Why join a common market? The political economy of international factor mobility in a multi–country setting

Giovanni Facchini
University of Illinois at Urbana–Champaign

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Giovanni Facchini*
Department of Economics
University of Illinois at Urbana-Champaign

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Abstract
This paper develops a theory of the endogenous formation of a common market in a three–country, n factor political economy model. Ex ante policies in each of the prospective members are the result of direct democracy, and equilibrium outcomes may include both import restrictions as well as subsidies. The decision to join a common market is modelled as a simultaneous move game between the two prospective members. Several interesting results emerge. First, ex ante differences in subsidies do not affect the attitude of the median voter. Second, for a common market to emerge, ex post factor flows between prospective members have to be balanced. Third, the likelihood that a common market emerges increases with the number of factors enjoying ex post enhanced protection. This last result highlights the potential tension between social desirability and political feasibility of the common market. JEL classification: F1, F2, P16

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1 Introduction

The emergence of preferential trading arrangements i.e., of agreements between countries to systematically remove restrictions on bilateral trade flows, is a well known phenomenon that has captured the interest of trade economists since the pioneering study by Viner (1950) on the economics of customs unions. Understanding the workings of Preferential Trading Arrangements (PTA’s) has become increasingly important, since a very large proportion of the world’s more than 200 nations has undertaken economic integration projects, and a vast literature has emerged. Both normative questions like “under which conditions is a preferential trading arrangement welfare improving?”,\(^1\) as well as positive questions like “Under which conditions will a Free Trade Area emerge as a result of a given political process?”,\(^2\) have been addressed, and attention has also been dedicated to the potential effects of regional trading arrangements on the multilateral trading system.\(^3\) So far the research effort has been focused on analyzing free trade areas or customs unions, but the recent experience of the most successful PTA, the European Union, calls for new research on the way the integration process deepens, moving beyond commercial liberalization. In particular, surprisingly little has been said on what is behind the decision of a group of countries to bilaterally liberalize factor flows, and this paper represents a first attempt at answering this question.

The need for a deeper understanding of the political forces behind the creation of a Common Market emerges very clearly from the recent debate on the Eastern expansion of the European Union. On the one hand we read of perspective members fearing that “...foreigners (...) would descend ‘like crows’ and pick the country apart”\(^4\), depriving local residents of the ownership of large chunks of the productive structure. On the other, rich western European countries have been wary of the risk of a massive inflow of east European

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\(^1\)See Kemp and Wan (1976) and Grinols (1981).


\(^3\)See the volume by Bhagwati, Krishna, and Panagariya (1999) for a systematic exposition of the literature.

\(^4\)The Economist, March 23d 2002, page 48 “Polish Land: A most emotional issue”.
workers, as evidenced by the recent electoral success of the National Front in France and of
the followers of the late Pim Fortuyn in the Netherlands.

In framing the incentives that influence the creation of a Common Market, I will assume
that every potential member country retains the power to autonomously set policy towards
external factor flows, even after joining the Common Market. In other words, I focus on the
formation of the less intrusive form of agreement between two nations, in which free factor
movement is allowed. This seems to be the natural first step in the process of deepening
integration, and the recent European Union’s experience indeed fits this framework. In
that context, several attempts to coordinate policy have been made, but the influence of
the resulting agreements has been limited. The *Schengen acquis* translates mainly in the
homogenization of border controls, while individual countries have retained most of the
powers to independently set migratory policies.\(^5\) Similarly, as far as foreign direct investment
is concerned, the EU treaty contains explicit provisions aimed at limiting the use of state aid
to companies. At the same time, the Commission has withhold wide reaching discretionary
power to grant exceptions to the general ban on the use of such instruments\(^6\)

In this paper, policy towards factor movements from non-member countries is endoge-
uously determined as the result of direct democracy. The optimal policy towards a factor
inflow is a tax or a subsidy, depending on whether the median voter owns a larger or smaller
than average share of the factor. The ex ante policy chosen by each potential member will
then naturally influence its decision to enter the common market. Although the institu-
tional settings vary from country to country, the various treaties behind the deepening of
the European PTA have become effective only after having been ratified by referenda (or
parliamentary vote)\(^7\). It appears therefore reasonable to model the decision of liberalizing
bilateral factor flows as the result of direct democracy, a setting in which the median voter

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\(^6\)See Oman (2000) for more detail on the different policies EU member countries towards FDI flows.

\(^7\)Interesting examples of non-ratification are the Danish vote in June 1992 on the Maastricht Treaty and
the Irish vote in June 2001 on the Nice treaty
determines the policy outcome. Of course, in the context at hand, the process will involve two stages: at first every country will vote on joining the common market, given the presumed intention of the potential partner to join. Next, if the voting process in both countries results in a positive outcome, the Common Market will actually be established.

