

Delayed (or Accelerated) Integration as a Counterforce to Gerontocracy*

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Abstract

Free movement of labour does not necessarily lead to an efficient allocation if net wages differ from the marginal productivities due to taxes and social security contributions. How migration is affected by the tax and transfer system depends on the chosen integration principle, i.e. on how fast migrants become a member of the foreign welfare state. In the presence of a gerontocracy where the immobile old have the power to levy taxes on the mobile young, this paper focuses on how the integration policy is optimally determined such that the mobility of the young counteracts this gerontocratic power and national welfare is increased.

JEL Classification: F22; H20; H50

KEYWORDS: Migration, redistribution, Leviathan, gerontocracy, delayed integration, home-country principle, employment principle

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1 Introduction

European integration implies first and foremost that barriers are dismantled and the movement of factors is unhindered. Whether the movement of labour and capital then leads to an efficient allocation across the Member States of the European Union depends on two aspects: first, the extent to which net returns or net wages in the sending and the destination country differ from the respective marginal productivities due to taxes and other kinds of fees and contributions; second, the extent to which this is relevant for the decision as to where to allocate capital or labour.

Correspondingly, the resulting distortions can be eliminated with the help of two different approaches where in what follows, we restrict our attention to the mobility of labour. One possibility is to harmonize taxes and social security contributions - either at zero, which would imply an abolition of the tax-transfer system, or at a level equal across countries. This would correspond to a neutralisation of the distortionary effects on the allocation of labour. At the same time the employment principle could be retained, i.e. taxation by the country where the individual is employed which in our case corresponds to the country of residence. This approach has already been extensively discussed in the literature (see, e.g., Homburg and Richter, 1993, Breyer and Kolmar, 2002, Uebelmesser, 2004) and will not be the focus here.

The other possible reaction is to isolate migrants from the fiscal and social policy in the destination country. The migration decision is then not affected by differences of taxes and transfers between countries, but depends on the difference in gross wages alone. An efficient allocation of labour results. Following this reasoning, Sinn (1990) proposes to replace the employment principle by the home-country principle. Individuals are allocated to a fiscal and social system of one Member State once for their entire life on the basis of their or of their parents' place of birth, their choice at a certain age or some other mechanism.

While the employment principle entails the danger of destructive tax competition,¹ the home-country principle relies on the benevolence of the decision-makers. As both alternative principles present rather extreme ways of how to assign migrants to jurisdictions, it has been

¹This reasoning is based on the presumption that non-cooperative fiscal and social policies will lead to inefficiency. There are, however, circumstances where non-cooperative behaviour results in constrained efficient outcomes. See Kehoe (1989) for mobile capital and Thum and Uebelmesser (2003) for mobile labour.

proposed to opt for a middle course with the principle of delayed integration (Wissenschaftlicher Beirat, 2001, Sinn, 2002, and Richter, 2002). Migrating from one country to another country then results in the assignment to the fiscal and social systems of the destination country with some delay. The shorter the delay, the closer is the principle to the employment principle and the longer the delay, the more similar is it to the home-country principle. Whether less competition should be preferred to more competition or vice versa depends on what one thinks about the general operation of the fiscal and social security systems (Oates, 2002). If we assume that those responsible for the national tax and transfer systems seek to promote social welfare, the home-country principle is the best solution. If, however, we adhere to the Leviathan belief, the employment principle has some merits. The advantages and disadvantages of either a regime where migrants are immediately integrated in the tax and transfer system of the destination country or a regime where migrants remain members of their country of origin can then be balanced by choosing the integration policy accordingly. Differences in the national tax and transfer systems then do no longer distort the migration decision for short-term migration and play a smaller role for long-term migration while the reassignment of migrants to the fiscal and social system of the destination country – even though with some delay – works as a counterbalance to potential Leviathan tendencies.

