Frontiers Openness and Optimal Migration Duration[*]
Preliminary Draft

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Abstract

Raising barriers to entry is a common policy used to limit immigration. It implicitly assumes that migrations are permanent. However, a growing literature has begun to study migrations as a temporary decision in a dynamic framework. In this light, policies aimed to limit inflows overlook their feedback on outflows. In what follows, we argue that both theory and historical evidence show that temporary migrations are the rule rather than the exception, and that there exists a trade-off between frontier closure and migration duration. As a consequence, a strict regulation of entries may not be optimal, because it decreases both inflows and outflows, and the net result may be an increase of the foreign population in the host country. Differently from most of the existing literature, and according to historical evidence, we argue that there is no reason to consider the return decision as permanent. Using an infinite-horizon model, we find that expectations on a possible return in the host country are indeed the key mechanism that allows frontier closure to backfire on migration duration. Moreover, we show that a policy only focused on frontier control overlooks the possible benefits of international co-operation.

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1 Introduction

Migration has always been a widely debated topic on the policy-makers agenda. The ‡ow of immigrants to rich countries is often a cause of concern to governments[1], that try to limit this phenomenon raising barriers to entry. However, despite the importance of this issue, the ralated literature is still poor. Most of the early analysis explaining migrations rely on wage di¤erentials in a static context (see Sjaastadt (1962), or Harris and Todaro (1970)). In these models, migration towards the rich countries increases with wage di¤erentials.

Within such a framework, the decision to emigrate can only be permanent: an individual will never go back to her home country. This assumption is clearly at odds with reality, since there are both in‡ows and out‡ows of migrants. Indeed, as Dustmann (2001) points out, temporary migrations are not uncommon, and often they are the rule rather than the exception, even in spite of persistent higher wages in the host country. Empirical evidence, too, does not always support the simple prediction that increasing economic disparity intensi…es migrations. (see, for example, Carrington et al. (1996), and Dustmann (2001)).

Thus, a static model is by no means satisfactory to study an essentially dynamic phenomenon. However, the determinants of the 'return' migration are still poorly investigated.

Nonetheless, as we argue in the present paper, the comprehension of its causes is essential to the design of immigration policies: the size of the migrant ‡ow is given by the di¤erence between the individuals coming in and out. In spite of that, policies are focused mainly on regulating in‡ows, overlooking their feedback on the out‡ows. This problem seems, somewhat surprisingly, better known in the press than among academic economists: "The Economist", on March 31st, wrote "Once you have climbed over a high fence, you are less likely to go home again once you've made money or gained experience, for fear that you can never return A more open regime would encourage temporary residence, allowing skills to ‡ow more freely to and fro". This paper is an attempt to …ll this theoretical gap.

In our work, we focus on the impact of the degree of frontier closure on the optimal migration duration. A strict regulation of immigration raises the cost of entry into the foreign country: For many migrants, entry barriers involve many failed attempts to emigrate. These attempts are time and money consuming, and often individuals pay very high fees to criminal organisations to enter illegally.

With few important exceptions (see, for example, Hill (1987)), the literature has generally considered the return decision to be permanent. Indeed, from a theoretical perspective, it is not clear at all why -after returning to her homecountry- an individual could not decide to emigrate again. In our view, this re‡ects a persistence of the former convention of considering the emigration decision as permanent. This assumption overlooks an important cause of migrations: political and economic instability. Individuals leave their origin countries

[1] The U.S. decided to restrict the access in 1920. Until that year, entry had been possible to anybody (Borjas (1994).

not only because of wage di¤erentials, but also to escape negative shocks . Galor and Stark (1990), and Dustmann (1997) analyse the return decision considering a single migration spell. Notice that we are not raising a purely technical point: there exists clear historical evidence that, just after the decrease in transoceanic travel costs at the end of the XIX century, repeated migration spells were not uncommon. Baines (1991) has pointed out that European migrants to U.S. were used to stay abroad for many intervals of 3-5 years. Similar results are reported by Byerlee (1974) for African migrants, and by Cornelius (1978) and North and Houstoun (1976) for Mexican ones.

Many large population out‡ows occur as a consequence of political turmoils, wars, natural catastrophes: these shocks, often of a magnitude unknown to developed countries, are likely to a¤ect both the physical and human capital accumulated abroad by migrants. Thus, there is no reason why a returning migrant should not respond to a new shock migrating again.

