The political interactions between firms and governments

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A mes parents

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[1] Et mes défauts aussi ... mais n'en parlons pas!

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Sommaire

General Introduction

" *[Today's challenges are] resisting protectionist tendencies, investing in policies which ensure that the benefits of trade are spread fairly among and within countries and investing in a stable multilateral trading system* "

Pascal LAMY, WTO Managing Director

" *The policies of the international economic institutions are all too often closely aligned with commercial and financial interests of those in the advanced industrial economies.* "

Joseph E. Stiglitz, Globalization and its discontents

As globalisation progresses, sovereignties of each country confront each other more often. Sometimes, countries even have to transfer part of their sovereignty. The dilution of the "ownership" of sovereign power and the lack of international laws have made international relations more complex. As complexity increases, caveats appear in the rules that govern international relations. These caveats induce some actors, are they special interest groups or governments, to try take advantage of their power. The classical David Hume's "balance of power"[2] is affected by these new relations which all induce relations of influence. Nowadays, influence is then a crucial question as it is the vector of all means to take advantage over a partner. There are many reasons to think that the so-called balance of power is not balanced anymore.

[2] He defines the concept in his books *Essays Moral and Political*, 1741-1744, in particular, in the essay entitled *Of the balance of Power*. The main aspect of this concept is that States will coordinate in order to avoid that any particular State develops a preponderance of power.

Two important facts that characterise the current globalisation process are the emergence of strong international organisations and the financial strength of multinational enterprises (henceforth MNE). The first one is linked to the emergence of new countries in the international relations. Thus, maintaining a cooperative equilibrium on bilateral bases became impossible. This has made indispensable the creation of such organisations in order to manage the interplays between countries. The second one is the concretisation of a process that has started more than a century ago, lobbying activity together with the increasing globalisation have allowed the development of powerful MNE. As Pascal Lamy argues, the increasing number of countries makes more difficult to ensure a fair treatment to all countries. He also argues that protectionist tendencies are the main forces that oppose to this objective. Two quite recent fields deal with these particular issues: the New Institutional Economy and the New Political Economy.

The New Institutional Economy is often related to the works of Ronald Coase. It incorporates the role of institutions into economics. Institutions influence the sphere of economics, which also influences institutions. Hence, this field of research lies between economics and political science and attempts to examine the effect of institutions on the main economic variables such as growth or trade. However, it encompasses not only a normative approach but also a positive one. The new institutional economy also relies on political pressures arising in international fora or in regional agreements. For instance, it does not ignore that diplomacy is not independent of trade and *vice versa*.

The New Political Economy is often related to the works of Mancur Olson. When looking at the political economy, two main strands appear within this field. On the one hand, there is the standard study of economic policy, which is principally based on a normative approach; on the other hand, the new political economy, which is mainly developed on a positive basis. Hence the former investigates what should be done to optimise a given objective function.[3] The point of the latter is to show

[3] One could also refer to welfare economics instead of the study of economic policy.

that these optimal policies are not implementable because of pressures on decision makers and then to study how these pressures affect the implemented policy.

Paul Collier proposes a definition of the political economy that is in fact more connected to the new political economy. He states that "*Political economy is about the sources of political power and its uses for economic ends.*" [p. 2]. He then argues that power can be either an objective in itself or a mean to achieve other objectives such than redistributing incomes. Again quoting Paul Collier: "*To further these objectives political power has two instruments: the provision of public and private goods financed by taxation, and the regulation of private economic activity. Political economy investigates how interests and institutions shape these choices.*" [p.2]. Alan Drazen insists on what should be the core of the new political economy by claiming that "*heterogeneity and conflict of interests are essential to political economy and should be the organizing principles of the field.*" [p. 5]. Hence the new political economy is about the heterogeneity both in terms of dotation in political power and of what should be the economic ends. And it is also about the conflict of interests that arises as heterogeneity appears. Additionally, institutions have an effect on the way conflicts of interests emerge in the presence of heterogeneity.

Influence may take very different forms. From the contributions to electoral campaigns to bribes, or networking, a special interest group has many possibilities at its disposal. Similarly, as international organisations have been recently created, there exist some caveats in their rules that governments may exploit. So by increasing interactions between actors and potential gains to trade, globalisation has offered a leading role to influence. Hence, the influence is assumed to encompass two dimensions. First, influence is the ability to obtain from a decision maker to deviate from its optimal policy. Second, it is the ability to obtain from an institution to not respect its own principles, such as a national law or an international judicial agreement. **This thesis proposes then to bring some new insights on the effects of political influence**. More precisely, particular attention will be given to two types of relations related to the new institutional economy and the new

political economy. First, the political relations between firms and governments: Those being between domestic firms and domestic government or a foreign to domestic relation. Second, the bargaining between governments in international negotiations. Obviously, these two aspects are not independent. If firms are able to influence governments, the latter bargaining with each other in international fora, it is straightforward to suppose that firms are able to indirectly influence the international negotiations issue.

The literature on political economy is quite old but is still a topical question. To illustrate this, we shall mention the anecdotal fact that *The Journal of Political Economy* is one of the oldest journal in economics. It was created in the late nineteenth century. Only two journals are older, *The Quarterly Journal of Economics* and *The Economic Journal*, respectively created in 1886 and 1891. Yet, the long history of the political economy has been regularly punctuated with new theories. This recalls that from the very beginning, each field of economics has been connected to political economy. This also represents a limit of this field. Indeed, in a 2006 speech Dixit and Romer underline that there is not a common structure in political economy. Very often, models are developed to explain a precise phenomenon and therefore make many assumptions to stick to the reality. Hence no model has been developed to highlight broadly the mechanisms active in political economy based games. This is not a new idea. Rodrik (1995) already regretted that *"the political economy literature has lost sight of the very questions that have motivated it"*. However, in spite of the lack of a unified model, some mechanisms are common to all models developed in the new political economy.

In order to understand the current developments in political economy, we only need to jump back forty years. Olson's book in 1965 has laid the foundations for the main hypotheses and problematics of the new political economy. As the book's title suggests, it is all about collective action.[4] Collective action is the main driving force of the new political economy because of heterogeneity and conflict of interests

[4] The original title of his book is *The Logic of Collective Action.*

as Drazen underlines (ibid).

Two main aspects should be considered in the new political economy. First, a successful influential action has to originate from the coordination of units that compose the influential group. Second, the means used to influence. By means of influence we intend to describe the nature of what influences the decision makers and the institutional environment that may affect political relations. Hence roots of the new political economy as it is practised nowadays come from the game theory. The latter helps to understand how players succeed in organising themselves in spite of the standard problem of free-riding. Game theory also helps to discover the effects of the order of play in political economy games, this order being possibly modified by an institutional environment. To pay homage to Mancur Olson, we could argue that he has described a *"visible hand of lobbying"*. Indeed, every actor acts because of their private interests. However, if they just act lonely they cannot obtain what they want. They need then to coordinate into collective actions in order to have enough bargaining power.

Each concession obtained by a lobby or a union is a public good. That is provided to all the members of the population represented by the special interest group. Therefore, the same problems occur than in the case of a publicly provided public good. The most important is the free-riding problem that induces a member of a group to let other members pay for something that serves its private interest. This is not the unique problem that special interest groups have to face. If a government is inclined to get some private gains, then all owners of specific factors are interested in lobbying. The difficulty organising a successful collective action prevents some of the potential lobbies from influencing officials, but not all. Then, the rivalry between special interest groups is an important issue. Becker (1983) is one of the first contribution that studied the effects of the competition among pressure groups and yields some theoretical foundations to many assumptions previously made. He explains clearly what is of interest in political economy:

> "Individuals belong to particular groups–defined by occupation, industry, income, geography, age and other characteristics–that are

> assumed to use political influence to enhance the well-being of their members. Competition among these pressure groups for political influence determines the equilibrium structure of taxes, subsidies, and other political favors." (Becker, 1983)[p. 372]

Divergence of interests and competition between these pressure groups determines the policy outcome. Competition between special interest groups is supposed to decrease the protectionist tendencies of the policy choices. More precisely, since each specific factor is organised in different lobbies. Additionally, the number of individuals sharing the same characteristics reduces the political power of a given group as this increases the free-riding problem. Mayer (1984) demonstrates the importance of the factor ownership. This is connected to the heterogeneity in dotation, or the "*ex post* heterogeneity" as Drazen has called it. Moreover, Mayer shows that, as hypothesised by Baldwin (1976), small groups may secure import protection. This being due to the relatively much larger gains of some industries compared to the small losses of other groups. Thus, the latter find it unprofitable to lobby against protection of the former as soon as there is a cost to do so. Despite the irrefutability of this logic, the number of members in a special interest group has another effect that may outweigh the first one.

Until Paul Pecorino's work in 1998, it has always been admitted that the higher the number of actors sharing the same interests, the higher the possibilities to free-ride. However, in a simple trigger strategy framework, Pecorino shows there are no reasons to believe that the standard effect of a higher number of protagonists that increases the incentives to defect systematically dominates the effect of the increase of the sanction associated with defection. This second effect, not having been studied before, consists simply in a greater penalty associated with defection because the noncooperative outcome is less desirable when the number of firms increases. Therefore, the higher the sanction, the less incentives a lobby member has to defect. Similarly, Pecorino shows that, under soft conditions, the number of protagonists does not explain the difficulty to maintain the cooperative equilibrium.

His work indubitably brings new insights to the new political economy and underlines that even the main certitudes may be questioned.

The larger number of factor owners should reduce their ability to coordinate, but should also decrease the opportunity of defection. If one comes back to the question of the firms. In reality, lobby members are firms rather than consumers owning a specific factor of production. However, this empirical fact does not change the reasoning exposed above about lobbying. The financial power of firms should help them to devote more financial resources to lobbying activity, but there are more actors to influence than before. Countries involved in the international trade are more numerous and a part of the decisions that affect the international trade is taken by international organisations. This is a part of the whole logic. But if firms try to influence or even succeed in influencing governments, this supposes that the latter have some interest in giving voice to firms' will. In other words, governments have some reasons to be protectionists.

In order to explain the protectionist tendencies of governments, economic theory has put forward the terms of trade effect. For instance, Bagwell and Staiger (1999) recall that large economies may gain from trade policies manipulations through their effects on world and foreign prices.[5] A sufficiently large country has indeed the means to transfer a part of the distortion induced by its trade policies on the rest of the world. If this transfer is large enough, being protectionist is an optimal strategy. Governments are then tempted to manipulate tools in order to protect domestic firms. This induces lobbies to form in order to obtain more protection. Moreover, free trade is a desirable output but many countries are not incited to open their borders first because of the prisoner's dilemma induced by the terms of trade effect. It is profitable for every country to let other countries diminish their protection without decreasing its own. This leads to the non optimal issue of a protectionist world. A coordination at the international level is necessary to

[5] The terms of trade effect on world price is a quite old concept. However, Bagwell and Staiger (1999) have shown that through the discrimination among trading partners with respect to their export volumes, there also exists an effect on foreign local prices.

overcome the prisoner's dilemma. This is the role international organisations try to fulfil. The terms of trade motive is then a major link between the emergence of both the international organisations and the lobbying activity.

In the quote of Lamy there are three dimensions that highlight this link. First, global gains to free trade are not questionable if it is fully achieved on a multilateral basis. But these gains are not positive and equal for all due to the heterogeneity of the countries (in terms of preferences or productivity for instance), therefore creating a conflict of interests between Nations. This means that some countries or some sectors in these countries know *ex ante* that they will lose. Second, political pressures influence trade policies and may encourage protectionist tendencies. That is, the power to choose trade policy is contested by others. Finally, it is difficult to maintain a stable multilateral system. This last point refers more to the new institutional economy but is the consequence of the first two points. Moreover, Joseph Stiglitz emphasises the major role of advanced economies in preventing the international economic institutions from ensuring fair benefits of trade to all countries, hence sustaining the idea of different dotations in power throughout the world which affect the redistribution of the gains to trade between Nations.

Concerning the first dimension, economists agree that (free) trade has various beneficial effects on national economies. Generally, international trade allows a better use of resources and reallocation of factors, when countries are asymmetric (HOS). When countries are similar, free trade allows a specialisation in different varieties within an industry (Krugman, 1991). In spite of possible losses for several countries, it is certain that the world would be better off with freer trade. Yet, from an empirical perspective, it seems that the globalisation is far from being total. In an extensive survey, Anderson and van Wincoop (2004) highlight that trade costs remain surprisingly high.

Such barriers can be broken down into two broad categories, the local distribution costs and the international trade costs. Distance remains the major cause of the latter. Additionally, some other determinants such as different languages

or, more broadly, cultural proximity are important too. But they also do not represent barriers that the international organisations attempt to suppress. On the contrary, barriers like trade policies, national regulations or the (relative) quality of institutions are part of the World Trade Organisation's core objectives (Henceforth WTO). These last barriers have also in common to be partly or fully the consequences of political decisions. All these barriers have to be taken into account. As Anderson and van Wincoop (2004) show it, assessing the success of the globalisation process by estimating the level of standard trade barriers is not pertinent.[6] Hence, there are many forces that retain globalisation from being fully accomplished. These two opposed forces characterise the diversity of interests that may affect the level of trade barriers through political decisions. At a global level, countries show a strong willingness to promote a fair free trade through their membership to the main international organisations. At a more microeconomic level, all actors aware of their expected losses due to free trade organise themselves and try to pressurise decision makers. These two levels are largely influenced by the evolution of the economic and political environments, at the national and the international levels.

Baldwin and Martin (1999) emphasise that the world has known two recent waves of globalisation. Between these two waves, roughly between the two World Wars, economies have tended to close themselves. Hence, many industries have been developed in spite of comparative disadvantages. They are then threatened by the growing globalisation and try to block it. In contrast, some firms may gain from globalisation. Following Melitz (2003), as trade is growing worldwide, the more productive firms export to foreign markets and obtain higher profit opportunities whereas less productive ones exit the market or remain on the home market.[7] Hence,

[6] These barriers represent, according to their estimates, less than 10 % of the total barriers to trade.

[7] According to the Fortune ranking, the profits of the 100 American largest firms increased by more than 2000% from 1960 to 2000. From decade to decade, their profits have always been increasing. This is not the case of the 401^{th} to the 500^{th} largest American firms. For the whole period, their profit have even more increased but they faced a decrease between 1980 and 1990. These figures are obviously rough. For instance, Louçã and Mendonça (2002) argued that there is an important turnover in firms that compose the 200^{th} largest US manufacturing firms.

MNE have more financial power and the raising number of interactions between countries induces them to influence governments more often since they are involved in more countries. On the one hand, the strategic interactions between countries through world prices and trade policies induce large firms to ask for a freer trade. Inasmuch they are present on foreign markets as exporters, they may suffer from the retaliation induced by a protectionist policy of their home country. On the other hand, domestic firms want more protection or MNE may jump trade barriers by investing into foreign markets directly. This last strategy can induce "quid pro quo" investments as described by Bhagwati et al. (1992). Once firms have jumped trade barriers, they ask for more protection from the foreign country where they are located. In a nutshell, firms have different interests and their relative bargaining power according to their financial resources and their influence may either induce protectionist tendencies or contribute to a freer trade.

The role of the influence of special interests groups is not anecdotal. In less than 20 years, some firms have contributed more than 20 million dollars to electoral campaign in the US.[8] Even more striking is the figure of the amount spent in lobbying activity in the US for the year 2006.[9] Last year, 2.55 billion dollars have been disbursed in such activity. Grossman and Helpman (2001) argue that there exist a lot of Special Interest Groups with various and sometimes opposed interest. These groups influence political and economic decisions. They also underline the increasing importance of this aspect of politics in the 90s. This trend is not decreasing. For the next year's American presidential election campaign, industries have already spent more than 111 million dollars.[10] On the 30^{th} July, the main contributors were the sectors "lawyers/law firms", "retired" or the "securities & Investments" categories. Some analysts expect the total collected amounts to break records with more than 500 million dollars for some candidates.

The distinction between lobbying and contributions highlight the heterogeneity

[8] Source: http://www.opensecrets.org

[9] Therefore this does not include electoral campaign.

[10] Source: Figures collected by the Federal Election Commission and computed by the Center for Responsive Politics, http://www.opensecrets.org.

of patterns of the relationship between influence and special interest groups. Whereas major industries pay more for lobbying than for contributions, the relative importance of the amounts crucially depends on the industry. A surprising observation comes from two sectors for which WTO negotiations are difficult (among others), especially because of the strong protectionist attitudes of the European Union and the US, namely textiles and steel.[11] It appears that both sectors have never been strongly engaged in a lobbying activity for the last ten years. Moreover, the total contributions they have paid for the elections of the last sixteen years are very small compared to other sectors. This contrasts sharply with the pharmaceutical industry which is the top industry engaged in lobbying for the last ten years with more than a billion dollars spent. However, this industry has not spent a particularly large amount in contributions for electoral campaigns. This suggests that political relations are complex; depending on their nature the explanation may be very different. As we will see, this suggests that the nature of the sectors, the stakes involved such as a large number of threatened jobs or a historical sector, may considerably modify the political strategy adopted by firms.

By introducing some rules to conform to, the WTO offers the opportunity to benefit from concessions from other members in exchange for the respect of the main principles stated by the organisation. The problem that arises is the enforceability of the contracts. It is impossible to write a complete contract in order to prevent governments from deviating from their commitments. There will inevitably remain some caveats. In spite of their membership to the WTO, countries still have incentives to use their bargaining power and to take advantage of every single failure or imprecision in the WTO's rules. Hence there are two dimensions linked to international organisations. First the evolution of the global economy that has driven to their creation, an *ex ante* dimension, and the incompleteness of the contracts between international organisations and their members.

Accordingly, political influence, strongly related to a core notion of the political

[11] Regularly, some disputes occur on these two sectors. This suggests there are some protectionists tendencies active in those sectors.

science, power, plays through two channels. Power's roots may be found in members that organised after having coped with international context in order to pressurise the issue of negotiations. They may also be found in a sole initiative, the aim of which is to obtain a favorable treatment. The WTO may help illustrating this as in parallel a country may try to deviate from an already stated rule but it may also try to organise with other countries to shape future rules favourably. Similarly, the International Monetary Fund (henceforth IMF) provides a useful illustration. Countries may use their power to obtain more than they should get from the Fund[12]; or organise to allow another country to benefit from favourable treatment.

The IMF has been created to cope with the increasing difficulty of countries to face more frequent international financial problems on their own. As the interconnections between countries are increasing as a result of the globalisation process, crises may hurt weak national economies much more than in the past. The 1944 Bretton Woods conference has been the theater of the inception of two twin organisations, the IMF and the World Bank, aimed to help countries facing temporary balance account difficulties and to promote their development. Nowadays, the aim of international organisations is to deal with new issues related to globalisation, the involvement of many countries at different levels of development being the main explanation of the need of such organisations. Hence, they represent an attempt to deal with the same problems identified by Drazen as the core of the new political economy, the heterogeneity of the protagonists (mainly their levels of development), and the potential conflicts of interests (due to the heterogeneity and the prisoner's dilemma, among others).

Therefore, countries are obliged to delegate a part of their sovereignty to international organisations in order to benefit from the globalisation process. At the same time, firms are getting more and more powerful. However, the transfer of sovereignty from countries to international organisations is on paper. There is no doubt that each country discovering a means to increase its bargaining power

[12] Each country cannot obtain a loan from the Fund that is larger than a fixed limit. This limit depends on their quotas calculated by the IMF. The quotas depend on their economic size.

towards other members, will use it: just as the fact that decisions that influence firms' business environment are taken by governments does not prevent the former from trying to influence the latter. The new institutional economy suggests that the institutions shape the economic environment. Indeed, the decrease in tariffs in most sectors of the economy achieved under the aegis of the GATT does not prevent firms from wanting more protection, but has obliged them and governments to create new instruments with which to protect their economy.

From a theoretical point of view, recent developments in international trade put emphasis on the apparition of new types of trade policies. Precisely, standards or more extensively technical barriers to trade (TBTs) have some particularities that necessitate a specific analysis. Since the WTO's inception, the principle of National Treatment obliges all members to pronounce the same policies for foreign firms and their domestic counterparts. This is inconceivable for traditional trade barriers such tariffs as they, by nature, cannot be imposed on a domestic product. Any counterpart should then involve another instrument. And as is well known, such behaviour is highly distorsive. This last situation raises the question of the Dispute Settlement Body, further discussed. However, as this involves a balance of distortions, the WTO seeks to eliminate gradually such agreements. For example, there is a conversion process of all standard barriers but tariffs to tariffs in order to apply the reduction formula currently discussed.[13] Moreover, through GATT and WTO negotiations the past 60 years have led to very low tariffs level. This corroborates the results of Anderson and van Wincoop (2004) who find high level of trade costs but confirm that traditional barriers to trade do not represent a large part of these. Logically, this means that protection passes through new channels. Interestingly, TBTs, as they are non transparent and possibly beneficial for the society, are likely to be preferred as instruments for protection since the WTO is, in most cases, inoperative.[14]

[13] The principle consists in estimating the equivalent tariff to a given quota or voluntary exports restriction on a protection level basis and to transpose the latter into the former.

[14] See for example Horn and Weiler (2004) on the WTO dispute concerning a French regulation on asbestos. They clearly expose the inherent ambiguity surrounding the question of the appreciation of the effects and the purposes of such socially beneficial regulation.

Tariffs are questioned both at the international level and at the national one. The WTO is trying to obtain the full elimination of tariffs. In parallel, Rodrik (1995) emphasises the real questioning surrounding the choice of tariffs, more extensively trade policies, to redistribute transfers to interest groups. It is well established that direct transfers would make all actors better off as they do not induce distortions. Accordingly, the quasi systematical assumption that government only have trade policies as instrument to satisfy lobbies should probably be relaxed.

The study of Technical Barriers to Trade is obviously a promising avenue. Their unavoidable implementation on the domestic territory suppresses the distortions induced by tariffs. Contrary to standard barriers to trade, this type of protection does not strengthen the disadvantage of foreign competitors that transports costs constitute. Consequently, implementing a TBT cannot amount to a simple measure against foreign interests. As the **first chapter** of this thesis shows, there is even a positive motive for the government associated with such regulation.

In this chapter we rely on the seminal paper of Grossman and Helpman (1994) (Henceforth G & H 94). They proposed a clear-cut model of lobbying that provides microfoundations to political motives for protection. They show how a policy maker's taste for private gains induces it to shape protectionist trade policies against unorganised populations. Trade policy is there understood in the most common way as the vector of tariffs/subsidies that a government may implement to protect some industries.

The aim of this chapter is then to study the political relation between a government and lobbies using the G & H 94's framework when the object of influence is a regulation. The very interest of this chapter is that contrary to tariffs, raising protection goes parallel to the raising of standards which could be beneficial. Therefore, if one wishes to be protected, one should wish more constraining regulations; thus inducing a trade off between two socially beneficial events : free-trade and better standards. However, a given increase of regulation entails an increase of costs borne by firms. Consequently, if this is the only way to

be protected, some firms may prefer not to be.

This chapter aims to answer the question of the willingness of lobbies to ask for protection if it is a new regulation. For tractability purposes, the question of protection in an open economy framework is left aside. However, as it will be highlighted in the penultimate section of this chapter, this closed economy framework yields results that are easily transposable to an open economy framework. Most of the simple mechanisms that would prevail in an open economy framework are predictable.

A very simple form of regulation is considered. Precisely, any kind of regulation might be thought of as a trade distortion in the sense that it hinders entry on a given market. Indeed, since it increases the costs borne by firms, some of them would not be able to enter the market anymore. The regulation is then assumed to be an entry tax.[15] The vanishing of some firms will prove to be the main interest of the regulation through a profit shifting effect. In order to observe this effect, we use a model of monopolistic competition *à la* Dixit-Stiglitz with heterogenous firms.

Formally, a government that has public and private concerns receives contribution schedules of all active lobbies in the economy. It then chooses the level of the endogenous variable, the entry tax, that maximises its objective function. In order to focus the analysis on the political determinants of the implementation of such a regulation, the latter is supposed to not generate any social enhancing effect. Therefore, this last assumption, together with the closed economy framework, allows us to focus on the intra-sectoral conflicts of interests among lobbies *within* a defined industry where some firms want the implementation of the regulation, whereas others do not. Hence we relax the "lobby-sector" assumption to introduce several lobbies within the industry, some of them encouraging the implementation facing the others. Hence lobbies gather in two groups of lobbies. One is in favour of the implementation of the entry tax whereas the other is opposed to it. The variation of the level of the

[15] This form has been chosen since the aspect the first chapter wants to highlight is the relationship between protection and regulation. This relationship is due to the cost induced by the regulation. This cost is then assumed to be borne by firms in order to create a protection motive.

entry tax influences the way lobbies gather.

The results are fivefold. First, the implementation of any kind of regulation may create some conflicts of interests among the lobbies within the sector. Second, the competition is not related to the number of active lobbies but to the extent of their ownership composition differences. Third, the equilibrium regulation is larger (i.e the additional fixed cost induced by the regulation is larger) when the entry sunk cost, the share of the total voting population represented by a lobby, and the social preference parameter of the government are lower. We also show that the incentive to lobby for a regulation in a sector is only motivated by the presence of firm productivity heterogeneity. That is, competition between lobbies does not depend on the number of active lobbies but on the degree of rivalry between them. Finally, a larger share of total population represented by each active lobby lowers both the degree of rivalry and the equilibrium regulation. This last result contrasts sharply with the previous literature.

Interestingly, the framework developed in this chapter, as it is about a regulation applied to domestic firms may easily be transposed to the question of an open economy. A crucial question in that case would be the treatment of foreign influence. An important issue is the asymmetry between countries involved in international trade. Let us assume that the least productive foreign firm is exactly as productive as the most productive domestic firm after trade costs have been incurred. Consider first that domestic firms are the only ones to be able to influence the government. Hence a new regulation would induce a profit shifting that would strongly benefit foreign firms as they are more productive. Thus, this reduces the interest of the more productive local firms to ask for the regulation. Then, a lower regulation should be adopted. Second, consider the fact that foreign firms can also influence the domestic government. Since all domestic firms would be hindered from entering the market before the first foreign firm would be hurt, a higher contribution compared to the closed economy equilibrium would arise. Indeed, foreign firms are, in this simple example, financially much more powerful than their domestic counterpart.