The aim of this paper is twofold: First, the paper lays out a theoretical model with which the trade-off between more or less tax competition in the presence of more or less benevolent decision-makers can be analysed. The optimal degree of tax competition is determined by the choice of the optimal delay of integration taking the Leviathan or gerontocratic tendencies of the old generation into account. The interests of the old are thus counterbalanced by enabling the young generation to escape the domestic fiscal and social system by migrating - albeit possibly only with some delay. Even though the societies are not yet gerontocratic as the median voter is still a member of the young generation, this might be the relevant scenario for the not so distant future as the forecasts for the demographic development show.² This paper allows determining how the integration policy should be chosen already today when the power

²Today the median voter is, for example, 48 years old in Germany and Italy and 47 years in France. Within the next decades, the age of the median voter will increase significantly – reaching 55 years in 2030 in Germany, 58 years in Italy and 53 years in France. The calculations are based on citizens of the year 2000, their descendents and naturalised foreigners (Eurostat, 2000, OECD, 2001, Bundesausländerbeauftragte, 2002). The demographic developments in other EU countries are similar.

is still largely balanced to guard against future changes of the power structure. By moving from the employment principle towards the home-country principle, the trade-off becomes evident between a more or less mobile tax base in the presence of a more or less (future) gerontocratic society. To fix an integration policy in the constitution today which allows balancing migration and gerontocracy in the future might be a way to avoid possible conflicts at a later point in time. Second, conclusions are drawn with respect to how this framework relates to the realities in the European Union. Even though most of the political debate at the moment at the national level as well as at the level of the European Union centres on the question of policies directed towards immigrants, we here choose the perspective of the home country of emigrants as this framework allows us to focus explicitly on this trade-off between tax competition with fast integration and possible exploitation of the young with slow integration in the presence of a Leviathan generation.

The setup of the paper is as follows: In the next Section, the related literature is discussed. In Section 3, the model is presented and the choices of the different groups are analysed. Section 4 concludes.

2 Related Literature

There is a large literature about the question whether tax competition is good or bad. While Sinn (1994), Oates (2001) and others stress the danger of a race to the bottom in the absence of policy coordination in the context of the European Union, Brennan and Buchanan (1980) point out that tax competition can be an objective in its own right. Edwards and Keen (1996) explicitly focus on this trade-off between tax coordination and tax competition in the presence of a Leviathan where taxes are levied on mobile capital while the capital owners are immobile. Rauscher (1998, 2000) further elaborates on this. This literature assumes a source-based taxation.

We are here instead interested in taxes levied on mobile labour and the optimal delay of integration. In this respect, the paper closest to ours is Richter (2004) who focuses on immigration and emigration and the optimal delay of integration when national welfare comprises tax payers or natives.³ In the spirit of the literature influenced by Edwards and Keen (1996),

³See also Weichenrieder and Busch (2005) for introducing a limited transition period which - by creating a

Richter (2004) constructs a model with a mobile and an immobile group where the mobile group pays taxes which finance a public good consumed by the immobile group. The provision of this public good by a Leviathan government results in the appropriation of part of the tax revenues for Leviathan consumption. Richter shows that delaying integration dominates the home-country principle whenever the propensity of the government to waste tax revenues is strong. However, comparing the home-country principle or the principle of delayed integration to the employment principle does not allow a clear ranking. There is only some weak evidence that the employment principle is the more favoured the more the Leviathan engages in wasteful activities.

The explicit aim of this paper is to derive clear-cut results. For this, a simple modelling framework is chosen. The Leviathan is no longer an additional player in our setup but rather an immobile group which depends on transfers from the mobile group. The immobile group, which can also be interpreted as the old generation, has the power to levy taxes from the mobile group or the young generation respectively - indicating a gerontocratic structure. Following the terminology of the Leviathan literature cited, one could be tempted to see the tax revenues collected by the old generation as wasteful activity. As both generations are, however, part of national welfare, the issue is not to minimize the transfers to the old but to achieve a distribution which corresponds to the social optimum.

3 The Model

There are two groups: one young, mobile group and one old, immobile one. The young group inelastically supplies one unit of labour at home or abroad, earns wage income and pays taxes;⁴ the old group has the power to levy taxes from the young, i.e. we assume a gerontocracy. As we want to focus on redistribution across the two groups, we assume that both groups are homogeneous. The time structure is the following: In stage zero, a constitutional assembly determines how fast migrants become a member of the foreign tax and transfer system after having migrated, i.e. to what extent integration is delayed or accelerated with respect to the

time-consistency problem - can bring tax competition to a hold. Leviathan tendencies do, however, not play any role.