Our opinion is that the nature of the shocks is quite di¤erent in host and home country: most macroeconomic shocks are temporary in developed countries, while in developing countries large and permanent negative shocks are much more likely. Moreover, the same shock is likely to have a di¤erent impact in these countries: think, for example, to the consequences of a ‡ood in the U.S. or in Bangladesh. In this case, the degree of frontier openness is a core variable, since migration is an instrument to hedge these risks. When considering whether returning, a low probability of re-entering in the immigration country in case of another shock will a¤ect the decision. In other words, strict migration control will reduce both in‡ows and out‡ows, and so it will not necessarily reduce the size of the migrant population in the host country.

Thus, the impossibility of ruling out such events for most of the developing countries implies a powerful disincentive to return home, particularly in presence of entry rationing.

Our model allows for multiple migration spells in an in…nite-horizon framework. Furthermore, di¤erently from most of the existing literature, it explicitly considers the role of frontier closure and domestic instability in determining the migration duration. We believe this factors are essential to the comprehension of the migration dynamics.

The paper is organised as follows: the next section brie‡y reviews some main …ndings in the literature on return migration, and after we lay out our model. Then, we show some simulations to illustrate our …ndings. We conclude discussing the results and the policy implications.

1.1 Related Literature

Some early contributions to the study of migration duration are given by Djajic and Milbourne (1988) and Hill (1987). The former authors explicitly stresses the importance of considering migrations as temporary, and develop a life-cycle model to study the e¤ect of wage di¤erentials in determining migration ‡ows and their …nal e¤ect on equilibrium wages. Djajic and Milbourne (1988), among others, assume that home consumption has a higher marginal utility. This assumption, in our view, is particularly realistic and useful in studying the migrants' behaviour: all of us have probably experienced the importance of the complementarities one can enjoy when consuming in his own environment. Djajic and Milbourne (1988) -however- still consider a single migration in the life-cycle.

Hill (1987) stresses instead the importance of "the repetitive character of contemporary labor migration"; nonetheless, his assumption of an identical duration for each migration is, in our opinion, too restrictive, and potentially deceptive. Di¤erently from him, we …nd that the impact of strict frontier control on the total time spent abroad is unambigous.

Dustmann, in a series of papers, (1995, 1996, 1997, 2001) has studied the migration and return decisions in a life-cycle framework. His results shed light on the migration dynamics: He lists three basic reasons why a migrant should return home:

1) she prefers consumption in the home country

2) the real value of the wealth accumulated during the migration may be higher at home

3) returns to human capital acquired in the host country may be higher at home.

Dustmann (2001) shows that an increase in the host country wage may lead both to a decrease and an increase in migration duration. This happens because a larger wage gap increases the marginal value of staying abroad (substitution e¤ect), but decreases the marginal utility of wealth as well (income e¤ect). The net e¤ect is indetermined.

Dustmann (1997) studies the e¤ect of the correlation of the shocks in the host and native labor markets: both the optimal migration duration and migrants' saving behaviour depend heavily on its sign.

Mesnard (2000) considers temporary migration as a way to overcome rationing in the credit market.

Galor and Stark (1990) suggest that a positive return probability may induce migrants to work harder, and save more than natives.

Faini (1996) in his comment to Dustmann (1996), sets out informally a framework very close to ours.

2 The model

We consider a risk-neutral potential migrant with an in…nite life horizon. She must …rst chose whether or not to migrate in the host country H and then after how much time possibly return to the domestic country D. In both countries there is an unique produced consumption good: the per-period utility of consuming it in host country is

$$u^H(c) = c$$

whereas the utility of consuming in the domestic country, in view of the presences of specific complementarities, is larger, namely

$$u^D(c) = \alpha c, \; \alpha > 1.$$

In spite of the lower utility of consuming, in the host country there is the possibility of accumulating human capital k. The low of motion which regulates the accumulation of human capital in period t is

$$k_{t+1} = (1 - \delta)\, k_t + l$$

where $0 \leq \delta \leq 1$ is the depreciation rate, and $l > 0$ is the per-period inelastic supply of "effort". In the host country, as well as in the domestic one, consumption is produced by a linear technology using human capital as the solely input:

