migration and the associated cultural cost.[4] Our framework possesses two key features. First, the objectives of employers/firms and the country's citizens are only partially aligned. While both firms and citizens benefit from having temporary workers fill any shortage in labor, the firms would prefer to retain the more productive, experienced workers for the long run, even if by doing so they become permanent residents. In contrast, citizens worry about the costs of having culturally very dissimilar migrants, especially if there is the prospect of them becoming permanent citizens. Second, government policymaking in our framework can be influenced through both lobbying and elections.[5] Citizens can threaten to vote out of office any government that chooses a migration policy against its wishes. In contrast, firms can lobby the government to retain the temporary workers and make them permanent. Under these conditions we demonstrate that there exists a broad *political* failure with regard to migration policy. All parties in the country – the government, the firms and the citizens, strictly prefer a larger guest worker program and fewer permanent workers. Nevertheless, countries let in not only an inefficiently *small* number of *temporary* migrants but also an inefficiently *large* number of *permanent* migrants. It is worth observing that these twin inefficiencies have little to do with the distributional impact of immigration, nor any administrative costs of admitting or repatriating temporary workers.

So why this political failure? The reason is that citizens worry that once admitted, these (culturally dissimilar) temporary migrants will not remain temporary. The firms will lobby to retain these workers for the long run and make them permanent residents. Citizen-voters are well aware of the government's vulnerability to the lobbying efforts of the firms. Accordingly, they aim to limit the lobbying incentives of the firms by restricting the number of temporary workers allowed into the country in the first place, and by threatening to replace any government which breaches

[3] They argue that hostility towards immigration is driven by 'compositional externalities' (i.e. culture, religion and ethnicity) associated with immigration, and suggest that such cultural factors are three to five times more important than economic factors in driving hostility towards immigration.

[4] The dynamic structure of the model shares many features with Coate and Morris (1999).

[5] In a common agency framework Facchini and Willman (2005) examine how government policymaking with respect to factor mobility is affected by citizen concerns as well as campaign contributions.

that threshold. Hence, it is the citizen-voter's recognition of a lack of inter-temporal control over the elected government that prevents socially optimal worker movement across borders. We also show that this same concern also leads to an inefficiently large number of permanent migrants allowed into the country. However to be complete, this argument needs to go further. In particular, such a mechanism should also simultaneously account for the firms' much greater effectiveness at retaining foreign workers than at lobbying to admit them into the country in the first place (see Coate and Morris (1999) for a general argument). This arises naturally in our framework, since the introduction of a temporary worker program creates a wedge between the pre and post migration incentive of the firms to effectively lobby the government.

Our analysis yields several insights. First, in the realm of practical policy design, our framework suggests a simple welfare improving policy innovation that is also politically feasible. Temporary worker migration programs in most countries typically require the 'tying' of guest workers with specific employers (see Table 1). The question of practical policy interest is whether this employer-guest worker 'tying' is in the interest of the *host* country. At first glance the answer seems a straightforward yes – after all by restricting the mobility of the migrant worker, the domestic firm can pay lower wages to the migrant worker and thus extract a higher profit. Nevertheless, such an inference would be misleading. A policy that increases the temporary migrant's mobility across firms increases not just the migrant's utility, but can also enhance the host country's overall welfare. This is because greater mobility across firms results in higher wages for the worker and lower rents for the firm. In turn this reduces the firms' incentives from lobbying the politician to retain the foreign workers. This suggests that a migration policy that strengthens the bargaining power of experienced migrants reduces the firms' profits (and desire) to lobby intensively to retain them, thus making a higher level of temporary migration politically sustainable. Ipso facto, elimination of worker-firm 'tying' will result in the country being better positioned to take advantage of the immigration surplus. Therefore, a policy that strengthens the foreign migrant's bargaining position, somewhat paradoxically also benefits the host country's overall welfare.[6]

Some of the largest guest-worker programs in the world exist in the Arabian Gulf States. One of the puzzling aspects of these programs is that there has been a dramatic shift in the source country for much of the migrant workers coming into the Gulf States. Relatively easy-to-assimilate Arab workers from Jordan and Egypt were replaced by culturally very dissimilar migrant workers from India and the Philippines (Jureidini, 2006). Further, this shift coincided

[6] Our analysis provides a framework to discuss the political sustainability of Kremer and Watt's (2008) proposal in which they argue for the political attractiveness of temporary labor migration programs in the household sector.

with a large increase in the size of these migrant programs. This finding accords well with our second comparative static result which demonstrates that host country welfare may be higher if it is difficult to culturally assimilate temporary workers. In other words, countries which are good at rapid socio-cultural assimilation of foreign workers may also find it difficult to sustain high levels of temporary migration. The reason is that it is politically very costly for the government to let temporary migrants stay on in those countries where they are not assimilated easily. This raises the politically sustainable level of temporary labor migration – reducing overall inefficiency – much as in the above case study.

Countries differ in their ability to culturally assimilate foreign migrants. For instance, countries such as the U.S. have been perhaps more successful in assimilating their migrants than countries in Europe, such as Germany. Are these differences simply an accident of history, or are they due to differences in fundamentals, such as the degree of xenophobia? Can the nature of migration policy itself influence the migrants' incentives to culturally assimilate? Any framework that throws light on these questions is important. On the one hand scholars such as Huntington (2004) have raised concerns about the scale of permanent migration, worried that "the single most immediate and serious challenge to America's traditional identity comes from the immense and continuing immigration from Latin America". In contrast, others such as Rodriguez (2007) believe that temporary migration programs "compromise our ability to integrate immigrants effectively into the American body politic". We explore these issues by endogenizing a migrant's cultural assimilation decision. Since our framework relates migration policy with the cultural costs imposed by immigrants, and the latter is related to the migrants' efforts at assimilating with the native culture, we obtain together an account of migration programs and assimilation. We demonstrate that there may be multiple equilibria, with similar countries being stuck with very different migration policies and being more or less successful with cultural assimilation. Some countries rely mainly on temporary migration programs (with temporary migrants having a very low scope for being made permanent) and see a relatively poor degree of assimilation by the migrants. In contrast, other countries have largely permanent migration programs and are good at assimilation. The precise equilibrium that a country finds itself could be a result of its history with migrants in the past. The importance of accounting for issues of cultural assimilation in deciding the cultural composition of the immigration pool was systematically made first by Lazear (1999). Konya (2007) also focuses on cultural assimilation by migrants and its interaction with the decision to migrate in the first place, taking immigration policy as given. Our focus is on how immigration policy (temporary versus permanent) itself maybe shaped by the degree of the migrants' assimilation.

The rest of the paper is organized as follows. We describe the model in Section 2 and analyze the equilibrium in Section 3. Various implications of the model are discussed in Section 4 and Section 5 concludes.

2 The Benchmark Model

Labor migration affects the domestic labor market, the host country culture and its politics. The framework that we develop captures the richness of these interactions in a dynamic framework. However, having all of these features necessitates that we capture them in the most parsimonious way, and eliminate all that is not essential. With this caveat, we now describe the model.

Production and the Labor Market: Consider an infinite period economy with many production opportunities each period, but a shortage of qualified workers to take advantage of them. We assume that f production opportunities open up at the beginning of the game, the implementation of each of which requires one worker. For simplicity, one could think of each of these production opportunities as occurring in separate firms. The country has a population comprised of i_N (native) citizen-workers, with the crucial assumption that $i_N < f$ i.e. there are fewer workers than required so that, without a further influx of workers, some productive opportunities would be wasted. Let us denote by $v = f - i_N$, the number of vacancies in the economy every period. This could be thought of as a model of the entire economy or for a particular sector which faces a shortage of qualified workers. Furthermore, we rule out distributional effects by assuming not only that all natives are identical but also by assuming that all natives own an equal share of all firms in the economy. This ensures that all of their objectives are aligned with respect to migration policy and simplifies the politics in this regard.

We denote the world wage as w_0 and assume that if a firm is able to locate a suitable foreign worker, this is the wage it needs to pay him/her in the initial period. This will be the case if for example, this particular country is an attractive destination and there is competition among workers to move here. In the absence of any other considerations, the solution for the shortage would be to bring in v foreign workers to implement the unutilized production opportunities so long as the wage for these workers does not exceed their output.

By definition, foreign workers come from a dissimilar working environment and there are likely to be gains in productivity as they spend more time at their new jobs and adjust to their new working environment. Alternately, the skill-set for foreign workers may not immediately match that of native workers and thus they may require a transition period to get themselves up to par.