⁴We thus abstract from any inefficiencies which could arise due to a distorted labour supply or human capital investment.

tax and transfer system of the destination country. The chosen regime implicitly determines the mobility of the migrants as their role of tax-payers is concerned. Taken this delay as given, in the first stage, the old generation fixes the tax rate and in the second stage, the young generation then decides about whether to migrate or not.

Solving by backward induction, we first discuss the migration of the young and then the choice of the tax rate of the old before elaborating on the optimal integration policy.

3.1 Stage 2: Migration of the Young

In the second stage, the young individuals compare the net wages in the home country and the net wages in the destination country to decide whether to migrate or not on the basis of the taxes which have been announced in the first stage. As we want to allow for the extreme cases of the employment principle and the home-country principle as well as for intermediate cases with delayed integration, we choose a flexible formulation.

Non-migrants earn w subject to the domestic tax rate t . Emigrants receive w^F in the foreign country where the part δ is subject to the tax rate t of their home country and the part $(1 - \delta^F)$ to the tax rate t^F of the destination country with $0 \leq \delta, \delta^F \leq 1$. The subscript F denotes variables of the foreign country. We follow Richter (2004) in two respects: First, we assume that the delays are harmonized across countries such that $\delta + (1 - \delta^F) = 1$, to rule out double taxation or a temporary exemption from taxation.⁵ Second, we assume that the static framework can be interpreted in a dynamic context; emigrants are subject to the tax regime in their home country for the first δ -part of their emigration period and become a member of the tax regime in the destination country for the following $(1 - \delta)$ -part.

We normalize the size of the young to 1 and allow for heterogeneity e among them where we assume that e is uniformly distributed between 0 and 2. With this, we are able to capture, for example, different non-monetary costs related to moving for $e < 1$ - e.g. individually differing difficulties of integrating themselves socially and culturally in the destination country - as well as preferences for living in a foreign country for $e > 1$.

⁵In the conclusion, we comment on this assumption.

For proportional taxes, the migration decision is thus given by⁶

$$w(1-t) \stackrel{\leq}{\geq} w^F(1-\delta t - (1-\delta)t^F)e. \quad (1)$$

where e is known to the individual. In what follows, we assume that gross wages in the home and in the destination country are equal. In the absence of taxes, there would be no economically motivated incentives to migrate. This simplification allows us to analyze incentives to migrate which are alone due to differences in taxes and thus in net wages - and due to non-economic reasons.

The indifferent individual is then characterized by $e^* \in e$ for which (1) holds as an equality

$$w(1-t) = w(1-\delta t - (1-\delta)t^F)e^*. \quad (2)$$

Net wages at home are equal to net wages abroad where taxes are a convex combination of the taxes to be paid to the home and foreign country respectively and where the individual costs of migration are taken into account.

All $e^*/2$ individuals with costs $e < e^*$ emigrate whereas all $(1-e^*/2)$ individuals with $e > e^*$ stay in the home country where e^* is given by

$$e^* = \frac{(1-t)}{(1-\delta t - (1-\delta)t^F)} \quad (3)$$

and

$$\frac{\partial e^*}{\partial t} = \frac{-(1-\delta)(1-t^F)}{(1-\delta t - (1-\delta)t^F)^2} < 0. \quad (4)$$

e^* is thus a function of the tax rates at home and abroad as well as of the delay, $e^* = e(t, t^F, \delta)$. Note that $e^* \geq 0$ holds for $t \leq 1$, while $e^* \leq 2$ requires that $t^F \leq t + \underbrace{\frac{1-t(1-2\delta)}{2(1-\delta)}}_{>0}$.

3.2 Stage 1: Tax Choice of the Old

In the first stage, the old then set the tax rate to maximize the objective function taking the migration behaviour of the young into account

$$\max_t \alpha U + (1-\alpha)V. \quad (5)$$

⁶Rewriting the wages net of taxes abroad as $w(1-\delta t - (1-\delta)t^F) = w\delta(1-t) + w(1-\delta)(1-t^F)$ helps to see that the chosen way of writing corresponds to a presentation where the total wage income abroad is de facto subdivided into the part $w\delta$ subject to the tax rate at home and $w(1-\delta)$ subject to the tax rate in the destination country.