$$c_t = k_t.$$

By contrast, in the domestic country, human capital accumulation is not possible. Human capital depreciation, moreover, is stochastic rather than deterministic: In each period, with a probability p human capital is completely destroyed, meanwhile with the probability $(1 - p)$ it is perfectly conserved. This requires some words of explanation. We can interpret this situation as follows: In developing countries, skill upgrading in the labor market is -if any- very slow. We try to catch this feature in our model assuming that human capital can only be imported from abroad. In a country with no production of human capital it is extremely unlikely that knowledge become obsolete. Therefore, the only factors able to erode the accumulated human capital are large and permanent macroeconomic shocks. It may seem unusual to assume that a shock can completely destroy a person's human capital; however, we think rather to its market value. The kind of catastrophic shock we are considering can, basically, destroy the possibility of economic activity (doing business). Thus, an individual would be forced to migrate again, starting from zero because her new country of destination may even be different from the older one[2]. Such shocks are, instead, ruled out in developed countries, where high growth rates and fast technological innovation require frequent knowledge updating.

It follows that consumption in the native country is constant: either equal to the initial endowment of human capital, if the shock has not realized, or to zero, in the opposite case.

Now we turn to the choice the potential migrant is faced with. She can of course choose not to migrate and to stay forever in the domestic country. For

[2] This is an important point: we assume that, each time the migrant goes abroad, she always starts from zero. This is needed to apply our recursive method, but it makes economic sense; loosely speaking, the migrant we have in mind is unskilled, and his human capital is strictly related to the social capital and the credibility she's able to construct abroad. These relationships are likely to vanish very rapidly when the migrant returns home. This is true not only for unskilled labor: think about yourself leaving your job for some years, and then coming back. Moreover, there is not just one destination country: it is fairly possible that the individual will leave to different countries.

sake of simplicity, and without any loss in generality, we have assumed that the endowment of human capital in $t = 0$ is zero. Thus, the consumption, and therefore the lifetime utility V^D discounted at the rate β is nil. Conversely, she can choose to migrate, but migrating is not the result of a purely individual choice. There exist, indeed, several institutional barriers to entry in foreign countries. Usually, only a small fraction of migrants are allowed to cross the frontiers. As a consequence, an individual will enter the country of destination only with a given and constant probability $\pi \in (0; 1)$. However, once the agent has chosen to migrate, she will try to do it in each period, until she succeed. Because of that, we can normalize the time of arrival in the host country to zero assuming that she has already migrated.

For sake of a clearer exposition, it is useful to begin the study of the migrant's problem assuming a complete freedom of moving from one country to another, and the absence of any shock in the domestic country.

2.1 Optimal migration with no adverse shocks on human capital

In this case the migrant must chose how much time to spend in the host country, where she can accumulate human capital. We assume that human capital fully depreciates only in case of re-migration, and that the its initial endowment is zero. It follows that she will spend the remaining of her (infinite) lifetime in the domestic country. $V(T)$; the utility corresponding to a period $T \geq 0$ of migration, can be therefore written as

$$V(T) = V^H(k_T) + \beta^T V^D(k_T) \tag{1}$$

where $V^H(k_T)$ is the utility of staying for T periods in the host country ending up with an amount of accumulated human capital k_T; and $V^D(k_T)$ is the (not discounted) utility of staying from period T to infinity in the domestic country. Given the simple structure of the model, $V^H(k_T)$ is the indirect utility of the following maximization problem:

$$V^H(k_T) = \max \sum_{t=0}^{T-1} \beta^T c_t$$

subject to the constraints

$$\begin{aligned} c_t &= k_t \\ k_{t+1} &= (1-\delta)k_t + l \\ k_0 &= 0: \end{aligned}$$

Integrating the low of motion of capital, straightforward computations yield

$$V^H(k_T) = \frac{l}{\delta}\left[\frac{1-\beta^T}{1-\beta} - \frac{1-(\beta(1-\delta))^T}{1-(\beta(1-\delta))}\right]: \tag{2}$$

Conversely, computing $V^D(k_T)$ is even easier. Indeed it is the solution of the problem

$$V^D(k_T) = \max \sum_{s=0}^{\infty} \beta^s c_s$$

subject to the constraint

$$c_s = k_T$$

since one has

$$k_T = \frac{l}{\delta}\left(1 - (1-\delta)^T\right) \tag{3}$$

we can write

$$V^D(k_T) = \frac{\alpha}{1-\beta}\frac{l}{\delta}\left(1 - (1-\delta)^T\right).$$