In spite of the simplicity of this example and the voluntary omission of several effects, the question of the influence of foreign firms is crucial. When considering a regulation, foreign and domestic firms are on an equal footing in the sense that they are not discriminated against. The **second chapter** of this thesis studies empirically the influence of foreign firms in developing countries. The choice of developing countries is due to several theoretical and factual observations that suggest these countries are more inclined to pay attention to foreign firms' wills.

This chapter proposes an original study since it extends the study of influence to almost all regions, contrary to Hellman et al. (2002)[16], and asks the question of the legal influence of firms, which is called the pure influence. This chapter is based on the WBES database.[17] This chapter proposes then a new investigation, as the only studies that have tested the influence of foreign firms have done this in Eastern and Central European Countries.[18] Moreover, this chapter aims to study the pure influence of firms which we define as the influence not achieved through direct payments to officials. Therefore, the data is purged from any illegal influence, for instance bribes.

As a starting point, this chapter suggests three theoretically-founded arguments that may justify a different treatment of foreign firms compared to their domestic counterparts. The first argument is the expected contribution to growth of foreign firms. Firms investing on foreign markets are often the most productive ones. This is one of the main predictions of New Economic Geography (see for instance Melitz (2003)). Hence developing countries' governments may be tempted to favour foreign firms as they expect these will help to foster their growth. Second, foreign

[16] This empirical study uses the same database than in this chapter. However, their study does not distinguish between legal and illegal influence and does not ask whether domestic and foreign firms enjoy the same influence.

[17] The World Bank provides a very complete view of the influence of foreign firms in the World Business Environment Survey (Henceforth WBES). In this survey, there is an extensive number of questions on the subject of regulations. Hence, in spite of its qualitative nature this survey offers the possibility to test whether foreign firms are more successful in influencing developing countries' governments than domestic ones.

[18] In Hellman et al. (2003), they study the legal influence of firms. But they focus their work on the East Europe and Central Asia countries and do not distinguish between foreign and domestic firms.

firms may suffer from a political liability of foreignness. In an electoral purpose, helping foreign firms may not have a strong impact on the election since they do not uniquely represent domestic interests. Moreover, helping foreign firms might be badly received by electors because of nationalistic considerations. Besides, in the theoretical literature, governments are never supposed to take into account foreign profits in their objective functions. Finally, multinationality is the third argument proposed. It simply corresponds to all the advantages a firm can benefit due to their operations in several countries. Particularly, we argue that the main components of this last argument are the threat to relocate abroad if the local governments were not to respect their will; and the experience in the lobbying activity acquired in previous operations.[19]

This chapter is organised in three steps, each of them yielding a broad contribution. First, whereas foreign firms are indeed more influential than domestic companies, this turns out to be untrue when considering the possibility that domestic firms could also be multinationals. Moreover, a newly created statute is studied, the hybrid MNE, that is foreign and domestic. These firms appear to be more influential than the two other types of MNE. These results suggest that the best argument to predict a differential treatment of foreign firms is their multinationality. Second, this chapter provides some insights into the propensity of an official to listen to firms' will whether she or he is elected or not. Not surprisingly, those that are nominated are more inclined to give voice to firms so that they would not be threatened by a possible sanction come the next elections. Those that are elected tend to favour slightly domestic firms. Once again, this result is expected as the political liability of foreignness concerns many more officials who need to gather voices for reelection. Finally, the third contribution of this chapter concerns the entry conditions of foreign firms. According to our estimates, the latter indeed succeed in obtaining some real improvements of their business environment and succeed in maintaining these advantages over domestic firms over time.

[19] That is, MNE have already be engaged in political influence relations in other countries. They get into the habit of negotiating with foreign governments.

Hence, in the quest of foreign influence, this chapter brings useful insights as it underlines the importance of multinationality. However, in frameworks derived from Grossman and Helpman (1994), the national welfare is composed of the social welfare plus the private gains of the government. The social welfare is weighted by a parameter a which is assumed to be positive. If a sector is organised, its profit will enjoy an additional weight equal to one in equilibrium. Consequently, a foreign firm can not have a weight higher than 1 in the national welfare if it tries to influence the government. This means that all domestic and organised firms has, by definition, a larger weight than their foreign counterparts. And if a is higher than one, even the domestic and unorganised firms have a stronger effect on the equilibrium policy. The second chapter suggests this is not realistic, at leats in the case of developing countries. The minimum should be to allow foreign firms to have an equal influence on the domestic government than domestic firms, either by assumption or endogenously. This last possibility could be the consequence of the higher profits of foreign firms, thus conferring on them an advantage compared to domestic firms. Financial power could outweigh their political liability of foreignness. If we return to the example derived from chapter 1, foreign firms are disadvantaged compared to domestic ones since their operational profits are not taken into account by the domestic government. However, if they are supposed to be more productive, then having more financial resources to devote to lobbying activity may counterbalance the absence of government's concern for their profit.

Chapter 2 offers a broad view of the influence of foreign and domestic firms in developing countries. Pure domestic firms have much less influence than other firms. However, they do have some. Some stylized facts emerge from this chapter. First, that multinationality is the main driving force behind the influence of firms, whether they are foreign or domestic. This refers to the credibility of the threat to relocate, the lobbying experience and larger financial resources relative to their size, following Melitz (2003). Second, domestic firms manage partly to fill the gap between themselves and their multinational counterparts when addressing to officials

that face public scrutiny through polls. In parallel, state-owned firms or former state-owned firms achieve more influence than other firms. This defends the positive role of political networks on policies outcomes.

This chapter leaves one aspect unanswered. Domestic firms are more influential when they are MNE. Moreover, they are even more influent when they are hybrid MNE (owned by foreign and domestic capitals). Looking at the endogenous trade protection theoretical models do not provide an answer to this. In models *à la* Grossman and Helpman (1994), paying a contribution has an effect on the equilibrium trade policy that is strictly equal to the effect this policy has on the welfare of special interest groups. What distinguishes a hybrid MNE from a domestic or a foreign MNE is only the nationality of their shareholders. There are no reasons to believe that hybrid MNE's profit depends on domestic regulations more than domestic MNE. Their advantage is to combine both the multinationality and financial resources. Arguably, the reasons explaining their advantage do not come from their profit but rather from their ability to be more influential than others. Hence, the results of the second chapter suggest that a firm, whether it is foreign-owned, domestic-owned or both, may enjoy different levels of efficiency when influencing local authorities. **Chapter 3** provides a new framework to explain this difference of treatment.

To our knowledge, theoretical analysis has yet to consider, except through an election, that influence can be a direct channel from lobbyists to government. Indeed, from the paper of Grossman and Helpman (1994) to the most recent developments, a lot of room has been made for common agency frameworks. The Grossman and Helpman paper develops a common agency model to explain the motives of both the government and firms when engaged in a political relation. As in a standard common agency model, the government is an agent whose effort, precisely the level of protection it grants to the domestic sectors, influences strongly the well-being of a multitude of principals, the organised sectors in their article. Hence the latter introduce in the objective function of the former an additional function that depends

on the realised 'effort' to induce him to act to increase their well-being. In other words, lobbies propose a contribution that depends on the level of protection the government chooses.

This framework has extensively been used since its publication. However, Dixit and Romer (*ibid*) question the use of a common agency framework since the model works with symmetrical information and there is no cooperative outcome. Indeed, considering this, one may suppose more efficient means to obtain a satisfying action from the government from the point of view of the special interest groups. This question is of importance since considering this could be a possible response to the critiques mentioned by Rodrik : The fact that financial transfers are used to influence a government is a problem in many political economy frameworks. Indeed, in his survey, he refers to Austen-Smith that has argued in 1991 that influence may take various forms that often does not imply a financial transfer.

However, theory may be partly malleable in terms of interpretation. The well-known benthamite function used in the political contributions approach, Dixit et al. (1997) for example, represents a pecuniary objective. Therefore, adding a contribution to the objective function corresponds, rigorously, to a monetary transfer. If the instrument used to influence the government is modified, the last element in the objective function, usually called contribution, could be seen as the value the government grants to the action of serving private interests. In other words, this indicates the effect of one euro spent by the lobby and this effect is not necessarily an increase of one euro in the government's objective function. The third chapter of this thesis aims to propose such a framework.

Lobbies design an optimal instrument to influence the value the government grants to the action they ask for. All lobbies are not necessarily on an equal footing. The specificity of the modeling used in this chapter allows to introduce such heterogeneity - not only in the equilibrium policy they obtain, which is already present in the last developments due to the different welfare functions of each lobby, but also in the influence they achieve, this being dependant on their ability to take

advantage of the 'natural' predispositions of the government.

The major contributions of this chapter are threefold. First, a new way to model the game between firms and a government is proposed. This offers the possibility of obtaining "independently" designed contribution schedules. This formalisation also allows firms to have more or less power over the decision of the government, depending on their reaction and on that of the government to the trade policy. Accordingly, this chapter emphasizes the importance of imports reaction to the trade policy relatively to the reaction of domestic firms. The model developed highlights the importance of the nature of the game and of the protagonists' rationality. It is highlighted that the common agency framework is not necessary to obtain a truthful contribution schedule, as defined in Bernheim and Whinston (1986b). More, it appears that when firms consider that their offer to the government, the contribution schedule, may modify directly the contribution they will pay, the contribution schedule is not truthful anymore. More precisely, in that case, the model proposed in this chapter shows that in allowing firms to take a strong advantage over the government, it also introduces moderation from firms, which is not possible in the common agency framework. The effect is the following : If firms observe that the government is initially inclined to help them because of their impacts on the social welfare, they do not need to make an important offer. Inversely, if the government seems to be unsensitive to firms situation, they are forced to make a large offer. This is robust with the idea that a same outcome can be derived from firm influence or from the sensitivity of the government to firms profits.[20] Indeed, the fact that pharmaceutical and steel industries seem favoured in WTO negotiations cannot be explained uniquely by their contributions or investments in lobbying activity as this has been shown above.

From a more descriptive point of view, this chapter also provides some results about the homogenous good case. It highlights some direct implications of the

[20] That is, the same protection may be achieved through weak influence and an important sensitivity of the government to firms profits or through a strong influence and a weak sensitivity of the government.

competition between lobbies on the equilibrium trade policy. This contrasts with the result of Grossman and Helpman (1994) which does not link the competition between lobbies to the equilibrium outcome.

A last part of chapter 3 aims to analyse in a very simple way the implications on an open economy. A highly tractable two countries model is developed. There is one firm in each country, both firms being present on both markets. To assess the important question of the effect of influence on multilateral negotiations, it relies on a very simple assumption. Reaching an agreement means that the international organisation has to propose a policy that lies within in the range of conceivable trade policies for all countries. Therefore, the idea is simplify to determine how constraining the equalisation of the trade policy vectors of all countries would be.[21] This is measured by the size of the range of values that can be equal and possible for all countries. It appears that the situation which involves lobbying in both countries is not necessarily worse than the one without contribution. Some configurations of the cost and market size advantages combined with the lobbying efficiency may yield some outcomes that make it easier to reach an agreement when both governments give some voice to lobbies. This last result is in line with some beliefs that taking into account politics in international fora may yield preferable outcomes.

As already underlined in this introduction, the trade theory would, in 'autarky', conclude that self enforcement is almost perfect since international fora allows a coordination that suppresses the prisoner's dilemma. However, if the trade theory is open to political economy, mainly through the endogenous protection strand, it highlights how hard to reach is the aim to avoid "protectionist tendencies" (Pascal Lamy, ibid). Hence politics is the salient force that prevents international organisations from developing harmoniously. As argued by political scientists, politics involves strategy. Strategy implies an aim and a way to reach it. Therefore,

[21] This equalisation of the trade policies is a stylised approach of the expected result of the combination of two WTO principles. The reciprocity and the most favoured Nation principles taken together imply a common tariff for all countries. The principle of reciprocity implies that tariffs are equal for every pair of WTO members. The most favoured Nation principle implies, given the principle of reciprocity, that the tariff is the same for all pairs. Indeed, the principle of the most favoured Nation prevents Nation from discriminating between its trading partners.

identifying the aim would help to guess the way and may be to prevent it.

Baldwin (1979) explains the paradox of the unrealised power. It means that some countries have 'weapons' but do not know how to use them. The result of chapter 2 illustrates this in the sense that domestic firms could have means to influence but appear to be much less efficient. Moreover, all countries do not have a developed experience of lobbying. By the latter, one should understand influence in a broad sense including bribes or networking. Yet, each country has a government to influence. Therefore, as chapter 2 shows, some foreign private interests use their experience to influence developing countries' governments. They indeed obtain some large advantages, in particular when entering the market.

Similarly, chapter 1 and 3 sustain the idea, although through different approaches, that the mix of influence and open economy may yield highly different outcomes. From the first mentioned, we know that allowing foreign lobbies to pressurise the local government is a crucial issue. From the second mentioned, unilateral influence may make it impossible to reach an agreement in international negotiations. Therefore, the question of politics is very important to increase the understanding of the functioning of international organisations.

As suggested about the questionable choice of the common agency framework, lobbies do not have the possibility of setting the trade policy, but just of influencing the choice of the government. Chapter 3 has proposed a solution to this particular problem. However, there are sometimes a means to decide on the use of strategic instrument. This is particularly the case for resources, whether they are energetic, geographic or other. This last chapter empirically assesses this concern. Despite it relies on empirical work, there is undoubtedly an implicit theoretical background that refers to the agency theory. So this last chapter reverses the problematics by considering variables, the use of which is transferable and by assuming that international fora are a mean to influence this use rather than an issue to overcome politics problems. That is, the international organisations can be diverted from their original aims.

Bernheim and Whinston have developed two fundamental articles that have influenced the common agency framework of the modern political economy. Bernheim and Whinston (1986a) present a theoretical approach of common agency. They prove that whatever the implemented action in equilibrium, it is done efficiently. Grossman and Helpman (1994) rely on the Bernheim and Whinston (1986b) work to characterise their equilibrium. Their common agency framework may be applied to the IMF. Indeed, the Fund would be the agent. In accordance with the model, its actions are observable, that is the amount lent. Principals would be the various countries composing the constituancies which animate the Executive Board where the major part of the decisions is taken.

Whether or not one considers that each loan granted to a country modifies the possibility and the amount of the loans other countries can get, one should refer to the Grossman and Helpman framework or to that developed in chapter 1. However, the broad conclusion of both frameworks states that when an actor is far from others' opinions, it should pay more. Transposed to the Fund problematics, this prediction implies that if a country is the only one to believe that it is important to lend to another country, the latter will not receive a large loan or just not get any loan. The Fund has *ex ante* no reasons to lend more to a country than to another. Once the economic criteria have been taken into account, all potential borrowers are on an equal footing. These are the countries that use their voting power and influence to obtain from the Fund a higher loan. Consequently, the similarity with the standard endogenous trade policy framework is quite clear.

The first three chapters of this thesis have then studied the influence foreign or domestic firms have on governments. These political relations obviously affect importantly the equilibrium policies of countries. As it has been argued previously in this introduction, the inception of strong international organisations has necessitated a partial transfer of sovereignty from countries to the boards of these organisations. Some policies are now decided at the multilateral level. Given the influence firms may enjoy towards governments, it seems that firms can influence the decisions taken

in international fora. And if this is the case, this would mean that countries succeed in achieving private goals through international organisations.

Chapter 4 proposes an original study in estimating the effect of geopolitics in the IMF lending practice. Geopolitics is used instead of politics since the concept implies more stable criteria. As it will be explained, geopolitics refers to the 'weapons'. They often are resources or strategic locations. This chapter answers then to a part of the scheme that would prove the effective influence of firms in international organisations.

To assess the question of the influence of firms in international fora, we need to show that firms environment and interests can be affected by decisions taken by international organisations. It is obvious that firms are directly or indirectly influenced by the decisions taken at the WTO. Indeed, these decisions are generally related to trade or property rights aspects. Therefore, this influences directly the business environment of firms. There are no doubts that firms have an interest to influence the decisions taken at the WTO.

Concerning the IMF, this link is less visible. However, several academic studies have studied the moral hazard hypotheses connected to the Fund loan practice. Two types of moral hazard may occur. First, the debtor moral hazard is the possibility that a country mismanages the public funds because it believes the IMF will provide a financial support if a crisis occurs. Therefore, this is the role of lender in last resort that creates the environment propitious to such behaviour. Second, the private moral hazard states that foreign private investors will neglect the real macroeconomic risks in developing countries. Again, this is due to the role of lender in last resort of the IMF. For instance, Mina and Martinez-Vazquez (Mina and Martinez-Vazquez, 2003) consider loans maturities to find evidence of moral hazard: If the occurrence of a bail out is more likely, considering that it should reduce the perceived risk, the maturity of loans should then increase. They find that moral hazard only appears after the crisis. In the same path, some authors have been looking for the reaction of shares to IMF related news, IMF decisions, IMF programs, etc. They generally find a positive

relation (Kho and Stulz, 2000; Brealey and Kaplanis, 2004; Hayo and Kutan, 2005; Evrensel and Kutan, 2006).

Moreover, other studies have looked at the evolution of spreads on financial markets to assess whether investors underestimate the real risk. Dell'Ariccia, Schnabel, and Zettelmeyer (Dell'Ariccia et al.) work on the Mexican and Russian crises with an interesting methodology. They use an inverse reasoning to identify moral hazard. Since Russia has not been bailed out, when investors thought that it would be, they expected to find investors' risk perception unchanged. Their conclusion is that the moral hazard hypothesis is consistent with the Russian crisis. Haldane and Scheibe (2004) test the impact of positive IMF related news on shares; they find that these news increase the value of shares, especially bank shares, and even more the shares of the most exposed banks.

All these studies, even if they are not all very conclusive, seem to justify that the investor moral hazard exists. Hence, if firms invest in developing countries which real macroeconomic risk has been underestimated and that face a financial crisis, these firms indeed have a strong interest to influence the loan decision of the IMF.

However, the fact firms have an interest in influencing the decisions taken by the international organisations is not sufficient to conclude they succeed in doing so. Indeed, whatever the international organisation, firms do not have an official voting power in order to influence the decisions. Therefore, they are forced to influence governments of member countries, as the first three chapters of this thesis illustrate, to induce them to influence international organisations decisions. This is possible uniquely if the governments retain a sovereign power in these organisations. If this is not the case, governments should act as the rules of these organisations state.

Then, we need to show that governments do not fully transfer the sovereignty they should have transferred. Both taken together, i.e an interest of the private sector to influence international decisions and a lack of transfer of sovereignty from governments to the international organisations, imply that firms are influential. Several articles have shown that this is the case in the WTO. For instance, Shoyer

(2003) shows that a country may have a greater influence on the selection of the Panel in a WTO dispute thanks to diplomatic or institutional advantages. In a recent article, Srinivasan (2007) draws a *brief history* of the Dispute Settlement Mechanism. He refers to several political scientists to highlight a "diplomatic" viewpoint of the procedure which main aim is to help countries during negotiations.

This is not the case of the Dispute Settlement disposal of the WTO. Bütler and Hauser (2000) have proposed a formal approach to it. The predominance of bilateral settlements is the first concern. As for the previously mentioned informal negotiations, there are no controls of the balance of the negotiation outcome. If two countries engaged in a dispute settlement process affirm to the dispute settlement body that they have reached an agreement the dispute is over. More broadly, the debate in political science is a topical subject. Jackson (2004) sum up the main bone of contention. On the one hand, some argue the WTO lacks the power of enforcement necessary to induce countries to respect its rules. On the other hand, some argue that despite the weakness of the retaliation and other punishment issues, the WTO provides a set of rules that are comparable to an international law (Kono, 2007). That is, the fact countries may easily violate the rules does not mean there are no rules. Finally, a consensus between both views have been partly reached around the second best nature of the Dispute Settlement Procedure as it reduces the incentives to behave badly, for example free-riding, but has not coercive means to force the respect of its rules.

Arguably, whether WTO's constellations of agreements are laws or not does not change the fact that countries are able to deviate from their commitments as the retaliation is weak. For example, there are no retroactive sanctions in the Dispute Settlement Procedure. Since settling a dispute may be quite long, the financial harm may be large.[22] All in all, Staiger (1995) highlights the core question of the self enforcement contract that may prevail in the WTO because of the lack of legal enforcement. The second best theory above mentioned refers to the ability of the

[22] The Venezuela-USA case on fuel limitation of imports at the WTO has last for two years and a half.

WTO rules to induce a partial self enforcement.

Concerning the IMF, Barro and Lee (2005) have showed that political determinants have an influence in the Fund loan decisions. Since the official rules of the IMF, the Articles of Agreement, only refer to economic criteria, every decision that is based on political criteria reintroduce the government sovereignty in the decision process. However, Sturm et al. (2005) have showed that political criteria are not very robust through an Extreme Bound Analysis. Therefore, it is not obvious that the IMF is diverted from its funding principles. It is then not obvious that governments have a room of maneuver that could allow Special Interest Group to influence the Fund decisions.

Nevertheless, there are some caveats. In the IMF, it is all about enforcement. The Articles of Agreement state some rules. But in many situations these have not been respected. As there are no mechanisms to induce countries to respect the rules, some of them occasionally break them. Similarly, the WTO operates through informal negotiations to reach an agreement. This means that powerful governments have the greatest latitude to bargain with weaker countries. The final outcome would be an agreement so complex to advocate on which countries obtained more or less than others. A common aspect of both political use, in the case of the IMF or the WTO, of international organisation rules failures is that it does not necessarily imply a bad outcome. It may be that these political forces are necessary to reach an agreement or to meet the initial objectives.

Indeed, one also could argue that some political concerns that induce increased lending (more than the fund authorises) may be proved to be a beneficial action. Some argue that Turkey would not have overcome its difficulties if the amounts lent were limited to the official ceilings.

The fourth chapter proposes that many countries want an IMF member to obtain a loan because of its geopolitical 'capital'. Following the comparison, a highly geopolitically important country has an effect on the welfare of many other countries. This helps the convergence of opinions of IMF members and then increases the

amount of the loan. To capture this effect, an original measure of the geopolitical importance is developed. It is constructed in two steps. First, a large number of variables that are involved in geopolitical stakes are collected in an original data set. Following Baldwin (1979) in considering that there are no unique geopolitical variables, a common factor analysis is run to extract the common vector that represents the geopolitical importance of a country. This yields a unique measure that takes into account all the collected variables and their effect thorough the 107 countries of the database. Second, a standard international trade literature measure is adapted to take into account the fact that a country close to geopolitically important ones is also geopolitically important. Thus, the market potential measure, first developed by Harris (1954), is applied to the common vectors obtained in the first step. This geopolitical potential takes then into account the allocation in strategic variables and the proximity to very well endowed countries.

This variable is then used to test whether the IMF has a lending practice influenced by geopolitics. Another important contribution of this chapter is to distinguish between two types of IMF loans. From a formal point of view, the conditions to fulfil in order to get each type of loans are very different. On the one hand, the Stand-by Agreements[23] (henceforth SBA) are large loans going hand in hand with strong conditions to meet. On the other hand, the Poverty Reduction Growth Facility relies on largely softer conditions and are considerably smaller. The probability of getting either one or the other could then be influenced differently by geopolitical considerations.

The results of this chapter provide empirical support to the view that geopolitical considerations are an important factor in shaping IMF lending decisions. Economic determinants are still valid for both facilities and turn out to play more for SBA. This is in a sense a reassuring result, since SBA are very large loans. Moreover, the Fund is shown to favour geopolitically important countries when lending non-concessional facilities while concessional ones tend to be attributed to non-

[23] They are the main loans supported by the General Resources Account, the main program through which the Fund lends money, so a particular attention is bring to them.

geopolitically important countries. Focusing on non-concessional loans, the lending process is separated in two steps: First the Executive Directors decide to lend and second they agree together with the borrowing country's government on an effective amount and on characteristics of the conditionality. Using a selection model, it appears that the/a decision to lend is influenced by the borrowing country's geopolitical potential and that the amount effectively drawn is rather influenced by the diplomatic bargaining power of the borrowing countries.

These four chapters have then been based on a strong political economy framework. They highlight that relations between firms and governments or between governments and international organisations are strongly influenced by political considerations. The first three chapters show that firms have a strong influence on governments, be they foreign or domestic. The last chapter shows that governments may indeed use international organisations to serve their interests. These four chapters then suggest that firms, despite they are not represented in international organisations, probably have an important role in the international negotiations and decisions.

Chapter I

Intra-Sectoral Lobbying on Entry : The Political Economy of a Technical Norm [1]

> *"When asked why free trade is so often preached and so rarely practiced, most international economists blame "politics". In representative democracies, governments shape trade policy in response not only to the concerns of the general electorate, but also to the pressures applied by special interest."*
>
> Grossman and Helpman (1994).

An important question for theoretical and applied research in international economics is related to the difficulty to implement free trade. In their seminal paper that encompasses the main mechanisms of the *New Political Economy*, Grossman and Helpman (1994) (Henceforth G & H 94) have proposed a clear-cut model of lobbying that provides the microfoundations to the political motives for protection. They show how a policy maker's affinity for private gains induces it to shape protectionist trade policies against unorganized population. Trade policy is there understood in the most common way as a vector of tariffs/subsidies that a government may implement to protect some industries. This line of research has been

[1] This chapter is based on a manuscript jointly written with Vincent Rebeyrol.

widely followed in the literature since then. Extensions of this model include political economy of Free Trade Agreements (FTA) (Ornelas, 2005; Grossman and Helpman, 1995a, among others) and the endogenous formation of lobbies by Bombardini (2005) and Mitra (1999). However, the nature of the trade policy instrument influenced has not been questioned, exception made of Testa (2005) on price liberalization and Do and Levchenko (2006) on entry costs and institutions.