U denotes the utility of the old generation and V of the young generation where we assume $U', V' > 0$ and $U'', V'' < 0$. The parameter $\alpha \in [0, 1]$ indicates to what extent the old generation considers the utility of the young generation when choosing the tax rate t . By this, we are able to capture different Leviathan or gerontocratic tendencies including the cases of pure gerontocracy with $\alpha = 1$ and of pure altruism with $\alpha = 0$ as well as all intermediate cases (see Edwards and Keen, 1996).

We have $(e^*/2)w + (1 - e^*/2)w\delta$ as wage income subject to the tax system in the home country and thus (potentially) shared between the young and the old generation. For t , the utility of the share for the old generation amounts to $U = U((e^*/2)wt + (1 - e^*/2)w\delta t)$ whereas the utility of the share for the young generation is equal to $V = V((e^*/2)w(1 - t) + (1 - e^*/2)w\delta(1 - t))$.⁷ (5) then becomes

$$\begin{aligned} \max_t \quad & \alpha U((e^*/2)wt + (1 - e^*/2)w\delta t) + \\ & +(1 - \alpha)V((e^*/2)w(1 - t) + (1 - e^*/2)w\delta(1 - t)). \end{aligned} \quad (6)$$

The first order condition

$$\begin{aligned} \alpha U' \left(\frac{\partial e^*}{\partial t} \frac{t(1 - \delta)}{2} + \frac{e^*}{2}(1 - \delta) + \delta \right) + \\ +(1 - \alpha)V' \left(\frac{\partial e^*}{\partial t} \frac{(1 - \delta)(1 - t)}{2} - \frac{e^*}{2}(1 - \delta) - \delta \right) = 0 \end{aligned} \quad (7)$$

yields the optimal tax rate $t^* = t(\alpha, \delta, e^*(\delta, t^F))$ from the perspective of the old generation given its Leviathan or gerontocratic tendency, the integration policy and the tax rate in the destination country.

Next, we are interested in analyzing the case where the optimal tax rate from the old generation's point of view differs from the socially optimal tax rate \tilde{t} as determined by the constitutional assembly.

⁷We thus abstract from the part $(1 - e^*/2)w(1 - \delta)$ which is subject to the tax system of the destination country. If we adhere to the temporal interpretation as discussed above, this corresponds to a welfare concept which is based on voters - at home and abroad: migrants then remain full members of their home country's fiscal and social system - including the right to vote - for the first δ -part of their stay abroad, while they switch to the foreign country's fiscal and social system - including the right to vote - for the following $1 - \delta$ part. See Richter (2004) who discusses in addition a welfare concept where natives are the relevant group.

3.3 Stage 0: The Optimal Delay

Given the behaviour of the young and the old generation, a constitutional assembly determines the optimal delay δ in stage zero such that the (future) old generation chooses the tax rate \tilde{t} which reflects the preferences of the constitutional assembly. The delay is thus implicitly given by $t^* = t(\alpha, \delta, e^*(\delta, t^F)) = \tilde{t}$. Following Casamatta, Cremer and Pestieau (2000) and also Richter (2004), we thus assume that the tax and transfer policy consists of elements which are of a more fundamental nature and which therefore are decided on a constitutional level - in our case the integration policy δ - while other elements like the tax rate are part of the normal legislative process.

In what follows we first look at the case where \tilde{t} is given before we discuss in more detail how the constitutional assembly might choose \tilde{t} .