Therefore, total utility associated to a period of migration T is

$$V(T) = \frac{l}{\delta}\left[\frac{1-\beta^T}{1-\beta} - \frac{1-(\beta(1-\delta))^T}{1-\beta(1-\delta)} + \beta^T\frac{\alpha}{1-\beta}\left(1-(1-\delta)^T\right)\right]. \tag{4}$$

The agent must therefore maximize (4) with respect to $T \geq 0$. Ignoring the integer constraint, the first oder condition for the problem is:

$$\beta^T \ln\beta\left(\frac{\alpha-1}{1-\beta}\right) - (\beta(1-\delta))^T \ln(\beta(1-\delta))\left(\frac{\alpha}{1-\beta} - \frac{1}{1-\beta(1-\delta)}\right) \propto V'(T) = 0. \tag{5}$$

Since $\alpha > 1$ and $\frac{\alpha}{1-\beta} - \frac{1}{1-\beta(1-\delta)} > 0$, one can immediately verify that $\lim_{T\to 0} V'(T) > 0$: therefore, not migrating is never optimal. Analogously, one has $\lim_{T\to\infty} V'(T) < 0$ and the second derivative $V''(T)$ is negative. The immediate conclusion of all this is that there exists an unique and interior optimum T^* for $V(T)$, as it is stated in the following proposition.

Proposition 1 (Optimal migration time without adverse shocks). Let $\alpha > 1$. The optimum of the function $V(T)$ defined in (4) then is (generically) unique and interior.

Notice that if $\alpha \leq 1$, one has $V(0) < V(\infty)$ and $\lim_{T\to\infty} V'(T) > 0$: this is sufficient to ensure, as it should be expected, that it is optimal for the individual to stay in the host country forever. It is also possible to show that the higher δ is, i.e. the higher the depreciation rate of human capital, the lower the time an individual will be willing to spend abroad. This result is easily comprehensible examining the low of motion of the system. Indeed, a higher δ not only lowers the level to which the accumulation of human capital converges, but also increases the speed of convergence. The optimal response is then to reduce the period spent in the destination country, and anticipate the time of return. Analogously, a higher level of the productivity λ according to which effort is converted into human capital, incentivates longer periods abroad: The expected returns from the investment in human capital are higher.

The introduction of the simplest case is going to make easier the analysis of the general model.

2.2 The general case with adverse shocks on human capital

We will solve the optimization problem recursively. Under the hypothesis of stochastic depreciation at home, in each period human capital fully depreciates with a constant probability p; moreover, an individual succeeds in entering the host country only with a fixed and constant probability π. Thus, total utility $V(T)$ of returning to the domestic country after T periods of migration writes:

$$V(T) = V^H(k_T) + \beta^T \left[(1-p) V^D(k_T) + p\pi V(T) + p(1-\pi) V(0) \right] \quad (6)$$

where $V^H(k_T)$ is defined as in (2). Equation (6) is to be interpreted as follows: The agent returns home after T periods, which give her an utility $V^H(k_T)$. In the first period spent home, there is no shock on human capital with a probability $(1-p)$, and the utility is $V^D(k_T)$:

The latter is simply the utility of starting in the domestic country with an initial endowment of capital k_T. Conversely, with a probability p, human capital fully depreciates: in this case, she will immediately try to re-migrate. She will succeed with probability π, therefore starting again and getting a (discounted) utility $V(T)$. If she won't succeed, which occurs with probability $(1-\pi)$, she will simply get $V(0)$, the utility of starting in the domestic country with no capital endowment.

Let us now first compute $V(0)$. In the current period no consumption is possible, and at the end of it the agent is going to migrate with a probability π. If she succeeds, her utility will be $V(T)$, otherwise she will get again $V(0)$: Therefore, we have

$$V(0) = 0 + \beta \{ \pi V(T) + (1-\pi) V(0) \}$$

from which it is easy to get the expression for $V(0)$:

$$V(0) = \frac{\beta \pi V(T)}{1 - \beta(1-\pi)}. \quad (7)$$

The computation of $V^D(k_T)$ is less straightforward . Indeed, starting with a level of human capital k_T yields in the first period a utility of consumption equal to αk_T. In the following period, with a probability $(1-p)$ the adverse shock does not occur and therefore the utility is still $V^D(k_T)$. In the case the shock occurs, (with a probability p), the individual will re-migrate with a probability π or will get an utility equal to $V(0)$ with a probability $(1-\pi)$. We have then the following expression for $V^D(k_T)$:

$$V^D(k_T) = \alpha k_T + \beta\left\{(1-p)V^D(k_T) + p\pi V(T) + p(1-\pi)V(0)\right\}. \qquad (8)$$