Yet, the tremendous decrease of tariffs barriers through GATT and WTO negotiations over the past 60 years have led to make tariffs manipulation by policy makers extremely difficult. Moreover, the creation of the Dispute Settlement Body (DSB) simultaneously with the WTO ensures no deviation from the negotiated tariff levels.[2]

Nevertheless, the empirical evidences clearly indicate that we are far away from a perfectly integrated world economy. According to Anderson and van Wincoop (2004) trade costs are still surprisingly high. The new trade literature that includes heterogeneous firms shows that only a small fraction of firms export. These firms are the most productive and can compensate the country-specific fixed cost associated to export (See among others Bernard and Jensen, 1995, 1999; Eaton et al., 2004). The fixed costs can be broadly defined as the costs to adapt a foreign country's standards and regulations.[3]. Recent empirical evidences support this by their estimates of huge disparities in regulations among countries (see Djankov et al. (2002)).

Parallel to these new academic developments, one current concern in WTO negotiations is the increasing role of non tariff barriers (NTBs) and technical barriers to trade (TBTs) to explain trade frictions. Since they are non transparent and possibly beneficial for the society, these barriers are likely to be implemented because the WTO is in most cases inoperative.[4] Consequently, WTO last round of negotiations is currently working on the harmonization of such regulations. (See

[2] Moreover, any deviation is potentially dangerous because of the possibility for other countries to 'use' the Dispute Settlement Body (DSB) of WTO.

[3] These costs also cover the need to collect information on the relevant market as well as costs induced by the need to launch a distribution network. See Melitz (2003) and Chaney (2005) for a discussion and model that fit these empirical evidences

[4] See for example Horn and Weiler (2004) on the WTO dispute concerning a French regulation on asbestos. They show the inherent ambiguity surrounding the question of the appreciation of the effects and the purposes of such socially beneficial regulation.

Swann et al., 1996; Vancauteren, 2002; Vancauteren and Weiserbs, 2005; Ganslandt and Markusen, 2001).

Any kind of regulation might thus be thought as a trade distortion that hinders entry on a given market. On the other hand, some new standards such as sanitary/environmental regulations might increase aggregate social welfare by reducing the extent of some negative production externalities. These regulations have complex effects. The multiplicity of the possible purposes to implement the regulations being the main explanation.

Thinking these regulations as a protection tool raises some new questions. The implementation of a standard cannot be only applied to foreign competitors but must also be applied to domestic producers. As staten by the national treatment principle of the WTO, a country cannot grant a preferential treatment to domestic firms compared to their foreign counterparts. It is then not obvious to observe the reasons why domestic producers have a positive demand for such policy.

The recent literature, starting with G & H 94, has explained the lobbying activity by the demand for protection from local firms. Since local firms should also bear the cost implied by a TBT, they may not all demand protection. This chapter tries to explicit the differences between a tariff and a regulation implementation for domestic firms. What are the domestic firms behind the demand for TBT's protection? In which sense this could be understood as a protection tool and how does it differ from a tariff?

We choose to stay very close to the framework of G & H 94, to allow a clear comparison between the incentives to erect tariffs compared to NTBs/TBTs.

A government that has public and private concerns receives contribution schedules of all active lobbies in the economy. The government then chooses the level of the endogenous variable that maximizes its objective function. Our model departs from G & H 94 because the endogenous variable is no more a level of tariffs or subsidies but a level tax entry. We assume that TBT's take the form of a beachhead entry tax.[5]

[5] We could have assumed that regulation also affects variable costs of firms but this makes computation rather cumbersome and yields qualitatively the same results.

In order to focus on the political determinants of the implementation of such regulation, we assume that it has no social enhancing effect. Suppressing any positive social effect allows to shed light on the way these regulations may be turned away from their "official" objective. The government has then no interest in the implementation of the new regulation. The political influence will be the unique explanation of the implementation if it occurs.

We refrain from studying the impact of entry tax on competition from abroad. In this simple model, we suppose the negative effect of the competition from abroad and the positive social effect cancel out and thus market size stays constant. This important assumption allows to focus on the intra-sectoral conflicts of interests among lobbies within a defined industry, motivated by a profit shifting effect.

As pointed out above, a major difference between a tariff and an entry tax for domestic producers is that the later also increases the production costs of domestic firms.[6] Because of heterogeneity, there is in our model a priori no reasons to group firms in a "lobby sector". Assuming a TBT, firms with different productivity do not have the same perception of it. The model does not include assumption on the existence of specific factor of production as in the previous literature. This is because lobbying occurs within a defined industry.

We show that the implementation of any kind of regulation which implies an increase in the cost function of domestic producers creates some conflicts of interests among them. To highlight this result, we concentrate on a one-sector economy.

This analysis brings new insights compared to the model developed by G & H 94. In their framework, each active "lobby-sector" has a producer interest to demand a tariff protection. But each active lobby has also a consumer interest to demand subsidies in the other sectors. The induced general equilibrium effect is the only source of competition between active lobbies. The competition between lobbies, and thus the surplus of the game captured by the government, is only positively linked

[6] Do and Levchenko (2006) is the closest paper to ours by dealing with the impact of an increase in entry cost on the export market and the incentives to improve institutions in that case. The mechanism at the heart of their contribution is very similar to ours. However, the political game they present is strongly different from ours (derived from the voting model of Benabou).

to the number of active lobbies and the share of the total population represented by these lobbies.

In contrast, our model provides a framework where lobbies are only opposed through their interest as producers, while their consumer interest always reduces competition among them, since we focus on a one sector economy. The determinants of competition among lobbies are thus deeply different. The competition is not related to the number of active lobbies but to the extent of their ownership composition differences. That is, we consider that each consumer possesses a share of all firms comprised between zero and one. Consumers are gathered in Special Interests Groups. Therefore, each group represents a share of all firm present on the market thus defining the ownership composition of the group.

Also, the general equilibrium effect induced by the consumer concern of each lobby works in the opposite way by reducing the competition among lobbies. The outcome of the model is thus quite different from the one developed by G & H 94. This may clarify the differences between tariffs and TBT's and the political motives to implement them.

The model is structured as follows. We consider a one sector closed economy framework where firms differ in their productivity. These productivity differences are needed to allow differences in ownership composition between lobbies, which would be impossible if firms were perfectly symmetric. A positive tax on entry would increase the fixed cost of production of all firms. This new cost has thus a negative effect on the rentability of all firms. On the other hand, the induced lower entry reduces competition and increases market shares of firms that are still able to make positive profits. As soon as this increased market share induces an operating profit that enables to cover the additional fixed cost, firms have an incentive to ask for a positive tax entry. The economic structure that yields these effects is exposed in section 2. The core mechanism that we want to put forward to explain the conflicts of interests is thus based on a profit shifting effect among firms.

The political game from which the equilibrium entry tax is derived is the same as in G & H 94, based on Bernheim and Whinston (1986b) (Henceforth BW86). Each

active lobby gives the government a contribution schedule for each possible level of entry tax. This contribution schedule depends on the ownership composition of the lobby. The possible contributions of a lobby are larger, the more its ownership composition is biased towards the most productive firms. The government collects all contribution schedules and chooses the level of entry tax in order to maximize its objective function. The basic trade-off faced by the government opposes its private and social concerns. A small tax on entry allows many firms to "live" in the market and increases the aggregate social welfare while a large entry tax forces some firms to stay outside the market, but the received contributions increases the private utility of the policy maker. The properties of the induced equilibrium are exposed in section 3.

To tackle the problem of competition among lobbies, we follow G & H 94 in assuming that lobbies' contribution schedules are truthful. The induced equilibrium level of all contributions is provided in section 5. This section presents the determinants of the competition among lobbies, and how they differ from the multi-sector framework with lobbying on tariffs proposed by G & H 94.

Section 6 discusses the main implications of our results and the potential extensions. Section 7 concludes.

1 Model Setup: The Economic Structure

Our model describes a static closed economy. Some of the results could be easily extended to a small open economy, as shown in the last section of this chapter, but the formal analysis of the open economy case and the impact of trade liberalization is let for further research.

We assume two sectors: M and A. Labour (L) is the only factor of production. The M sector is characterized by increasing returns to scale in the production of a continuum of varieties and is subject to monopolistic competition *a la* Dixit-Stiglitz. The A sector produces a homogeneous good under perfect competition and constant returns to scale, and thus will serve as a numeraire. Firms are owned by workers.

Demand

Preferences are represented by a quasi-linear utility function U, with a CES sub-utility function over the continuum of manufacturing varieties:

$$U = A + \mu \ln C_M \qquad C_M = \left(\int c_i^{1-\frac{1}{\sigma}} \right)^{\frac{1}{1-\frac{1}{\sigma}}} \text{, with } \sigma > 1 \tag{I.1}$$

where C_M and A denote consumption for the M composite good and the numeraire good, respectively. σ is the constant elasticity of substitution between any two varieties and μ the preference parameter over manufactured goods.

The maximization of consumers utility yields the following demand for variety i:

$$c_i = \frac{\mu L}{\int_{h \in \Theta} p_h^{1-\sigma} d_h} p_i^{1-\sigma} \tag{I.2}$$

where p_i is the price of variety i, Θ being the set of all available varieties h in this economy. In the following, we normalize labour endowment such that $L = 1$.

Production

The numeraire good (A) is produced with one unit of labor per unit of output and without loss of generality, we normalize wage rate to one.

Any active firm i in the M sector bears a fixed overhead production cost F,[7] and a constant marginal production cost a_i. The cost of producing q units of good i with marginal cost a_i is thus: $C_i(q) = a_i q + F$. Given the demand function (2), the optimal price charged by a firm i is a constant mark-up over its marginal cost. Hence, a firm whose marginal cost is a_i will charge price $p_i = \frac{\sigma}{\sigma - 1} a_i$. It follows that profits of a firm with marginal cost a_i are:

$$\pi_i = \frac{\mu}{\sigma} \left(\tfrac{\sigma}{\sigma - 1} \right)^{1-\sigma} P^{\sigma - 1} a_i^{1-\sigma} - F \tag{I.3}$$

where $P = \left(\int_{j \in \Theta} p_j^{1-\sigma} dj \right)^{\frac{1}{1-\sigma}}$ is the price index.

Firm Heterogeneity

We assume that firm marginal costs are drawn from a Pareto distribution. As shown by Helpman et al. (2004), if marginal costs are drawn from a Pareto

[7] This fixed cost could reflect all costs implied by the legal system and standards in force in the country.

distribution, the distribution of firm revenue and thus firm size in a given market follows also a Pareto distribution.

We assume that marginal costs a are comprised between 0 and a_0, and suppose that these marginal costs are drawn from a Pareto distribution $G(.)$ with a shape parameter κ such that

$$G(a) = \left(\frac{a}{a_0}\right)^{\kappa} \text{ , with } 0 < a < a_0 \tag{I.4}$$

Without loss of generality, we assume that $a_0 = 1$, and that $x_i = a_i^{\sigma-1}$. We can define the ratio of two firms revenues by:

$$\frac{r(x_1)}{r(x_2)} = \frac{x_2}{x_1} \tag{I.5}$$

where x may be understood as an index of the inverse of firm size. Indeed, this index perfectly follows the inverse of the firm size distribution in our economy. In the following, we will refer to x_i as the efficiency index of firm i.

Thus, in the following, we will consider x rather than a and assume that x is drawn between 0 and 1 from a Pareto distribution $F(x)$, with a shape parameter $\rho > 1$.[8]

$$F(x) = x^{\rho} \text{ , with } x > 0 \tag{I.6}$$

Finally, we assume, that there is a group of entrepreneurs proportional to country size. Hence, the total mass of entrants is proportional to L.[9]

Equilibrium

The profit of any firm takes the following form:

$$\pi_i = \frac{\mu}{\sigma \int p_i^{1-\sigma}} p_i^{1-\sigma} - F \tag{I.7}$$

The computation of the price index ultimately depends on the efficiency index of the least efficient firm able to enter the market and produce, since all firms with an

[8] It can be shown that $\rho = \frac{\kappa}{\sigma-1}$, which ensures that the standard regularity condition is satisfied: $\kappa - (\sigma - 1) > 0$, if $\rho > 1$

[9] Recall that it is normalized to 1.

x below this threshold are active in this market. We name the x of the least efficient active firm x_E (E for entry). We can now compute the price index with respect to x_E:

$$\int_0^{x_E} p_i^{1-\sigma}(x_i)dx = \left(\tfrac{\sigma}{\sigma-1}\right)^{1-\sigma} \lambda x_E^{\rho-1} \quad \text{with} \quad \lambda \equiv \tfrac{\rho}{\rho-1}$$

Without loss of generality, we assume that the marginal cost of the least productive firm is equal to 1 in equilibrium without lobbying, our benchmark. This induces that the least efficient firm has an efficiency index equal to $x_E = 1$. Hence, this firm makes no pure profits (her operating profits only cover the fixed entry/production cost, F) which drives the value of fixed entry/production cost:

$$F = \frac{\mu}{\sigma\lambda}$$

All firms with an efficiency index $x_i < x_E$ are able to cover the fixed cost F with their operational profits and so are active in this market and make pure profits. Inversely, all firms with an efficiency index $x_i > x_E$ cannot enter the market, since they would make negative profits in that case.

2 Lobbying on entry tax

Every decision that may affect the level of the fixed cost will then have a consequence on the number of firms active on the market. A marginal increase of F will induce the least efficient firm to stay outside the market. We assume the fixed entry cost to be defined as the level of TBT. So the set-up described in the previous section allows now to study the effects of an increase in the stringency of a regulation on the domestic sector. Debates at the WTO or in the European Union are now strongly oriented on the harmonization and eventually the reduction of the stringency of standards adopted, and we generally refer to these policies as TBTs agreements. Thus in these conditions, it is crucial to study the incentives of a domestic sector to ask for more of this kind of protection.

From a pragmatical and theoretical point of view, there are many reasons

why standards might be beneficial. For instance, they can reduce the negative externalities linked to pollution, as well as sanitary, environmental or labor matters. These concerns make these regulations desirable from a social perspective. However, these considerations would only make the social and private interests converge towards the will of a more stringent regulation. In other words, the protection would have a positive effect on consumer utility. Adding a positive social effect of the regulation would then increase the willingness of the government to protect productive firms. This would induce the equilibrium policy to be higher but would alter any effect of the model. Hence, the consumers as well as the government have no social incentives to wish the implementation of the regulation.[10]

Therefore, in order to study the incentive to pay to influence government decisions over the implementation of such policy, we assume that these regulations take the form of an entry tax that raises the fixed cost of all active firms in a market. Examples of tax entries include the necessary steps to create a firm, to obtain the authorisation to sell a product. The recent European decree called REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) now obliged all firms within the chemical industry to pay themselves for the tests of their products. For a given product, this is a fixed cost against which many small firms are (in France for instance, they are gathered in a sector union, the UIC).

By suppressing the social desirability, it may seem that the incentives to promote these regulations are off as they hinder entry and thus competition. We shall argue that there still some incentives to ask for more stringent regulations.

There are other reasons to suspect that these regulations may be also desirable from a pure private interests perspective.Many individual producers complain about these regulations because of their capacity to hinder entry into markets. And what is denounced by some may then be promoted by others.

[10] Still, to consider a socially desirable regulation would not affect the results of the model. Moreover, it would introduce an effect that reduces forces opposed to the implementation.

These regulations may have another important effect : a profit shifting effect.[11] Active firms on markets that are strongly regulated and agents that own these firms benefit from a weaker competition compared to deregulated markets. They benefit from market shares of all competitors whose entry is made impossible by the high level of regulation.

2.1 Impact of setting an entry tax: intra-sectoral conflicts of interests

All in all, in spite of the additional cost, some productive firms may want the implementation of the regulation to obtain the market shares left by firms stayed outside the market. This would be characterized by profits shifting from least productive firm towards more productive ones. These conflicts of interests between firms within a single sector should divide this sector into several categories of firms whose interests are opposed.

Precisely, the implementation of any kind of new standard or regulation may have one particular effect on firm's cost function. An increase in the fixed cost firms have to pay through the implementation of a entry tax. We assume that this entry tax implementation raises the entry fixed cost by an amount of βF, such that an active firm must pay a total fixed cost of $(1 + \beta) F$ if the entry tax is set up.

The crucial variable in this model and the only endogenous instrument for policy maker is thus β. The larger the β, the more stringent is the regulation.

We first study the consequences of the implementation of an entry tax on the market structure to analyse the intra-sector conflicts of interests.

Basically, an additional fixed cost reduces the profitability of all firms. For the least efficient firms the implementation of an entry tax prevents them to make positive profits. As a consequence, these firms cannot produce and sell their production under the new regulation. On the other side, the most efficient firms

[11] There may be many effects active in a more general framework such that this social desirability aspect. These effects may induce additional rent shifting. However, the main aspect and therefore the main motivation for firms is the profit shifting. In the following, we will refer to a pure profit shifting effect has an effect only involving profits transfers between firms. Thus, the "profit shifting" expression has to be understood as characterizing the motivation rather than describing the precise rent shifting.

may be competitive enough to still be able to make positive profits. The impact of the entry tax setting on these firms is thus ambiguous, since it has two opposed effects. On the one hand, their profits are reduced by the higher entry cost. On the other hand, market competition toughness is reduced since some firms are forced to stay outside the market, this increases the market shares and profits of all firms that are able to bear the larger entry cost. Hence, this second effect may be larger than the first one for the most productive firms.[12] In other words, the implementation of an entry tax leads to a rent shifting effect from small to large firms, compared to the benchmark case where β is equal to 0.

Intuitively, the implementation of a positive entry tax split all potential firms in three groups. The first group is composed by firms that cannot enter the market anymore. The second is composed by firms that can bear the larger entry cost, but that make smaller profits than in the benchmark case (without any entry tax). For these firms, the first effect of the entry tax overcomes the second one. Finally the last group is composed by firms that can bear the entry tax and that even make larger profits. For this last group, the second effect of the entry tax overcome the first one.

Of all these three groups, only the last group has an interest in the implementation of the entry tax. The two other groups loose from it. Indeed, as it will be shown below, overall pure profits are constant whatever the level of the positive entry tax implemented. Consequently, what is earned by some is exactly loosed by the others.

The first step is to define formally these three groups as well as the total profit shifting effect induced by the entry tax represented by the parameter β.

Suppose that an entry tax is set up which raises the entry fixed cost to $(1+\beta)F$. All active firms must bear this larger cost. Their profits thus have the following form:

$$\pi_i = \frac{\mu}{\sigma\lambda\left(\frac{\sigma}{\sigma-1}\right)^{1-\sigma} x_E^{\rho-1}} p_i^{1-\sigma} - (1+\beta)F \tag{I.8}$$

[12] But some firms remaining on the market see their profits decreasing compared to the benchmark case.

It is straightforward to determine the efficiency index (x_E) of the least efficient firm that is able to produce in this market. All firms characterized by a $x_i > x_E$ are forced to stay outside the market and compose the first group of firms. x_E has then moved leftward and corresponds to another firm.

This "new" least efficient firm makes exactly no pure profits. Its operational profits are just sufficient enough to cover the entry fixed cost $(1+\beta)F$. This allows to define x_E:

$$\pi_{_E} = \frac{\mu}{\sigma\lambda x_E^{\rho-1}} \times x_E^{-1} - (1+\beta)F = 0 \tag{I.9}$$

$$\Leftrightarrow x_E = (1+\beta)^{-1/\rho} \tag{I.10}$$

The firm that makes exactly the same profits with or without the entry tax marks the separation between both remaining groups $(x_i < x_E)$. We call the efficiency index of this "indifferent" firm x_C.

Formally, x_C is given by:

$$\Delta\pi_{x_C} = \pi_{x_C}^{\beta>0} - \pi_{x_C}^{\beta=0} = 0 \tag{I.11}$$

$$\Leftrightarrow x_C = \beta^{-1}\left((1+\beta)^{\frac{\rho-1}{\rho}} - 1\right) \tag{I.12}$$

In a political economy setting, there only are two groups. One is composed of firms that loose in the new policy and those that win in it. Thus, the outcome of the model is influenced by the relative bargaining power of these two groups. In order to assess the latter, evaluating the increase in the global profit shifting effect is necessary. From this, the extent of potential conflict of interests with respect to β can be derived.[13]

As pointed out in introduction, in order to analyze the political motives in this framework, all additional effects that come from the general equilibrium property have been cut off. In that spirit, one convenient aspect of the quasi-linear utility

[13] Recall that in a monopolistic competition framework *a la* Dixit-Stiglitz, all firms set up a constant mark-up over their marginal costs. Thus, each unit of expenditure leads to the same level of profits, whatever the productivity of the seller or the level of competition on that market.

function is that the total amount of expenditure spent over manufactured goods is given and constant, independently of consumers' incomes. As a result, market shares lost by small firms are exactly equal to market shares won by large firms. Moreover, the use of the Pareto distribution of marginal costs has the particular (and convenient) feature that the sum of entry fixed costs saved due to the non entry of some small firms is exactly equal to the entry tax paid by all active firms. This induces overall the pure profits in the economy to be constant, whatever the level of the entry tax implemented.

To show this, we compute the sum of all pure profits with respect to x_E (and thus with respect to β). The aggregate pure profit in this sector is ultimately independent of β and thus constant whatever the level of the entry tax:

$$\int_0^{x_E} \pi_i = \frac{\mu}{\sigma\lambda} \frac{1}{x_E^{\rho-1}} \int_0^{x_E} x_D^{-1} - \int_0^{x_E} SC - \int_0^{x_E} (1+\beta) F = \frac{\mu}{\sigma\rho} \tag{I.13}$$

This result ensures that the increased pure profits of some firms is exactly equal to the pure profit loss of all other firms.

Lemma 1. *In this economy, the pure profit variation of any group of firms due to any entry tax setting is equal to the opposite of pure profit variation of all other firms. These transfers may thus be considered as pure profits shifting between firms.*

This lemma highlights the potential conflicts of interests among firms inside a sector with respect to the potential implementation of an entry tax. Moreover, as the definition of the three groups of firms shows it through the definition of x_E and x_C, each firm (except the least and the most efficient ones in the benchmark case) may win or loose from the implementation of the entry tax, depending on the level of the tax. Thus, firms cannot know *ex ante* if the implementation of an entry tax will be beneficial to them or not.

Finally, gains and losses of any group of firms can be summed up by computing the total/aggregate profit shifting in this sector. Indeed, the aggregate profit shifting shows how the conflicts of interests may be stronger, the larger is the tax on entry,

since this aggregate profit shifting is monotonically increasing in β. Consider $\Delta\pi_i(\beta)$, the variation of firm i's pure profits from $\beta = 0$ to $\beta > 0$ and we get:

$$\sum_{i\in\Theta} \Delta\pi_i(\beta) = 0 \text{ whatever } \Theta \tag{I.14}$$

$$\begin{aligned} \sum_{i=0}^{i=x_C} \Delta\pi_i(\beta) &> 0 \\ = (MP_{Di} - MP_i) \int_0^{x_C} x_i^{-1} - \beta F x_C^{\rho} \\ = \frac{\mu}{\sigma\rho} \left((1+\beta)^{\frac{\rho-1}{\rho}} - 1 \right)^{\rho} \beta^{1-\rho} \end{aligned} \tag{I.15}$$

3 Political game

We now turn to the political game itself. In this section we want to study the incentives to lobby and the properties of the equilibrium reached in a political game similar to the one developed by G & H 94. In this game, lobbies are the first players. They set up a menu auction and transmit it to the government who chooses the level of the entry tax. This level maximizes the government's objective function. Therefore, the aim is to show how a lobbying activity on the level of an entry tax in a sector with no specific inputs differs from a multi-sector case with specific inputs and lobbying on tariffs, as studied by G & H 94 and further developed in Bombardini (2005) who includes firm heterogeneity.

The political game is based on the truthful equilibrium proposed by Bernheim and Whinston (1986b). The truthfulness implies that the lobby proposes a contribution schedule that truly reflects its preferences. At the origin, the truthful equilibrium is developed in a menu auction setting. Each player's offer strictly represents its preference for a given level of the trade policy. In this section, as in G & H 94, we only consider the contribution are locally truthful. Around the equilibrium, the offers of all lobbies are truthful. In the next section, the contribution will be assumed to be truthful everywhere. In the penultimate section of their paper, Bernheim and Whinston have exposed how their work could be transposed to the

question of the economic influence:

> "It is easy to see that this game [with a linearly transferable utility] is strategically equivalent to a game of perfectly transferable utility, where interested party i receives gross payoffs $\alpha_i g_i(s)$. (...), coalition-proof Nash equilibria will involve the decision maker selecting
>
> $$\arg\max_{s\in S} \sum_{i=1}^{M} \alpha_i g_i(s) \tag{I.16}$$
>
> " Bernheim and Whinston (1986b)[p. 21].

The truthful equilibrium with a distinct efficiency for each lobby or party induces the government to maximise the joint welfare of all players. This result describes the effect of a truthful equilibrium.

We first present each player, namely the government and the lobbies. Then we present the equilibrium. Finally, following G & H 94, we will assume next that lobbies make truthful contribution schedules (that are truthful everywhere) to show how is shared the surplus of this political game.

3.1 Government

As standard in this literature, the government maximizes an objective function, namely G, composed by the aggregated welfare of the whole agents and the contributions effectively paid by the L organized lobbies. The objective function is benthamite, means that the government weights differently the social welfare and its private revenue. The coefficient "ϕ" is a signal of the relative weight granted by the government to its private revenue. If $\phi \to \infty$, the government is a pure social one, totally insensitive to influence or bribes. To the contrary, if $\phi = 0$, the government only cares about its private revenues. The objective function of the government is thus given by:

$$G(\beta) = \sum_{j\in L} C_j(\beta) + \phi W(\beta) \tag{I.17}$$

Where $\sum_{j\in L} C_j(\beta)$ represents the sum of contributions paid by the various active lobbies. The aggregate social welfare ($W(\beta)$), gross-of-contributions, is standardly defined as the sum of the aggregate income, plus the entry tax revenues plus the consumer's surplus:

$$W(\beta) = \left(\int_0^{x_E} \pi_i(\beta) + L\right) + F\frac{\beta}{(1+\beta)} + \left(\mu \ln \mu - \mu + \tfrac{\mu}{\sigma-1} \ln \lambda \tfrac{\sigma}{\sigma-1} (1+\beta)^{\frac{1-\rho}{\rho}}\right)$$

The set up of an entry tax induces two effects on the social welfare. Recall, from lemma 1, that the sum of pure profits ($\int_0^{x_E} \pi_i(\beta)$) in this framework is constant and independent of β. First, an entry tax hinders entry for least efficient firms which reduces the number of varieties available for consumers and thus has a negative impact on consumers' utility. Second, the tax on entry revenues raises consumers' income and thus reduces the negative effect of the tax on entry on consumers' utility and social welfare. Indeed, similarly to G & H 94, the government revenues are transferred to the consumers.