The model gives rise to several interesting results. First, the existence of ex ante differences in subsidies to a production factor does not affect the attitude of the median voter towards the formation of a common market. Second, for a common market to emerge as a political equilibrium, factor flows have to be balanced. If one country will overwhelmingly be on the receiving side of factor flows in the common market, the median voter will oppose the joining because of the large negative consequences of trade diversion. Third, for a common market to emerge, a sufficiently large number of factors should enjoy enhanced protection through the common market. This last result highlights the potential tension between social desirability and political feasibility of the common market.

The rest of the paper is organized as follows. Section 2 briefly discusses the related literature, while in section 3 the model is developed and a characterization of the ex–ante policy is provided. Next, we consider the economic implications of the creation of a common market, while section 5 analyzes the common market game. Section 6 concludes the paper. The derivations of the results are contained in the appendix.

## 2 Related Literature

The growing importance of international factor flows has spurred renewed interest in the endogenous formation of policies towards factor movements. While several papers have tackled narrowly defined questions\(^8\), Benhabib (1996) has considered how migratory policies that impose capital and/or skill requirements will be determined under majority voting if the polity maximizes its income. The setting allows only for two factors, capital and labor, so that

\(^8\)See for instance Scholten and Thum (1996) and Razin and Sadka (1999) for interesting studies on the political economy of migration in presence of a social security system.
under direct democracy the policy will be chosen by the voter endowed with the median capital–labor ratio. The main message of this elegant model is that complementarities between the median voter’s and the potential immigrant’s factor endowment will determine the policy chosen. Unfortunately, the assumption of constant returns to scale in production gives rise to a problematic result: the number of immigrants in equilibrium can be potentially unlimited, and this appears at odds with actual policies followed by most countries. Facchini and Willmann (2001), in a related paper, avoid this difficulty by assuming decreasing returns to scale in the mobile factors. The endogenous formation of policies towards factor movements is there the result of the interaction between lobbies representing organized factors and elected politicians. Policies can take the form both of tariffs (subsidies) or quantitative restrictions, and in equilibrium the amount of protection granted depends both on whether the factor is organized or not, and on the degree of complementarity between inputs. The setup of this paper shares elements of both these models. On the one hand, the ex-ante policy towards factor movements and the decision to join the Common Market are the result of direct democracy, like in Benhabib (1996). On the other, the setup of the economy is the multi-factor model developed by Facchini and Willmann (2001), and the ex-ante non-discriminatory policy chosen involves tariffs (subsidies) and, potentially, quantitative restrictions. Furthermore, while both previous papers focus on the policies of a single country, here I am interested in exploring the spillovers generated by the interaction of multiple jurisdictions.

The last problem has already been analyzed in two contexts that are related to the one we consider: commercial integration and the formation of economic unions. Commercial integration i.e., the formation of Free Trade Areas and Common Markets, has been thoroughly analyzed in the papers by Grossman and Helpman (1995), Richardson (1993) and Cadot, de Melo, and Olarreaga (1999) among others. In the first contribution, nondiscriminatory tariffs are assumed exogenous, and the decision of two countries to join a free trade area is the result of lobbying activity by the organized owners of specific factors. The effects of
the creation of a Free Trade Area on ex post tariff rates vis-a-vis the rest of the world are therefore not explicitly analyzed. Richardson (1993), in a reduced form political–support function model, considers instead exactly this problem, and shows that tariff rates towards the rest of the world will fall as a consequence of the creation of a Free Trade Area. The presence of tariff revenues - given the same prevailing domestic prices - would indeed induce domestic lobbies to prefer importing from the Rest of the World, rather than the partner country: trade diversion is likely to become trade creation in that context. Cadot, de Melo, and Olarreaga (1999), use instead a model similar to Grossman and Helpman’s (1995) and compare the effects on ex post tariffs of Free Trade Areas and Custom Unions, showing that increasingly deep integration can lead to rising protection against the rest of the world. In this paper, while I endogenize the formation of the ex-ante policy by each of the member countries like in Cadot, de Melo, and Olarreaga (1999), I stop short of considering the effects of the creation of a common market on the ex post policy towards the rest of the world to keep the analysis manageable.