Writing (8)one lag forward, yields:

$$V^D(k_T) = \alpha k_T + \beta\left\{(1-p)\left[\alpha k_T + \beta\left[(1-p)V^D(k_T) + p\pi V(T) + p(1-\pi)V(0)\right]\right] + p\pi V(T) + p(1-\pi)V(0)\right\}$$

which can be rewritten as

$$\begin{aligned} V^D(k_T) = {} & \alpha k_T + \alpha\beta(1-p)k_T + (\beta(1-p))^2 V^D(k_T) + \beta(1-p)p\pi V(T) + \\ & + \beta^2(1-p)p\pi V(T) + \beta(1-p)p(1-\pi)V(0) + \beta^2(1-p)p(1-\pi)V(0). \end{aligned}$$

Integrating (8) up to infinite, since $\lim_{s\to\infty}(\beta(1-p))^s V^D(k_T) = 0$ and taking into account (7) and (3), we finally get:

$$V^D(k_T) = \frac{\alpha}{1-\beta(1-p)}\frac{\lambda}{\delta}\left(1-(1-\delta)^T\right) + \frac{\beta p\pi V(T)}{1-\beta(1-p)} + \frac{\beta p(1-\pi)}{1-\beta(1-p)}\frac{\beta\pi V(T)}{1-\beta(1-\pi)}. \qquad (9)$$

Now, substituting in (6) (7) and (9), we find:

$$\begin{aligned} V(T) = {} & \frac{\lambda}{\delta}\left[\frac{1-\beta^T}{1-\beta} - \frac{1-(\beta(1-\delta))^T}{1-\beta(1-\delta)}\right] + \\ & \beta^T\left\{(1-p)\left(\frac{\alpha}{1-\beta}\left(1-(1-\delta)^T\right) + \frac{\beta p\pi V(T)}{1-\beta(1-p)} + \frac{\beta p(1-\pi)}{1-\beta(1-p)}\frac{\beta\pi V(T)}{1-\beta(1-\pi)}\right) + p\pi V(T) + p(1-\pi)\frac{\beta\pi V(T)}{1-\beta(1-\pi)}\right\} \end{aligned} \qquad (10)$$

It is now possible to solve (10) for $V(T)$ and find:

$$V(T) = \frac{\frac{\lambda}{\delta}\left[\frac{1-\beta^T}{1-\beta} - \frac{1-(\beta(1-\delta))^T}{1-\beta(1-\delta)}\right] + \beta^T\frac{\alpha}{1-\beta}\left(1-(1-\delta)^T\right)}{1-\beta^T\left(\frac{\beta p\pi}{1-\beta(1-p)} + \frac{\beta p(1-\pi)}{1-\beta(1-p)}\frac{\beta\pi}{1-\beta(1-\pi)} + p\pi + p(1-\pi)\frac{\beta\pi}{1-\beta(1-\pi)}\right)}. \qquad (11)$$

This is the expected lifetime utility with respect to T. To solve the problem, we have to find the maximum of this function with respect to T. We are currently performing the computations, which are algebraically extremely cumbersome, but give standard results: there exists a unique T maximising the utility. For the time being, we refer to our simulations, which show that the function is continuous, single-peaked, and respects appropriate boundary conditions.

We calibrate the model with different parameter values to present also a comparative static analysis. The section below will give a clearer idea of how the exogenous parameters affect the shape of the function, i.e. the migrant's behaviour.

3 Sensitivity Analysis

In this section, we report some simulations to illustrate the e¤ect of the exogenous variables on the optimal migration duration. Since our paper focuses primarily on the degree of frontier openness, we are going to present its e¤ect. In Figure 3.1 we can see how the migrant's utility is a¤ected when ¼ changes from 0.9 to 0.1. We can clearly see how the frontier closure increases the time spent abroad and reduces total utility.