We thus assume that in the first period of their arrival, the productivity of a foreign worker is y, while from the next period onwards, their productivity increases to $y(1+\Delta)$, which is at par with native workers. Part of this increase Δ may be firm-specific, while the remaining is general. We denote the firm-specific component by s and the general part by g so that $\Delta = s + g$. Accordingly, the "immigration surplus" equals $v.y$ or $vy(1+\Delta)$ minus the wage depending on whether we are talking about new or experienced foreign workers.[7]

Thus, in the longer term (i.e. from the second period onwards) there are no differences in the intrinsic productivity of migrant and native workers. Nevertheless, new migrant workers face communication, cultural and other social barriers that reduce their productivity and limit their inter-firm mobility till such time as they gradually integrate into the country's work force. However with more time spent at the workplace and in the country (i.e. at least two periods), the migrant worker's familiarity increases (say, due to an increasing ability to navigate cultural and linguistic barriers) and he may be in a position to seek opportunities at other firms, albeit at a possible mobility cost, which we discuss next. The extent of this mobility may depend on the nature of the country's labor market, as well as cultural and legal differences in the treatment of native versus migrant workers. In particular, a number of analysts have observed that there are differences in structure between labor markets in Europe and the United States (Blanchard, 2005), with both geographic and inter-firm mobility being much higher in the U.S. than in Europe (Nickell, 1997). We model this in the simplest way by assuming that the cost for a migrant worker to move to another firm is $y\gamma$; thus from period $t = 2$ onwards, the outside option for a migrant worker is $y(1 + g - \gamma)$. Note that γ can be thought of as a measure of the degree of *segmentation* of the labor market between natives and migrants, with $\gamma = 0$ representing the case where there is no difference between workers in terms of their history of origin. We refer to such a labor market as an *integrated* one. A higher value of γ reflects an environment in which a migrant worker's outside option is constrained. In such segmented markets, given the employee's relatively weak outside option after the first period, the firm can get away with retaining a larger part of the surplus generated by the migrant worker's increased productivity.

From the second period onwards, since there is a firm-specific as well as a general component to the migrant worker's productivity, we model the interaction between the firm and the worker in the usual manner of bilateral Nash bargaining. We denote by β the bargaining strength of the

[7] Since it suffices for our purposes, we have chosen a particularly simple way to depict the labor market and the 'immigration surplus'. For a more elaborate general-equilibrium model of the labor market that shares many qualitative features of our simpler structure, see Helpman, Itskhoki and Redding (2008).

firm, and correspondingly, $1-\beta$ is the bargaining strength of the worker.

Natives, Migrants and Socio-Cultural Heterogeneity: So far we have only described the economic aspects of migration. Higher levels of migrant labor boost national income by allowing the implementation of productive opportunities which would have otherwise gone abegging due to a shortage of labor. However, migration levels also matter because they may change the country's sociocultural makeup. As forcefully argued by Alesina and La Ferrara (2005) and Huntington (2004), citizens of a country care not just about their income but also the degree of sociocultural heterogeneity in society.[8] Greater ethnic and cultural diversity can affect a native citizen's welfare in different ways. As we discuss further in section 3.4, greater sociocultural heterogeneity can adversely affect a native citizen through its impact on the nature of local public goods provided (see Alesina and Spolaore, 1997). For example, natives may dislike the fact that the nature of public education changes with greater Hispanic immigration, with resources being diverted away from, say, classical music and towards teaching Spanish. A more straightforward way is when diversity enters preferences directly (as in Alesina and La Ferrara, 2005). This accords with pioneering work in social psychology by Tajfel et al. (1971) that suggests that greater ethnic heterogeneity has a direct (and adverse) impact on the utility obtained by an individual through social interaction.[9]

We model this disutility in a straightforward manner, by directly assuming (section 3.4 provides some microfoundations for this cost) that migrants impose a cultural cost on native citizens. This cost is c_T for every worker during his presence in the country in the first period and $\lambda c(\frac{n}{1+a})$ if n migrants are present beyond their first period in the country, where $c', c'' > 0$. This formulation captures, in a parsimonious way, the cultural tradeoffs between having temporary versus permanent migrants (i.e. those staying beyond the first period). On the one hand, permanent migrants may impose higher cultural costs because they arguably threaten the nation's identity and ethnic composition. Furthermore unlike short-term workers, permanent migrants acquire voting rights and hence may influence the allocation of scarce resources across local public goods in ways that adversely affect native welfare (e.g. resources towards bilingual education and not piano lessons).[10] Finally, permanent migrants are often accompanied by family, which further increases

[8] For instance, Freeman (2006) suggests that "some natives worry that immigrants will present a cultural threat to their way of life and reduce social cohesion. This view is reflected in the attitudes of some Europeans toward immigrants from developing countries, particularly those from Moslem countries."

[9] See Leyens et al. (2003) for a more recent discussion.

[10] Freeman (2006) again: "Another factor that determines attitudes toward immigration is that immigrants *eventually become citizens and affect politics.*[Emphasis added] In the United States, both political parties seek support from the growing Hispanic community and tailor their policies on immigration to appeal to that community."

their cultural 'burden'. So for all of these reasons the disutility from permanent migration may be higher and increasing in their number. Accordingly, we assume that the marginal cultural cost being imposed by these permanent migrants is increasing in n. For simplicity in analysis, we assume that the cultural cost imposed by temporary migrants is linear in their numbers; assuming convexity in these costs as well does not qualitatively change the results. In our benchmark model we assume that the cultural costs associated with permanent migration are higher. However, we should point out that while there are several reasons for assuming this, it need not always be the case. For instance, it can plausibly be argued that temporary migrants have a lower incentive to invest in cultural assimilation than permanent migrants. In Section 3.3 we endogenise the migrant's cultural assimilation decision and discuss conditions when our assumption holds.[11]

Thus, while permanent migrants contribute more because of their increased productivity $y(1+\Delta)$ from period $t = 2$ onwards, they also impose cultural costs of $\lambda c(\frac{n}{1+a})$ as compared with that imposed by temporary migrants, namely c_T. If the permanent migrants impose lower cultural costs as well, then the solution to the labor shortage problem is trivial, namely, to import v permanent workers once and for all. Thus to make the problem interesting, we assume:

Assumption 1: (i) $y(1+\Delta)v - \lambda c(\frac{v}{1+a}) < 0$, (ii) $y - w_0 - c_T > 0$

Assumption 1(i) ensures that, for a large enough number of permanent workers, the socio-cultural heterogeneity costs outweigh their productivity, so that national welfare would not be enhanced if all the v vacant slots were filled with permanent migrants. At the same time, assumption 1(ii) states that the one period surplus from hiring a temporary migrant worker is positive even after accounting for the cultural costs he or she imposes. Thus in the absence of any other considerations, they provide a viable alternative to fill the labor shortage and enhance national welfare. However if there is some chance that the temporary migrant workers are retained and made permanent in the long run, then their long term productivity gains and cultural costs will have to be taken into account.

The Migration Protocol: All migrants (temporary or permanent) are randomly matched with the available vacant jobs available at the firms. We assume that if the government desires, the temporary migrants among these can be repatriated at the end of the first period of their stay. We thus do not consider issues related to the efficacy of enforcement mechanisms in repatriation that

[11] There maybe positive cultural benefits as well from having migrants – for example, in the form of increased diversity. Including this (e.g. in the form of negative costs over a certain range) does not change the qualitative nature of our results. In section 3.3., we explicitly incorporate such benefits into our analysis on cultural assimilation.

may differ between countries. Furthermore, in order to make the point in a sharp way, we assume that the government incurs zero administrative costs in enforcing the repatriation of temporary migrants. Relaxing the latter assumption does not alter the qualitative nature of our results.

However, if the migrant worker stays for two periods or longer then he cannot be repatriated – the idea being that he becomes a permanent resident or citizen. We further assume that all foreign workers are treated symmetrically. This implies that the government can neither selectively tax nor repatriate a subset of these workers. Thus the tension between voters and firms comes at the end of the first period, when the repatriation of temporary migrants is still feasible and desired by the citizenry, while firms are interested in retaining them for their productivity gains.

The Political Structure and Immigration Policy: At the start of each period, citizen-voters choose a rule specifying the number of migrants (temporary and permanent) to be allowed in that period. Accordingly, the government in power chooses the number of migrant workers to be allowed into the country. At the end of the period, the incumbent politician who runs the government makes the decision of whether to repatriate the temporary migrants, who have by then acquired one period of 'experience', or to allow them to be retained by their employers, thus granting them permanent residence. The incumbent politician then faces an election.