3.3.1 \tilde{t} given

The question is how to determine δ such that (7) holds with $t^* = \tilde{t}$ for given α, t^F . With (3) and (4) and using a linear specification for the utility function, (7) becomes

$$\alpha \left(\frac{-(1-\delta)^2(1-t^F)\tilde{t}}{2(1-\delta\tilde{t}-(1-\delta)t^F)^2} + \frac{(1-\tilde{t})(1-\delta)}{2(1-\delta\tilde{t}-(1-\delta)t^F)} + \delta \right) + (1-\alpha) \left(\frac{-(1-\delta)^2(1-t^F)(1-\tilde{t})}{2(1-\delta\tilde{t}-(1-\delta)t^F)^2} - \frac{(1-\tilde{t})(1-\delta)}{2(1-\delta\tilde{t}-(1-\delta)t^F)} - \delta \right) = 0 \quad (8)$$

which gives us the α, δ relation which guarantees that $t^* = \tilde{t}$ is chosen by the old generation for a given t^F . For illustration, we solve (8) for α as a function of δ . Rearranging yields

$$\alpha = \frac{\left(\frac{\partial e^*}{\partial t} \Big|_{t=\tilde{t}} \frac{(1-\delta)(1-\tilde{t})}{2} - \frac{e^*}{2}(1-\delta) - \delta \right)}{\left(\frac{\partial e^*}{\partial t} \Big|_{t=\tilde{t}} \frac{(1-\delta)(1-2\tilde{t})}{2} - 2\frac{e^*}{2}(1-\delta) - 2\delta \right)} \quad (9)$$

We abstract from solving for the reverse relation. But as we can show that α is a strictly monotonically decreasing function of δ for $\alpha, \delta \in [0, 1]$ (see the Appendix), we have that δ is a strictly monotonically decreasing function of α . Let us define $\underline{\alpha}$ and $\bar{\alpha}$ as the lower and upper bounds of the Leviathan or gerontocratic tendency such that the old generation chooses \tilde{t} for $\delta = 0$ or $\delta = 1$ respectively, i.e. $t^*(\alpha, \delta, t^F) : t^*(\underline{\alpha}, 1, t^F) = t^*(\bar{\alpha}, 0, t^F) = \tilde{t}$. In particular, we have $\underline{\alpha} = \frac{1}{2}$ and $\bar{\alpha} = \frac{2-2\tilde{t}}{3-4\tilde{t}}$ where $\frac{1}{2} < \bar{\alpha} \leq 1$ as long as $\tilde{t} \leq \frac{1}{2}$. This allows us to state the following result

Proposition 1 *For an old generation whose attitude towards the young generation can be described by $\alpha \in [\underline{\alpha}, \bar{\alpha}]$, there is a $\delta \in [0, 1]$ for every α, t^F with which the preferred tax rate \tilde{t} can be reached as long as $\bar{\alpha} \leq 1$.*

Proof. See the discussion above. ■

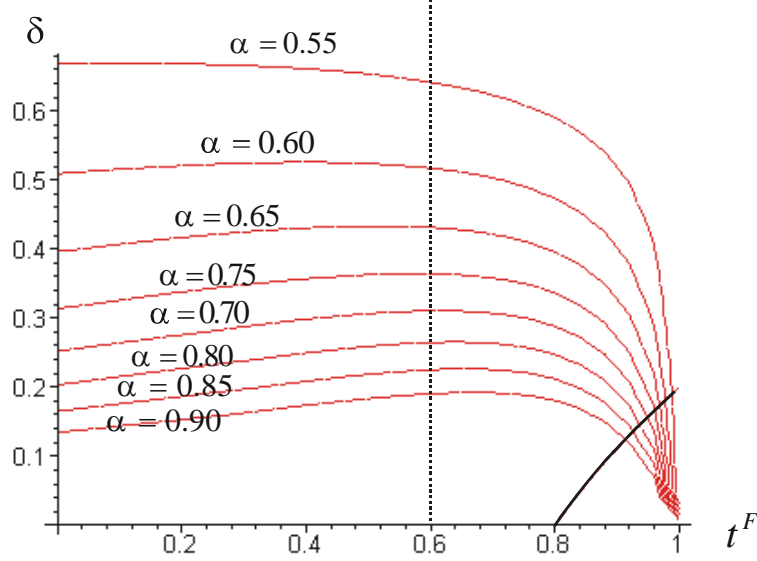
For $\alpha < \underline{\alpha}$ or $\alpha > \bar{\alpha}$, it is no longer possible to completely counteract the Leviathan or gerontocratic tendency. We can summarize