At the other end of the spectrum, the growing institutional integration among western European countries has given rise to renewed interest in the mechanisms underlying the creation of economic unions, and in the welfare properties of the political outcome. Perotti (2001) studies the degree of income redistribution and factor mobility that would be chosen in a two-country setting by majority voting. Asymmetries in the labor markets are the main driving force of the model, and no attention is paid to the policies undertaken towards the rest of the world. The latter are key in understanding the results of this paper, and the source of heterogeneity between the potential member countries are factor endowments rather than different institutional settings. In two related recent papers, Alesina, Angeloni, and Etro (2001a) and Alesina, Angeloni, and Etro (2001b) consider the problem of the optimal institutional design of a union, as well as the endogenous determination of its size and composition. The driving force of the model is a tension between the advantages of internalizing potential spillovers and the heterogeneity of countries’ preferences, and the
most interesting result is that the political equilibrium implies a bias towards excessive centralization and small Union size, that calls for a careful design of the constitutional rules. In this paper we limit our attention to a less intrusive form of economic integration i.e., a common market, and the integration is not so much the result of the presence a market failure, but of the potential income gains brought about by factor movements between member countries.

3 The model

We are now ready to introduce the model with which we will analyze the formation of a common market. The world is made up by three economies: Home, Foreign and the Rest of the World (ROW). We assume that both Home and Foreign are “small” in the sense that the two countries cannot influence international factor prices, while ROW is not explicitly modelled. Home and Foreign differ only in terms of mobile factor supplies, and therefore we will omit the country identifier while discussing the setup of the model.

For simplicity, and since the focus of this paper is international factor movements, we assume that each country produces a single consumption good using a finite set of mobile inputs, denoted \( J = \{1, ..., n\} \). Each country has a continuum of agents, described by the interval \( I = [0, 1] \) endowed with a Lebesgue measure. Each agent in \([0, 1]\) is indexed by \( i \).

Home’s total (inelastic) supply of mobile factors is described by vector \( \ell = (\ell_1, ..., \ell_j, ..., \ell_n) \).

Let \( \lambda^j_i \) be the fraction of factor \( j \) supplied by agent \( i \), with \( \int \lambda^j_i \, di = 1 \). Finally, let \( m_j = L_j - \ell_j \) be the total import demand for factor \( j \), where \( L_j \) denotes total domestic demand for factor \( j \). Home and Foreign share the same technology to produce the single consumption good, described by a differentiable production function \( y = f(L_1, ..., L_n) \) exhibiting decreasing returns to scale. This assumption guarantees the existence of a well defined profit function \( \pi \),

\[\text{9We are assuming that the distribution of factor ownership is atomless i.e., that every agent only owns a tiny fraction of each factor's supply. Strictly speaking then, for } \lambda^j_i \text{ to be a positive measure, it should be interpreted at the factor supply of the coalition of identical agents.}\]
and the corresponding monetary payment can be interpreted as the compensation received by an immobile factor. As for prices, the consumption good is the numéraire in each country, and the international real factor prices i.e., the factor prices prevailing in the ROW, are set equal to one. In this setting it turns out to be convenient to look at taxes/subsidies as the policy instruments chosen by each country, but the equivalence between tariffs and quotas can be invoked whenever real life developments make it necessary. Let then \( \Omega \) be the bounded set of real domestic factor prices, and a point in this set will be a vector \( \omega = \{\omega_1, ..., \omega_j, ..., \omega_n\} \).

As a first approximation, policy towards international factor movements in each country is modelled as the result of direct democracy. Agents choose the optimal policy in order to maximize their welfare, described by

\[
    u_i(\omega) = \sum_j \lambda^j_i \ell_j \omega_j + \sum_j (\omega_j - 1) m_j + \pi(\omega) \tag{1}
\]

The first term of the right hand side of equation (1) represents \( i \)'s total factor income, while the second describes the fiscal revenues from the policy, which are lump-sum equally rebated to all citizens, and the same is true for the immobile factor’s income (the third term in the equation). To simplify the problem we will make one further assumption, i.e. that the production technology is separable in the different mobile inputs. The preferences of individual \( i \) concerning the policy towards factor \( j \) will then depend only on his share in the

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10 Land is the natural candidate in this context. Notice that this assumption rules out the agglomeration dynamics that are central in the new economic geography models.

11 For instance, policies towards migration have only rarely have taken the form of taxes/subsidies. See Timmer and Williamson (1996) for an interesting account.

12 With a perfectly elastic supply from the rest of the world the introduction of a subsidy or tariff necessarily translates in a loss of social welfare. If one believes that the positive externalities associated to Foreign Direct Investment inflows are substantial, this might be not the case. For a discussion of this point, see Wildasin (2000).