Due to the gain in productivity by workers during their first period of work with the firm, it is in the firm's interest to try and retain them for the longer term instead of importing new unknown migrant workers in their place. Thus they may lobby the government in order to be allowed to retain these workers at the end of their temporary period. We assume that in any period, on incurring a fixed cost, firms with experienced migrant workers can form a lobby. Such a lobby may find it profitable to bribe the government so as to retain their temporary migrant workers on a more permanent basis. However, one may ask why are the firms more effective at lobbying to retain foreign workers than at lobbying to admit them into the country in the first place. As argued by Coate and Morris (1999), incentives for lobbying to maintain an enacted policy differ greatly from the lobbying incentives to enact change in the first place. This wedge also arises naturally in our framework. With the introduction of a temporary worker program, firms who do acquire a migrant worker have a strong incentive to lobby to retain the worker. Ex-ante however, each individual firm realizes that it has only a limited probability of acquiring a worker and its lobbying incentives to increase this probability for all firms is much more muted. Thus, there is a gap between the pre and post migration incentive of the firms to effectively lobby the government, with the former incentive being much lower. With a fixed cost for lobby formation, it implies that

a lobby to retain the temporary migrants is much more likely to form.

All politicians are identical and care both about the representative citizen-voter's utility, U_N, *as well as* their own rents, which consist of the ego rents R from holding office as well as any bribes B paid to them to influence their choice of policies. A politician's payoff each period he is in office is given by

$$U_P = \theta(R + B) + (1 - \theta)U_N \tag{1}$$

where θ is the relative weight that he puts on his own rents. Given these preferences, both the citizens and the lobby are in a position to influence (using different instruments) government policymaking. The lobby can offer the government a bribe to induce it to allow firms with experienced workers to retain them (thereby making them permanent workers, who are immune to future repatriation). In contrast, citizen-workers exercise control on government policy by threatening to replace the incumbent government in the upcoming elections. This political framework, which involves a dynamic game between the lobby, the politician and the citizen-workers of the country, is similar to the structure in Coate and Morris (1999).

The timing of the game is as follows. At the beginning of each period, citizens observe the degree of labor shortage in the economy, and decide on the number of temporary and permanent migrants to be let in. In addition, they choose a voting rule, which associates a probability of re-election for the politician/government with the action vis-a-vis repatriation taken by the politician. The government in power chooses the number of migrant workers that firms are allowed to bring into the country in that period. Firms hire these workers from foreign countries at the going wage rate. At the end of the period, the firms' lobby decides whether, and how much, to offer the politician in bribes to implement its preferred policy of letting the experienced temporary migrant workers, who are due for repatriation, remain in the country. The incumbent politician observes the citizens' voting rule and the bribe offered by the lobby, and decides on immigration policy, which determines whether firms are allowed to retain their experienced migrant workers. The politician can choose either to accept the bribe and implement the lobby's preferred policy, or refuse the bribe and repatriate the temporary workers (with the aim of getting re-elected). The politician's decision on whether or not to allow firms to retain their experienced migrant workers is observed by citizen-voters, who then vote at the end of the period on whether to re-elect the incumbent politician, or replace him with a randomly drawn challenger. Next period, the same cycle is repeated, with either the re-elected politician, or the newly elected government that replaces him.

3 Equilibrium Analysis

We begin by briefly delineating key features of the social planner's problem by describing the optimal migrant mix in the *absence* of any political considerations on the part of the government.

3.1 The Socially Optimal Mix: Temporary versus Permanent Migrant Workers

A social planner will maximize the representative citizen's discounted stream of utility. Accordingly, the socially optimal number of temporary migrant workers m_T and permanent immigrants m_P solves the following problem:

$$\max_{m_T, m_P} (y - rw_0 - c_T)(m_T + m_P) + \frac{\delta}{1-\delta}[(y - rw_0 - c_T)m_T + y(1+\Delta)m_P - \lambda c(\frac{m_P}{1+a})]$$

subject to the constraint that $m_T + m_P \leq v$. An underlying assumption here is that only a part of the migrant worker's wages are included in the social welfare function during his temporary phase as he possibly remits a large part of it home. The parameter r denotes the fraction of the income a temporary worker remits back home. On the other hand, once he has become permanent, the assumption is that he sets up home here and thus his wages are counted as part of the social welfare in this country. The first-order condition with respect to m_P is:

$$y(1+\Delta) - \frac{\lambda}{1+a} c'(\frac{m_P}{1+a}) \leq 0 \quad \text{with equality if } m_P > 0 \tag{2}$$

and the solution for m_T is that temporary migrants fill up the rest of the shortage i.e. $m_T = v - m_P$, since the surplus they provide viz. $y - w_0 - c_T$ is positive by Assumption 1(ii).

Our framework emphasizes two factors that drive the socially optimal mix of temporary and permanent migrants. The first is the impact of the migrant worker's productivity and how it evolves over time. For instance, if a worker's productivity increases significantly with time spent in the host country, even a country that is culturally averse to migrant workers may prefer permanent migrants. The other driving force is the preference that natives have for temporary versus permanent migrant workers – the inter-temporal "cultural assimilation" effect. Of course, a country's ability to assimilate foreign migrants is likely to be a function of the ethnicity of the migrant workers and the ability of the country's society to absorb and integrate migrants into the national fabric.[12] Given these two effects a number of possibilities arise.

[12] In Section 3.3 we endogenize the migrant's cultural assimilation decision and make it a function of whether he perceives himself as likely to be in the country for the short or the long run.

(i) Corner Solutions: Permanent Immigration versus Temporary Migration: The social planner's optimization problem may result in a corner solution where only temporary migrants are admitted, i.e. $m_T > 0$ and $m_P = 0$. This is the case when the cultural costs of permanent immigration are so high that it is not worth the increase in productivity i.e. when $y(1+\Delta) - \frac{\lambda}{1+a}c'(0) < 0$.

The reverse case, i.e. $m_T = 0$, is also possible, where some permanent migrants are let in, while temporary migration is not allowed. This is the case when either the surplus from a temporary worker $y - w_0 - c_T$ is negative, or when the enhanced productivity of a long-run permanent migrant is enough to outweigh their (small) cultural costs i.e. if $y(1+\Delta) - \frac{\lambda}{1+a}c'(\frac{v}{1+a}) > 0$. For example, if a country is particularly good at cultural assimilation over time, permanent workers would be strictly preferred even if there is no difference in the productivity of temporary versus permanent migrants. Typically, we would expect this to be the case in countries that have a long history of immigration and assimilation, as well as greater tolerance for sociocultural heterogeneity. In contrast, there will only be temporary migration when the disutility from allowing even a single worker to stay on and become permanent is sufficiently high – an immigration regime similar to that found in countries such as the UAE and Singapore.

(ii) Interior Solution: Both Temporary Migrants and Permanent Immigration: Alternatively, for a wide set of parameters we may have an interior solution with both temporary and permanent migrants i.e. $m_T, m_P > 0$. Such an outcome is possible if the cultural cost of the temporary migrants do not outweigh their productivity benefits i.e. $y - w_0 - c_T > 0$ as well as the cultural cost of the marginal permanent immigrant is smaller than his/her long-run productivity gain i.e. $y(1+\Delta) - \frac{\lambda}{1+a}c'(\frac{v}{1+a}) < 0$. In this case, the social optimum will consist of bringing in permanent migrants till the point where their productivity surplus is offset by the rising cultural cost, and then filling in the rest of the worker shortage using temporary migrants. Assumptions 1(i) and (ii) precisely give rise to this possibility.

3.2 Politics and Barriers to Entry: Equilibrium Analysis

3.2.1 Only temporary migrants

To understand the impact of political constraints on immigration, we first study the case where at the start, the citizens' only decision is on how many temporary migrants to let in every period. Since no permanent migration takes place and given assumption 1(ii) that the surplus from employing them is positive, the socially optimal decision is to fill the v vacancies with temporary migrants. Unfortunately, there is the possibility that once admitted, the firms' lobby may bribe

the government into making the temporary workers permanent. This possibility and the resultant large cultural costs may limit the extent to which citizens are willing to allow in temporary workers in the first place. Since the optimum here is rather simple and involves a rotating pool of v (temporary) migrants every period, the extent of inefficiency can be easily detected through the deviation of migration policy from this.

To fix ideas, we begin by informally describing aspects of the equilibrium. The representative citizen takes two decisions – first, he chooses the threshold number of temporary migrants the government should allow into the country in any period, together with the repatriation requirement implicit in the designation of these workers as temporary migrants. Second, the citizen decides on the re-election (or not) of the incumbent government, depending on whether the threshold condition and the repatriation requirement were violated or fulfilled by the government. In taking these decisions, the citizen takes into account the resulting discipline it imposes on the government and also the economic and cultural implications. As for the politician, he faces a simple trade off – the payoff from any bribe received from the lobby to help retain the temporary migrant workers versus the prospect of electoral loss if the migrants are not repatriated. If the bribe offered by the lobby is sufficiently large, then the politician may choose to retain the temporary migrants on a permanent basis and be willing to face the prospect of being replaced by the citizen-voter in the next elections. We now analyze the equilibrium systematically.