However, it is important to notice that the first (negative) effect is always larger than the second one, i.e. $\frac{\partial W(\beta)}{\partial \beta} < 0$ for any $\beta > 0$, meaning that an entry tax always reduces the aggregate social welfare, and the larger is the former, the larger is the welfare loss. From a pure social perspective, there is thus no reasons to implement a positive entry tax in this very simple framework.

The government has a direct interest for social welfare but is also concerned by private revenues (from lobbies' contributions). The government evaluates all lobbies' proposals included in their contribution schedules and finally chooses the entry tax level that fits the best with its compromise between social and selfish concerns by maximizing its objective function. Assuming that political contributions are differentiable around the equilibrium,[14] this maximization implies that in equilibrium:

$$\sum_{j\in L} \frac{\partial C_j(\beta^*)}{\partial \beta^*} + \phi \frac{\partial W(\beta^*)}{\partial \beta^*} = 0 \tag{I.18}$$

Where β^* is the equilibrium value of the tax on entry implemented.

[14] That is, locally truthful as defined by Bernheim and Whinston (1986b).

3.2 Lobby

The lobby j maximizes its objective function, G_j, which is simply the sum of the joint welfare of the lobby members, $W_j(\beta)$, net of the contributions paid to the government, $C_j(\beta)$:

$$G_j = W_j(\beta) - C_j(\beta)$$

Where $W_j(\beta)$ is defined in the same way as the aggregate social welfare:

$$W_j(\beta) = \sum_{i \in j} \pi_i(\beta) + \alpha_j \left(\left(L + F \frac{\beta}{(1+\beta)} \right) + \left(\mu \ln \mu - \mu + \frac{\mu}{\sigma - 1} \ln \lambda \frac{\sigma}{\sigma - 1} (1+\beta)^{\frac{1-\rho}{\rho}} \right) \right)$$

With α_j the fraction of the total voting population represented by lobby j. No assumptions are made on the type or number of firms represented by lobby j. Indeed, since we assume that there is no specific factor of production, we have *a priori* no reason to gather some particular firms in the lobby. As seen above, large firms have opposed interests to small firms regarding the implementation of an entry tax. However, the definition of a large/small firm depends *in fine* on the level of entry tax implemented, which ultimately depends on the government's decision and cannot be given *ex ante*. Thus, $\sum_{i \in j} \pi_i(\beta)$ could be potentially strictly increasing, strictly decreasing or non monotonic in β, depending on the size of firms represented by lobby j. This means that $\sum_{i \in j} \Delta\pi_i(\beta)$ can be positive or negative depending on the value of β.

So, this means a standard lobby may first want the government to implement an entry tax. However, as the potential entry tax grows up, some members of the lobby see their expected profits decreasing. Therefore, there are less and less lobby members that contribute to the lobbying activity. Finally, the slope of the contribution schedule shifts downward. Considering a TBT brings then some new insights compared to what the previous literature usually stated. According to Gawande (1997), a lobby does not change his mind regarding the optimal policy it wants. Here, the lobby can change his strategy. It can be very active before reaching a certain size threshold but becomes inactive then.

3.3 Equilibrium: Cannibalism and lobbying

In our model, the firms get the market shares of others. We refer to this as cannibalism. A novelty of our model is that the potential "victims" try to live whereas others want the government to let them die. However, since this game is about an entry tax, contribution schedules are designed before firms enter the market. By dying, we then mean that they will not be able to enter the market after the political game has occurred.

3.3.1 Timing of events

The chronology of the game is the following. First, each firm draws freely its own productivity from the specified distribution. Then, firms' owners decide to join a lobby or not. As explained above, there are no particular assumption on the number and on the productivity of firms in a lobby and we do not model an endogenous formation of the lobbies, but rather of the groups of lobbies. The lobbying activity is free, it consists to propose to pay a precise amount for each level of tax on entry possibly chosen by the government. This defines a contribution schedule. The level of the tax entry is then decided by the government in order to maximise its objective function. The government receives the contributions for the chosen level of β. Following G&H 94, we assume that the government finally gives back to consumers the revenue of the implemented policy. Production takes place with firms that make non-negative profits at equilibrium.

3.3.2 Equilibrium

The equilibrium is characterized by a set of conditions in the entry tax setting game. The interpretation of these conditions is given below. We denote by L the set of all active lobbies in the sector and by Ξ the set of possible tax on entry that can be chosen by the government.

Bernheim and Whinston (1986b) have shown that the equilibrium of such kind of game characterized by[15] $\{C_j^*(\beta)_{j\in L}, \beta^*\}$ is a subgame-perfect Nash equilibrium of

[15] Lemma 2 in their article, or Proposition 1 in G & H 94.

the entry tax-policy game if and only if:

(*a*) $C_j^*(\beta)$ is feasible for all $j \in L$.

(*b*) β^* maximizes $\sum_{j\in L} C_j^*(\beta) + \phi W(\beta)$ on Ξ

(*c*) β^* maximizes $\sum_{j\in L} C_j^*(\beta) + \phi W(\beta) + W_j(\beta) - C_j(\beta)$ on Ξ for every $j \in L$.

(*d*) for every $j \in L$ there exists a β^j that maximizes $\sum_{i\in L} C_i^*(\beta) + \phi W(\beta)$ on Ξ such that $C_j^*(\beta^j) = 0$

Condition (a) states that contributions cannot be negative and greater than the total income of lobby members. Condition (b) states that the government chooses the level of entry tax β so as to maximize its own welfare given the contributions of all lobbies. Condition (c) states that the joint surplus of the government and lobby j is maximized at β^*, otherwise lobby j could modify its contribution schedule to increase the joint surplus and would retain a fraction of this increased surplus. Finally, condition (d) states that lobby j manages to extract all the available surplus from the government; it contributes just enough to maintain the government at the same level of welfare it would achieve if lobby j were not participating in the political game.

Condition (c) implies that a first order condition is satisfied at β^*:

$$\sum_{j\in L} \frac{\partial C_j(\beta^*)}{\partial \beta^*} + \phi \frac{\partial W(\beta^*)}{\partial \beta^*} + \frac{\partial W_j(\beta^*)}{\partial \beta^*} - \frac{\partial C_j(\beta^*)}{\partial \beta^*} = 0 \tag{I.19}$$

However, condition (b) requires another first order condition:

$$\sum_{j\in L} \frac{\partial C_j(\beta^*)}{\partial \beta^*} + \phi \frac{\partial W(\beta^*)}{\partial \beta^*} = 0 \tag{I.20}$$

Taken together, these two first order conditions lead to:

$$\frac{\partial C_j(\beta^*)}{\partial \beta^*} - \frac{\partial W_j(\beta^*)}{\partial \beta^*} = 0 \tag{I.21}$$

This last equation establishes that the contributions schedules are locally truthful around the equilibrium entry tax β^*. That is, each lobby sets its contribution schedule such that the marginal change in the contribution around the equilibrium level for a small change in the entry tax perfectly matches the effect of policy change

on the lobby's gross welfare. Finally, substituting the last equation into the last first order condition allows to get the following condition:

$$\sum_{j\in L}\frac{\partial W_j(\beta^*)}{\partial\beta}+\phi\frac{\partial W(\beta^*)}{\partial\beta}=0 \tag{I.22}$$

This condition shows that the equilibrium of the game may be interpreted as the government maximizing the aggregate social welfare with weighting individuals represented by a lobby by a parameter $(1+\phi)>0$ and the other by a simple weight 1. This last equilibrium condition may be written to isolate the total marginal gain and the total marginal loss of lobbying:

$$\underbrace{\frac{\partial\sum_{j\in L}\sum_{i\in j}\pi_i(\beta)}{\partial\beta}}_{\text{marginal gain}}=\underbrace{\frac{F}{(1+\beta)}\left(\frac{\sigma}{\sigma-1}-\frac{1}{(1+\beta)}\right)\left(\sum_{j\in L}\alpha_j+a\right)}_{\text{marginal loss}} \tag{I.23}$$

Therefore, increasing F, α_j or ϕ reduce the equilibrium entry tax , everything else equal. These effects are those expected since an increase of F implies there will be less firms able to bear additional costs and thus less firms lobby for the implementation of an entry tax. As explained above, as the consumers lose from the implementation (the net social effect of the entry tax is always negative), the more they are in a lobby, the less disposed to ask for the implementation they are. Concerning the relative weight ϕ, a more socially concerned government is less inclined to implement an entry tax that diminishes the social welfare.

To the contrary, the effect of a marginal increase in σ is ambiguous. On the one hand, a larger σ makes varieties more substitutable. Thus a reduction in the number of varieties has less impact on consumer's utility. On the other hand, a larger σ reduces the profit shifting effect ($\frac{\partial\sum_{j\in L}\sum_{i\in j}\pi_i(\beta)}{\partial\sigma}<0$) and thus mitigates the potential gains from setting up an entry tax. Indeed, the larger the elasticity of substitution, the more concentrated the sales are towards large firms. The potential profit shifting is lower, *ceteris paribus*, as they have *ex ante* a large share of the market.

Proposition 1. *The equilibrium entry tax β^* is larger, the lower are the entry fixed cost F, the share of the total voting population represented by a lobby α_j, and*

the social preference parameter of the government a. However, the effect of σ is ambiguous since σ affects in the same way marginal gains and losses of this political game.

Proposition 1 states that if one considers that all sectors are subject to this kind of internal competition, then the main effects shown in G & H 94 are already present within a sector. It turns out that an apparently unorganized lobby in the G & H 94 framework could correspond to a highly organized lobby against a given policy within the sector in our framework. This result has then some insights on the empirical strategy to adopt when the dependent variable is a TBT. Indeed, positive contributions could correspond to a theoretically unorganized lobby. Moreover, positive contributions could have been granted to obtain the non-implementation of a given policy. Analysising the correlation between contributions and the level of protection has to be done very carefully.

The equilibrium definition in (I.23) also shows that the LHS term must be positive (and larger than $\frac{\rho-1}{\sigma-1}$) to ensure a positive entry tax in equilibrium. If all firms were represented in equilibrium by any lobby, the equilibrium level of entry tax would be $\beta^* = 0$, due to the fact that in that case $\sum_{j\in L}\sum_{i\in j}\Delta\pi_i(\beta) = \sum_{i\in\Theta}\Delta\pi_i(\beta) = 0$, whatever β. Hence, the larger is $\sum_{j\in L}\sum_{i\in j}\Delta\pi_i(\beta)$, the larger is the equilibrium entry tax. It follows that large firms must be over represented by lobbies in order to have a positive entry tax.

We derive the following proposition in order to sum up the findings concerning the equilibrium entry tax :

Proposition 2. *The equilibrium entry tax is positive if and only if large firms are sufficiently more represented by lobbies than small firms. This would be impossible if all firms were to be represented.*

Corollary 1. *The equilibrium entry tax is larger, the more lobbies' interests are biased towards large firms.*

These results may be compared to those of Bombardini (2005). She shows that the larger is firm heterogeneity, the larger are the *contributions* and the *real protection level* in a set up similar to G & H 94. Here, the motivation for

contributions is only based on the presence of heterogeneous firms. The aim of contributions is to set up an entry tax that forces small firms to stay outside the market, increasing effective market shares of firms able to bear the larger fixed entry cost. Thus, firm heterogeneity is the sole motivation for the occurrence of *positive contributions*. Given this, it is not surprising that the relative bargaining power, i.e the relative proportion of small and large firms represented in lobbies, has this effect. As no assumptions have been made on the composition of each lobby, nothing can be said on the role of heterogeneity between firms within the sector. However, as heterogeneity can be interpreted as the extent of the bias towards large firms, it can be inferred that the more heterogeneity in the sector, the larger can be the entry tax. That is, the more heterogenous the firms are, the more configurations of lobbies biased towards large firms there are.

Lemma 2. *The incentive to lobby for an entry tax in a sector is only motivated by the presence of firm productivity heterogeneity.*

Proof. If all firms were the same, then they all would be similarly affected by the additional cost. Therefore, an entry tax would either oblige all firms to stay outside the market, or would prevent no firm from entering the market. In the first case, there still no firm to get back the market shares of firms that do not enter. In the second situation, no market shares are left so there is no profit shifting. Thus, there are no reasons for a firm to lobby as there is nothing they can obtain. □

Moreover, as the last corollary shows it, the level of *effective protection* (the entry tax) is positively related to the bias of active lobbies towards large firms. Thus, the level of effective protection is positively influenced by the heterogeneity of firms' representation by lobbies, in the sense that the more large firms are represented, relatively to small ones, the larger is effective protection. That is, more homogeneity within a lobby implies a higher *effective protection*.

Therefore, the impact of firm heterogeneity is similar to the one presented by Bombardini (2005). However, whereas the result is similar, the motivation is totally different : Suppressing the heterogeneity in her model does not suppress the demand for a higher tariff and then does not imply free trade.

3.3.3 Political contributions with truthful contribution schedules

So without heterogeneity, the unique possible output is free trade. However, free trade can also be an output even if the competition between lobbies is tough. The difference between both output is of course the amount paid by lobbies to obtain free trade. So the characterization of the share of the surplus generated by the political activity is an important issue as it allows to distinguish between similar equilibrium level.

In the multi sector analysis developed by G & H 94, lobbies have different interest by definition, through the presence of factors specific to sectors. And their interest may be opposed only through a general equilibrium effect taking into account their consumer interest. This intra-sectoral analysis reverses the result. Here lobbies may or not have different interests, but this only depends on their producer interest. The degree of competition between them only comes from the divergence in their producer interest while the general equilibrium effect taking into account their consumer interest always reduces their degree of rivalry.

4 Political contributions with truthful contribution schedules

To go further in the analysis of the political game and its consequences, we must make an additional assumption on the shape of the lobbies' contribution schedules. Indeed, the equilibrium presented in the section above can be supported by many contribution schedules (the properties of the equilibrium only require that contributions schedules are truthful *around* β^*). To allow a clear comparison with previous literature, we follow G & H 94 and BW86 in supposing that lobbies propose truthful contributions schedules to the government, that are truthful everywhere. This assumption ensures that:

$$\frac{\partial C_j(\beta)}{\partial \beta} - \frac{\partial W_j(\beta)}{\partial \beta} = 0 \text{ whatever } \beta \tag{I.24}$$

As shown by BW86 and argued by G & H 94, there are some reasons to focus on such contribution schedules. Mainly, BW86 have shown that "the set of best responses to any strategies played by one's opponents includes a strategy that is truthful"(G & H 94). Besides, truthful strategies induce equilibria that are stable to non-binding communication among players, i.e. they are "coalition-proof", which will be emphasized in our analysis.

The truthfulness of contribution schedule of any lobby k implies that this lobby chooses its contribution schedule such that:

$$C_k(\beta, B_k) = \max[W_k(\beta) - B_k, 0]$$

where B_k is a constant and can be interpreted as the net welfare of lobby k whenever this lobby makes a positive contribution to the government in equilibrium. As pointed out by GH 94, "the lobby therefore wishes to make B_k as large as possible (and the contribution as small as possible), but without going so far as to induce the government to deviate from p^o (for us β^*) to some alternative policy that might be damaging to its interests".

In order to define the level of each B_j, which allows to show how is shared the surplus of this political game, we follow the formal procedure introduced by G & H 94, which is an application of the one described by BW86.

Formally, any lobby k chooses its B_k so as to make the government indifferent between the equilibrium entry tax (β^*) chosen if lobby k is active in the political game and the entry tax chosen by the government if contribution of lobby k was zero and all other contributions schedules are kept equal, which leads to another equilibrium entry tax, labeled $\widehat{\beta}$. Thus, $\widehat{\beta}$ is given by:

$$\arg\max_{\beta} G(\beta) = \sum_{j \neq k \epsilon L} C_j(\beta, B_j^*) + aW(\beta) \Rightarrow \widehat{\beta}$$

Any lobby k chooses its B_k and thus its contribution schedule such that its contribution makes the government just indifferent between these two policy choices, β^* and $\widehat{\beta}$:

$$\sum_{j\epsilon L} C_j(\beta^*, B_j^*) + aW(\beta^*) = \sum_{j\neq k\epsilon L} C_j(\widehat{\beta}, B_j^*) + aW(\widehat{\beta})$$

$$\Leftrightarrow C_k(\beta^*, B_k) = a\left(W(\widehat{\beta}) - W(\beta^*)\right) + \sum_{j\neq k\epsilon L}\left(C_j(\widehat{\beta}, B_j^*) - C_j(\beta^*, B_j^*)\right) \qquad \text{(I.25)}$$

This equilibrium contribution of lobby k must also satisfy the following condition:

$$W_k(\widehat{\beta}) \leq B_k^*$$

This last condition means that the contribution of lobby k at $\widehat{\beta}$ cannot be positive. Otherwise, the government would have an incentive to choose $\widehat{\beta}$ rather than β^*. Indeed, if this condition doesn't hold, we would have that:

$$\sum_{j\epsilon L} C_j(\beta^*, B_j^*) + aW(\beta^*) < \sum_{j\epsilon L} C_j(\widehat{\beta}, B_j^*) + aW(\widehat{\beta})$$

Which would lead the government to choose $\widehat{\beta}$ rather than β^* in equilibrium.

The basic aim of the analysis here is to show how the results presented by G & H 94 in a multi-sectoral political game of lobbying on tariffs are amended or even reversed in this intra-sectoral political game of lobbying on entry tax.

In the political game proposed by G & H 94, the presence of factors of production specific to each sector together with the assumption that consumers owns one specific factor at most leads to the presence of lobby sectors. These lobbies have different interests *by definition* since each lobby ask for protection for its particular sector. The competition between these lobbies only comes from a general equilibrium effect induced by their consumer interest. Indeed, their consumer interest induces lobbies also to ask a free trade policy (or even subsidies) for all other sectors. It follows that lobbies have divergent interests but the degree of competition between them *only increases through an increase in their consumer interests.* The possibility that

lobbies represent a negligible share of total population thus completely eliminate the competition among them.

The model developed here is based on a different starting point. Looking at lobbying incentive on an entry tax inside a sector, the sector specific factor assumption cannot help in defining an exogenous divergence of interest among lobbies. Besides, the endogenous instrument of protection simultaneously affects producer and consumer's interests of each lobby. It follows that contrary to the multi-sectoral analysis developed by G & H 94, the producer interest of each lobby is *by definition* in opposition with its consumer' interest, while producer interest of each lobby *does not necessary diverge* from other lobbies. The degree of rivalry between lobbies only depends on the composition of their ownership.

To foster intuition, we will develop three special cases.

Suppose first an arbitrarily exogenous number of active lobbies having exactly the same ownership composition (the distribution of their s_{ij} is the same). Their welfare functions are thus identical and so their contribution schedules. The obvious consequence is that all lobbies have the same preferred entry tax and thus their private interests do not diverge (here we also suppose that their preferred tax entry is positive). There is thus no competition between these lobbies, the degree of rivalry between them is nil.

To see this, note that contribution schedules of all lobbies are strictly identical and they thus all pay a positive contribution for β^* and a nil contribution for $\widehat{\beta}$. This ensures that for any lobby k, we have : $\sum_{j\neq k\epsilon L} C_j(\widehat{\beta}, B_j^*) = 0$.

If each lobby pays no contribution for $\widehat{\beta}$, we must have $\widehat{\beta} = 0$. It follows that the sum of contributions paid to the government in the equilibrium β^* is:

$$\sum_{j\epsilon L} C_j(\beta^*, B_j^*) = a\left(W(\beta = 0) - W(\beta^*)\right)$$

Thus, as soon as all active lobbies are identical, whatever the number of active lobbies, the government will only be compensated for its welfare loss at β^*, and all the surplus of the political game will be shared by active lobbies. This result is

intuitive since we have assumed that lobbies make truthful contribution schedule, which are, as shown by BW86, robust to non-binding communication among lobbies.

Proposition 3. *Competition between lobbies does not depend on the number of active lobbies but on the degree of rivalry between them. If the degree of rivalry between them is nil (their contribution schedules are identical) they capture all the surplus of the political game.*

Proof. An important distinction has to be made here. There are two alternative policies. First, there is $\widehat{\beta}$ which denotes the preferred policy of all lobbies if lobby j is not active. This policy has to be distinguished from the policy the government finally chooses.

Therefore, the contribution of lobby j must be such that :

$$\sum_{j \neq k \epsilon L} C_j(\widehat{\beta}, B_j^*) + aW\left(\widehat{\beta}\right) = \sum_{j \epsilon L} C_j(\beta^*, B_j^*) + aW(\beta^*)$$

$$\Leftrightarrow$$

$$\sum_{j \neq k \epsilon L} C_j(\widehat{\beta}, B_j^*) + aW\left(\widehat{\beta}\right) = NC_j(\beta^*, B_j^*) + aW(\beta^*)$$

Where N denotes the number of organized lobbies. However, as all lobbies are identical, the total contribution offered for $\widehat{\beta}$ is nil. Thus, this corresponds to :

$$\sum_{j \neq k \epsilon L} C_j(\widehat{\beta}, B_j^*) + aW\left(\beta = 0\right) = NC_j(\beta^*, B_j^*) + aW(\beta^*)$$

This expression can be rewritten as follows :

$$C_j(\beta^*, B_j^*) = \frac{aW\left(\beta = 0\right) - aW(\beta^*)}{N}$$

So the contribution of lobby j is equal its share in the compensation of the government between the status quo and β^*.

□

Then, the number does not explain the competition between lobbies. This result is quite close from the results of Pecorino (1998). Indeed, he shows that the free-riding problem and the difficulty to maintain a cooperative outcome are not increasing in the number of firms in the lobby. In his paper, the effect that increases the free-riding problem comes from the greater desirability of defection. Similarly, in our model, the competition comes from opposition between lobbies interests. This means that if a lobby would lose a lot in not participating to the lobbying activity, then she will pay a lot. So the divergence of interest explains the competition. In order to characterize the degree of rivalry between lobbies, let us choose another extreme case as our second special case, where their ownership compositions are different. More precisely, we will suppose that we have two groups of lobbies, labeled l and s, that only represent some of the largest (l) and smallest (s) firms, respectively. This simplifying assumption ensures that $\frac{\partial C_l(\beta)}{\partial \beta} \geq 0$ and $\frac{\partial C_s(\beta)}{\partial \beta} \leq 0$ whatever β. This case should be understood as the case featuring the largest degree of rivalry between lobbies since the divergence in their ownership compositions is maximum.

Suppose next that the equilibrium entry tax is positive, $\beta^* > 0$, because the strength of lobbies belonging to the l group is sufficiently high (and that some small firms in the economy are not represented by any active lobby). The question is to know how is split the surplus of the political game between players, namely the active lobbies and the government.

Consider first lobbies belonging to the l group. According to (?), any lobby k belonging to the l group must pay a contribution that is equal to:

$$C_k(\beta^*, B_k^*) = a\left(W(\widehat{\beta}) - W(\beta^*)\right) + \sum_{j \neq k \epsilon L}\left(C_j(\widehat{\beta}, B_j^*) - C_j(\beta^*, B_j^*)\right)$$

Since we have imposed a pure symmetry between lobbies in each group, it follows that all lobbies belonging to the l group will pay the same contribution, and a nil contribution for the alternative entry tax $\widehat{\beta}_l$. Equation () thus becomes:

$$C_k(\beta^*, B_k^*) = a\left(W(\widehat{\beta}_l) - W(\beta^*)\right) + \sum_{s \epsilon L}\left(C_s(\widehat{\beta}_l, B_s^*) - C_j(\beta^*, B_s^*)\right)$$

Besides, our assumption on the shape of the welfare of lobbies belonging to the s group ensures that $\widehat{\beta}_l = 0$, since their maximum contribution is paid for $\beta = 0$. It follows that all lobbies belonging to the l group pay an aggregate contribution in equilibrium that is equal to:

$$\sum_{l \epsilon L} C_l(\beta^*, B_l^*) = a\left(W(\beta = 0) - W(\beta^*)\right) + \sum_{s \epsilon L}\left(C_s(\beta = 0, B_s^*) - C_j(\beta^*, B_s^*)\right)$$

These lobbies must then compensate the government for its welfare loss, but also for its contribution loss from lobbies of the s group. Compared to the case studied above, it is clear that lobbies of the l group cannot capture all the surplus of this political game.

Finally it is important to notice that the larger is the equilibrium tax entry β^*, that is the larger is the divergence of interest between both groups, the larger is the contribution differential of lobbies of the s group ($\sum_{s \epsilon L}\left(C_n(\beta = 0, B_n^*) - C_j(\beta^*, B_s^*)\right)$), the larger is the welfare loss of the government, and the smaller is the net welfare of lobbies in the l group.

A similar reasoning for the s group leads to define their aggregate contributions in equilibrium as:

$$\sum_{s \epsilon L} C_s(\beta^*, B_s^*) = a\left(W(\widehat{\beta}_s) - W(\beta^*)\right) + \sum_{l \epsilon L}\left(C_l(\widehat{\beta}_s, B_l^*) - C_j(\beta^*, B_l^*)\right)$$

Where $\widehat{\beta}_s$ is defined as the equilibrium entry tax chosen by the government if any lobby belonging to the s group is not active.

Our assumptions on the ownership composition of each group ensures that $\widehat{\beta}_s > \beta^*$, and $\sum_{l \epsilon L}\left(C_l(\widehat{\beta}_s, B_l^*) - C_j(\beta^*, B_l^*)\right) > 0$. The equilibrium contributions of lobbies belonging to the s group are thus positive if and only if $\sum_{l \epsilon L}\left(C_l(\widehat{\beta}_s, B_l^*) - C_j(\beta^*, B_l^*)\right) > a\left(W(\beta^*) - W(\widehat{\beta}_s)\right)$.