13 In other words, the second and third terms represent the average tariff rebated and average profit redistributed.
total domestic supply of factor $j$, i.e. $\lambda_j^i$. Furthermore,

$$\frac{\partial u_i}{\partial \omega_j} = (\lambda_j^i - 1)\ell_j + (\omega_j - 1)m'_j$$

(2)

and since $m'_j$ i.e., the derivative of the factor import demand, is negative, agents with above average ownership of factor $j$ will vote in favor of a tariff, while agents with below average ownership of the factor will vote for a subsidy.14 If the median voter’s most preferred tariff does not lie on the boundary of $\Omega$, her most preferred policy will be determined by

$$\omega_j - 1 = (\lambda_j^m - 1)\frac{\ell_j}{-m_j'}$$

(3)

The policy towards inflows of factor $j$ then takes the form of a tariff if the median voter’s ownership share is higher than the population’s average, while it is a subsidy if it is below population average.15 Intuitively, if the median voter ownership share in factor $i$ is higher (lower) than the population average, a small increase (decrease) in the domestic return above (below) the international level will induce an increase (decrease) in factor income that more than outweigh his losses (gains) as average citizen..16 Equation (3) also highlights that the tariff (subsidy) is increasing in the importance of the factor for the domestic economy, and it is smaller, the larger are the distortions induced by the policy.

4 The economic consequences of a common market

Before we discuss the conditions under which a common market will emerge in equilibrium, it is worth analyzing the welfare implications, for each domestic factor17, of the decision of

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14 Notice that $\lambda_j = 1$ for all $j$.
15 For a similar result in the case of goods trade, see Mayer (1984).
16 In Facchini and Willmann (2001) a similar equilibrium outcome (i.e. subsidization of factor imports) was obtained by explicitly modelling the role of complementarities in production.
17 Notice that we focus here on the returns on factor $i$ to illustrate the point, even if the median’s voter decision will depend on his overall welfare.
a country to join a common market. In doing so, we will use Figure 1, where we depict the market for input \( j \) from the point of view of the Home country. The downward sloping line depicts Home’s import demand function for the factor, while the three vertical lines labelled (1), (2) and (3) indicate three different original endowments of the factor in Foreign. In what follows we will assume, for simplicity, that in the pre-common market situation both Home and Foreign are importing factor \( j \), and that in both Home and Foreign the median voter opts for a restriction in the imports of factor \( j \). Furthermore, let’s assume that Home’s non-discriminatory policy is more restrictive than Foreign’s, so that \( \omega^H_j > \omega^F_j \). Notice that while in this paper the discussion is carried out in terms of tariffs/subsidies, a similar analysis could be carried out if the government were to implement quantitative restrictions to protect the domestic factor.

The three different combinations of factor endowments allow us to highlight the welfare effects of the creation of a union\(^{18}\). Consider case (1). Foreign’s supply of the factor is limited and, at the price prevailing in the Home country before the introduction of the

\(^{18}\)The analysis carried out here is similar in spirit to Richardson (1992) and Grossman and Helpman (1995).
common market, it is not sufficient to satisfy import demand. The creation of a common market will result in the removal of any restrictions on factor movements between $H$ and $F$ and consequently all of Foreign’s factor supply will move into Home to grab the benefit of a higher return. A “rules of origin” provision will ensure that Home will continue to satisfy its residual demand by directly importing from the ROW. The factor price prevailing in Home does not change in this case, and therefore neither does the income of the immobile factor. Home’s government will see its tariff revenues reduced by the inflow of freely moving Foreign’s factor. More specifically, the change in tariff revenues is

$$\Delta T^H = (\omega^H_j - 1)\ell^F_j$$

(4)

This effect corresponds to what is known as “trade diversion” in the Vinerian theory of preferential trading arrangements. Turning to Foreign, the country now experiences an outflow of the factor to Home, and satisfies its demand importing from the Rest of the World. Assuming that the nondiscriminatory restriction is not changed as a consequence of the creation of the common market, the price for the factor prevailing in Foreign will not change, while Foreign’s government will now see its tariff revenues increase, and its immobile factor’s income remain constant. In other words, Foreign’s residents will experience a welfare improvement through two distinct channels. On the one hand, they will be able to grab the benefits of the higher return to the factor realized when it moves to Home:

$$\Delta W^F_j = (\omega^F_j - \omega^H_j)\ell^F_j$$

(5)

On the other, there will be an increase in tariff revenues

$$\Delta T^F = (\omega^F_j - 1)\ell^F_j$$

(6)

In this situation both Home’s and Foreign’s factor income and profits do not decline, and
the introduction of a common market results in *enhanced protection* for the factors.\textsuperscript{19}

At the opposite end of the spectrum of possible outcomes, we have the case in which Foreign’s factor supply is very large i.e., case (3) in Figure 1, and is more than sufficient to satisfy Home’s import demand at the lowest pre–common market price $\omega^F_i$. Also in this case Foreign’s factor will move to Home in order to take advantage of the initially higher return. The supply is so large though that the inflow will lead to a decrease in the factor return in Home to $\omega^F_i$, reducing in this way the amount of protection granted to the factor. The income loss for Home’s factor owners will be

$$\Delta W^H_j = (\omega^H_j - \omega^F_j)\ell^H_j$$  \hspace{1cm} (7)$$

and Home’s residents will see their position worsened also through a reduction in the tariff revenues, since now factor $j$ is no longer imported from the Rest of the World. The loss occurring to Home’s government budget is

$$\Delta T^H = (\omega^H_j - 1)m^H_j(\omega^F_j)$$  \hspace{1cm} (8)$$

Notice though that the immobile factor’s income is naturally going to rise as a result of the decline in factor prices.