Consider first the citizen's voting rule, which specifies the incumbent politician's re-election probability as a function of whether or not the (temporary) migrant workers are repatriated or made permanent. Since all politicians are identical, the primary objective of the voting rule here is to maximize the incentives it provides to the politician in power to follow the citizen's migration preferences. Here the primary issue under consideration is the repatriation of the temporary migrants or their being made permanent. Thus, the citizen's voting rule here is very simple: the incumbent government will be re-elected if and only if all temporary workers are repatriated. A second aspect of this decision involves the follow-up action if a government were to deviate and in fact allow the firms to retain the temporary workers permanently: how much temporary migration should be allowed in the future in that case? The reason this is important is that the addition of permanent migrants to the population changes the cultural cost imposed by any additional migrant and thereby affects welfare in the future. Since politicians care both about rents from being in office *as well as* future welfare, the strongest incentive can be provided to them by promising the worst possible outcome on both dimensions. Since by assumption 1(ii), the welfare benefit from bringing in temporary workers is always positive, the worst outcome on the welfare dimension is to

disallow the import of any more temporary workers ever after. Thus the promised (punishment) strategy following a deviation (i.e. permanent retention of the group of temporary migrants) is to throw out the incumbent government and scrap the temporary migration program forever. While one may view this as the usual grim trigger strategy of repeated games, here it can be interpreted as the electorate losing faith in the political viability of the temporary migration program and choosing to scrap it.[13]

Given this voting rule, consider the equilibrium strategy of the incumbent politician. If offered a bribe B to retain the temporary migrants, he trades off the gain from accepting the bribe versus the loss in ego-rents R from being voted out of office as well as future welfare. Therefore if the number of temporary migrants under consideration is n_T, the incentive constraint for the politician is given by:

$$\theta[B] + (1-\theta)\frac{\delta}{1-\delta}[y(1+\Delta)n_T - \lambda c(\frac{n_T}{1+a})] \leq \theta[\frac{\delta}{1-\delta}R] + (1-\theta)\frac{\delta}{1-\delta}[y - rw_0 - c_T]n_T$$

Note that the politician puts weight $1-\theta$ on the welfare of the native-citizens; thus the second term on the left-hand side of the above equation represents the productivity gain minus the cultural cost of greater ethnic heterogeneity by making the n_T temporary migrants permanent. On the other hand, if the politician continues with the policy of repatriating the temporary migrants, then he retains office and the gains to society from each such worker is $y - rw_0 - c_T$; thus the total gains to the politician from not deviating is given by the right hand side of the equation.

Recall that the firm lobby makes a take-it-or-leave-it offer to the politician where, in exchange for a bribe B, the politician agrees to let the lobbying firms retain their temporary migrants. Thus we need to determine what is the maximum level of bribe that the firm lobby is willing to offer. For each firm, an extra experienced worker from period $t = 2$ onwards yields output of $y(1+\Delta)$ each period. Since part of the worker's increased productivity consists of general skills which he can take to other firms, it gives the worker an outside option in bargaining with his current employer. Since the worker can move to other firms, the firm needs to share with the worker a part of this output. The worker's outside option is $y(1+g-\gamma)$; thus the worker and firm bargain over the surplus $y(1+\Delta) - y(1+g-\gamma)$. Denoting the firm's relative bargaining strength by β, the surplus for the firm from having such a worker is $\beta[y(1+\Delta) - y(1+g-\gamma)] = \beta y(s+\gamma)$.

[13] Instead of considering totally scrapping the temporary migration program following a deviation, one may explore for example, what if instead citizens optimally chose a new policy at every stage following a deviation? This now requires the entire path of choice to be worked out. It is possible to trace out this path, starting backwards from the point where it is no longer optimal to admit any migrants. However, it makes the analytics much less tractable without yielding any additional insights.

Hence the maximum bribe the firm lobby will be willing to pay for retaining permanently the n_T temporary workers is:

$$B^{\max} = \frac{\delta}{1-\delta}\beta y(s+\gamma)n_T$$

The incentive-compatibility constraint for the politician requires that this maximum bribe-level be not enough to persuade the politician to retain the temporary migrants i.e. one requires:

$$\theta\frac{\delta}{1-\delta}[\beta y(s+\gamma)n_T]+(1-\theta)\frac{\delta}{1-\delta}[y(1+\Delta)n_T-\lambda c(\frac{n_T}{1+a})] \leq \theta[\frac{\delta}{1-\delta}R]+(1-\theta)\frac{\delta}{1-\delta}[y-rw_0-c_T]n_T \tag{3}$$

Since the gain from bringing in temporary workers is positive so long as they are not made permanent, the optimization problem for the citizen at the beginning boils down to choosing the maximum number of temporary migrants n_T subject to the incentive constraint which (rewriting (3)) is:

$$n_T[\frac{\theta}{1-\theta}\beta y(s+\gamma) + y\Delta + rw_0 + c_T] - \lambda c(\frac{n_T}{1+a}) \leq \frac{\theta}{1-\theta}R \tag{4}$$

This is portrayed in figure 1 below. It is clear from the figure that unless the end point (i.e. at $n_T = v$) of the left-hand side of (4) lies below $\frac{\theta}{1-\theta}R$, the equilibrium level of temporary migration is lower than the social optimum. This is summarized in the proposition below.

Proposition 1 *If*

$$v[\frac{\theta}{1-\theta}\beta y(s+\gamma) + y\Delta + rw_0 + c_T] - \lambda c(\frac{v}{1+a}) > \frac{\theta}{1-\theta}R \tag{5}$$

then in a world with political constraints, the equilibrium level of temporary migrants will be lower than the socially optimal level.

The basic intuition for the result is fairly straight-forward. Since firms gain from retaining temporary migrant workers, they lobby the politician to not repatriate the temporary migrants. As the number of temporary workers increases, so does the total incentive of firms to retain them permanently and thus more likely is the politician to succumb to their (increased) lobbying pressures. Anticipating this, at the beginning, citizens decide on an inoptimally low number of temporary migrants. Put another way, the proposition suggests that the socially optimal level of temporary labor migration is not politically feasible.

Aspects of the above political equilibrium are best understood by examining the impact of a change in the relevant parameters of the model on the degree of inefficiency. Such an exercise is also instructive because it leads to some results that may seem surprising at first glance, but follow naturally from our analysis that takes into account political constraints on migration policy. The following corollary to Proposition 1 addresses this.

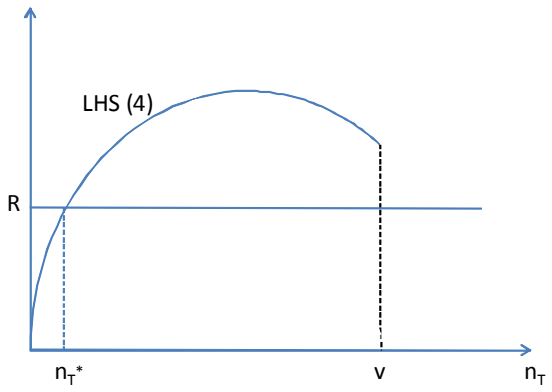

Figure 1: The equilibrium number of temporary migrants

Corollary 1 *In an intermediate range of the parameters, the level of temporary migration n_T^* decreases with (i) a rise in the firm's bargaining power β, (ii) an increase in the segmentation of the labor market γ, (iii) a rise in the inter-temporal productivity increase Δ or s, (iv) a decrease in the cultural costs from permanent migration λ, or (v) an increase in the world wage w_0.*

Proof. An increase in β, γ, Δ, s, or w_0 or a decrease in λ tends to raise the left-hand side of (4). From the figure it is then clear that this will result in a decrease in n_T^*. ■

A few implications of the above corollary are worth highlighting. Consider first the impact of an increase in the degree of segmentation of the labor market. Greater segmentation in the labor market reduces the migrant's wages by reducing his outside option in terms of alternative job opportunities. This increases firm profits and results in a greater incentive to lobby and retain migrant workers. Since voters anticipate this skewing of political incentives in countries with higher labor market segmentation, they admit fewer temporary migrants into the country in the first place. Therefore, the above corollary suggests that moving from a low segmentation labor market (e.g. the U.S.) to a relatively highly segmented labor market (e.g. Europe) results in greater inefficiency. More generally, the above corollary suggests that any variable that affects the distribution of surplus between the firms and the migrant workers (e.g. the firms bargaining power β), will have a similar effect.

Even more striking is the impact of lower cultural costs λ or a higher gain in intertemporal productivity Δ is a *decrease* in the number of migrants that citizens approve of to be brought into the country. Again, the primary channel at work here is the impact of these variables on the

politician's incentives. A smaller value of λ or a bigger Δ means that the impact on future welfare due to a politician's deviation from the repatriation policy is not as bad. Since the politician cares (with weight $1-\theta$) about welfare, this serves to increase his incentive to deviate. Anticipating this, citizens approve of a smaller pool of temporary migrants to be brought in. Note that these effects are only in the intermediate range of parameters. If the cultural cost λ is low enough or the productivity increase Δ is big enough so that the condition (5) of Proposition 1 does not hold, then we get the efficient outcome where all v vacancies are filled by bringing in v migrant workers.