Since we have assumed that the equilibrium entry tax β^* is positive, lobbies in the s group cannot capture any part of the surplus of the political game. Besides, they may have an incentive to make positive contributions in equilibrium to reduce

the equilibrium entry tax as most as possible. Importantly, the larger is the gap between $\widehat{\beta}_s$ and β^*, that is the larger is the divergence between both groups, the larger is this incentive.

Since there two groups of exactly similar lobbies, the following equation holds :

$$\sum_{s\epsilon L} C_s(\beta^*, B_s^*) = \sum_{l\epsilon L} C_l(\widehat{\beta}_s, B_l^*) - \sum_{l\epsilon L} C_l(\beta^*, B_l^*) + aW(\widehat{\beta}_s) + aW(\beta^*)$$

The same equation holds for the group l (just reverse the s and the l subscripts). This equation is true because all the sums corresponding to the contribution of the small firms are nil for $\widehat{\beta}_s$, by definition.

Then, if we consider that the equation just above corresponds to two equations (one for s, one for l), then we can substitute the second term in the RHS, $\sum_{l\epsilon L} C_l(\beta^*$ for its value according to the corresponding equation for l. When we rearrange the equation, we obtain two equations :

$$\sum_{l\epsilon L} C_l(\widehat{\beta}_s, B_l^*) = \sum_{s\epsilon L} C_s(\widehat{\beta}_l, B_s^*) + aW(\widehat{\beta}_l) - aW(\widehat{\beta}_s)$$
$$\sum_{s\epsilon L} C_s(\widehat{\beta}_l, B_s^*) = \sum_{l\epsilon L} C_l(\widehat{\beta}_s, B_l^*) + aW(\widehat{\beta}_s) - aW(\widehat{\beta}_l)$$

Then, using these equations allows us to find the following expression :

$$\sum_{l\epsilon L} C_l(\beta^*, B_l^*) = \sum_{l\epsilon L} C_l(\widehat{\beta}_s, B_l^*) - \sum_{s\epsilon L} C_s(\beta^*, B_s^*) + aW(\widehat{\beta}_s) - aW(\beta^*)$$

It follows:

Proposition 4. *The competition between lobbies depends on the degree of rivalry between them, which depends on the differences of the shape of their contribution schedules (the gap between $\widehat{\beta}_s$ and β^* and between β^* and $\beta = 0$). These differences only come from the differences in their ownership composition.*

Corollary 2. *The larger is the degree of rivalry between lobbies, the larger is the share of surplus captured by the government (same as G & H 94).*

Proof. To ease the reading, we will assume that the following equation is true for all lobbies :

$$C_i(\beta, B_i^*) = W_i(\beta) - B_i^*$$

This corresponds to the definition given by BW86 of a truthful strategy. That is, $C_k(.)$ is a truthful strategy relative to β^* if and only if, for all $\beta \epsilon \Xi$, we have $W_k(\beta) \leq B_k^*$ and $C_k(\beta) = 0$. Indeed, the previous equation means that for all β, we may have $C_k(\beta) = 0$, or $0 < C_k(\beta) < C_k(\beta^*)$, which corresponds to the definition of BH86.

Then, we can rewrite equation (27) as :

$$C_k(\beta^*, B_k^0) = a\left[W(\widehat{\beta}) - W(\beta^*)\right] + \sum_{j \neq k \epsilon L}\left[W_j(\widehat{\beta}) - W_j(\beta^*)\right]$$

This last equation comes from the fact that the B_i^*'s are given for each lobby, whatever the level of the policy they lobby for.

Thus, if we rewrite and rearrange this last expression, we obtain that :

$$B_k^0 = a\left[W(\widehat{\beta}) - W(\beta^*)\right] + \sum_{j \epsilon L} W_j(\beta^*) - \sum_{j \neq k \epsilon L} W_j(\widehat{\beta})$$

Therefore, the first term of the RHS represents the compensation of the government whereas the difference between the second and the third terms corresponds to the rivalry between lobbies. As the third term increases, it reduces the surplus of the lobby k. The former precisely increases when the other lobbies are different, that is they would gain much more if $\widehat{\beta}$ was to be chosen. □

The last important point in this analysis is to characterize the impact of the general equilibrium effect on the contributions paid by lobbies.

In the two examples developed above, the question of the fraction of the population they represent has been put aside.

However, this could affect the equilibrium contribution of active lobbies. In the last example, the s group could be constituted of lobbies that only represent

consumers interest ($s_{is} = 0$ for all s and $\alpha_s > 0$). The qualitative result would be the same since we still have $\frac{\partial C_s(\beta)}{\partial \beta} \leq 0$ whatever β.

In the example we want to develop here, the mental experiment consists to increase α_l and α_s to show how the general equilibrium effect through consumer interest affects the equilibrium of the political game.

The assumption that contribution schedules are truthful ensures that the shapes of these schedules perfectly follow the evolution of lobbies' welfare with respect to the entry tax:

$$\frac{\partial C_j(\beta)}{\partial \beta} = \frac{\partial \sum_{i \in j} \pi_i(\beta)}{\partial \beta} - \alpha_j \frac{\frac{F}{(1+\beta)} \left(\frac{\sigma}{\sigma - 1} - \frac{1}{(1+\beta)} \right)}{\partial \beta}$$

The welfare expression of lobbies is constituted of a producer part and a consumer part. Whereas the evolution of the producer part depends on the composition of the lobby's ownership structure, the consumer part is the same for all lobbies and is strictly decreasing in β. As the above expression shows it, an increase in α_j necessarily increases the weight of the consumer part in the welfare of the lobby, which always reduces the slope of the contribution schedule. Thus the larger are the α_j's, the lower will be the equilibrium entry tax.

In the above example, an increase in both α_l and α_s reduces the equilibrium entry tax because the consumer's interest of lobbies in the l group reduces their preferred entry tax. For the s group, the rise of α_s only increases the harmfulness of the entry tax.

But the rise of the share of total population reducing the slope of all contribution schedules, the degree of rivalry between lobbies necessarily decreases, since the gaps between $\widehat{\beta}_s$ and β^* and between β^* and $\beta = 0$ decrease (as soon as all contribution schedules are strictly decreasing, the equilibrium entry tax is 0 and contribution are nil).

It follows:

Proposition 5. *The larger are the shares of total population represented by active lobbies, the lower is their degree of rivalry and the lower is the equilibrium entry tax.*

This result is opposed to the one obtained by G & H 94 in a multi-sectoral analysis. From a policy point of view, the government has thus the incentive to have all the economy represented by lobbies that have clear divergence of interests (degree of rivalry), such that we have producer lobbies and consumer lobbies, and some lobbies composed of small firms and other composed of large enterprizes.

5 Discussion and extensions

As some results depart from those found by Grossman and Helpman (1994), the insights of those on an open economy framework might also differ. In addition, the originality of this framework, the lobbying for a regulation rather than a tariff, together with its generality allow to consider some interesting perspectives in the application of this framework to different set-ups.

5.1 Open economies

Suppose two symmetrical countries that are similar to the country depicted in this chapter, and suppose that trade takes place between both countries. As this is usual in the literature, the government is not interested in the profit of foreign firms. The other difference between domestic firms and their foreign counterparts being the transport cost. On the one hand, the implementation of a standard should reduce foreign competition since some foreign exporters will not be able to bear the additional costs induced by such regulation. On the other hand, we could also expect that such regulation may increase prices in the relevant industries, implying a substitution effect for consumers towards other industries, which could reduce the market size in the industry. Two implications are then straightforward. First, if foreign firms cannot lobby[16], there will be some free-riding. Some foreign firms, that are among the most productive ones on the domestic market in spite of the transport cost, would benefit from the lobbying activity of the large domestic firms.

[16] Besides, we could remove this assumption by assuming that foreign competitors are similar to local firms in their ability to influence the government. (and that the government also take into account their profits, so the good assumption is that foreign competitors are held by domestic agents)

This would decrease the incentives of the latter to lobby. Similarly, foreign firms that among least productive firms may benefit from the lobbying activity of the small domestic firms. However, as they fight to survive, they may continue to lobby against the regulation. All in all, this should reduce the equilibrium entry tax. So, it is not about protecting against foreign firms but against small firms. As both countries are symmetrical, the higher the transport cost, the larger the number of foreign firms considered as small ones on the domestic market. Then it appears that the competition between countries may be quite different from the one arising with tariffs.

However, the competition between countries is now supposed to respect WTO principles. This framework offers some nice perspectives in order to analyze competition between countries in such international fora.

5.2 International Negotiations

At the WTO, many times negotiations are rather on a regulation than on a precise level. Moreover, negotiations usually concern one sector. The simple structure of this model allows a simple transposition to this situation. Just suppose that what we have referred to along the chapter as the government is the WTO. Similarly, former firms become governments. So this corresponds to the situation of a negotiation concerning a sector. The results of this model could very easily be declined. As there is a strong heterogeneity between countries, the level of the regulation would be small, except if the most productive countries are much more powerful. The population represented by each countries has no effect on the equilibrium level. Not surprisingly, this fits very well with the G90 story. It appears that represent a very large part of the population and they have difficulties to influence the issues of the negotiations. Another result of the model is that if a lobby has an interest really opposed to those of the other lobbies, then it pays a lot and obtain few results. This prediction fits pretty well with the position of the EU on the agricultural sector. To constitute an homogenous lobby is a good strategy, the Cairns Group is a good illustration of this effect.

This discussion suggests that when governments and domestic lobbies interact

politically, the former has an agenda previously negotiated at a higher level (e.g the WTO).

5.3 Government first player

The negotiation between the government and lobbies is not on the level of a regulation, but on the implementation of a given regulation or not. So the current international trading system induces governments to act as first players. All lobbies are then consulted. This political relationship would therefore takes place as an auction where lobbies signal their position and how they are willing to pay the government for him to implement it. This could yield very different results as it could generate some focal points that counterintuitively could reduce the competition among lobbies. Hence, to reverse the order of play in this framework seems to be a realistic modeling as most of countries are now constrained by the rules of the Organizations they belong to. Moreover, such a framework could be very useful to study the endogenous formation of lobbies as it induces some free-riding possibilities that does not depend on a cost of the lobbying activity. An interesting possibility to construct such framework would be to take one's inspiration from the coalition theory, mostly from the seminal works of Penrose (1946), Shapley and Shubik (1954) and Banzhaf (1965).

6 Conclusion

The literature on the New Political Economy has extensively studied the case of tariff negotiations. Yet, it seems that a focus on the Non Tariff Barriers and the Technical Barriers to Trade is of interest as their importance in the policy field increases. The framework proposed above is an attempt to fill this gap. The original and general modeling follows the major effects proposed by Grossman and Helpman (1994) in order to allow comparison. The main findings are that homogeneity within lobbies is a vector of efficiency for lobbies whereas heterogeneity between lobbies has, on the contrary, a negative effect on the efficiency of the lobbying activity as it increases competition. Very interestingly, it is also showed that the share of

the population represented by lobbies has the counterintuitive role of decreasing the degree of rivalry between lobbies, thus implying a larger surplus for lobbies, and reduces the equilibrium entry tax. The single sector approach offers then some new insights on the interactions inside a given sector, thus inducing some interesting perspectives on future works in this direction. It appears that firms are not necessary unified within a sector. As the population share represented by lobbies increases, the competition becomes less strong and then lobbies tend to share more common interests. This situation tends then to the lobby sector assumption often used in this literature. However, there are many case where competition within a sector is strong and may then reduce their position *vis-a-vis* the other sectors. Finally, the framework allows to consider exciting extensions and applications in research fast growth fields such that International Organisations or political interactions that take place in them.

I.A On the ownership structure

As this has already been explained, ζ measures a bias within a lobby. We could think it as a portfolio bias. However, this is not really the case by construction. Indeed, this is the coefficient of the rent generated after the implementation of the standard. Thus, it is a function of the additional fixed cost introduced, β. Marginally, an increase in β induces a smaller number of firm entering the market. The additional firms that cannot enter the market are the least efficient, marginally. So this increases the rationalization effect and, consequently, the size of the rent shifting. Moreover, there will be less firms present on the market that could benefit from this rent. That is, the cake is bigger, so are the its shares.

For simplicity and to stay as general as possible, we have decided to not define ζ more precisely. Otherwise, it would be necessary to impose a distribution to the share of firms owned by the organized lobbies. However, it is possible to give more than an intuition of the what is inside this zeta.

Consider that each consumer owns a share of each firm. This share is denoted s_{ij} for an individual i that owns a share of firm j. Therefore, its total ownership is equal to :

$$\int_{k=1}^{j} s_{ik}\pi_j ds$$

By definition, the total shares owned of a firm is equal to one, that is $\int_{h=1}^{i} s_{hj}ds = 1$.

Therefore, dividing the total ownership of individual i by the profit of the sector allows to obtain the share of the economy it owns. Consequently, we have the following equality :

$$\int^{i}\int^{j} s_{hk}\pi_j = \Pi \tag{I.26}$$

Where Π is the profit of the sector. Hence, there is a parameter s that does not depend on β. When all shares an individual owns are considered, this is the expression of its portfolio bias. It is worthwhile to note that if all shares are equal,

then the individual has no interest in lobbying activity. Indeed, if small firms disappear, it looses a fraction s of their profit, and gain exactly the same fraction s of the loss through its more productive firms.

It is possible to study more precisely the inside of ζ. The model is designed such that the instrument used by the government is an additional fixed cost. Hence, whatever its productivity, a firm that enters the market pays a fixed cost of $(1+\beta)C$.

So the profit of a representative firm may be written as follows :

$$\pi_j = h_j(\beta) - (1+\beta)C \tag{I.27}$$

The h_j function is the part of the profit that is proper to each firm. Therefore, the ownership of an individual may be divided in a variable part and a stable one.

$$\int_{k=0}^{1} s_{ik}\pi_j ds = \int_{k=0}^{1} s_{ik}[h_k(\beta) - (1+\beta)C]$$

$$\Leftrightarrow$$

$$\int_{k=0}^{1} s_{ik}\pi_j ds = \int_{k=0}^{1} s_{ik}h_k(\beta) - \int_{k=0}^{1} s_{ik}C - \int_{k=0}^{1} s_{ik}\beta C$$

However, since an additional fixed cost βC is implemented, all firms do not finally enter the market. The $h(.)$ part of the profit has to be considered for the whole range of productivity that exists. The profits of firms that do not enter the market are equal to zero. Inversely, we shall consider that only the firms that enter the market pay the fixed cost. So the previous equation has to be rewritten, for a given i :

$$\int_{s_0}^{s_1} s_{ik}\pi_j ds = \int_{s_0}^{s_1} s_i h_k(\beta) - \int_{s_0}^{s_{xe}} s_i C - \int_{s_0}^{s_{xe}} s_i \beta C$$

If this last expression is derived with respect to β, then the following expression is obtained.

$$\frac{\partial \int_{s_0}^{s_1} m.h_m(\beta)ds}{\partial \beta} - CF[s_e(\beta)] - (1+\beta)f(s_e)\frac{\partial x_e}{\partial \beta}$$

This result comes from the fact that $\frac{\partial x_e}{\partial \beta} = \frac{\partial s_e}{\partial \beta}$. $F[.]$ and $f(.)$ are respectively the repartition and the density functions of the share.s

Chapter II

The Political Influence of Foreign Firms in Developing Countries[1]

> " *Dunning's eclectic paradigm can be readily expanded to include political elements in its consideration of firm-specific, internalization and location advantages. However, this expansion requires accepting that various non-market forces (e.g. the government) may be endogenized instead of simply conceptualizing them as unalterable 'givens' that are 'out there'* "
>
> Boddewyn (1988, p.357)

Recent works, on multinational enterprises (MNE) location choice in developing countries, have acknowledged the importance of public governance as a key determinant of foreign direct investment (FDI), since the profitability of MNE foreign affiliates largely depends on the business environment in which they operate (see for instance, Globerman and Shapiro, 2003). Although these studies tend to see host government policies as exogenous to MNE strategies, it is likely that foreign firms try to shape the business environment in their favour (Boddewyn, 1988; Hillman and Hitt, 1999). Indeed, the first chapter provides a theoretical framework that could totally allow a lobbying activity of foreign firms.

Such corporate political strategy has been mostly investigated by the endogenous protection literature, which has progressively shifted its emphasis from a passive role of MNE in the determination of the level of trade protection to an active political participation in the decision-making. In early works, FDI influences the level of trade

[1] This chapter is based on a manuscript jointly written with Rodolphe Desbordes, published in *Economics & Politics*.

protection by its mere presence: motivated by a protectionist threat, foreign firms undertake 'quid pro quo' direct investments, which alleviate protectionist pressures by reducing the supply and demand for protection (Bhagwati, 1987; Bhagwati et al., 1992; Grossman and Helpman, 1996; Blonigen and Figlio, 1998).[2] While in 'quid pro quo' models, foreign firms are passive political actors, several papers have started considering the possibility that foreign investors directly influence the level of trade barriers through lobbying. Mostly based on the Grossman and Helpman (1994) framework, they show that the policy-contingent campaign contributions of foreign firms to the government can lead either to trade liberalisation (Hillman and Ursprung, 1993; Olarreaga, 1999; Gawande et al., 2004) or stronger trade protection (Grether et al., 2001).[3] The first chapter of this thesis also suggests that depending on the relative productivity of foreign firms compared to their domestic counterparts and depending on the transport cost, the lobbying activity of foreign firms may either increases the strength of lobbies against the entry tax or increases the strength supporters of its implementation.

These trade policy outcomes depend on the extent of political influence enjoyed by a foreign firm, compared to a domestic firm. Most of the previously cited papers assume that foreign and domestic producers share the same level of political influence and conclude that foreign lobbying generally leads to lower tariffs. Estimates of Gawande et al. (2004) indicate that such weighting is about right in the U.S. government case. However, in Grether et al. (2001), the higher sensitivity of a government to demands from foreign firms than from domestic producers lead, under certain conditions, to an increase in trade protection; their econometric analysis indirectly supports this analysis since they find that FDI-intensive sectors in Mexico tended to be over-protected during the 1986-1990 period. In comparison to developed countries, developing countries may therefore give more voice to foreign firms for various reasons. It is also possible that foreign firms hold less political influence than an equivalent domestic firm in most developing countries,

[2] They can buy goodwill from the host country government or coopt the domestic firms, workers and communities who benefit from their presence.

[3] Other works have analysed the impact of foreign lobbying on the choice between alternative trade policy instruments; see for instance **?**, Ellingsen and Wärneryd (1999) or Konishi et al. (1999).

as postulated by traditional models of government policies towards affiliates of foreign MNE (Caves, 1996). In this case, trade liberalisation is likely to be weaker. Hence, depending on the political influence of a foreign firm, relative to the one hold by a domestic counterpart, endogenous policy models may not yield the same conclusions.[4] The fact that foreign firms can decisively shape government policies can have profound consequences for the host country. For instance, successful foreign lobbying for a reduction of trade barriers should improve domestic consumer surplus and possibly increase aggregate welfare (Olarreaga, 1999). On the other hand, Cole et al. (2006) put forward that the lobbying of MNE can result in a relaxation of pollution regulations and the subsequent creation of pollution havens if the government gives a lot of weight to campaign contributions in its objective function.

Hellman et al. (2002) is the only study to have examined the political behaviour of foreign firms in developing countries. In line with Grossman and Helpman (1994) model, they show that foreign firms, by bribing more frequently public officials than their domestic counterparts, enjoy substantial private gains from this strategic behaviour, at the expense of the rest of the economy. However, their results do not give any clue on whether domestic and foreign producers diverge in terms of bribing efficiency.[5] Furthermore, the authors ignore the possibility that foreign firms may influence the government through legal means, i.e. through political influence.[6] With the entry into force of the OECD Anti-bribery Convention, foreign firms from developed countries are increasingly likely to resort to legal lobbying activities. Finally, their sample only includes firms located in East Europe and Central Asia, in which the new institutions are extremely malleable and not fully implemented.

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[4] In addition, the lobbying motives of foreign firms depend on whether they are located in the host country, on their trade orientation and on their mode of entry (Olarreaga, 1999; Grether et al., 2001).

[5] Firms were asked: "*How often do firms like yours need to make extra unofficial payments to public officials to influence the content of new laws, decrees or regulations?*" The responses ranged across always; usually; frequently; sometimes; seldom and never. Thus, more frequent bribes result in more favourable policies. However, it is unclear whether the benefits derived from identical contributions would be the same if the firm was either foreign or domestic.

[6] In Hellman et al. (2003), they investigate the determinants of political influence in East Europe and Central Asia countries but they do not take into account the nationality of firms.

This chapter is then the first study to empirically investigate whether foreign and domestic firms possess diverging levels of political influence and whether political influence leads to a better business climate than the one to which non-influential firms are subject. This enquiry is made possible by the availability of the World Business Environment Survey data. It is a survey of over 10000 domestic and foreign firms in 80 countries, conducted in 1999-2000, which examines a wide range of interactions between firms and the state.[7] Among other questions, firms were asked to rate their influence on the content of a new regulation which may substantially affect the conduct of their business. The answers provide, after some adjustments relative to the elimination of any illegal influence achieved through bribery of public officials, an unique measure of a firm's political influence, i.e. influence achieved through legal means. The distinction between political and illegal influence is crucial. The level of political influence enjoyed by a firm can be interpreted as the extent to which the intrinsic characteristics of a firm allow it to wield political power over public officials, with the goal of having an impact on the formation of the rules of the game. On the contrary, firms which influence the government through outright bribery do not exert a direct power over politicians; their preferential treatment only results from their illegal activities (Hellman et al., 2003).

Hence, this chapter refers to the idea that the effect of influence is not only due to the government's taste for an euro. There are ways to bargain that allow to achieve higher lobbying efficiency than others. For instance, by bringing up their importance for the national economy. Moreover, as it has been emphasised in the general introduction, there are different means to influence a government as contributions to electoral campaigns or the consulting of professional lobbyists. This suggests that all these means have not the same effects and that optimal strategies may differ given the situations of the Special Interest Group (SIG). Considering outright bribery, it is impossible to distinguish the effect of the government's taste for private revenues from the efficiency of the influence of SIG. Consequently, we focus on what we call the political influence which is based on a day to day bargaining

[7] The dataset and the questionnaire are available at http://info.worldbank.org/governance/wbes/index.html.

process between MNE and public officials. We believe this type of influence is connected to the intrinsic characteristics of firms since the "official" aspect of the influence forces public officials to be transparent concerning their preferences.

This chapter puts emphasis on the political influence of firms for three reasons. First, the WBES does not provide any detailed data on how firms influence public officials through illegal means. Second, although the endogenous protection literature fully acknowledges that political influence can lead to the "privatisation of public policy" (Kaufmann et al., 2004), most attention has been devoted to illegal forms of influence. Finally, the fact that the degree of political influence enjoyed by a firm depends on its intrinsic characteristics implies that any diverging political influence between a foreign and a domestic firm is likely to be caused by structural differences.

This chapter proposes a conceptual framework in which the political influence of a foreign firm, compared to the one held by its domestic counterpart, depends on three factors *ceteris paribus*: the host country belief that its presence will contribute to economic growth, the extent of its political liability of foreignness and its multinationality. On the one hand, it can be argued that a foreign firm will exert a stronger political influence on government policies than a domestic firm because it may be seen as an essential contributor to domestic growth, thanks to its advanced technology. On the other hand, governments may discriminate foreign firms against domestic firms because the former suffers from a political liability of foreignness. Finally, international operations may give MNE, be they foreign or domestic, two advantages, in terms of relocation threat credibility and international experience. The strength of a foreign firm's political influence depends *in fine* on the relative weight of each of these determinants.

To sum up, this chapter aims to test whether foreign firms systematically are more influent than their domestic counterparts. We propose three stylised hypotheses that may justify that either foreign firms are more influent or, to the contrary, less influent. Hence we test empirically three relationships. First, the relationship between the expected contribution to growth from foreign firms and their influence on the government. That is, if the government had to choose between

helping two firms for an equivalent amount, the government would prefer to help the firm that contributes more to its growth. Second, the relationship between the nationality of firms and firms influence. That is, if the government had to choose between helping two firms for an equivalent amount, the government would prefer to help the firm that represents more the domestic interests, and then electors. Finally, the relationship between the nature of the firm (foreign MNE, domestic MNE, hybrid MNE or domestic firms) and the influence of firms. Since foreign firms are, by definition, MNE and since being an MNE may correspond to an advantage in the bargaining with a government, we also study the influence of domestic MNE in order to compare more rigourously foreign and domestic firms.

In a first stage, these three hypotheses are tested econometrically, by using a sample of 4085 firms in 48 developing countries. Estimations indicate that foreign and domestic firms generally share the same degree of political influence, though hybrid MNE, i.e dual nationality MNE, are more influential than all other firms. These outcomes suggest that the bargaining power of foreign firms is generally high enough to outweigh any political liability of foreignness and that the stronger political influence of hybrid MNE results from their extensive multinationality rather from their expected contribution to host country growth. In a second stage, it is investigated whether foreign and influential firms are privileged by the government. It is found that they both indeed enjoy a better business climate, in benefiting from lower fiscal and regulatory constraints. The advantages enjoyed by foreign firms over domestic firms are then a consequence of two effects. First, thanks to their expected potential contribution to growth, foreign MNE hold enough bargaining power to negotiate favourable entry conditions with a host country, in terms of regulatory concessions and lower taxes. Second, hybrid MNE derive from their extensive international operations sufficient political power to influence any new government regulation which may affect their business operations. This last effect is much stronger in East Europe and Central Asia, where institutions are relatively malleable and civil society weak. Generally, nationality and political influence explain respectively one-third and two-thirds of the difference in probabilities that a fully influential foreign firm and a non-influential domestic firm will enjoy a low

fiscal and regulatory burden. Thus, foreign firms which successfully influence the host country government are likely to benefit from a significant competitiveness advantage, compared to their domestic competitors.

The chapter is constructed as follows. Section II introduces the political influence variable. Section III proposes a conceptual framework which explains the determinants of a foreign firm's political influence, compared to a domestic firm. Section IV provides an econometric test of the comparative political influence of foreign and domestic firms. Section V investigates whether influential and foreign firms enjoy fiscal and regulatory advantages denied to other firms. Section VI concludes.