For Foreign the factor’s outflow to Home is offset by an increased inflow from the Rest of the World, that generates additional revenues for the government’s budget

$$\Delta T^F = (\omega^F_j - 1)m^H_j(\omega^F_j)$$  \hspace{1cm} (9)$$

Factor’s income does not change in equilibrium, and neither do profits. We can label this as the *reduced protection* case, i.e. the situation in which the mobile factor’s income (weakly) declines as the result of the creation of a Common Market.

\textsuperscript{19}This concept has been originally introduced by Krueger (1999) while analyzing the effects of a preferential trading arrangement.
The last possibility, described in Figure 1 as case (2) occurs when Foreign’s factor supply is in an intermediate position, so that it is enough to satisfy Home’s import demand at the pre common market price $\omega^H_j$, but it is not large enough to reduce the price prevailing in Home to $\omega^F_j$. Foreign’s factor will once again take advantage of the higher return prevailing in Home and move there. The implementation of a “rule of origin” requirement keeps Home’s and Foreign’s markets separate in the sense that the factor now imported by Foreign from the Rest of the World continues to be compensated at a rate $\omega^F_j < \omega^{H*}_j$, where $\omega^{H*}_j$ is the new equilibrium wage prevailing in Home.

The welfare implications in this case are particularly interesting. From Home’s residents’ point of view, the country experiences a welfare reduction through two channels, while through one channel there is a welfare improvement. Domestic factor reward declines with the introduction of the Common Market by

$$\Delta W^H_j = (\omega^H_j - \omega^{H*}_j) \ell^H_j \omega^H_j > \omega^{H*}_j$$

The same is true for tariff revenues

$$\Delta T^H = (\omega^H_j - 1) m^H_j (\omega^{H*}_j)$$

The fixed factor’s income will instead increase due to a decline in the mobile factor reward. In Foreign’s case the situation can be described as follows. Foreign’s factor experiences an increase in its compensation when it moves to Home:

$$\Delta W^F_j = (\omega^{H*}_j - \omega^F_j) \ell^F_j$$

and similarly Foreign’s government revenues increase by

$$\Delta T^H = (\omega^H_i - 1) \ell^H_i$$
The fixed factor’s income does not change since the mobile factor’s return prevailing in Foreign has not been impacted by the entrance in the Common Market.

The analysis developed so far has allowed the identification of the incentives behind the creation of a common market, and in so doing we have laid out the foundations for the characterization of the voting equilibrium, which will be developed in the next section. Before discussing these policies, notice a few common elements that emerge from the analysis. Since differences in protection rates are the driving force behind factor movements, the return on those factors that are exported from one country to its partner will never be reduced as the result of the creation of a common market. At the same time, the return on factors that are imported from a partner country will never improve as a result of the creation of a Common Market. In the case of the country exporting the mobile factor $i$ to the partner, the fixed factor’s income will never increase, while in the case of the country importing the mobile factor $i$ from the partner, the decision of joining the common market will always be (weakly) beneficial. Once we take into account that the government’s revenues are also redistributed to the agents, the position of the median voter becomes more complex, as we will see in the next section.

Before we conclude this discussion, consider the effects of ex ante import subsidies on the incentives to create a Common Market. Remember from equation (3) that if the median voter holds a share of factor $j$ below the population mean, imports of that factor will be subsidized in the initial political equilibrium. This appears indeed to be the case for Foreign Direct Investment, which is being actively subsidized by many countries.

Consider Figure (2), where once again we take the point of view of Home in the analysis. The introduction of an import subsidy for factor $j$ reduces the price paid by local immobile resources to hire factor $j$ below the international price. This translates in an additional inflow $(m^S_j - m^F_j)$ from the rest of the world, compared to the free factor movement situation. Notice though that factor $j$’s return is still fixed at the international price i.e., at 1. If Foreign is also subsidizing the imports of factor $j$, the return to the factor in that country is also going
to be fixed at the same level. In other words, the decision of joining the common market will not have an impact on factor $j$’s return, making it indifferent towards the outcome of the political process.