3.2.2 Temporary and permanent migrants

So far we have considered the case when citizens decide only on the number of temporary migrants to be allowed into the country to meet the labor shortage v. Given that this labor shortage is expected to last indefinitely into the future, it may be worthwhile to fill some of the positions with permanent migrants once and for all and then use temporary migrants to fill the remaining slots. In this section, we study the implications of allowing citizens to choose at the start the number of permanent migrants to bring in along with the number of temporary ones to be allowed every period.

If n_P permanent migrants are brought in initially and n_T temporary migrants are allowed in in every period (and repatriated at the end of the period), the overall national welfare is given by:

$$\frac{(y-rw_0-c_T)}{1-\delta}n_T + [y-rw_0-c_T)n_P + \frac{\delta}{1-\delta}\{y(1+\Delta)n_P - \lambda c(\frac{n_P}{1+a})\}]$$

which is to be maximized subject to the government's incentive constraint, which is now given by:

$$\begin{aligned}&\theta\frac{\delta}{1-\delta}[\beta y(s+\gamma)n_T] + (1-\theta)\frac{\delta}{1-\delta}[y(1+\Delta)(n_T+n_P) - \lambda c(\frac{n_T+n_P}{1+a})]\\ &\leq \theta[\frac{\delta}{1-\delta}R] + (1-\theta)\frac{\delta}{1-\delta}[\{y-rw_0-c_T\}n_T + y(1+\Delta)n_P - \lambda c(\frac{n_P}{1+a})]\end{aligned}$$

Thus the addition of permanent migrants changes the marginal cost of retaining a temporary worker permanently from $\frac{1}{1+a}c'(0)$ to $\frac{1}{1+a}c'(\frac{n_T}{1+a})$.

Using l as the Lagrange multiplier on the incentive-compatibility constraint, we can write the first-order condition for the problem as:

$$(y-rw_0-c_T) + \frac{\delta}{1-\delta}[y(1+\Delta) - \frac{\lambda}{1+a}c'(\frac{n_P}{1+a})] = -l\,(1-\theta)\,\frac{\lambda}{1+a}\{c'(\frac{n_T+n_P}{1+a}) - c'(\frac{n_P}{1+a})\}$$

As c is convex, the right hand side of the above equation is negative. Since by assumption 1(ii), $y-rw_0-c_T>0$, it implies that $y(1+\Delta) - \frac{\lambda}{1+a}c'(\frac{n_P}{1+a}) < 0$. Thus, comparing it with the social

optimum condition (2), one can easily see that the solution here will involve an excess number of permanent migrants as compared with the social optimum. We summarize the result in the following proposition.

Proposition 2 *In a world with political constraints, the optimal mix of migrants will involve an excess number of permanent migrants as compared with the social optimum i.e.* $n_P^* > m_P$.

The intuition for the above result is the following. Observe that the politician cares (with weight $1-\theta$) about the welfare of the citizen voter. By increasing the number of permanent migrants, the marginal cultural cost of admitting an extra migrant is raised. Thus the cultural impact of making temporary migrants permanent is now bigger, and hence the incentive constraint gets tightened. In other words, as the marginal cultural cost of immigration goes up, the politician becomes less likely to accept the lobby's bribe to retain the temporary migrants. Thus the permanent migrants play a deterrence role in reducing the politician's incentive problems with respect to temporary migrants.

How is this level of permanent migration affected by the various parameters? This is analyzed in the following corollary to proposition 2.

Corollary 2 *The level of permanent migration* n_p^* *increases with (i) a rise in the firm's bargaining power* β*, or (ii) an increase in the segmentation of the labor market* γ*, or (iii) an increase in the firm-specificity* s *of the worker's increased productivity. The effect of a rise in the inter-temporal productivity increase* Δ *or in the cultural costs* λ *on the level of permanent migration is ambiguous.*

PROOF: See Appendix.

The intuition for the comparative static results stems from the fact that factors which increase firm profitability cause the firms to lobby politicians much more aggressively to retain the temporary workers. For example, if the labor market is segmented, i.e., γ is high, then the migrant worker's outside option is weak, his wages are relatively low and thus the firm enjoys the prospect of earning high profits from retaining this (relatively immobile) migrant worker. Accordingly, it is willing to lobby much more. As noted before, by raising the marginal cultural cost, permanent migrants help to tighten the politician's incentive constraint. This role is more important when the incentives are more skewed, as is the case when firm profitability is high. Thus, when β, γ or s is high, a higher number of permanent migrants are brought in. While the parameters Δ and λ also impact the incentive constraint, unlike the previous set of parameters, these two affect the overall surplus

as well. These effects go in opposite directions, and thus their overall impact on the number of permanent migrants depends on which effect dominates.

3.3 Culture and Assimilation

Our analysis has so far has taken the cultural costs to be exogenously given. In reality, the magnitude of these cultural costs imposed by migrants depends on the degree to which they have culturally assimilated in the host country. For instance, a number of influential commentators have compared the difference between immigrant experience in the United States versus that in much of Europe. In broad terms, the United States is considered to be more of a 'melting pot' where migrants invest in assimilation and are welcomed (Waters and Jiminez, 2005). In contrast, barring a few exceptions, in Europe migrants often do not make investments in assimilation and are socially segregated (Huntington, 2004). Indeed these broad patterns of cultural assimilation across the Atlantic also mirror differences in the nature of migration policy, with permanent migrants being much more important in the U.S..[14] In this section we show how our framework can be adapted to reflect these broad differences. In doing so, we show that the greater assimilation in the U.S. need not be because socio-cultural fundamentals are different. Rather, it may be because of the existence of multiple cultural equilibria.

Start by observing that the willingness to imbibe the local cultural ethos and the degree of assimilation is (in part) a choice variable for the migrants and like other activities, is likely to be determined by the returns to this investment. From the migrant's point of view, the perceived returns to investment in socio-cultural assimilation is driven by two concerns. First, is the expected length of time the migrant worker plans to stay, work and live in the country.[15] The second factor which affects investment in cultural assimilation is given by whether natives make complementary investments in accepting and welcoming migrants. After all, social interactions are a two-way

[14] For instance, an editorial in *The New Republic* (dated 04/17/2006) argues that "..there is little that is more antithetical to the American ideal than a guest worker. While there are dangers in romanticizing this country's immigrant heritage, it is an unmistakable part of the national ethos. For generations, immigrants have come to the United States in search of a better life. In the process, they often remake themselves — as Americans. Even those who are here illegally, and whom we call illegal immigrants, can transcend that identity — or at least see their children who are born here transcend it. But a guest worker and his family have no such opportunity for transcendence....Indeed, to see the pernicious (and un-American) nature of a guest-worker program, one need only look across the Atlantic at the misery such programs have wrought in Europe."

[15] Dustmann (1999) shows using German data that the degree of investment in human capital (language) depends on the expected length of time the migrant expects to be in the host country.

process, depending on attitudes and investments made by both migrants and natives. Since our focus here is on the duration of immigration (temporary versus permanent), we will primarily focus on the first factor, but briefly discuss the second factor as well. If a migrant believes that natives are unlikely to interact meaningfully with him, then he will have diminished incentives to invest in cultural assimilation and may indeed prefer to spend more of his time associating with fellow migrants. On the other side, if natives believe that migrants will not invest in assimilation, they too have little to gain from making an effort to culturally interact with the migrants. This may result in a "ghetto" like equilibrium where migrants are socially segregated from natives. In contrast, if each group believes that the other will also make investments in social integration, then we have an equilibrium where there is a good degree of socio-cultural assimilation.

While the possibility of multiple equilibria is relatively easy to see in the case of two-way investments by migrants and natives, there is an additional more subtle argument that generates a similar outcome amongst temporary migrants. We describe this now.

In particular, for temporary migrants a key issue is whether they can reasonably expect to be made permanent. For example for many migrant workers in the U.S., an H1-B temporary permit is perceived to be a reliable stepping stone towards their permanent resident status (see Table 1 for additional examples). Therefore, if temporary migrants believe that they have a good chance of being made permanent then their payoffs from such investments are much larger. On the other hand, if they perceive themselves to be truly temporary (having to return to their home country at the end of their tenure), then such temporary migrants will have very little incentive to invest in cultural assimilation. Conversely, the decision by temporary migrants to homogenize themselves or not affects the natives' attitudes towards making them permanent, and also impacts on their decision of how many temporary migrants to bring in in the first place. Thus the two decisions (that by the migrants and the natives) are interdependent, resulting in the possibility of multiple equilibria, which we explore now.