- A low Leviathan tendency requires a less restrictive policy in the sense that migrants can remain members of the domestic tax and transfer system for a longer period. In particular, $\delta = 1$ is optimal for $\alpha \leq \underline{\alpha} = \frac{1}{2}$, i.e. the home-country principle can be implemented if the old generation is sufficiently altruistic towards the young generation. This would also be the best from an efficiency as well as distributional point of view: The migration decision would be based on differences in gross wages - and thus in productivity - only (beside preferences), i.e. different national tax and transfer systems would no longer distort migration. In addition, the wage income earned by all natives of the home country - migrants and non-migrants - would accrue in total to the home country and could be shared between the two generations.
- A high Leviathan tendency, however, has to be counteracted by allowing migrants to become a member of the fiscal and social system of the foreign country very soon after they have left their home country. In particular, $\delta = 0$ is optimal for $\alpha \geq \bar{\alpha}$ where for $\alpha = \bar{\alpha}$, the tax rate \tilde{t} will be chosen by the old generation in the presence of the employment principle while for $\alpha > \bar{\alpha}$, the Leviathan tendency can only be partially counteracted. As $\frac{\partial \bar{\alpha}}{\partial \tilde{t}} > 0$, a higher Leviathan tendency of the old generation can be accepted before $\delta = 0$ is implemented if the socially optimal tax rate \tilde{t} is higher.

By moving away from the home-country principle, the old thus have to take into account that by increasing the tax rate, more and more young leave the country and by doing so escape at least partially the domestic tax and transfer system.

Figure 1 shows δ as a function of t^F for various values of α for the case where the objective of the constitutional assembly is to reach the socially optimal tax rate $\tilde{t} = 0.6$ with the chosen

Figure 1: The optimal integration policy for $\tilde{t} = 0.6$



integration policy. The less selfish the old generation (small α) for a given t^F , the closer is the policy to the home-country principle (high δ),⁸ while for an old generation with a strong Leviathan or gerontocratic tendency (high α), the chosen regime is closer to the employment principle (small δ). The dashed line marks $t^F = \tilde{t}$. While for $t^F < \tilde{t}$ those with low enough costs to integrate themselves in the foreign country leave the home country, to migrate for $t^F > \tilde{t}$ requires that the preference for the foreign country is sufficiently high.

As we have already noted above, there is only emigration ($e^* \leq 2$) if $t^F \leq t + \frac{1-t(1-2\delta)}{2(1-\delta)}$ or equivalently if $\delta \geq \frac{2t^F-(1+t)}{2t^F} = 1 - \frac{(1+t)}{2t^F}$ (for $t^F \neq 0$). Only then does it make sense to think about optimal integration policies δ as only then can migration be used to counter a Leviathan or gerontocratic tendency of the old generation. For high values of t^F , integration policies thus have to lay above the solid black line, i.e. a policy, which is very close to the employment principle, is not feasible if the foreign country is very unattractive. This implies that with an egoistic old generation, an integration policy, which enables migrants to become members of the foreign tax and transfer system very fast, is necessary but not sufficient to counterbalance the interests of the old generation. In addition, the foreign country must be sufficiently attractive, i.e. the foreign tax rate sufficiently small.

⁸For $\alpha \rightarrow 0.5$, δ approaches 1.

3.3.2 Determination of \tilde{t}

We have so far been elusive as to the constitutional assembly and the derivation of the socially optimal tax rate \tilde{t} .

The socially optimal tax rate \tilde{t} can be determined in various ways. Similar to the procedure of the old generation, the constitutional assembly can derive the tax rate on the basis of a utilitarian welfare criterion where now β constitutes the weight. One can think of β , for example, as the population shares of the two groups at the moment or as projected for the next years or decades. It is evident that the tax rate preferred by the old generation t^* is different from the socially optimal tax rate as determined by the constitutional assembly \tilde{t} if and only if $\alpha \neq \beta$. Alternatively, the constitutional assembly can determine the optimal tax rate for the benchmark case where $\delta = 1$ and $\frac{\partial e^*}{\partial t} = 0$. Following the terminology of the Leviathan literature, it is possible to refer to the taxes which exceed \tilde{t} as wasteful activities or transfers not justifiable on the basis of the applied welfare criterion. Taxes up to \tilde{t} , on the contrary, are in line with the preferences of the constitutional assembly - despite the resulting distortions of the migration decision for $\delta < 1$.