5 The common market game

In section 3 we have described how the ex ante policy towards factor movements is chosen under majority voting in a prospective member country. The formation of a common market can be thought of as a simultaneous move game in which each of the two countries has two strategies at its disposal i.e., \{Join, Stay Out\}, and where the median voter’s welfare represents the payoff of the game. Only if \{Join, Join\} is a Nash equilibrium for this game will a common market be established. Notice that in this setting, we are not considering explicit redistribution between member countries, which could be used to alter the incentives of the median voter in favor of the creation of the common market. This seems realistic since in the EU, only 0.1% of the total GDP of the area is used for this purpose, and even thinking at the forthcoming enlargement, it very hard to configure a much bigger role for this type of expenditures.
In order to solve the game, we need to introduce a set of simplifying assumptions. First of all, we will limit our attention to the case in which the demand for each mobile production factor is linear, i.e.\(^{20}\)

\[ L_j = L - b\omega_j \]  

(14)

with the restriction \( L_j > 0 \) for all \( j \). Under this assumption, the optimal ex ante policy in each country takes the form

\[ \omega_j - 1 = (\lambda_j^m - 1)\frac{\ell_j}{b} \]  

(15)

For simplicity, we will assume that the median share of ownership of every factor is \( \lambda^m \) so that for all \( j \), \( \lambda_j^m = \lambda^m \). Furthermore, there exists a median agent \( i \) such that \( \lambda_i^i = \lambda^m \geq 1^{21} \).

The driving force behind the model are differences in factor endowments, and for the sake of simplicity, we will assume that \( \ell^H_j + \ell^F_j = \ell \) for all \( j \). In other words, the common market supply of each mobile factor is the same. Home is relatively more endowed than Foreign of a proportion \( s \geq 1/2 \) of the factors, while Foreign is relatively more endowed with the remaining \( 1 - s \) factors. We can then describe Home’s factor supply as

\[ \ell^H_j = \begin{cases} 
\theta\ell & \theta > 1/2 \quad \text{for } s \text{ factors} \\
(1 - \theta)\ell & \text{for } 1 - s \text{ factors}
\end{cases} \]

and symmetrically for Foreign we have

\[ \ell^F_j = \begin{cases} 
\theta\ell & \theta > 1/2 \quad \text{for } 1 - s \text{ factors} \\
(1 - \theta)\ell & \text{for } s \text{ factors}
\end{cases} \]

Now consider three different sets of parameter values that, even if they do not exhaust

\[^{20}\text{A concave production function that would give rise to this factor demand is given by } Y = \bar{Y} - \sum_{j \in J} \frac{(L - L_j)^2}{2b}, \text{ where } \bar{Y} \text{ is an appropriately chosen constant.}\]

\[^{21}\text{This assumption allows us to maintain the link between the determination of the ex ante policies and the decision to join a common market. The analysis focuses on the case in which } \lambda^m > 0 \text{ since if import subsidies are present in the ex-ante political equilibrium, the countries will be indifferent between joining or not the common market.}\]
the entire region of possible values, correspond to the three cases discussed in section 4. Let us start by assuming that

$$\frac{L - b}{\ell} > \theta(\lambda^m - 1) + 1$$  \hspace{1cm} (16)

These parameter values correspond to the *increased protection* situation. Both countries import all mobile factors in the original equilibrium, and if the common market is actually created, each factor will still be imported from the rest of the world. This implies that domestic factor prices in each will not change once the countries have bilaterally liberalized factor flows. Focusing on Home’s median voter, he will support the decision to join a common market if

$$\frac{1}{2} < s < \frac{\theta + \lambda^m(2\theta - 1)}{1 + \lambda^m(2\theta - 1)} < 1$$  \hspace{1cm} (17)

while in the case of Foreign, the median voter in that country will always support the decision to join a common market.\footnote{For a derivation of the results, see the Appendix.} Three points are worth stressing:

- For Home’s median voter to support the decision to join the common market, $s$ has to be close to $1/2$. In this case her gains as owner of the $(1 - s)$ factors exported to the partner country will outweigh the potential loss in tariff revenues from trade diversion.

- For a given $s$, a decision to join a Common Market is more likely to emerge at Home the higher $\theta$ or, in other words, the larger the imbalances in the distribution of a factor between the two countries.

- For a given $s$ the median voter is more likely to support joining the Common Market the larger is her share in the ownership of the mobile factor (the larger is $\lambda^m$).