We consider the same model as before, except that we incorporate the possibility that some temporary migrants may be made permanent in the long run. While we had, as a simplification, assumed above that permanent migrants only impose (negative) cultural costs on the natives, in reality natives perhaps also gain from the cultural diversity that is brought by new migrants. To model this in the simplest manner, we assume that $d(n_P)$ is the diversity benefit to natives from bringing in n_P permanent migrants every period. However, apart from contributing to increased diversity, permanent migrants impose other costs on the natives as discussed above, and we still use $\lambda c(\frac{n_P}{1+a})$ to denote these costs. Thus, trading off the diversity benefits against the costs

(ignoring productivity gains), the optimal number of permanent migrants to bring in is given by: $d'(n_P) = \frac{\lambda}{1+a} c'(\frac{n_P}{1+a})$. Note that, when the cultural costs imposed by migrants (λ), are low, it is optimal to admit more permanent migrants as the marginal cost that they impose are smaller.

To endogenize the degree of assimilation, consider the situation where temporary migrants can decide to invest in assimilation with the host country culture, (e.g. by learning the local language and customs, making an effort to attend and participate in local customs), or not. We assume that if migrants incur a cost e, they reduce the cost they impose on the local society from λ_0 to λ_1, where $\lambda_0 > \lambda_1$. Temporary migrants' decision to incur this cost or not depends on their perceived probability of becoming permanent migrants into this society and their gains from such assimilation. We denote these welfare gains from social interaction by V.

The timing of the game is as before, with n_T temporary migrants admitted at the beginning of each period. Each migrant decides whether or not to make this private investment in cultural assimilation with the local populace. At the end of the period, if the government does not succumb to the firm lobby, then among this group of temporary migrants, n_P are made permanent. In making this decision, the government cannot observe the degree of assimilation undertaken by each individual migrant and so it chooses the n_P permanent migrants *randomly* from among the pool of n_T temporary migrants. Thus if n_P increases or the pool of temporary migrants n_T decreases, the chance for each individual migrant to be absorbed permanently goes up. An equilibrium for this game consists of the number of temporary migrants n_T who are brought in at the beginning, investment decisions by them in cultural assimilation and the fraction of them who are admitted as permanent migrants, along with (as before) an electoral rule specifying government repatriation as a function of its actions.

Now, if λ_i is the degree of cultural costs imposed by the temporary migrants, then the optimal number of permanent migrants to admit among them is given by:

$$d'(n_P^i) = \frac{\lambda_i}{1+a} c'(\frac{n_P^i}{1+a})$$

Let us denote by n_P^1 and n_P^0 the number of permanent migrants and by n_T^1 and n_T^0 the number of temporary migrants when the migrants do and do not assimilate respectively. Note that $n_P^0 < n_P^1$ as the costs imposed by assimilated migrants is lower.

From each migrant's perspective, the probability of being made permanent is given by n_P^i/n_T^i and thus they incur the cost of cultural assimilation only if:

$$\frac{n_P^i}{n_T^i} V - e > 0$$

As noted before $n_P^0 < n_P^1$. To study the impact of λ_i on the number of temporary migrants to be brought in, recall from section 3.2 that as the cultural cost imposed by permanent migrants is lowered, the government's incentive constraint becomes harder to sustain as deviating from the given policy does not cost as much. This point is made specifically in Corollary 1 where as λ decreases, so does n_T. In the present context, since $\lambda_1 < \lambda_0$, it implies that $n_T^1 < n_T^0$.

Combining the two facts, $n_P^0/n_T^0 < n_P^1/n_T^1$. In other words, in the case where migrants do invest in assimilation, the pool of temporary migrants brought in every period is smaller and the number of them made permanent is higher. Thus the chances for any individual migrant to be made permanent is high in this case, thus justifying their investment in assimilation in the first place. More specifically, this happens if $\frac{n_p^1}{n_t^1}V > e$. At the same time, if $e > \frac{n_p^0}{n_t^0}V$, it implies that of the large pool of temporary migrants brought in every period, too few are made permanent for any of them to invest in assimilation with the local culture. Thus, when $\frac{n_p^1}{n_t^1}V > e > \frac{n_p^0}{n_t^0}V$, we have the possibility of multiple equilibria.

On the other hand, if $\frac{n_p^0}{n_t^0}V > e$, then the only equilibrium is where everyone invests in assimilating into the local society, while at the opposite extreme, if $e > \frac{n_p^1}{n_t^1}V$, then the only equilibrium involves no assimilation by migrants, with very few temporary migrants being made permanent and most being repatriated at the end of their tenure. We summarize these results in the following proposition.

Proposition 3 *If the ratio e/V is in an intermediate range, we have multiple equilibria where in one equilibrium temporary migrants invest in cultural assimilation and are likely to be made permanent citizens and in the other equilibrium, the temporary migrants do not invest in cultural assimilation and are likely to remain temporary. In contrast, we have a unique equilibrium where all temporary migrants invest (not invest) in cultural assimilation if e/V is sufficiently large (small).*

3.4 Cultural Heterogeneity and Migration: Some Microfoundations

The maintained assumption of this paper is that worker migration affects native welfare not only through its effect on overall income but also its affect on the culture of the host country. However, we further assumed that (under some conditions) the effects of permanent migration on native welfare are likely to be different from that of temporary migration. Indeed we suggested that even if one set aside distributional considerations, the political backlash against permanent migration may well be more severe than temporary migration. We now elaborate on one such mechanism.

The key distinction that we highlight is that permanent immigrants acquire citizenship and

voting rights. This has the potential to change the political dynamic at least at the local level. For example, take education. As pointed out by Alesina, Baqir and Hoxby (2004), there is a fundamental tradeoff that affects the provision of local public goods like education, namely that between the benefits of economies of scale and the costs of an increasingly heterogeneous population. For instance, there may be significant differences in preferences (on average) for bilingual education between the native and the immigrant population. Natives may prefer to spend school resources for extra piano classes while the immigrant may prefer particular language lessons. For simplicity, we capture these differences in a single dimension – the unit line. Assume that an individual i has payoffs given by $u_i = w - A(g - x_i)^2$, where g is the location of the public good provided (e.g. the share of resources spent on piano lessons) and x_i is the 'location' of the individual i, representing his ideal choice. Here A is a parameter denoting the importance of the publicly provided good in an individual's utility. It is likely to be low in an economy where there are ample alternatives to public education, for example. The second term in the utility function is the payoff to the individual from the local public good, with his payoff decreasing (at a convex rate) in the distance between his ideal point and the point actually chosen. Given this utility function, an individual's ideal choice for the public good is $g = x_i$.

Let us assume that native preferences are uniformly distributed on the unit line, with the (pre-immigration) median voter preferences among the natives (and therefore the location of the public good) given by $g^N = \frac{1}{2}$. To make the point in the simplest manner, we assume that all migrants are identical and have their public good preferences given by $x_M = 1$. Then the addition of permanent migrants to the society results in a shift in the identity of the median voter. Suppose the initial mass of natives is unity, and that of the migrants is n; the median voter now changes from the one located at $x_i = \frac{1}{2}$ to that located at $x_i = \frac{1+n}{2}$, resulting in a change in public good provision to $g^M = \frac{1+n}{2}$. Given the preferences, the utility of a native located at x_i is now given by $u_i = w - A(\frac{1+n}{2} - x_i)^2$; thus, natives whose preferences are closer to $x_i = 1$ gain, while those located near $x_i = 0$ lose. What about overall welfare? Evaluating aggregate utility for the natives, it changes from $w - \frac{A}{12}$ to $w - \frac{A}{12}[1+3n^2]$ after the addition of a mass n of permanent migrants to the society. Thus there is a decrease in overall welfare by $\frac{A}{4}n^2$. The following proposition summarizes the impact.

Proposition 4 *Overall welfare for the native population decreases at an increasing rate with permanent migration. Furthermore, the negative impact of immigration is higher the bigger is the importance of public goods on citizens' welfare.*

Note that, as we have assumed in reduced form for our basic model, the cost imposed by the migrants is convex in their number. Notice also that the impact is higher the bigger is A. This implies that the constraints on immigration are likely to be higher in countries where there is greater dependence on goods and services that are publicly provided and hence there is enhanced concern that immigration may change the nature of their provision. Again, this may serve to partly explain the difference in attitudes towards immigration between the US and Europe (where publicly provided goods/services are more prevalent than in the US).

Notice that temporary migrants do not skew the allocation of resources for local public goods as much. This is mainly because of two factors: one, temporary migrants lack political clout and are unlikely to affect public good allocation to the same degree as permanent migrants; two, temporary migrants are less likely to bring with them their children and families, and therefore may not be as concerned with the provision of public goods such as education.