1 The measure of political influence

To measure political influence, the answer to the following question, taken from the World Bank Environment survey (WBES) carried in 1999-2000, is used: "*When a new law, rule regulation or decree is being discussed that could have a substantial impact on your business, how much influence does your firm typically have at the national level of government to try to influence the content of that law, rule regulation or decree ?*". The answers were *(1) never influential (2) seldom influential (3) influential (4) frequently influential (5) very influential* and the question concerned separately the estimated influence on the executive, the legislature, the ministry and the regulatory agency. The overall influence of a firm over a government, on a 1-5 scale, corresponds to the average of the four answers, rounded to the nearest unit. Data are available for 4085 firms in 48 countries, located in East Europe and Central Asia (23 countries), Latin America and the Caribbean (20 countries) and South and East Asia (5 countries).

The kind of data we use in this chapter is mostly qualitative. Hence, analysing results based on these data needs to be done carefully. Kaufmann et al. (2004) study whether the majors changes observed with their indicator are well perceived by individuals. They simply compute an "agreement ratio" that scores the compatibility between individuals answers to the questionnaire and the global indicator they have

computed. Concerning large changes, it appears that 80% of important changes or perceived by individuals. However, the picture is more blurred concerning small changes thus inducing to be particularly careful when interpreting small marginal changes of the indicator and its effect.

The qualitative nature of the data is clearly due to the object studied. Indeed, Kaufmann et al. (2004) argue that "*The primary reason for this choice is that for many of the key dimensions of governance, such as corruption or the confidence that property rights are protected, relevant objective data are almost by definition impossible to obtain, and so there are few alternatives to the subjective data on which we rely.*"[p. 19]. However, some problems connected to the qualitative nature of the data can be addressed. In particular, we use several measures of governance in the regressions in order to assess whether our results are robust. More importantly, we address the question of the perception bias that may occur in the answer of such questionnaires. Indeed, we propose in the penultimate section an econometric test aimed to check whether there is a perception bias in the answer. The "kvetch factor" consists in determining an answer presumably unbiased such as the quality of the postal service and to use the answers to this question as a benchmark.

Therefore, despite we are not able to transform qualitative data onto quantitative ones, we have used the most up to date instruments in order to provide the most possible unbiased measure of the influence of foreign firms.

The measure of influence obtained can be interpreted as reflecting the legal and illegal political behaviours of firms. Although no reference was made to illegal payments when firms were asked about their influence, it does not necessarily imply that firms do not achieve influence through corruption of public officials. Since this chapter focuses on the political influence of firms, the measure of influence should be purged of any illegal influence achieved through bribery. Answers to the following question included in the WBES provides some information on the bribing behaviour of firms "*It is common for firms in my line of business to have to pay some irregular 'additional payments' to get things done. This is true (1) always (2) mostly (3) frequently (4) sometimes (5) seldom (6) never*". Consistent with this last answer, 70% of firms which report never or seldom paying bribes also

indicate that on average 0% of their sales are earmarked for unofficial payments to public officials.[8] Although it is impossible to ascertain whether these bribes serve the purpose of illegally influencing the contents of new government rules, which may lead to an underestimation of the genuine political influence of certain firms, not taking into account this possibility would defeat the purpose of this chapter. Hence, whichever the value of the influence variable, a firm is considered to exert some political influence over a government only if it reports never or seldom paying bribes.[9]

As Table II.1 shows, distinguishing between overall influence and political influence yields strikingly different results in terms of the percentage of firms, in each country sample, which consider themselves influential. For instance, in Indonesia, little political influence can exist without corruption of public officials whereas the opposite is true in Chile. Correlations between these two ratios and the Corporate Legal Corruption Index (CLCI) developed by Kaufmann (2004)[10] clearly indicate that a better picture of politically influential firms is obtained by not considering firms which may achieve their influence through corruption. Furthermore, after correcting for the potentially illegal political behaviour of firms, it appears that about the same percentage of firms across developing regions report that they exert political influence over government policies.[11]

At the aggregate country level, the achievement of influence through political means certainly depends on the quality of its public governance. Table II.2 indicates the correlation coefficients between the share of politically influential firms in the sample and various indicators of public governance quality computed by Kaufmann

[8] Firms were asked "*On average, what percent of sales do firms like yours typically pay per annum in unofficial payments to public officials?*". The answers were *0%, less than 1%, 1–1.99%, 2—9.99%, 10—12%, 13—25%, over 25%.*

[9] Firms which report seldom paying bribes are included since in East Europe and Central Asia, it seems that business cannot be conducted without paying unofficial payments to public officials: for most countries of this region, 100% of sampled firms indicate paying bribes.

[10] This index measures legal dimensions of undue political influence, based on the percentage of firms in a country surveyed in the 2004 Executive Opinion Survey of the World Economic Forum which give satisfactory ratings to the questions on influencing legal political funding and undue political influence.

[11] A comparison of means test indicates that differences between means are not significant at the 10% level.

Country	Influential firms *(%)*	*Politically influential firms* (%)	*Country*	*Influential firms (%)*	*Politically influential firms (%)*
Albania	40	13	Kyrgizstan	25	3
Argentina	41	19	Lithuania	33	16
Armenia	30	9	Malaysia	75	28
Azerbaijan	16	8	Mexico	41	11
Belarus	30	18	Moldova	60	22
Belize	74	35	Nicaragua	38	10
Bolivia	55	11	Pakistan	71	8
Bosnia	58	35	Panama	71	39
Brazil	42	20	Peru	47	24
Bulgaria	44	26	Philippines	87	24
Chile	54	43	Poland	26	13
Colombia	61	37	Romania	31	6
Costa Rica	62	37	Russia	27	12
Croatia	74	42	Singapore	65	61
Czech Republic	33	12	Slovakia	38	17
Dominican Republic	59	25	Slovenia	44	35
Ecuador	54	14	Trinidad&Tobago	71	55
El Salvador	35	19	Turkey	46	7
Estonia	60	28	Ukraine	49	21
Georgia	51	29	Uruguay	59	38
Guatemala	40	21	Uzbekistan	40	20
Haiti	40	5	Venezuela	46	14
Honduras	33	16			
Hungary	18	5	*Latin America*	51	25
Indonesia	73	5	*South and East Asia*	74	25
Kazakhstan	20	9	*E. Europe and C. Asia*	39	18
			Corr. CLCI	**0.24**	**0.41*****

Notes: % of sample. *** indicates that the correlation coefficient is significant at the 1% level. CLCI: Kaufmann (2004)'s Corporate Legal Corruption Index (CLCI); a higher value implies a higher ethical standard rating given by the country's enterprise sector.

Table II.1: Share of influential and politically influential firms in the sample, by country

et al. (2004) for the year 1998. They have evaluated six dimensions of public governance, on the basis of polls of experts or surveys of businessmen/citizens: voice and accountability (VOICE), political stability (POLSTAB), government effectiveness (GVTEFF), regulatory quality (REGQ), rule of law (RLAW) and control of corruption (CCORR). The first two clusters attempt to capture the process by which those in authority are selected and replaced, the next two clusters are related to the ability of the government to formulate and implement sound policies and the last two clusters assess the respect of citizens and the state for the institutions which govern their interactions.[12] Table II.2 clearly shows that there are more politically influential firms in countries which are well governed. The high correlations with the government efficiency, rule of law and control of corruption indicators suggest two reasons for explaining this relationship. First, in badly-governed countries, firms are unlikely to attempt influencing legally the shaping of new laws or rules when their application depends *in fine* on public officials goodwill. Second, corruption is not without risk for the payer and the bribe recipient, since there is always the possibility that they could get caught. This risk probably increases with the quality of public governance and therefore in well-governed countries, most of firms and public officials may be too afraid of the legal consequences to engage themselves in illicit activities. Hence, the single alternative remaining for firms willing to influence new rules in their favour is to use legal means.

Governance Indicators	*VOICE*	*POLSTAB*	*GVTEFF*	*REGQ*	*RLAW*	*CCORR*
Coefficient of correlation with share of politically influential firms	0.30**	0.39***	0.54***	0.34**	0.55***	0.58***

Notes: '**' '***' respectively indicate that the correlation coefficient is significant at the 5 and 1% level.

Table II.2: Correlations between the share of politically influential firms in each country sample and various public governance indicators

[12] For a comprehensive discussion of these indicators, see Kaufmann et al. (2004).

All in all, it has been established that the variable constructed is a good proxy for the political influence of firms. In the next section, it will be investigated the determinants of a foreign firm's political influence, compared to its domestic counterpart.

2 The determinants of a foreign firm's political influence

The political influence of a foreign firm, compared to its domestic counterpart, depends on three factors: the host country belief that its presence will contribute to economic growth, the extent of its liability of foreignness and its multinationality.

Foreign firms and economic growth

Foreign firms can foster economic growth through their contribution to labour and capital stocks and their transfer of advanced technology.[13] This technology transfer arises from the fact that a necessary condition for a firm to invest in a foreign country is an ownership advantage over at least one internationally transferable knowledge asset, known as a firm-specific advantage (FSA), which allows it to overcome the difficulties of competing with local firms (Hymer, 1960; Carr et al., 2001).[14] By definition, the technology used by foreign MNE[15] is not available to domestic firms, but foreign firms may contribute to its diffusion in the host country if their activities generate productivity spillovers, through demonstration effects, labour turnover, vertical linkages or increased competition.[16] Developing countries, which have increasingly integrated the contribution of MNE in their development

[13] Numerous surveys have comprehensively examined the impact of FDI on host country productivity and economic growth. See Blomström and Kokko (1998); Saggi (2000); Lipsey (2002); Görg and Greenaway (2002).

[14] The notion of FSA/technology should be interpreted broadly, since it encompasses production processes, management techniques, marketing methods or means of finance.

[15] As it will be seen later on, the distinction between foreign MNE, i.e. a foreign firm, and domestic MNE matters.

[16] For Saggi (2000) the competition effect should not be included in a strict definition of spillovers because it is not a pure externality: Innovation in a domestic industry caused by increased competition from foreign MNE is a "benefit enjoyed by the host country that works its way through the price mechanism" (Ibid., p.18). However, in most studies, pure and pecuniary externalities are not distinguished.

strategy (Kobrin, 2005), are therefore eager to attract the foreign firms which can provide the domestic economy with the highest growth benefits. The bargaining power of a MNE, in the negotiation of its entry conditions with a government, is therefore likely to depend on its potential contribution to host country economic growth. Cross-sectional (Fagre and Wells, 1982; Lecraw, 1984) and longitudinal studies (Vachani, 1995) validate this hypothesis. They show that the bargaining power of a foreign MNE, proxied by its ability to obtain its desired equity share in its foreign affiliate, depends on its technology level.

Hence, in this chapter, we do not try to defend this idea. We rather suggest that developing countries are actually spending large amounts in order to attract FDI. These proactive policies indicate that developing countries governments expect these FDI will generate some gains for the economy that will cover the cost.

Despite the political economy literature does not explicitly develop the idea that a government is interested in the growth of its GDP, we can argue that this is not opposed to their framework. First, these models are mostly, if not all, static. The lack of dynamics makes then hard to assume that growth is an objective of the government. Second, the main components of a standard social welfare function in a political economy framework are the producer and consumer surpluses. Most of the methods to calculate the GDP, and then its growth, are based on consumption or on the value added, that is the profit.

The bargaining power of a foreign MNE should not be limited to the negotiation of its entry conditions in the local market. In opposition to Vernon (1971)'s obsolescing bargain model, in which a MNE loses its power once it has sunk its assets in a developing country, Dunning (1998) and Luo (2001) emphasise that relations between a foreign MNE and a host country government have progressively become less confrontational and more cooperative because both actors recognise that their interests are compatible and that their resources are complementary. If the objective of the government is to ensure that the foreign MNE will carry on contributing to the economy in the long-run, through reinvestment or technology upgrading, it is likely that it will adopt a cooperative stance, consulting or taking into account a foreign firm's opinion about any new regulation affecting its business conditions

(Luo, 2001). Even in the long-run, foreign MNE may therefore hold some political influence if they are seen as long-term contributors to economic growth.

Hence, a foreign firm may possess a stronger political influence on government policies than a domestic firm because its advanced technology could be highly valued and desired by a government wishing to promote economic growth. However, as it will be seen in the next section, traditional models of government policies towards affiliates of foreign MNE assume that a government will privilege domestic firms over foreign firms, for electoral or nationalistic reasons.

Hypothesis 1. *A foreign firm possesses a stronger political influence on government policies than a domestic firm because its advanced technology could be highly valued and desired by a government.*

The political liability of foreignness

Among the costs of going abroad faced by a firm, can be found those engendered by a lack of societal legitimacy and by economic nationalism (Zaheer, 1995; Kostova and Zaheer, 1999). Thus conventional frameworks, describing host country policies towards affiliates of foreign MNE, suggest that foreign firms will be discriminated against domestic firms. For instance, in the national preference model exposed in Caves (1996), a democratic government, trying to get reelected, may decide to redistribute income at the expense of foreigners. Since foreigners do not vote in national elections and domestic producers do not receive any income from the activities of foreign producers, this will cause no harm to the government, in terms of negative votes.[17] Foreign enterprises may also be imposed "performance requirements," which frequently engender a deterioration of the operating conditions of foreign enterprises (Moran, 1998; UNCTAD, 2003), in order to allegedly increase the development benefits of foreign presence. Voters may also favour measures restricting or regulating foreign operations because they experience some utility from the discrimination of foreigners, due to nationalistic or xenophobic feelings. In every

[17] Although this model acknowledges that foreign firms can influence the government through other channels, such as campaign contributions, Caves (1996) remarks that "*in general the political influence of foreigners is sensibly regarded as discounted from that of equivalent domestic business units*" (p.250).

case, foreign firms are discriminated against domestic firms.[18] Public questioning of the legitimacy of foreign firms may even encourage them to adopt deliberately a low profile, leading to few political interventions (Mitchell, 1995) or to the targeting of policy-enforcers rather than elected public officials (policy-makers).

A high political liability of foreignness may therefore leave foreign firms at a disadvantage against domestic firms in terms of political influence, especially when facing politicians.[19]

Hypothesis 2. *A high political liability of foreignness leaves foreign firms at a disadvantage against domestic firms in terms of political influence.*

The international operations of foreign and domestic firms

A MNE, by definition, operates in several countries. Its gradual expansion overseas engender the formation of new firm-specific advantages, known as "economies of common governance" (Dunning, 1993, 2001). In other words, they do not exist before the multinationalisation of the firm but result from its multinationality *per se*.[20] Purely domestic firms, i.e. not foreign-owned and without foreign operations, do not benefit from these advantages of multinationality which allow MNE to arbitrage institutional restrictions, to realise informational economies and to benefit from economies of scale (Kogut, 1983). The first two avantages appear to be particularly salient for explaining possible differences of political influence between a MNE and a purely domestic company.

First of all, multinationalisation contributes to the credibility of the relocation threats of MNE. If a firm disagrees with a government about the proposal of a new regulation, it can threaten the government to relocate its operations to another country. A MNE is likely to be more credible than a domestic firm because its moving

[18] The national preference model assumes that the country is democratic. In an authoritarian country, it is possible that foreign producers will be privileged, because they are less likely to contest the established political regime.

[19] Since a foreign affiliate does not always have a clear nationality, depending on its degree of foreign ownership, government policies models are more likely to apply to majority-owned foreign firms, which involve few domestic interests.

[20] In Dunning's terminology, the O^t (the firm-specific transaction advantages) arise from the multinationalisation made possible by the O^a (the firm-specific asset advantages).

costs abroad are smaller (Kogut, 1983; Polk, 2002; Ietto-Gillies, 2002). Developing countries, in their eagerness to attract foreign firms are willing to grant them short-run incentives (Oman, 2000), which reduce the cost of moving to another country. If a MNE already runs a plant in another country, it will be easier to expand it than build one from scratch, as will be the case for a purely domestic firm.[21] Finally, MNE possess greater experience in managing institutional idiosyncracies than domestic firms (Henisz, 2003), which should result in their greater capability to relocate their activities to another country, even if the latter is geographically distant and culturally dissimilar (Davidson, 1980). According to Cowling and Tomlinson (2005), MNE make a frequent use of the relocation threat, i.e. a "divide and rule" strategy, to obtain the introduction or maintenance of profitable measures.[22]

Multinationalisation also allows for the acquisition of lobbying experience since entering and operating in different countries certainly encourage MNE to develop this kind of specific advantage (Boddewyn, 1988; Grether et al., 2001). Thus, a MNE should be more accustomed to dealing with public officials than a domestic firm.

Hypothesis 3. *Multinationalisation allows firms to threaten more credibly to relocate. It also allows for the acquisition of lobbying experience. Hence, multinationalisation increases firms' influence.*

These arguments imply that a MNE should exert more political influence on government regulations than a purely domestic firm. However, MNE can either be domestic,[23] foreign or both. Since domestic MNE theoretically share with foreign MNE a similar level of threat credibility and international experience, a foreign firm may not have more political influence than a domestic MNE. It is unclear what

[21] Kogut (1983) considers that operating on purpose plants at less than full capacity in other foreign countries is a strategy which provides a MNE with more bargaining power in negotiating with a government.

[22] According to Ietto-Gillies (2002), the "divide and rule" strategy was already at the heart of Hymer's concerns when he was examining, in the seventies, the relations between MNE and host country governments or workers.

[23] South-south FDI flows is a growing phenomenon. Aykut and Ratha (2004) estimate that in 2000, more than one third of the FDI flows reported by developing countries, originate from other developing countries.

would be the relative degree of political influence of a hybrid MNE, i.e. a foreign MNE which is also a domestic MNE. Its combination of both foreign-imported and domestically-obtained firm-specific and transaction advantages, could give it more relocation options or more lobbying experience and therefore higher political influence, in comparison to domestic or foreign MNE.

2.1 Summary of various determinants and empirical evidence

Table II.3 summarises the determinants of a foreign firm's political influence over host country government policies, compared to a domestic firm. The strength of a foreign firm's political influence results *in fine* from the relative weight of each of these determinants.

Empirical evidence on the capacity of foreign firms to politically influence their business environment is scarce but seems to point out that foreign firms are privileged by the government. Thus, using the WBES data, Nagarajan (2001), Schiffer and Weder (2001), Batra et al. (2002) and Huang (2004) uncover that foreign firms appear to be less constrained by the business environment than domestic firms, even after controlling for firm-specific and country-specific effects.[24] In other words, these studies put forward that the foreign-privilege hypothesis finds more empirical ground than the national-preference hypothesis; foreign firms benefit from advantages (frequently in terms of regulatory and fiscal concessions) which are denied to their domestic counterparts. However, besides Huang (2004), none of these papers have tried to explain the underpinning of these results. This author argues that foreign firms are only privileged against the politically weak domestic firms, implicitly suggesting that the origin of the advantages enjoyed by certain firms should be tracked back to their political behaviour.

[24] Firms were asked to rate eleven constraints to their business operations and growth: financing, infrastructure, taxes and regulations, policy instability/uncertainty, inflation, exchange rate, functioning of the judiciary, corruption, street crime, organised crime and anti-competitive practices by government or private enterprises. Huang (2004) also uses as dependant variables the answers to the question asking firms to judge how problematic are different regulatory areas for the operation and growth of their business (e.g. business licensing, foreign trade or labour regulations, tax regulations, administration).

Determinants of political influence	*Political influence of a foreign firm compared to a domestic firm*	
	Yes	No
Is the technology of the foreign firm valuable to the government?	+	-
Does the foreign firm lack domestic legitimacy and is economic nationalism favoured by the government or voters?	-	+
Does the domestic firm operate in another country?	+/=	+

Notes: '+': greater political influence, '=': same political influence, '-': lower political influence

Table II.3: Determinants of the relative political influence of a foreign firm

3 An econometric test of the comparative political influence of foreign and domestic firms

It is possible that foreign firms are privileged by the government because they are more successful than domestic firms in shaping the business environment in their favour. Indeed, table II.4 illustrates that on average, foreign firms [FDI], defined as firms in which a foreign investor owns 10% or more of the ordinary shares, are more influential than domestic firms;[25] the measure of political influence is the variable described in section 1. However, before asserting with certainty that foreign firms are more influential than domestic firms, firm-specific characteristics and country-specific effects need to be econometrically controlled for.

[25] A comparison of means test indicates that this difference is significant at the 1% level.

Ownership	*Degree of political influence*						
	Never	Seldom	Influential	Frequently	Very	Mean	Obs
No FDI	81%	11%	4%	2%	1%	1.30	3516
FDI	67%	20%	8%	4%	1%	1.52	569

Notes: % of sample.

Table II.4: Summary statistics for the firm-level measure of political influence, by ownership

3.1 Model specification

In terms of firm characteristics, the WBES data provide information on the origin of the firm, its size, its year of establishment, its sector, its export activity, and its operations in other countries. In line with Hellman et al. (2002, 2003), these variables will control for other determinants of a firm's political influence, apart from its foreign ownership.

First, it is likely that depending on their origin, firms do not possess the same ties with the state. Hence, firms have been divided in four categories, based on their reported origin of establishment. Firms can either be: 1) originally private from time of start-up with no state-owned predecessor or a joint-venture between foreign and domestic private partners [PRIV] 2) privatised or a private subsidiary of a formerly state-owned firm [FSO] 3) state-owned [SO] or 4) a co-operative (COOP). State-owned firms or recently privatised firms should enjoy an easier access to the state and should be more experienced in dealing with public officials than private firms (Hellman et al., 2002). Moreover, interests of state-owned firms may matter more to a government than those of other firms since the former may be seen as instruments of government policies. Thus, in agreement with the findings of Hellman et al. (2002) for a sample of firms located exclusively in East Europe and Central Asia, it is expected that privatised or state-owned firms will be more influential than private firms.

Second, the political influence of a firm certainly depends on its size. A

government should treat preferentially large firms since the evolution of their economic activities affects a high number of workers and, potentially, voters (Schiffer and Weder, 2001; Hellman et al., 2002). Moreover, large firms may have the possibility to devote more resources to lobbying activities than smaller firms. However, a high size implies a higher exposure to public scrutinity, which may hinder the use of political influence when a publicly sensitive issue is addressed by a new regulation. Expected sign of this variable is therefore uncertain. Firms have been divided in three categories, based on the number of employees: small (50 or fewer employees) [SMALL], medium (between 50 and 500 employees) [MEDIUM] or large (more than 500 employees) [LARGE] firms.

Third, the age of the firm [AGE] is included among the control variables. An experienced firm is probably more acquainted with the machinery of state and has acquired more domestic legitimacy than a newly-established firm (Schiffer and Weder, 2001).

Fourth, the government may be more sensitive to the interests of certain industries, for electoral or economic reasons. Firms can belong either to the agricultural sector [AGRI], manufacturing sector [MANUF], service sector [SERV], or another non-specified sector [ANS].

Fifth, a firms which exports part of its production should possess more political leverage than a firm uniquely selling its production in the local market. An export-oriented firm can threaten the government to serve the export market through foreign direct investment, resulting in a loss of capital/ jobs and foreign currency. A government is therefore more likely to be sensitive to the interests of firms which export [EXP].

Finally, to take into account that firms can either be purely domestic, domestic MNE, foreign MNE or hybrid MNE, four dummies are created. A purely domestic firm [DOMESTIC] is a firm in which a foreign investor owns less than 10% of the ordinary shares and which has no operations in other countries. A domestic MNE [DOMESTIC MNE] is a firm which is not foreign-owned and which has operations in other countries. A foreign MNE [FOREIGN MNE] is a firm in which a foreign investor owns 10% or more of the ordinary shares and which does not operate in other

countries. Finally, a hybrid MNE [HYBRID MNE] is a firm which is foreign-owned and which has operations in other countries. Domestic and foreign MNE should benefit from the same advantages given by international operations to foreign MNE. A hybrid MNE may exert more political influence than domestic or foreign MNE thanks to greater lobbying experience or higher level of relocation threat credibility. Note that the foreign firm dummy is equal to the sum of the foreign MNE and hybrid MNE dummies; replacing the FDI variable by these two dummies allows the decomposition of the overall foreign dummy effect.

Table II.5 provides a summary of the different variables. Beyond these firm-level determinants, the political influence of firms depends on the characteristics of the country in which they operate, too. It is probable that these characteristics vary across countries and therefore unobserved cross-country heterogeneity needs to be taken into account. Otherwise, estimations are biased since they suffer from an omitted variables problem. Unobserved country-specific factors are captured through country fixed effects [C].

An ordered probit model is used as the values of the dependent variable only reflect an opinion ranking and not meaningful relative differences; a linear regression would assume that the difference between a '2' and a '1' is the same as that between a '4' and a '3' (Greene, 2003, p.736). The ordered probit model avoids this assumption. The original structural model takes the following form for i firms belonging to c countries:[26]

$$y_i^* = \beta X_i + \epsilon_i$$

$$y_i^* = \beta_1 FDI_i + \beta_2 PRIV_i + \beta_3 FSO_i + \beta_4 MEDIUM_i + \beta_5 LARGE_i + \beta_6 AGRI_i + \beta_7 MAN_i + \beta_8 SERV_i + \beta_9 AGE_i + \beta_{10} EXP_i + \sum_{1}^{48} \beta_{11} C_c + \epsilon_i \quad \text{(II.1)}$$

where y_i^* is a latent variable, ranging from $-\infty$ to ∞, which can be thought of as the propensity of firms to consider themselves influential, and ϵ_i is a random error.

[26] The presentation of the model heavily draws on Long and Freese (2003)[chap. 5].