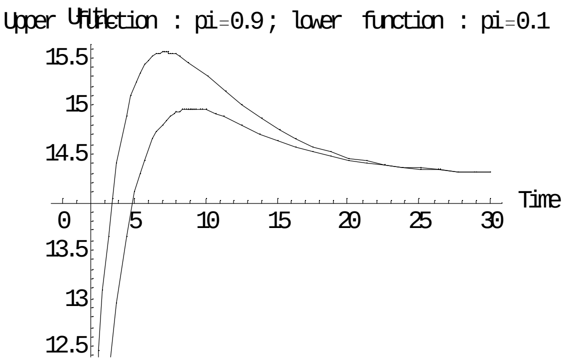

Figure 1:

In Figure 3.2, conversely, we show the impact of the domestic instability on migration duration:

Within the current parameter range, the system shows a bifurcation: when the domestic shock is almost certain (p = 0:9), it is never optimal to return home. It is interesting to compare the combined e¤ect of a high frontier openness and higher domestic stability: in Figure 2, for the upper curve ¼ = 0:9, and p = 0:1, while in the lower curve p goes to 0:9[3].

We see that, for this parameters setting, the impact of domestic instablity is much more important than the degree of frontier openness. This suggests that a policy aimed to reduce economic volatility in underdeveloped countries may, in some cases, be more e¤ective than entry barriers. Now we want to see how a more di¢cult entry a¤ects the migration duration with di¤erent probabilities of the domestic shock. In Figure 3.3, the upper curve has ¼ = 0:1; and p = 0:1;and the in lower curve p goes to 0.9.

Note that, with a constant shock probability, a bigger frontier closure increases the optimal duration.

[3] Note that the lower curve still has a maximum for a …nite t, even though it is not evident from the graph.

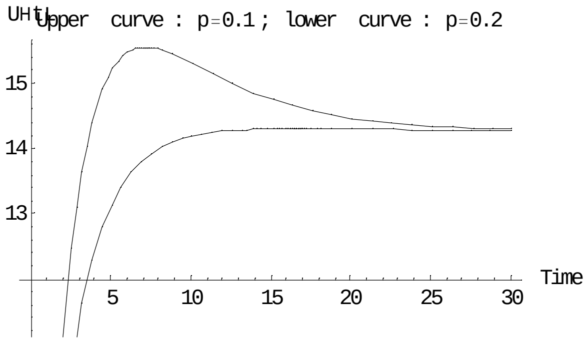

Figure 2:

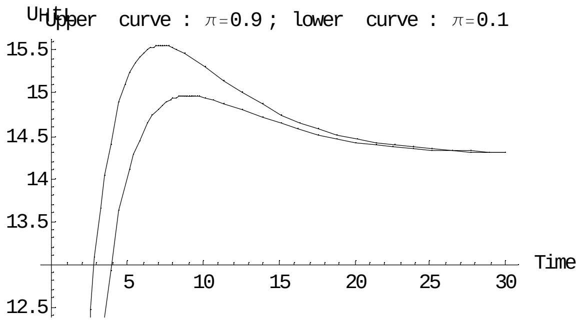

Figure 3:

In Figure 3.4, we examine brie‡y the role of the capital attrition in the host country.

As one can expect, a rapid human capital depreciation is a disincentive to accumulate: an individual prefers to use quickly a rent more valuable at home. This implies that migration spells should be lower in countries with a fast skill upgrading in the labour market.

Finally, we look at the e¤ect of a higher intertemporal discount rate: so far, in our calibrations, ¯ was set to 0.8.

4 Conclusions and policy implications

The study of return migrations is a recent topic in the literature. The authors mentioned throughout the paper have shed new light on the dynamics of migrations, stressing the importance of the migrants' willingness to return home.

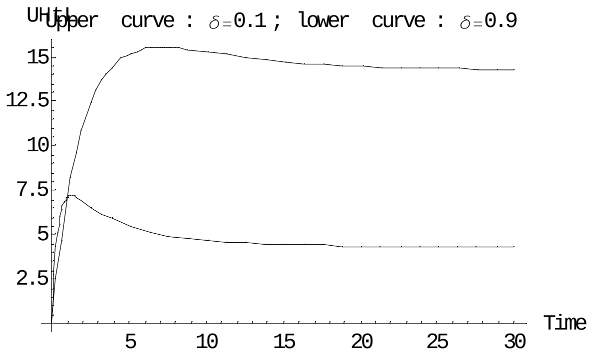

Figure 4:

This has opened a …eld overlooked for a long time. However, among the determinants of duration migration, the degree of frontier openness/closure has not been su¢ciently investigated yet.