4 Aspects of Temporary Migration Programs: An Evaluation

Having described the political equilibrium in our model, we can now use it to evaluate aspects of the design of existing temporary labor migration programs, at both a prescriptive and descriptive level. We then illustrate aspects of our framework, by using it to evaluate changes in migration policy.

I. Employer Assignment and the (im)Mobility of Guest Workers

One of the more striking aspects of most temporary labor migration programmes has been the fact that the guest workers are tied to specific employers. As described in Table 1, this feature is common to some of the largest temporary migration programs across the world - in countries as diverse as the U.S., Kuwait or Switzerland .[16] Clearly, such restrictions on the mobility of guest workers lower the bargaining power of the migrant workers, and adversely affects their wages. Advocates of migrant worker rights and the ILO have repeatedly argued that relaxation of the restriction on labor mobility can help improve the bargaining strength (and wages) of temporary migrant labor. However, of more direct interest to us is whether this employer-guest worker 'tying' is a good thing from the host country's point of view. Higher wages for temporary foreign migrants

[16] While not strictly a temporary labor migration program, the *H-1B* program in the United States assigns foreign workers to specific employers and makes mobility across employers costly (Ruhs, 2002).

mean lower profits for the firms that hire them, which might suggest that it is in the interest of the host country to maintain such tying.

Our theoretical framework helps throw light on this issue, and suggests otherwise. We begin by observing that γ is the cost that migrant workers have to endure to move across firms, and can be influenced by policies of the host country. When visa restrictions preventing worker mobility across firms are in place the degree of worker (im)mobility is given by $\gamma(V_R = 1)$, and if such restrictions are absent by $\gamma(V_R = 0)$, where $\gamma(1) > \gamma(0)$. Recall that a worker's outside option is given by $y(1 + g - \gamma(V_R))$. This implies that an increase in worker mobility (i.e. lower $\gamma(V_R)$), results in higher wages for the migrant worker. However, what about overall national welfare in the host country? Our theoretical framework suggests that in fact a relaxation of restrictions should be 'potentially Pareto improving' (in the terminology of Besley and Coate, 1998).

COROLLARY IIIA. *Over the range satisfying condition (5) of Proposition 1, the host country's relaxation of visa restrictions, and the consequent increase in the mobility of migrant workers, results in a higher number of temporary migrants in the steady state, i.e.* $n_T^*(\gamma(1)) < n_T^*(\gamma(0))$*, as well as a higher level of national welfare.*

Once political considerations are taken into account, the intuition is straightforward. A relaxation in the migrant workers' ability to move across employers increases their bargaining power vis-a-vis their employing firms. This reduces the economic rent that the firm is able to appropriate and thereby reduces the maximum amount the firm lobby is willing to pay the government in order to retain its migrant workers, i.e. $B^{max}(\gamma(1)) > B^{max}(\gamma(0))$. Overall, this implies that any change in migration policy that strengthens the bargaining power of experienced migrants reduces firms' profits, and their willingness to lobby intensively to retain them. Ipso facto, it increases the time-consistent temporary migration level into the country, thereby increasing welfare.

More striking is the result that any policy which encourages greater labor mobility is at least potentially a Pareto-improvement. To see this, we first observe that there is an obvious benefit to the migrant worker from a higher wage. Further, note that the country's citizens also benefit from the increase in national income that follows this higher level of sustainable temporary labor migration. Perhaps less obviously, even firms benefit. At first glance, this may appear puzzling, since the amount of surplus they can extract from the retained experienced workers is being reduced. However, the key point is that, since in equilibrium not all vacancies are getting filled, that surplus is not being extracted anyway. Since the level of that temporary migration is higher than it would have been with lower labor mobility, more of the productive surplus gets realized.

Therefore, our theoretical framework unambiguously suggests that any policy that increases guest-worker mobility within the host country is likely to benefit all parties, and should be made a priority.

II. Culture and Migration Programs: Two Examples

A. Guest Worker programs in the Middle East: Some of the largest ongoing temporary migration programs in the world are in the Middle East – Bahrain, Kuwait, Saudi Arabia and the UAE being prominent examples. However, during the late eighties there was an important shift in the nature of the guest-worker programs in these countries. In particular, there was a dramatic shift in the source countries for much of the migrant workforce, away from other Arab countries, such as Egypt, Yemen and Jordan, which had previously been the main sources from which migrant workers were drawn.[17] Instead, these rich Gulf countries chose to deliberately replace temporary migrants of Arab origin with those of South Asian or South East Asian origin. In fact, there was a decrease in not just the share, but even in the absolute number of Arab workers. So what accounts for this puzzling switch?

Our model suggests one possible answer. Consider the decision facing a host country which can import workers from different countries with widely differing cultural characteristics. For instance, it can either import workers from a culturally dissimilar country such as India (λ^I), or from a neighboring culturally similar Arab country such as Egypt (λ^E) or Yemen, where $\lambda^I > \lambda^E$. Given the ethnic, religious, linguistic and cultural affinity with fellow Arab countries, one might expect the policymaker to prefer importing temporary migrants from these countries, rather than from culturally dissimilar countries in South and South East Asia. However, Corollary 1 provides the following observation.

COROLLARY IIIB. *The politically sustainable level of temporary migration and national welfare in the host country, is higher, if temporary migration is from countries that are more culturally dissimilar from the host country, i.e.* $n_T^*(\lambda^I) > n_T^*(\lambda^E)$.

The intuition is the following. It is much more costly to the government to provide citizenship to a group of migrant workers who are culturally very different. In large part this is because it is likely to be easier to culturally assimilate workers whose cultural distance is small to begin with.

[17] The Arab share of the foreign worker population in the Arab countries of the Gulf Cooperation Council (GCC) went down from 56 percent in 1985 to 32 percent in 2002. This decrease in the Arab share of temporary migrants was mirrored by the rise in the share of South and South East Asian migrants over the same period. For details see Andrezj Kapiszewski (2006).

Huntington (2004) and Pritchett (2006) make such a point in the context of European migrants in American society. Indeed, this effect is captured in the politician's incentive constraint (equation (4)), where a higher λ implies that it is easier for the constraint to be satisfied. In other words, if the migrant workers are culturally very dissimilar (e.g. λ^I), the firm needs to make a larger bribe in order to successfully lobby the politician to retain the temporary workers. Accordingly, since it implies that it is less likely that the government will succumb to a bribe, the politically sustainable level of temporary migration n_T^* rises with the cultural distance of the migrants.

Therefore, our analysis suggests that a simple way in which the degree of inefficiency can be reduced is by replacing (culturally similar) Egyptian migrants with culturally distinct Indian (or Filipino) migrants, since this would imply that $n_T^*(\lambda^I) > n_T^*(\lambda^E)$. Jureidini (2006) in his survey of temporary migration to the Gulf States argues that this was clearly one factor that contributed to the replacement of Arab workers with other Asians: "Arabs were more likely to stay and eventually make demands for citizenship and political participation. Asians were considered more dependable and less demanding and were easily expelled".[18]

B. The Civil Rights Movement and Migration Policy: Consider the following three events drawn from the years 1964-65 in the United States. First, in December 1964 the *Bracero* Program was formally terminated after having been in place since 1942. This was one of the largest temporary worker programs in the world, and sponsored over 4.5 million border crossings of Mexican labor to work in the farm sector in California over the period 1942-64. Soon after, the Federal Government in the United States changed its immigration policy, with the passage of the landmark Immigration and Nationality Act Amendments of 1965. This Act was revolutionary in that it allowed immigration from countries where the racial, ethnic and cultural makeup of the country was very different from that of the United States, and from the European countries from which most of the U.S. population originated. Finally, around the same time, Congress passed the landmark Civil Rights Act of 1964 and the Voting Rights Act of 1965.

Typically, these three events have been analyzed independently of each other. In contrast, our starting point is to treat the contemporaneous occurrence of these events as not just a coincidence, but rather as a series of inter-related outcomes. In particular, we view the shift in citizens' preferences that accompanied the Civil Rights Movement as central to an explanation of the

[18] Given the large differences in the nature of politics in the West as compared to the Middle East, it may seem that our model is not directly applicable. However, we should point out a simple modification of our model where elections are replaced with the threat of political instability (arising due to cultural heterogeneity) would also generate very similar results.

contemporaneous re-direction of immigration policy. In the context of our model, one can frame the issue as follows: How does a shift in attitudes towards cultural heterogeneity result in a change in migration policy? Consider the implication of an exogenous reduction in the disutility from permanent migration, λ. In that case we can expect that the cultural costs of having citizen-workers of very distinct racial-cultural ethnicity might be (more than) offset by the enhanced productivity of the temporary migrants to whom citizenship is granted. In particular, Corollary 1 implies the following comparative static result.