Variable	Mean	Std. Dev	Min.	Max
Dependent variables				
POLITICAL INFLUENCE (INF.)	1.33	0.75	1	5
POLITICAL INFLUENCE OVER EXECUTIVE	1.31	0.77	1	5
POLITICAL INFLUENCE OVER LEGISLATIVE	1.29	0.74	1	5
POLITICAL INFLUENCE OVER MINISTRY	1.31	0.76	1	5
POLITICAL INFLUENCE OVER REG. AGENCY	1.31	0.77	1	5
FINANCING CONSTRAINT	2.92	1.12	1	4
TAXES AND REGULATIONS* (TAXREG)	1.90	0.96	1	4
REGULATIONS*	2.42	0.60	1	4
Independent variables				
FOREIGN FIRM (FDI)	0.14	0.35	0	1
PURELY DOMESTIC FIRM	0.78	0.42	0	1
FOREIGN MNE (F. MNE)	0.07	0.25	0	1
DOMESTIC MNE	0.08	0.28	0	1
HYBRID MNE (H. MNE)	0.07	0.26	0	1
PRIVATE (PRIV)	0.73	0.45	0	1
PRIVATISED (FSO)	0.15	0.36	0	1
STATE-OWNED (SO)	0.01	0.10	0	1
COOPERATIVE (COOP)	0.06	0.23	0	1
SMALL	0.39	0.49	0	1
MEDIUM	0.44	0.50	0	1
LARGE	0.17	0.38	0	1
AGRICULTURAL SECTOR (AGRI)	0.06	0.24	0	1
MANUFACTURING SECTOR (MAN)	0.33	0.47	0	1
SERVICE SECTOR (SERV)	0.42	0.49	0	1
AGE	18.44	21.14	0	193
EXPORTING FIRM (EXP)	0.31	0.46	0	1
Number of observations		4085		

Note '*' indicates that the variable is defined and used in section 4.
Abbreviations are indicated in parentheses.

Table II.5: Summary statistics

The base categories are state-owned firms [SO], small size firms [SMALL] and firms belonging to a non-specified sector [ANS].

The measurement model divides y^* into five categories, corresponding to the answers of the firms: *(1) never influential (2) seldom influential (3) influential (4) frequently influential (5) very influential*:

$$y_i = m \quad if \quad \tau_{m-1} \leq y_i^* < \tau_m \tag{II.2}$$

where y is the observed measure of political influence, which takes a value m between 1 and 5; τ_1 to τ_4 are four estimated cut-points and the endpoint categories 1 and 5 correspond to $\tau_0 = -\infty$ and $\tau_5 = \infty$. When y_i^* is higher than a threshold value τ, the observed category changes. The predicted probability of an observed outcome y for a given value of the independent variables is:

$$\begin{aligned} Pr(y = m|X) &= Pr(\tau_{m-1} \leq y^* < \tau_m|X) \\ Pr(y = m|X) &= F(\tau_m - \beta X) - F(\tau_{m-1} - \beta X) \end{aligned} \tag{II.3}$$

where F corresponds to the cumulative density function for ϵ: F is normal with $Var(\epsilon) = 1$.

Studies using an ordinal regression model frequently do not test for the parallel regression assumption (Williams, 2006). The ordered probit model can be written as:

$$Pr(y \leq m|X) = F(\tau_m - \beta X) \tag{II.4}$$

with $m = 1$ to 4. The ordered probit model can be seen as equivalent to 4 binary regressions. A critical assumption is therefore that the parameters β are identical across each regression. If this is not the case, an alternative model must be used. A Wald test, devised by Brant (1990), allows the testing of the parallel regression assumption for each variable individually. If a variable violates this assumption, a

partial proportional odds model can be used, in which some of the β coefficients can be constrained to be the same for all values of m, while the β coefficients of the offending variables can differ (Williams, 2006). In the following discussion of the estimation results, it will be indicated whether a variable violates the parallel regression assumption and whether partial relaxation of the parallel lines constraint modifies the conclusions derived from an ordered probit model.

3.2 Estimation results

In order to understand the results provided in sections 3 & 4, we present here the way to calculate them. We know that logit and probit models exhibit marginal effects that are not constant. Indeed, they depend on Z which represents a function of the explanatory variables. That is, probit and logit are often represented as sigmoid functions of Z (S-curves).

In the particular case of a probit model, the sigmoid curve is the cumulative standardized normal distribution. Formally, if we have a probit such that $y_i = x_i\beta + u$, it corresponds to :

$$F(Z) = \Phi(Z) = \int_{-\infty}^{Z} \frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2}Z^2} \tag{II.5}$$

Therefore, we have

$$f(Z) = \phi(Z) = \frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2}Z^2} \tag{II.6}$$

And then,

$$\frac{\partial P(y_i = 1)}{\partial x_j} = f(Z)\beta_j = \phi(Z)\beta_j \tag{II.7}$$

The last equation states that the marginal effect of a probit model is not constant. A common method to evaluate the probabilities is to calculate the exponential of

the coefficient of an explanatory variable. Therefore, we calculate the e^{Z_i}. Then we use the formula $P(y_i = 1) = \frac{e^{Z_i}}{1+e^{Z_i}}$ to obtain the result. That is, for a given variable we set all variables to zero to obtain the probability that an increase of the given variable will increase the dependant variable.

However, since setting the variables to zero is not totally realistic, a better measure to use is the marginal effect. Since they are not constant, a usual method is to estimate them while holding the other variables to their sample means.

Finally, we get the marginal effect

$$\frac{e^Z}{(1+e^Z)^2}\beta_i \tag{II.8}$$

where

$$Z = \beta_1\overline{FDI_i} + \beta_2\overline{PRIV_i} + \beta_3\overline{FSO_i} + \beta_4\overline{MEDIUM_i} + \beta_5\overline{LARGE_i} + \beta_6\overline{AGRI_i} + \beta_7\overline{MAN_i} + \beta_8\overline{SERV_i} + \beta_9\overline{AGE_i} + \beta_{10}\overline{EXP_i} + \epsilon_i \tag{II.9}$$

Estimation results are given in table II.6. An omitted variable test, known as the linktest, indicates that the model is well specified.[27] Regression (1) shows that most variables are significant. Size, experience, export activity and state ownership are positive and significant determinants of a firm's political influence. The variable of interest, FDI, is highly significant and indicates that foreign firms have a slight advantage over domestic firms in terms of political influence: with values of other variables held at their mean, there is a 22% (16%) predicted probability that a foreign (domestic) firm exerts some political influence on the government. Thus, governments appear to give more voice to foreign firms, suggesting that the national preference hypothesis should be rejected, in favour of the two other arguments, outlined in section 2. Regression (2) investigates whether the foreign privilege effect

[27] The idea behind the linktest is that if the model is well-specified no other regressors need to be included. Test of this hypothesis relies on the regression of the dependent variable on its predicted value and its predicted value squared. If the model is well-specified, coefficient of the predicted value should be positive and significant whereas the coefficient of the predicted value squared should not be significant, as is the case for regressions (1) to (4).

is persistent across developing regions. For this purpose, an interaction term (FDI * ECA), which takes the value of one if the foreign firm is located in East Europe and Central Asia, is added. Focus on this region is justified by the fact that foreign firms may have more opportunities to influence the government when a new set of political and economic institutions is under development. However, this does not appear to be the case since the interaction term is negative and not significant, implying that the foreign privilege effect is the global norm rather than a regional exception.

It has been previously argued that it is not clear whether domestic and foreign MNE should diverge in terms of political influence, since they benefit from the same advantages granted by their international operations. However, hybrid MNE, i.e. a foreign MNE which is also a domestic MNE, may be more influential because of greater lobbying experience or higher relocation threat credibility. In order to disentangle this issue, two dummies, respectively indicating whether the observed firm is a hybrid MNE or a foreign MNE, replace the FDI variable. In addition, a domestic MNE dummy is included and the base category corresponds now to purely domestic firms. Regression (3) shows that only hybrid MNE are more influential than other firms. Compared to a purely domestic firm, the predicted probability of exerting some political influence on the government increases from 16% to 27% if a firm is a hybrid MNE. Foreign and domestic MNE appear to be slightly more influential than a purely domestic firm but their coefficients are not significant.[28] Hence, the potential contribution of foreign MNE to economic growth does not appear to be a source of political influence, since domestic MNE and foreign MNE possess about the same political influence. It follows that hybrid MNE are more influential than all other firms, including domestic and foreign MNE, because they benefit from stronger economies of common governance. For instance, it may be easier for a hybrid MNE to relocate if they are not constrained by the lack of financing, giving more credibility to its threat (Grether et al., 2001). Regression (4) tests such hypothesis, using as dependent variable answers to the following question "*Please judge on a four point scale how problematic are the following factors for*

[28] Interestingly, the coefficient of the FDI dummy is about equal to the average of coefficients of hybrid and foreign dummies. This decomposition indicates which type of foreign firms drive the overall FDI dummy effect.

Determinants	*Political influence*			*Financing constraint*
	(1)	(2)	(3)	(4)
FDI	0.226[a]	0.240[a]		
	(0.070)	(0.076)		
FDI * ECA		-0.055		
		(0.172)		
HYBRID MNE			0.387[a]	-0.462[a]
			(0.085)	(0.069)
DOMESTIC MNE			0.079	0.025
			(0.070)	(0.063)
FOREIGN MNE			0.057	-0.221[a]
			(0.086)	(0.077)
PRIV	-0.347[a]	-0.346[a]	-0.347[a]	-0.264[a]
	(0.093)	(0.092)	(0.093)	(0.088)
FSO	-0.137	-0.136	-0.139	-0.036
	(0.118)	(0.118)	(0.119)	(0.105)
COOP	0.137	0.134	0.137	0.083
	(0.152)	(0.152)	(0.152)	(0.164)
MEDIUM	0.339[a]	0.340[a]	0.338[a]	-0.166[a]
	(0.077)	(0.076)	(0.077)	(0.060)
LARGE	0.554[a]	0.554[a]	0.542[a]	-0.325[a]
	(0.086)	(0.086)	(0.088)	(0.075)
AGE	0.006[a]	0.006[a]	0.006[a]	-0.002[c]
	(0.001)	(0.001)	(0.001)	(0.001)
EXP	0.113[b]	0.114[b]	0.100[c]	.008
	(0.057)	(0.057)	(0.055)	(0.060)
Observations	4085	4085	4085	4055
Pseudo R^2	0.11	0.11	0.11	0.06
Prob>Chi^2	0.00	0.00	0.00	0.00
Log pseudolikelihood	-2634.29	-2634.22	-2629.35	-4948.04
Cut 1	1.60	1.60	1.60	-1.02
Cut 2	2.27	2.27	2.27	-.48
Cut 3	2.78	2.78	2.78	.26
Cut 4	3.29	3.29	3.30	-

Notes: a, b, c denotes respectively significance at the 1, 5 and 10% level. Robust-cluster standard errors are in parentheses. Unreported industry and country dummies are included. Sector and country dummies are jointly significant at the 1% level.

Table II.6: The political influence of foreign firms over government regulations

the operation and growth of your business: financing. (1) No obstacle (2) Minor obstacle (3) Moderate obstacle (4) Major obstacle". Results indicate that, whereas for domestic MNE, the predicted probability that a firm finds that financing is not an obstacle or only a minor one equals 30%, the predicted probabilities for foreign and hybrid MNE are respectively 8 percentage points and 17 percentage points greater. Thus, easier access to foreign and domestic sources of financing is certainly one of the characteristics which differentiate hybrid MNE from domestic MNE and to a certain extent, from foreign MNE.

Robustness checks have been carried out in order to verify the stability of these results. First, exploration of the parallel regression assumption, through the Brant (1990) test, points out that only the exporting dummy violates this condition, at the 5% level. The use of a partial proportional odds model shows that for high values of political influence, exporters lose their political influence advantage. Coefficients and significance of other variables, including variables of interest, are unaffected. Second, conclusions are qualitatively similar when an alternative measure of political influence is used: *"In case of important changes in laws or policies affecting my business operation the government takes into account concerns voiced either by me or by my business association. This is true (1) always, (2) mostly, (3) frequently, (4) sometimes, (5), seldom, (6) never"*.[29] Third, it is investigated whether the degree of political influence of foreign firms varies when a distinction is operated between policy-makers (executive and legislative) and policy-enforcers (ministries and regulatory agencies).[30] On the one hand, in line with the government policy model, elected officials should be more sensitive to the interest of domestic producers. On the other hand, officials who enforce regulations are less politically accountable and are often given some room for the design and interpretation of new rules, within their constitutional competencies. Hence, the latter may be most plausible interlocutors of foreign firms. They will be both more likely to take into account the

[29] Results are available upon request to the authors.

[30] Each measure of political influence over a distinct government branch has been submitted to the same correction as the overall measure of political influence: whichever the value of the influence variable, a firm is considered to exert some political influence over a government branch only if it reports never or seldom paying bribes.

concerns of foreign investors and at the same time more likely to be the targets of foreign firms' lobbying. Table II.7 confirms this line of reasoning since the probabilities that hybrid MNE enjoy some political influence over policy-makers or over policy-enforcers equal respectively 20% and 25%, a 5 percentage points difference. Interestingly, the most accountable branch of the government, the executive, gives more weight to domestic MNE than to foreign MNE. Thus, although host country governments are not globally hostile to foreign firms, politicians tend to grant slightly more political importance to domestic firms than other officials.

To sum up, it has been shown that governments in developing countries do not discriminate against foreign firms, suggesting that the bargaining power of foreign firms is generally high enough to outweigh any political lability of foreignness. However, distinguishing between the different types of MNE reveal that only hybrid MNE are more influential than purely domestic firms. Their superior political influence is likely to result from the combination of both foreign-imported and domestically-obtained firm-specific and transaction advantages, i.e. from their extensive multinationality, rather from their expected contribution to economic growth.

4 The preferential treatment of influential and foreign firms by the government

Firms are likely to use their political influence to benefit from fiscal and regulatory advantages denied to non-influential firms. Furthermore, foreign MNE may have chosen to invest in a particular country because they have been promised regulatory concessions and lower taxes by the government. Thus, it is possible that influential and foreign firms enjoy a better business environment than other firms.

Both hypotheses are tested in table IV.13, in which the dependent variable (TAXREG) is now the answer to the following question: "*Please judge on a four point scale how problematic are the following factors for the operation and growth of your business: Taxes and regulations. (1) No obstacle (2) Minor obstacle (3)*

Determinants	***Political influence over policy-makers***			
	Executive		Legislative	
	(5)	(6)	(7)	(8)
FDI	0.145^{c}		0.173^{b}	
	(0.078)		(0.079)	
HYBRID MNE		0.268^{a}		0.328^{a}
		(0.096)		(0.099)
DOMESTIC MNE		0.136^{c}		0.037
		(0.072)		(0.082)
FOREIGN MNE		0.053		-0.013
		(0.095)		(0.093)
Determinants	***Political influence over policy-enforcers***			
	Ministries		Regulatory agencies	
	(9)	(10)	(11)	(12)
FDI	0.232^{a}		0.241^{a}	
	(0.066)		(0.071)	
HYBRID MNE		0.379^{a}		0.381^{a}
		(0.085)		(0.086)
DOMESTIC MNE		0.061		0.089
		(0.078)		(0.072)
FOREIGN MNE		0.073		0.103
		(0.086)		(0.085)

Notes: a, b, c denotes respectively significance at the 1, 5 and 10% level. Ordered probit model. Robust-cluster standard errors are in parentheses. Unreported firm-specific and country-specific variables included.

Table II.7: The political influence of foreign firms on each government branch

Moderate obstacle (4) Major obstacle". This business obstacle is general enough to encompass most of the business constraints faced by firms and it corresponds to an aspect of the business environment which is unambiguously under the control of the government (Huang, 2004). For ease of reading, the scale of the dependent variable has been reversed such as "1" corresponds to the "major obstacle" category and "4" to the "no obstacle" category.

Regressions (13) and (14) confirm that foreign and influential firms feel less constrained by their business environment than other firms.[31] The regulatory advantages of foreign firms do not seem to primarily derive from their political influence since introducing the political influence variable in regression (14) does not substantially affect neither the significance nor the magnitude of the FDI coefficient. The predicted probabilities that a firm considers that taxes and regulations are not an obstacle or only a minor one equal 27% (21%) for a foreign (domestic) firm and 34% (20%) for a fully influential (non-influential) firm. Compared to a non-influential domestic firm, this probability rises from 20% to 40% in the case of a fully-influential foreign firm. Concerning the control variables, few are significant: only cooperative and exporting firms appear to be privileged. The Brant (1990) test underscores that only the age of the firm violates the parallel line regressions. The use of a partial proportional odds model shows that the relationship between the perception of taxes and regulations as a burden and the year of establishment of a firm exhibits an inversed U-shape. However, the coefficient of AGE is always found to be non-significant, as in the parallel lines model.

These last two regressions may be suffering from a potential perception respondent bias if firms have the tendency to view all questions with the same subjective lens, leading them to give answers which are not justified from an objective standpoint (Kaufmann and Wei, 2000; Batra et al., 2002). In presence of such phenomenon, known as the "kvetch factor," coefficient estimates may be biased by measurement errors and the relationship found between the degree of political influence and the level of taxes and regulations enjoyed by a firm could even be

[31] The linktest indicates that the model is well specified.

	Taxes and regulations						*Regulations*
Determinants	(13)	(14)	(15)	(16)	(17)	(18)	(19)
FDI	0.196^a	0.185^a	0.197^a	0.200^a			
	(0.052)	(0.051)	(0.052)	(0.051)			
HYBRID MNE					0.276^a	0.248^a	.168^b
					(0.080)	(0.085)	(0.086)
H.MNE * AGE						0.001	
						(0.002)	
DOMESTIC MNE					0.031	0.029	-0.078
					(0.072)	(0.072)	(0.058)
FOREIGN MNE					0.126^b	0.183^b	0.051
					((0.056)	(0.089)	(0.067)
F. MNE * AGE						-0.003	
						(0.003)	
INF.		0.103^a	0.096^a	0.060	0.094^a	0.094^a	0.067^a
		(0.030)	(0.029)	(0.037)	(0.029)	(0.029)	(0.026)
INF. * ECA				0.106^b			
				(0.052)			
PRIV	0.080	0.097	0.108	0.109	0.109	0.106	0.102
	(0.075)	(0.073)	(0.072)	(0.071)	(0.072)	(0.073)	(0.073)
FSO	-0.076	-0.067	-0.063	-0.060	-0.064	-0.064	-0.011
	(0.125)	(0.124)	(0.124)	(0.123)	(0.124)	(0.124)	(0.112)
COOP	0.315^b	0.312^b	0.304^b	0.289^b	0.304^b	0.303^b	0.186^c
	(0.135)	(0.135)	(0.133)	(0.134)	(0.134)	(0.135)	(0.110)
MEDIUM	0.020	0.008	0.015	0.015	0.015	0.014	-0.033
	(0.040)	(0.042)	(0.041)	(0.040)	(0.041)	(0.041)	(0.039)
LARGE	0.110^c	0.082	0.076	0.081	0.071	0.071	0.001
	(0.060)	(0.064)	(0.063)	(0.063)	(0.064)	(0.064)	(0.053)
AGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
EXP	0.086^c	0.083^c	0.078	0.074	0.072	0.072	0.047
	(0.050)	(0.050)	(0.049)	(0.049)	(0.049)	(0.049)	(0.050)
KVETCH			-0.103^a	-0.103^a	-0.103^a	-0.104^a	-0.058^a
			(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
Observations	4085	4085	4085	4085	4085	4085	4031
Pseudo R^2	0.09	0.09	0.10	0.10	0.10	0.10	0.05
Prob>Chi^2	0.00	0.00	0.00	0.00	0200	0.00	00
Log Pseudolikelihood	-4574.85	-4566.30	-4543.78	-4541.60	-4542.43	-4541.84	-3394.11
Cut1	0.39	0.50	0.12	0.21	0.12	0.12	-1.74
Cut2	1.37	1.48	1.11	1.20	1.11	1.11	0.67
Cut3	2.15	2.27	1.91	2.00	1.91	1.90	2.32

Notes: a, b, c denotes respectively significance at the 1, 5 and 10% level. Robust-cluster standard errors are in parentheses. Unreported industry and country dummies are included. Sector and country dummies are jointly significant at the 1% level.

Table II.8: Fiscal and regulatory advantages granted to influential and foreign firms

spurious, if it results from their simultaneous correlation with an unobserved factor, such as a general tendency to complain (*kvetch* in Yiddish). In line with Kaufmann and Wei (2000) and Batra et al. (2002), this potential misspecification issue is addressed through the inclusion of an additional variable, which corresponds to the answers to the following question *"Please rate the overall quality and efficiency of services delivered by the following public agencies or services: The Water/Sewerage Service/Agency. (1) Very good (2) Good (3) Slightly Good (4) Slightly Bad (5) Bad (6) Very Bad"*. Provision of this public good by the government is likely to be identical for all firms and therefore firm-specific deviation from the country mean can be interpreted as an individual measure of perception bias. Interestingly, a comparison of means test of residuals values indicates that domestic and foreign firms tend to share an identical perception bias, implying that subjectivity of respondents is not a function of their nationality. Inclusion of this kvetch measure in regression (15)[32] reveals the existence of a weak but significant perception bias, which only slightly decreases the coefficient of political influence, relative to regression (14).

The impact of political influence may also diverge across regions. As argued by Hellman et al. (2003), political institutions in East Europe and Central Asia could be particularly vulnerable to corporate meddling. Indeed, regression (16) point outs that political influence of firms is much higher in East Europe and Central Asia than in other developing regions where political influence does not seem to generate any significant fiscal or regulatory benefits. However, if the impact of the political influence over each government branch is examined separately, as in table II.9, it appears that firms which are successful at influencing regulatory agencies, i.e. hybrid MNE, will be privileged worldwide: regulatory agencies are likely to be much less accountable to civil society and may enjoy greater discretion power than other government branches, especially concerning the granting of fiscal and financial incentives to investors.

So far, it has been assumed in this section that it is the political influence of firms which allows them to benefit from regulatory advantages denied to non-

[32] The kvetch variable does not need to be transformed before including it in regression (15) as country-specific fixed effects are among independent variables.

Determinants/Political influence over	*Taxes and regulations* (20)	(21)	(22)	(23)
Executive	0.089[a]	0.051		
	(0.026)	(0.035)		
Executive * ECA		0.110[b]		
		(0.046)		
Legislative			0.067[b]	0.047
			(0.028)	(0.034)
Legislative * ECA				0.057
				(0.056)
Determinants/Political influence over	*Taxes and regulations* (24)	(25)	(26)	(27)
Ministry	0.094[a]	0.056		
	(0.027)	(0.036)		
Ministry * ECA		0.099[b]		
		(0.050)		
Regulatory agency			0.107[a]	0.072[c]
			(0.026)	(0.039)
Regulatory agency * ECA				0.101[b]
				(0.052)
Observations	4085	4085	4085	4085

Notes: a, b, c denotes respectively significance at the 1, 5 and 10% level. Robust standard errors are in parentheses.Unreported firm-specific and country-specific variables included.

Table II.9: Political influence over government branches and regulatory advantages

influential firms. Conversely, it is possible that firms which face lower taxes and regulations may be more influential than other firms. They may, for instance, be able to earmark more resources for political lobbying. The issue of possible reverse causality needs therefore to be addressed. Since it is easier to test and correct for potential endogeneity bias in probit models, two dummies are created, which respectively take the value of one if the firm is at least seldom influential and if taxes or if regulations are not a major obstacle for the firm. Unreported regressions using these two new dependent variables yield results which are comparable to regressions (1) and (15): the probability that a foreign (domestic) firm is influential equals 23% (16%) and the probability that a foreign (domestic) firm faces a low regulatory burden equals 27% (21%).[33] The perception of inflation as a business constraint is used for instrumenting TAXREG; both assessments of the economic environment in which firms operate are significantly and positively correlated -the Spearman's rank correlation coefficient is 0.32, significant at the 1% level, and firms should not be able to influence to their advantage this dimension of the business climate. To test for the exogeneity of TAXREG, the Smith and Blundell (1986) test is used. Similarly to a Davidson and Mackinnon (1993) auxiliary regression test, it consists in regressing the suspected endogenous variable on a set of instruments and to include the residuals from this first-stage regression in the second-stage model. If the variable is exogenous, the residuals should have no explanatory power. The Smith and Blundell (1986) test, yields a *Chi-squared(1) test* equals to *1.04* with a *P-value* equals to *.31*, indicating that the null hypothesis that TAXREG is exogenous, cannot be rejected.[34] Hence, taxes and regulations to which firms are subject are not an indirect source of political influence.

Turning to the distinctive regulatory and fiscal regimes enjoyed by the three kinds of MNE, it appears, in regression (17), that foreign and hybrid MNE are privileged by the government while domestic MNE are not better off than purely domestic

[33] Estimations are available upon request to the authors.

[34] On the basis of a two-stages least squares estimation, diagnostic tests have been run, showing that the instrument is valid: the first-stage F-statistic (149) indicates that the instrument is relevant and statistically significant while an Anderson canonical correlations test of instrument relevance validates that the model is identified.

firms. Compared to a purely domestic firm, the probability that a firm considers that taxes and regulations are not an obstacle or only a minor one increases from 21% to 25% (29%) for a foreign (hybrid) MNE. The opposite signs for domestic and foreign/hybrid MNE dummies suggest that the preferential treatment of the latter does not result from their multinationality; including in regression (15) a dummy which takes the value of one if the firm has operations in other countries supports this hypothesis since its coefficient is small and insignificant. Hence it is likely that the exclusive business conditions enjoyed by foreign firms arise from their ability to negotiate favourable entry terms with the government, in exchange for their expected contribution to host country economic growth. Hybrid MNE may be the most privileged firm category because they are seen by the government as the most dynamic engine of growth: they can contribute to the long-term viability and expansion of the most profitable domestic firms[35] or their capability to create a domestic MNE may underline the sophistication of their technology.[36]

New frameworks of MNE-host Government Relations, such as Dunning (1998) or Luo (2001) contradict the idea of the "obsolescing bargain" put forward by Vernon (1971). They argue that it is in the interest of governments to entertain long-term cooperative relations with MNE. Such hypothesis is tested in regression (18), through the interaction of foreign and hybrid MNE dummies with the firm age. Size and significance of the interaction terms coefficients suggest that foreign firms do not lose any fiscal or regulatory advantages, in the years subsequent to their entry. This is in line with the temporal shift of MNE-government relations from conflictual towards cooperative (Luo, 2001) and with Safarian (1999)'s review of FDI policies, who concludes that "*The key to the new approach to TNCs is that policy on FDI and policy on endogenous growth have converged. TNCs are regarded as central to the*

[35] Studies have shown that performance gaps between foreign and domestic firms are mainly explained by multinationality and not foreign ownership *per se* (Bellak, 2004).