The second case we consider is when the parameter values are such that

$$\theta\lambda^m(1 - \theta)a > \frac{L - b}{\ell} > \lambda^m\theta$$  \hspace{1cm} (18)
These parameter values correspond to the situation which we have called reduced protection in section 4. Both countries still import all mobile factors from the Rest of the World in the initial equilibrium. If the countries decide to form a Common Market, the mobile factor rewards will now decline to the common minimum. In particular, the factors which in equilibrium are being exported to the partner country will not see their welfare changed. Those factors that are now imported from the partner country, instead of from the Rest of the World, will see their return decline until it reaches the common minimum. The immobile factor stands to gain from the creation of the Common Market, since at least some of the mobile factor prices are going to decline. The government budget is affected positively through an increase in tariff revenues generated by the replacement of the factors exported to the partner country with imports from the rest of the world. It will be negatively affected by the loss in revenues due to the replacement of imports from the rest of the world with imports from the partner country. Considering the point of view of the median voter at Home, if \( s = 1/2 \), then the median voter (weakly) supports joining the common market only if \( \lambda_m = 1 \), i.e. if its ownership share coincides with the population average. In this case the creation a common market is just equivalent to global integration of the factor markets. In the appendix we show that if \( \lambda_m > 1 \) Home’s median voter rejects the common market for any \( s \geq 1/2 \). The intuition is that the losses directly incurred from the reduction in the return on mobile factors and from trade diversion outweigh the benefits from trade creation and greater immobile factor’s income.

The third and last case we consider is the case in which the parameters of the model satisfy

\[
\theta > \frac{L - b}{\ell} > (1 - \theta)\lambda^m
\]  

In this case, the factors that are relatively abundant in the two countries are exported in the original equilibrium, and fetch international rewards if the countries are not allowed to subsidize the outflow of production factors. Factors relatively scarce are instead imported and protected at the original equilibrium, according to equation (3). Given these parameter
values, if a Common Market is created, all factors will experience reduced protection, and will be rewarded at international prices. Also in this case, if $\lambda^m > 1$ the median voter at Home will not support the formation of a Common market.

What have we learned? First of all, for a Common Market to be sustained as a political equilibrium, $s$ has to be close to $\frac{1}{2}$. In this sense, a Common Market requires “balanced” factor flows. If all factor flows were to be in one direction, the political feasibility of the Common Market would come under question, since the median voter in one country would be overwhelmingly negatively affected by the factors being imported from the partner country.

The second consideration is that for a Common Market to emerge, a sufficient number of factors should be experiencing enhanced protection through the Common Market. In fact, as we have seen, in case (1) a CM can be sustained as a political equilibrium, while in case (2) and (3), if the median voter is not the average citizen, she will be against the formation of a common market. From the point of view of society as a whole, this might be a troublesome conclusion. A common market is more likely to emerge in equilibrium, the more distortive are its effects. This conclusion should not be too surprising though, since the median voter and the average citizen’s interests are not fully aligned in this model.

6 Conclusions and discussion

This paper develops a theory of the endogenous formation of a common market. The institutional setting is a direct democracy, and the driving forces behind the result are differences in factor endowments between the partner countries. While this model illustrates well some of the issues raised by the eastern enlargement of the European Union, its predictions are very relevant for the possible deepening of preferential arrangements in North and Latin America.

The results obtained are quite sharp, and it is worth stressing that they are the result of a series of simplifying assumptions. First of all, in our setting, once the common market is established, there will be no residual frictions affecting factor movements. The EU expe-
rience has shown that this is largely the case for cross border capital flows, but as far as labor movements are concerned, linguistic and cultural differences have often represented an important obstacle.

Secondly, the setting of the model is static, and a dynamic extension would allow to tackle two important questions. On the one hand, one could consider the impact of the creation of a common market on the existing social security system of the perspective member countries. And this would be particularly important if there are substantial differences in the age composition of the population like, for instance, in the case of the US and Mexico. Secondly, the dynamic impact of Foreign Direct Investment could be modelled explicitly, highlighting the role of technological spillovers on welfare. While all these are very important questions, we leave them for further research.

7 Appendix

In order to evaluate the effects of the creation of a common market notice that the profit function associated to the production function (20) is

$$\pi = \bar{Y} + \frac{b}{2} \left( \sum_{j \in J} w_j^2 \right) - \sum_{j \in J} w_i L$$

We can now discuss the three cases considered in section 3

1. $\frac{L-b}{L} > (\theta (\lambda^m - 1) + 1)$.