COROLLARY IIIC: *There exists a sufficiently large decline in λ such that temporary migration is replaced by a permanent migration program. In particular, there exists a $\lambda_1 > \lambda_2$ such that $n_T^*(\lambda_1) > 0$ and $n_P^*(\lambda_1) = 0$ while $n_T^*(\lambda_2) = 0$ and $n_P^*(\lambda_2) > 0$.*

The Civil Rights movement (and the accompanying change in legislation) played a pivotal role in changing attitudes towards and the tolerance of individuals of very different ethnicity. Prior to the Immigration Act of 1965, immigration quotas were on the basis of national-origin quotas established in 1920. In practice, as argued by Chin (1996) there were strong racially based restrictions that prevented non-white individuals (most pointedly from Asia) from immigrating to the U.S..[19] However, the Civil Rights Movement is likely, at least at the margin, to have increased public tolerance of immigration from countries with a very different ethnic-cultural makeup. For instance, Chin (1996) argues that

> "....whether or not aliens had a right to immigrate on a race-neutral basis, officials recognized that racism in immigration was a civil rights issue because of its effect on Americans. Dean Rusk for example, observed that immigration policy had significant domestic, as well as foreign effects: 'Given the fact that we are a country of many races and national origins, that those who built this country and developed it made decisions about opening our doors to the rest of the world, that anything which makes it appear that we, ourselves, are discriminating in principle about particular national origins, suggest that we think.....less well of our own citizens of those national origins, than of other citizens'."

Furthermore, Jenkins (1999) suggests that in the wake of Lyndon Johnson's landslide victory, congressional liberals simultaneously pushed to bring about an end to the *Bracero* program, pass

[19] For example a person of Asian racial descent who was born and raised in Brazil was treated as Asian, and not Brazilian, for the purpose of immigration.

the Civil Rights Act, as well as push through the Immigration and Naturalization Act of 1965. Indeed Wells (1996) argues that the Civil Rights Movement played an important role in the termination of the Bracero program. While a number of explanations can be offered for the passage of each of these major pieces of legislation taken individually, taken together, it is highly likely that the shift in popular attitudes towards individuals of a different cultural makeup also had a major role to play in all of these policy changes.

III. Temporary Workers in the Household: the Kremer-Watt Proposal

Kremer and Watt (2008) propose a policy which is designed to be both Pareto improving and politically feasible. In particular, they suggest that relaxing restrictions on the "migration of foreign private household workers can potentially (1) equalize wages among natives, (2) provide a fiscal benefit, and (3) limit the perceived impact of immigration on culture and crime." Under this policy, temporary foreign workers (mostly women) would perform household services, from simple au pair duties to cooking, cleaning and so on, similar to existing programs such as the one in Singapore, for example. The idea is that this would free up (highly educated) native women to (re-)enter the work force, with an accompanying increase in national income from the increase in labor participation of high-productivity workers. For these reasons, they argue such a proposal is likely to be efficiency enhancing *and* be politically attractive: "programs with temporary non-renewable visas might make introducing foreign workers more palatable".

While the Kremer-Watt proposal has a number of attractive features, our framework suggests caution about some of the political constraints that even such an apparently attractive program might face. The key point is that the household sector is one in which the (employer-specific) productivity of the worker rises over time. For example, as au pairs attached to particular households become familiar with the idiosyncrasies of the household, their children, their cooking habits and so on, they become more valuable to the household. Similar increases in employer-specific productivity can occur in other sectors as well. If we make the additional plausible assumption that households/employers can politically organize themselves to lobby the government, then our model highlights the trade-off between, on the one hand, the efficiency and equity benefits, and on the other, the political constraints of such a program. Therefore, while such a proposal may get off the ground and should be encouraged, we should point out that there are likely to be real political limits to the size of the program.

5 Conclusion

Aging populations, rising social security payments and a shortage of labor in many countries in the developed world are likely to increase the debate about importing a younger workforce from the developing world. This paper explores a neglected channel that may prevent lowering of barriers to labor migration even in the face of greater economic gain – namely, concern about the country's culture and identity. Despite the potential to boost world income, any policy aimed at encouraging migration will face political limits driven by cultural concerns. In particular we demonstrate that countries may fail to encourage worker migration even if such a policy has no distributional impact and where the repatriation of workers can be costlessly enforced. The inefficiency can be in both the levels of temporary and permanent migration. Furthermore, our framework also allows us to understand which countries may find it politically difficult to take advantage of the globalization of labor migration and points out that simple alterations in worker-employer tying requirements can help make greater amounts of labor migration politically feasible.

However, this paper is but a first step in examining the impact of culture on the politics and pattern of migration policy. Many other issues remain for future work. For example, how does uncertainty in the economy affect this relation? While migrants maybe welcomed during economic booms, popular attitudes often turn against them during times of economic crisis. Another relevant issue is that of the dynamics in the process of cultural assimilation by migrants and the resulting impact on future migration policy. Should one deliberately choose a diverse migrant pool or instead focus on importing migrants from a particular cultural area? We leave this and much else for further exploration.

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Appendix

PROOF OF COROLLARY 2:

Let us rewrite the incentive-constraint when it binds:

$$\beta y(s+\gamma)n_T + \frac{1-\theta}{\theta}[(y\Delta + rw_0 + c_T)n_T - \lambda c(\frac{n_T+n_P}{1+a}) + \lambda c(\frac{n_P}{1+a})] = R$$

i.e. for a given level n_P, it gives a maximum supportable level of n_T as a function of n_P. Let us call this function as $n_T(n_p)$. The left-hand side of the above equation is similar to that in figure 1 i.e. it is inverse U-shaped in n_t and its intersection with the R line gives $n_T(n_P)$. Given that $c(.)$ is convex, an increase in n_P lowers the left-hand side of the above equation and thus increases $n_T(n_P)$ i.e. $\frac{dn_T}{dn_P} > 0$.

Now, one can use $n_T(n_P)$ to rewrite the objective function in terms of only the number of permanent migrants as:

$$\max_{n_P} \frac{1}{1-\delta}\left\{(y - rw_0 - c_T)(n_T(n_P) + n_P) + \delta[y(1+\Delta)n_P - \lambda c(\frac{n_P}{1+a})]\right\}$$

with the attendant first-order condition:

$$(y - rw_0 - c_T)(n_T'(n_P) + 1) + \delta[y(1+\Delta) - \frac{\lambda}{1+a}c'(\frac{n_P}{1+a})] = 0 \tag{6}$$

Analysis of this equation shows how the level of permanent migration, n_P, is affected by the various parameters.

Consider first the firm's bargaining power β or the level of market segmentation γ. They affect this equation only though their effect on $n_T'(n_P)$.

One can derive the expression for $n_T'(n_P)$ as:

$$\frac{dn_T}{dn_P} = \frac{\frac{\lambda}{1+a}\{c'(\frac{n_T+n_P}{1+a}) - c'(\frac{n_P}{1+a})\}}{\frac{\theta}{1-\theta}\beta y(s+\gamma) + (y\Delta + rw_0 + c_T) - \frac{\lambda}{1+a}c'(\frac{n_T+n_P}{1+a})}$$

Hence $n_T'(n_P)$ decreases as $\theta, \beta, s, \gamma, \Delta, w_0$ or y increases or as λ decreases.

Returning to (6), an increase in θ, β, s or γ lowers the left-hand side only through their effect on $n_T'(n_P)$. Thus n_P^* falls as either θ, β, s or γ increases. An increase in the cultural cost parameter λ or a decrease in the intertemporal productivity parameter Δ has two countervailing effects: they lower the left-hand side via their direct negative effect on the marginal cultural cost and marginal productivity, but at the same time raise the left-hand side through their positive effect on $n_T(n_P)$. Thus their overall impact on the level of permanent migration is ambiguous.

Table 1: ***TEMPORARY MIGRATION PROGRAMS: A SELECTION****

	United States *Bracero* Program	Germany *Gasterbeiter* Program	Switzerland *Auslanderausweis* B	Singapore *Employment Pass* R	Kuwait *Kafala V.18*
Duration of Visa Program	Less than one year, Renewal possible	Initially one year, renewal possible after residence of three years	One year, renewal possible	Two years, Renewal possible for max of four years	Renewal possible
Change of Status	No	Yes, after a period of five years, worker may get permanent resident status	Yes, after a period of five years may get perm. residency	No	No
Employment restricted to Specific Sector	Yes (agriculture + Rail): 1942-46	Yes	Yes	Yes	Yes
Employment restricted to Specific Employer	Yes	Yes	Yes	Yes	Yes
Skill Requirements	Unskilled farm workers	As specified by employer	Yes (mainly skilled)		

* This Table draws on Table 2.3 in Kapur and McHale (2005), and Ruhs (2002).