In these cases as well as in other cases which have not been discussed here, the constitutional assembly can adjust the constitutional framework δ to correct - completely or partially - for deviations of the preferences of the old generation from the optimum from the point of view of the constitutional assembly.

4 Conclusion

We have shown that for our setting where both the old and the young generation are part of national welfare delayed integration is a suitable instrument to counterbalance Leviathan or gerontocratic tendencies of the old generation by allowing for (partial) tax competition.

As already pointed out, we have chosen the perspective of the home country of emigrants for our analysis of the trade-off between tax competition with fast integration and possible exploitation of the tax-payers with slow integration in the presence of a gerontocratic or Leviathan group with the power of levying taxes. In the European Union, migration policy so far is mainly

decided in an uncoordinated way on the national level despite the apparent spillovers.⁹ Applied to our framework, this would imply that a constitutional assembly in each Member State determines the socially optimal tax from the respective country's point of view in an uncoordinated way. It is evident that different integration policies, δ , could emerge. This could lead to double taxation or a temporary exemption from taxation for migrants. A harmonization of the integration policies can of course be reached by establishing a central European assembly. The drawback then is, however, that national differences can no longer be taken into account which might lead to problems if countries are very heterogeneous with respect to the gerontocratic or Leviathan tendencies of the old generation, α , the tax rate in the respective destination country, t^F , and the tax rate chosen by the respective national constitutional assembly, \tilde{t} .

If one is willing to accept that integration policies for immigrants and emigrants might vary across countries, one could think about leaving the responsibilities with the Member States while free movement of labour and in particular free access to the respective labour markets could be agreed upon on the European level. Countries then have an individual instrument which they can use to influence immigration and emigration and - by doing so - to counterbalance non-benevolent decision makers. The chosen framework is flexible enough to be applied to these issues.

5 Appendix

5.1 Proof - Proposition 1

It can be shown that α is a strictly monotonically decreasing function of δ . For this, we start with rewriting (9) as follows

$$\alpha = \frac{1}{2} + \frac{1}{2} \frac{(1-\delta)^2(1-t^F)}{A} \quad (10)$$

where $A \equiv (1-\delta)^2(1-t^F)(1-2t) + 2(1-\delta t - (1-\delta)t^F)^2 - 2(1-\delta)^2(t-t^F)(1-\delta t - (1-\delta)t^F)$.

⁹While emigration policy does not play a very prominent role so far for the Member States of the European Union, the national responsibilities are evident concerning the policy with respect to immigrants from third countries as well as the rules applicable for immigrants from the new EU Member States during the transitional period (see Boeri and Brücker, 2005).

Differentiating (10), we find

$$\begin{aligned} \frac{\partial \alpha}{\partial \delta} = & -\frac{1}{2} \frac{1}{[A]^2} \cdot \\ & \{2(1-\delta)^2(1-t^F)(1-2t) + 4(1-\delta t - (1-\delta)t^F)^2 - \\ & -4(1-\delta)^2(t-t^F)(1-\delta t - (1-\delta)t^F) + \\ & + (1-\delta)[-2(1-\delta)(1-t^F)(1-2t) - 4(1-\delta t - (1-\delta)t^F)(t-t^F)] + \\ & + (1-\delta)[4(1-\delta)(t-t^F)(1-\delta t - (1-\delta)t^F) + 2(1-\delta)^2(t-t^F)^2]\} \end{aligned} \quad (11)$$

which can be simplified to

$$\frac{\partial \alpha}{\partial \delta} = -\frac{1}{2} \frac{1}{[A]^2} \{2(1-\delta t - (1-\delta)t^F)(1-t) + (1-\delta)^3(t-t^F)^2\}. \quad (12)$$

A sufficient condition for $\frac{\partial \alpha}{\partial \delta} < 0$ is that $(1-\delta t - (1-\delta)t^F) \geq 0$ which is nothing else than a constraint which guarantees that the domestic and foreign tax burdens of a migrant do not exceed 100% and which is always fulfilled for $0 \leq \delta, t, t^F \leq 1$.

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