Let $\bar{\varphi} = 1 + \frac{\lambda^m - 1}{b} \theta$ and $\varphi = 1 + \frac{(\lambda^m - 1)(1 - \theta)\ell}{b}$. From the point of view of Home, joining will induce the following change in mobile factor income:

$$\Delta \varphi_i = \begin{cases} 
0 & \text{for } s \text{ factors} \\
(\bar{\varphi} - \varphi)(1 - \theta)\ell & \text{for } (1 - s) \text{ factors}
\end{cases}$$
In terms of tariff revenues, the effect can be summarized as follows:

\[ \Delta T_i = \begin{cases} 
-(\bar{\omega} - 1)(1 - \theta)\ell & \text{for } s \text{ factors} \\
(\omega - 1)(1 - \theta)\ell & \text{for } (1 - s) \text{ factors}
\end{cases} \]

while the return on the immobile factor will not change. Substituting, the total change in the median voter’s welfare is

\[ \Delta u_m = \frac{n(1 - \theta)\ell^2(\lambda^m - 1)}{b} [(1 - s)\lambda^m(2\theta - 1) + \theta - s] \]

and if \( \lambda^m \geq 1 \), \( \Delta u_m \geq 0 \) if and only if

\[ \frac{1}{2} < s < \frac{\theta + \lambda^m(2\theta - 1)}{1 + \lambda^m(2\theta - 1)} < 1 \]

In the case of Foreign, factor income will change as follows

\[ \Delta \omega_i = \begin{cases} 
(\bar{\omega} - \omega)(1 - \theta)\ell & \text{for } s \text{ factors} \\
0 & \text{for } (1 - s) \text{ factors}
\end{cases} \]

while tariff revenues will change by

\[ \Delta T_i = \begin{cases} 
(\omega - 1)(1 - \theta)\ell & \text{for } s \text{ factors} \\
-(\bar{\omega} - 1)(1 - \theta)\ell & \text{for } (1 - s) \text{ factors}
\end{cases} \]

and also in this case profits are unchanged. Substituting, the change in the welfare of the median voter is equal to

\[ \Delta u_m = \frac{n(1 - \theta)\ell^2(\lambda^m - 1)}{b} [s\lambda^m(2\theta - 1) + s - \theta] \]

and if \( \lambda^m > 1 \), \( \Delta u_m \geq 0 \) for any \( s \geq 1/2 \).
2. \( \theta \lambda^m (1 - \theta) > \frac{L - b}{\ell} > \lambda^m \theta \)

From the point of view of Home, joining the Common Market induces a change in the return on the mobile factor equal to

\[
\Delta \omega_i = \begin{cases} 
-(\overline{\omega} - \omega) \theta \ell & \text{for } s \text{ factors} \\
0 & \text{for } (1 - s) \text{ factors}
\end{cases}
\]

In terms of tariff revenues, the effect is

\[
\Delta T_i = \begin{cases} 
-(L(\overline{\omega}) - \theta \ell)(\overline{\omega} - 1) & \text{for } s \text{ factors} \\
(L(\omega) - \theta \ell)(\omega - 1) & \text{for } (1 - s) \text{ factors}
\end{cases}
\]

while using equation (20) the change in fixed factor’s income is

\[
\Delta \pi_i = \begin{cases} 
L(\overline{\omega} - \omega) - (\overline{\omega}^2 - \omega^2) b & \text{for } s \text{ factors} \\
0 & \text{for } (1 - s) \text{ factors}
\end{cases}
\]

If \( s = 1/2 \), the change in the welfare of the median voter is

\[
\Delta u_m = \frac{1}{2}(\overline{\omega} - \omega)(\lambda^m - 1) \ell (\frac{1}{2} - \theta) \leq 0 \tag{21}
\]

Notice that if \( s > \frac{1}{2} \), the result holds a fortiori, because now the gains from trade creation are weighted less than the losses from trade diversion in the objective function of the median voter.

3. \( \theta > \frac{L - b}{\ell} > (1 - \theta) \lambda^m \)

Joining the common market will have the following effect on mobile factor’s income:
\[ \Delta \omega_i = \begin{cases} 0 & \text{for } s \text{ factors} \\ (\omega - 1)\lambda(1 - \theta)\ell & \text{for } (1 - s) \text{ factors} \end{cases} \]

The change in tariff revenues is

\[ \Delta T_i = \begin{cases} 0 & \text{for } s \text{ factors} \\ (\omega - 1)(L(\omega) - (1 - \theta)\ell) & \text{for } (1 - s) \text{ factors} \end{cases} \]

while the effect on the immobile factor’s income is

\[ \Delta \pi_i = \begin{cases} 0 & \text{for } s \text{ factors} \\ (\omega - 1)(L - \frac{b}{2}(1 + \omega)) & \text{for } s \text{ factors} \end{cases} \]

Substituting, the total change in the median voter’s welfare is

\[ \Delta u_m = (1 - s)(\omega - 1)(-\frac{1}{2}(\lambda^m - 1)(1 - \theta) \leq 0 \quad (22) \]

and similarly for the median voter in Foreign.

References