We think that we have carefully modelled this point. Nonetheless, we are aware that our model adopts only a rough carachterization of the consumer behaviour, and that no physical capital markets are mentioned. This has proved necessary to preserve simplicity and analytic tractability. Adding physical capital would substantially increase the complexity of the model without changing signi…cantly our conclusions. The absence of capital markets is not a major drawback in our setting, because in the migrants' origin countries they are supposed almost inexistent. Moreover, a migrant is likely to be liquidity constrained in any imperfect -i.e., real- capital market.

Di¤erently from most of the literature, we have argued that the decision about migration duration is not independent from the policy towards immigrants. Our simulations show that the migration duration is quite sensitive to this parameter.

Thus, policies focused only on raising barriers to entry are unlikely to be very e¤ective, their main e¤ect being to disincentivate the out‡ow of migrants. It is likely that only a country hosting a low population of immigrants may use this strategy successfully. Otherwise, we can reasonably expect that frontier closure causes a slow but steady increase of the foreign population in the host country. One may argue that a government willing to close national borders may overcome this problem giving returning migrants an authorisation to re-enter in the future. Unfortunately, this would not be credible: any large macroeconomic shock would cause a sudden wave of migration, not acceptable by the host country.

Our analysis, however, shows as well the role of the economic instability of the native countries in disincentivating returns. This point is not su¢ciently stressed in the existing literature on return migrations, too. Nonetheless, we think its importance is fundamental: loosely speaking, p is also a policy variable. International co-operation may help to reduce volatility in developing countries, setting an environment more favorable to economic growth and political stability. Though it may be difficult to influence these processes, there are no theoretical reasons why international, co-ordinated help policies should be less effective or more costly than enforcing strict frontiers closure.

It is our opinion that, in the current debate on migration regulation, too much weight is put on raising barriers to entry, and too little on the importance of reducing the causes of migration.

We hope that the results presented in this paper may give some insights to address this problem.

References

[1] Baines D.E. (1991): "Emigration From Europe, 1815-1930", Macmillan, Basingstoke

[2] Borjas G.J. (1994): "The Economics of Immigration", Journal of Economic Literature 32, (Dec.)1667-1717

[3] Byerlee D. (1974): "Rural-Urban Migration in Africa: Theory, Policy, and Research Implications",International Migration Review 8, 543-566

[4] Carrington W.J., Detragiache T., Vishwanath T. (1996): "Migration with Endogenous MovingCosts", American Economic Review, 86 909-933

[5] Cornelius W. (1978): "Mexican Migration to the U.S.: Causes, Consequences and U.S. Responses",Center for International Studies, MIT, Cambridge, MA

[6] Djajic S.(1989): "Migrants in a Guest-Worker System", Journal of Development Economics 31,327-339

[7] Djajic S., Milbourne R.(1988):"A General Equilibrium Model of Guest-Worker Migration", Journal of Interntionl Economics 25, 335-351

[8] Dustmann C. (1996): "Return Migration: The European Experience", Economic Policy 22, 214-250

[9] Dustmann C. (1997): "Return Migration, Uncertainty and Precautionary Savings", Journal of Development Economics, 52, 214-250

[10] Dustmann C. (2001) "Return Migration, Wage Di¤erentials, and the Optimal Migration Duration",IZA Discussion Paper 264, February

[11] Dustmann C., Kirchkamp O. (2001): "The Optimal Migration Duration and Activity Choice AfterRe-Migration", IZA discussion Paper n.266, February

[12] Faini R. (1996): "Comment to Dustmann", Economic Policy 22, 253-256

[13] Galor O., Stark O. (1991): "The Probability of Return Migration, Migrants' Work E¤ort, andMigrants' Performance", Journal of Development Economics 52, 295-316

[14] Harris J.R. , Todaro M.P. (1970): "Migration, Unemployment and Development: A Two-SectorAnalysis", American Economic Review 70, 126-142

[15] Hill K.J. (1987) "Immigrant Decisions Concerning Duration of Stay and Migratory Frequency",Journal of Development Economics 25, 221-234

[16] Mesnard A. (2000): "Temporay Migration and Capital Market Imperfections", mimeo, Universite' deToulouse

[17] North D.S., Houstoun M. T. (1976): "The Characteristics and Role of Illegal Aliens in the U.S.Labor Market: An Exploratory Study", Linton and Co., Washington DC.

[18] Sjaastad L.A. (1962): "The Costs and Returns of Human Migration", Journal of Political Economy,Supplement, 70