[36] It could be argued that MNE report that they feel less constrained by taxes than other firms because they can engage into transfer pricing practices, i.e. through overpricing of imports and/or under-pricing of exports between affiliates in different countries, they can transfer profits from high taxes countries to low taxes locations. However, since the three kinds of MNE have at their disposition this tax avoidance instrument, it cannot explain the differences in the coefficients of MNE.

creation and diffusion of knowledge, within and between firms, and in cooperation with Governments" (p.108).

The granting of fiscal and financial incentives to foreign investors for the purpose of attracting them is well-advertised in the literature (Oman, 2000; Charlton, 2003). However, easing the regulatory burden is another way of improving the host country competitiveness.[37] In order to test whether foreign firms enjoy regulatory concessions, in addition to any fiscal advantage, a new dependent variable is constructed: it is the residual of TAXREG on the answers to the following question "*Please judge on a four point scale how problematic are these different regulatory areas for the operation and growth of your business: high taxes (1) No obstacle 2) Minor obstacle 3) Moderate obstacle 4) Major obstacle*". The residual has been rescaled and values have been rounded, so, like TAXREG, a (1) means that regulations are a major constraint and (4) no constraint. Regression (19) indicates that only hybrid MNE are likely to enjoy regulatory concessions. For already stated reasons, their bargaining power may be high enough to bend to their advantage the regulatory framework, which may be necessary to preserve their ability to operate on a worldwide scale. Nevertheless, it can be generalised that advantages granted to foreign investors mainly take the form of fiscal incentives.

These results imply that foreign firms enjoy a better business climate than other firms because they have the capability of shaping it at two stages. First, thanks to their expected potential contribution to growth, hybrid and foreign MNE possess enough bargaining power to negotiate their entry conditions with a host country, in terms of regulatory concessions and lower taxes. Second, hybrid MNE derive from their extensive international operations enough political power to influence any new government regulation which may affect their business operations. Hence, the advantages enjoyed by foreign firms over domestic firms are a consequence of two effects: the outcome of their bargaining with the government over their entry conditions, and their subsequent political activism in the host country. This last effect is much stronger in East Europe and Central Asia, where institutions are

[37] The World Bank (2004) has shown that it is the poorest countries which regulate the most.

relatively malleable and civil society weak. Using the estimates of regression (15), one-third of the probability advantage of a fully influential foreign firm over a non influential domestic firm, in terms of facing a low regulatory burden, is explained by nationality and the remaining two-thirds by their diverging political influence. Thus, (foreign) firms which successfully influence the host country government are likely to enjoy a significant competitiveness advantage over their competitors.

5 Conclusion

On the basis of a conceptual framework, this chapter has empirically investigated whether foreign and domestic firms possess diverging levels of political influence and whether political influence leads to a better business climate than the one to which non-influential firms are subject. It is globally found that foreign and domestic firms share the same degree of political influence and that political influence provides fiscal and regulatory advantages, especially in countries of East Europe and Central Asia. In addition, it is shown that foreign firms enjoy worldwide a better business environment than all other firms. These exclusive conditions, in terms of regulatory concessions and lower taxes, may be the result of the foreign firm's bargain with the government over favourable entry conditions, in exchange for its expected contribution to host country economic growth. This preferential treatment does not appear to obsolesce over time. Thus, influential and foreign firms are likely to enjoy non-exclusive competitiveness advantages over their competitors.

This chapter has demonstrated that the endogenous policy literature has been right to assume that domestic and foreign firms share generally the same degree of political influence, though in the case of hybrid MNE, more voice appears to be given by the government to the latter. This equality of political influence increases the likelihood that foreign firms will be able to shape government policies in a form that suits their private interests. Such strategic political behaviour is not without consequences for the rest of the economy. Successful foreign lobbying for greater market access may be welfare-enhancing, whereas the foreign use of political influence for the obtention or preservation of monopoly privileges is welfare-

depressing. Hellman et al. (2002) have shown that foreign investors from OECD countries do not "import" better standards of corporate conduct and governance; they are more likely than domestic firms to engage in corrupt forms of influence in countries where bribing public officials is common and their behaviour does not appear to be affected by home country regulations to prevent bribery. Thus, it is unclear whether the political influence of foreign firms generates positive or negative externalities on the rest of the economy and although FDI is commonly attracted by well-governed countries, foreign firms do not necessarily contribute to the improvement of the host country business climate.

Chapter III

Domestic political relations : Beyond the common agency framework

1 Introduction

The broad literature on endogenous protection has extensively analyzed the effect of lobbying on trade policy. Nowadays, there are no doubts that Special Interest Groups (henceforth SIG) are active in the determination of trade policies (Goldberg and Maggi, 1999; Gawande and Bandyopadhyay, 2000).

Rodrik (1995) surveys the most prominent contributions to this literature. He distinguishes five strands of the political economy that study the political relations between officials and lobbies. First, the tariff-formation function approach, developed by Findlay and Wellisz (1982), assumes that trade policy depends on the resources devoted by lobbies in order to obtain protection. Second, the political support function approach which introduces the policy maker's tradeoff between social and private interests. Third, the median-voter approach proposed by Mayer (1984) which relies on the well-known median voter framework. Each voter has a preferred trade policy that depends on his factor ownership. Thus the voter that is pivotal determines the equilibrium trade policy. Fourth the campaign contributions approach, developed by Magee et al. (1989). Lobbies contribute to electoral campaigns to increase the probability of their favored party to win. This is different from the previous in the sense that lobbies choose their preferred parties.

The latter do not choose the pivotal voter. Finally, there is the political contributions approach, pioneered by Grossman and Helpman (1994), where lobbies compete with each other in order to influence an incumbent government.

What do we know about political influence of firms in these models? As emphasized in the general introduction, the two key dimensions are the nature of the game and the collective action. The first one corresponds to the institutional side of a model, the second dimension refers to the competition between lobbies and the way they influence the government. Rodrik (1995) argues that trade policy decisions are rarely taken by voters through a poll but by an incumbent government, thus suggesting the last approach is more appropriate to the study of endogenous trade policies. In this strand of the literature, the paper of Grossman and Helpman (1994) is acknowledged as the most accomplished and elegant model. Since it has become the standard framework in the analysis of lobbying activity.

The previous chapter presents, in an anecdotal manner, the effects of firm size on the firms' influence on governments decisions. Large firms are more influent than medium and small firms. The latter being far less influent. Moreover, it is shown that foreign MNE are more influent than pure domestic firms and that they are as influent than domestic MNE. Yet, a framework inspired from Grossman and Helpman (1994)[1] does not allow this.

In the G & H 94 framework, the government is assumed to grant a positive weight a to the social welfare, composed by the consumer surplus, the producer surplus and the gains and losses due to the trade policies implemented. The political economy framework highlights that an organised lobby's welfare enjoy a total weight of $1 + a$ in the government objective function. By definition, the welfare of a lobby that represents a foreign firm or sector is not in the social welfare. Consequently, despite this sector is organised, its influence on the government, measured by the weight granted to its welfare in the objective function, is equal to one. Hence, this framework would imply that all domestic organised sectors are more influent than the foreign ones. Moreover, if a is higher than one, even the unorganised domestic sectors are more influent than the foreign organised sectors.

[1] The abbreviation G & H (94) will sometimes be used instead of the full names and year.

More generally, Grossman and Helpman (1994) state that a political relation between local firms and the government will result in a raise of tariffs or subsidies. The government's taste for private gains opens the door to firms asking for protection. Through the payment of contributions to the government, import competed firms obtain a higher tariff. Similarly, export oriented firms pay for higher subsidies. However, if one refers to the optimal tariff theory, the government may have its own incentives for protecting sectors.[2]

The common agency framework of Grossman and Helpman (1994) involves a kind of cooperation between firms and the government as the latter sets the trade policy independently of the efficiency of the lobbies influence. For instance, despite the population is represented in the lobbies, the competition between lobbies has no effects on the equilibrium political tariff. The truthful equilibrium developed by Bernheim and Whinston (1986b) explains this mechanism: The government acts as an auctioneer to sale protection. This menu auction induces lobbies to design a contribution schedule that reflects truthfully the effect of the trade policy on their welfare which is mainly driven by imports competition. That is, lobbies maximise their net welfare with respect to the trade policy and this yields the shape of the contribution schedule. The equilibrium trade policy is obtained through the maximisation of the joint welfare of the lobbies and the government. In this model, lobbies correspond then to multiple principals and the government to the agent of a common agency type framework. However, since information is symmetric and since there are no cooperations between principals, the use of a common agency framework may be questioned as it usually involves at least one of these features.

Therefore, the equilibrium that prevails in a common agency framework without asymmetry of information and cooperative behaviours between principals is the equilibrium that prevails in a standard sub-games perfect Nash equilibrium. Yet, the equilibrium policy with influence in G & H 94 is neither influenced by competition between SIG nor by the maximisation program of the government. In a sub-games perfect Nash equilibrium, these two effects are present when there is no

[2] In influencing the terms of trade towards other countries, a government may generate a higher welfare in spite of the cost of the tariff (the distortions it implies).

cooperation between the government and the lobbies. In G & H 94, since lobbies and government have the same strategic variable (the tariff) and since the government is the actor that chooses the trade policy, cooperation with the agent is necessary. This cooperation concretises in the equilibrium where the welfare of the lobbies and of government are jointly maximised with respect to the tariff. As Goldberg and Maggi (1999) explained, the "menu auction" set-up of Grossman and Helpman (1994) indeed yields the same equilibrium output than a Nash bargaining game.

However, there are no reasons to believe the firms cooperate with the government since the latter does not have a private information. In such a case, it is questionable whether the common agency framework is appropriate. In other words, firms have probably the possibility to obtain more than its truthful issue. This would imply that firms have a real first player advantage in influencing the equilibrium output. This advantage is based on the assumption that firms dispose of an strategic variable that allows them to determine the choice of the government.

The variable proposed in this chapter is assumed to be the contribution schedule. The lobbies' welfare maximisation yields an optimal contribution schedule that is taken into account by the government when setting the trade policy. Two alternative solutions are proposed. First, the offer of the lobbies is assumed to influence the contribution they will pay only through the effect the offer has on the government policy choice; the influence is then indirect. In that case, the result of G & H 94 is obtained. Second, the offer is assumed to influence indirectly *and* directly the contribution the lobbies will pay. In that case, the equilibrium policy also depends on the government's objective function. Therefore, giving to the lobbies' offer a strategic effect, the direct effect on the contribution, allows them to take into account the objective function of the government when designing the contribution schedule. This schedule can then be strategically designed to take advantage of the behaviour of the government.

The major contributions of this chapter are threefold. First, a new way to model the game between firms[3] and a government is proposed. This offers the possibility

[3] The words firm and lobby will be use interchangeably. Indeed, the share of the population the lobbies represent is assumed to be negligible.

to obtain an "independently" designed contribution schedule, which impacts the lobbies' power over the decision of the government. The resulting equilibrium trade policy depends on the sensitivities of the lobbies *and* of the government to trade policy. Second, by allowing firms to take a strong advantage over the government, this model counter intuitively induces influent lobbies to moderate their offer. This result contrasts sharply with the previous results in this literature and is consistent with the idea that a same trade policy can be derived from firm influence or from the sensitivity of the government to firms profits. Third, the chapter provides an interesting result in the sense that without a common agency framework, the equilibrium trade policy of Grossman and Helpman is obtained.

These results have some implications on the understanding of endogenous trade policies formation. The first main result can explain why foreign firms are more influent than purely domestic ones. If a foreign firm has a large effect on the social welfare, as it would be case if it threatens the government to relocate in another country, then it would have a strong influence.

The second main result provides an possible theoretical explanation for the observation that influential sectors do not have the same strategy to influence a government, as this is the case for the textile, steel and pharmaceutical sectors evoked in the general introduction. Indeed, since the WTO as been incepted, the Dispute Settlement Body (henceforth DSB) has often been solicited. The DSB has the difficult tasks to identify whether there has been a protectionist decision and to decide whether this decision enters in a safety clause or not. Indeed, many countries attacked for high tariffs, refer to the difficulties met by a sector to justify their actions. However, as the decisions taken by the DSB or the Appellate Body (henceforth AB) attest sometimes the main motivation to deviate from their commitment towards the WTO, is unfair protectionism.[4] The main problem is that appearances can be the same in the case of violation of tariff ceilings or in the case of a justified safety clause. The observed tariffs are the consequence of the trade policy choices of governments. When governments decide to protect a sector, it

[4] Wilson (2007) highlights that in about 90 percent of reports, at least one violation of the WTO rules have been found.

is difficult to know from where their incitation comes. Quoting Jackson (1989), Staiger (1995) puts emphasis on the difficulty to assess with certitude that an action is reprehensible :

> "Nullification or impairment has been interpreted to include actions taken by one country "... which harmed the trade of another, and which 'could not reasonably have been anticipated' by the other at the time it negotiated for a concession"[Jackson (1989, p. 95)]" Staiger (1995)[p. 1500].

The understanding of the terms "reasonably... anticipated" is obviously not straightforward. More recently, Horn and Weiler (2004) show explicitly the complexity of the determination of the causes and the consequences to any deviation. Competition from imports has of course something to do with a protectionist trade policy. As argued by Rodrik (1995), trade policy is an appealing tool as it allows to generate large rents for pressure groups while inducing small losses for the unorganized majority. The dilution of the losses in a large number being the explanation. Consequently, the discretion of such redistribution policy suggests that many SIG attempt to organise to generate rents through this way, not only those facing tough import competition.

From a more descriptive point of view, this chapter also provides some results about the homogenous good case. It highlights some direct implications of the competition between lobbies on the equilibrium trade policy since we obtain some contribution schedules reaction functions for all lobbies. This contrasts with the result of Grossman and Helpman (1994) which does not link the competition between lobbies to the equilibrium outcome. This last result combined with a simple two country one good framework allows the derivation of an interesting feature on the easiness to reach an international trade agreement. It appears that surprisingly, some particular types of countries may reach an agreement more easily when they are both subject to influence rather than none of them.

The remaining of the chapter is organized as follows. Section 2 develops the general framework. Section 3 exposes the functioning of the policy choices. Section 4 develops the formation of the contribution schedule in the case of differentiated

good. Section 5 presents the special case of the homogenous good. Section 6 presents the simple international trade agreement model. The last section concludes.

2 General framework

As stated in the introduction, the lobby is particular in this chapter compared to the specification of Grossman and Helpman (1994) and of the first chapter. As in Ornelas (2005), lobbies are assumed to represent a negligible share of the population. Hence lobbies are only composed by firms. Therefore, there are no strategic interactions between lobbies through the consumer surplus of the lobby members. This implies that an action of a lobby does not directly diminish the welfare of the other lobbies.[5] It would have been possible to model Special Interest Groups as this has been done in the first chapter. They could have then represent alternatively firms or consumers lobbies for instance. However, in the first chapter the full ownership structure is not derived for tractability purposes. In the present chapter, a full specification of the lobbies is needed. Nevertheless, the very general approach adopted here will allow to discuss this point in the ante penultimate section of this chapter.

2.1 Basic framework

In order to highlight the general properties of the model developed, we conduct our analysis in both perfect and oligopolistic competition frameworks. Depending on the studied subject, it is more useful to adopt price competition as in Bagwell and Staiger (1999), where they study competition between countries at the GATT tariffs negotiations, or quantity competition as in Ornelas (2005) who studies the strategic implementation of Free Trade Areas (Henceforth FTA).

Two noticeable reasons are proposed by Ornelas (2005) to justify the choice of oligopolistic over perfect competition. First, oligopolistic competition is consistent with recent empirical evidence, as shown in Chang and Winters (2002). Indeed, even small trading blocks are able to influence the terms of trade. This is not conceivable in a perfect competition framework. Second, oligopolistic competition

[5] Exception made of the case of a homogenous good.

implies independent decisions regarding the trade policy choices through market segmentation and a constant marginal cost. This setting has also been chosen for its simplicity and will essentially serve to illustrate the effects of the model in two examples developed in sections 5 and 6. The other sections present results for oligopolistic and perfect competitions. However, we want to point out that the general approach used to highlight the nature of the game could be easily applied to other frameworks. The next subsections present the main hypotheses of the model.

Demand

The utility function is given by the utility of consumption of each good i plus a numeraire good, namely good 0 which world and domestic prices are equal to 1.

$$U = x_0 + \sum_{i=1}^{N} u_i(q_i) \tag{III.1}$$

The sub-utility functions are differentiable, increasing and strictly concave. If the good is homogenous, then equation (III.2) becomes a very simple expression. All consumers have a demand of good i that is equal to $q_i = d_i(p_i)$ where p_i is the local price of good i and $d_i(p_i)$ is the inverse of $u_i^{'}(q_i)$.[6] The profit function is π_i. We consider that there are N firms on the market. The demand function is $Q(1,..,i) = \sum_{i=1}^{N} q_i + \sum_{i=1}^{N} M_i$. M_i represents the consumption of imports of the same good. The aggregate supply of labor is assumed to be large enough to ensure a positive supply of good 0, produced under constant returns to scale. A unit of labor allows to produce one unit of good 0. Therefore, in a competitive equilibrium, the wage rate is equal to 1. Each other good requires labor and a sector-specific input. These goods also exhibits constant returns to scale and the sector-specific factors are available in inelastic supply.

Social Welfare

The social welfare is given by

$$W = (U - \sum_{i=1}^{N} p_i d(p_i)) + \lambda \sum_{i=1}^{N} \pi_i + \sum_{i=1}^{N} \tau_i (d(p_i) - y_i) \tag{III.2}$$

[6] This specification is for perfect competition. The quantity competition implies that the price is the inverse of the demand function, which is equal to $u_i^{'}(q_i)$.

where $y_i = \pi'(p_i)$ is the output of good i and coefficient λ is the same parameter as in Bagwell and Staiger (1999). It can be interpreted as the political orientation of the government. The business oriented is the government, the more importance is granted to the producer surplus. It is often supposed that some political parties have stronger connections to the business world than others. If connections are strong, two alternative outcomes are conceivable. On the one hand, since the government is already supporting the firms' interests, the latter needs less influence through lobbying. This should reduce the contribution schedules. On the other hand, since the government gives more voice to firms, they may attempt to achieve larger influence. The parameter λ is aimed to answer this question. That is, the fact that a government is business oriented may favour lobbying activity or, to the contrary, impede it. The last term of the Right Hand Side (RHS) has to be read as a function. τ_i denotes a trade policy that depends on the difference between the domestic demand and output. In general, the last term represents the trade revenues (or spending), denoted TR_i.

The additive form of the government's objective function is standard in the literature (See for instance Grossman and Helpman (1994); Dixit et al. (1997); Ornelas (2005)). τ_i denotes the rate the government gains or pays for setting the policy p_i. The components of this function (the consumer surplus, the domestic firms profits and the potential revenues from the trade policy) are then similar to those of chapter 1.

Contribution

The definition of the contribution differs from those previously used in the literature. In this chapter, the contribution is defined as the primitive of the contribution schedule. This is a consequence of the order of play. First, firms design the contribution schedule (the derivative of the contribution). Second, the government takes this schedule into account and chooses its trade policy. The contribution represents what is effectively paid, whereas the contribution schedule represents the rule that allows the government to determine what it will get depending on the chosen trade policy. Therefore, the contribution schedule is the rule that defines how the contribution evolves with respect to the trade policy.

The contribution schedule is denoted c_{i,τ_i}. C_i is a function of τ_i. To sum up, we have the following definition

$$C_i'(\tau_i) \equiv c_{i,\tau} \tag{III.3}$$

Since the contribution is the primitive of the contribution schedule, the former may take an infinity of forms. The constant added in the primitive can take an infinity of values. Indeed, the contribution is the sum of a constant and a function of the trade policy vector. We aim to study ways through which the second component may be affected by the competition between firms. In G & H 94, the competition between lobbies is active in the determination of the value of the constant. This value gives the surplus each lobby can achieve through the political relations with the government. The competition between lobbies is also present indirectly through the consumers' surplus. Since each lobby pays for a trade policy vector, they all ask for a protection of the sector that uses the specific factor they own and a decrease in the protection of all other goods. They only consume these goods, they are then interested in buying these goods at the lowest possible price. However, as emphasised in chapter 1, we believe that the competition between lobbies can affect the equilibrium policy directly.

Since there is no consumer surplus in the lobbies' welfare, competition between lobbies will occur through the competition on the market. The utility function has an additive form, then the only way to observe competition between lobbies is in the case of a homogeneous good. We are then interested in the difference between a situation where the N firms produce a same homogenous good and the situation where each firm produces a different good. Indeed, we expect the former to yield some interesting insights on the effects of competition between lobbies on the equilibrium trade policy vector. This new game between firms and the government has this interesting feature to not allow firms to influence each others through the consumer surplus of the lobbyists. Due to the focus of this chapter on the effect of competition between lobbyists, other channels through which firms are linked have

been removed.

Government

The government has a linear objective function given by

$$G = W + \alpha \sum_{i=1}^{N} C^i(\tau) \tag{III.4}$$

where W represents aggregate, gross-of-contribution welfare. As in chapter 1, W is the social welfare. C_i represents the contribution paid by firm i to obtain the most favorable policy. C_i depends on τ_i, the policy chosen by the government. The parameter α represents the relative weight of the contribution in the welfare. It reflects the efficiency of the lobbies or, alternatively, the interest of the government to generate private revenues. This parameter can be compared to the coefficient a in G & H (94).[7]

This model comports three stages. First, firms design the contribution schedule. Second, the government chooses the trade policy. Finally, firms compete either by quantities or by prices. In the remaining of this section, we focus on the first two stages of the game where the precise definition of the nature of the trade policy is not relevant. Therefore, we postpone the precise definition of τ_i to the next section that develops the third stage. Here, it is simply assumed to represent a direct or an indirect trade policy choice. The trade policy has a negative effect on the consumer surplus, a positive effect on the profit of the firm and may be, according to the nature of the policy, costly or beneficial to the government.

In order to design the optimal contribution schedule, firms take into account the government's reaction to their choices. The model is then solved by backward induction, starting with the government's maximisation of the welfare function with respect to the trade policy. The optimal policy τ_i^* is such that

$$\nabla W(\tau_i^*) + \alpha \sum_{i=1}^{N} \nabla C_i(\tau_i^*) = 0 \tag{III.5}$$

[7] In their article, just as the ϕ in chapter 1, a is the relative weight of the social surplus. Here for analytical purpose, it is assumed that it is the relative weight of the private revenues. Hence $a = 1/\alpha$.

This last equation indicates how the government sets its policy and how this optimal policy is affected by the form of the contribution schedule.

Then firms take this reaction function into account when maximising their profit with respect to the contribution schedule. This yields an optimal contribution schedule.

Formally, the optimal trade policy is :

$$\tau_i^* = f(\sum_{i=1}^{N} c_{i,\tau}) \tag{III.6}$$

This function has no particular specification.

To go further in the interpretation of this framework we need to specify the nature of the trade policy and the lobbyists' objective. In price competition, the government policy choice is a local price. The *ad valorem* tax is defined as $\rho_i \equiv \frac{(p_i - p^w)}{p^w}$, where p_i is the local price and p^w is the world price.[8] The trade policy is then the domestic price and the lobbyists' objective is the *ad valorem* tariff.[9]

An equivalence of this expression in quantity competition is proposed. Similarly to perfect competition that implies firms to be threaten by foreign firms' prices, quantity competition involves firms threaten by quantities produced by foreign firms. Therefore, the *ad valorem* trade policy should express a penetration rate. Accordingly, the *ad valorem* trade policy is then defined as $\tau_i \equiv \frac{(M_i^w - M_i)}{M^w}$, where M_i is the local consumption of the importations of good i, and M_i^w represents the total production of the rest of the world of good i devoted to the home market.[10]

In price competition, equation III.5 takes the following form:

$$\nabla W(p_i^*) + \alpha \sum_{i=1}^{N} \nabla C_i(p_i^*) = 0 \tag{III.7}$$

[8] Since we focus on one sector, we use p^w rather than p_i^w to ease the reading.

[9] It is not necessary to distinguish between the origin of the good i since the model is implicitly implying two countries, a local one and the rest of the world. There are no considerations for foreign prices as this is the case in Bagwell and Staiger (1999) who derive a multi-country framework with differentiated trade policies according to the trading partner, thus inducing another terms of trade effect through foreign prices.

[10] The same discussion applies here with quantities produced by the rest of the world instead of prices. Similarly, the framework of this chapter prevents from distinguishing quantities with respect to their origin.

Where p_i^* is the optimal local price. Using the expression of the *ad valorem* tariff in a price competition allows to find $\rho_i^* = f(c_{i,\tau_i}, p_i^*)$.

In quantity competition, the government maximises its welfare function to find an optimal tax τ_i^* such that equation III.5 becomes

$$\nabla W(\tau_i^*) + \alpha \sum_{i=1}^{N} \nabla C_i(\tau_i^*) = 0 \tag{III.8}$$

Using the expression of the local consumption of importations allows to find $M^* = g(c_{i,\tau}, \tau_i^*)$.

Therefore, the government chooses either a price p_i or a tariff τ_i that will determine the protection rate of a sector. ρ_i^* and M_i^* are defined as the sector's protection rate and represent the objective of firms in price competition and quantity competition, respectively. Since there is only one instrument available to the government, these are linear in this framework.

It is straightforward that one could assume that the government uses simultaneously several trade policy instruments. Therefore implying a (possibly complex) trade off for the government when choosing what combination of instruments to use to protect a sector. The lobbies' objective would then be influenced simultaneously by all these instruments. In this case, a linear relationship between the protection rate and the trade policy cannot be guaranteed anymore.

Since the relationship between lobbies' objective and the instrument is linear, we could just assume that the level of the trade policy is the lobbies' objective, that is the protection rate. However, as addressed by Rodrik (1995), the question of the limitation to one trade policy (non) choice is non negligible. Therefore, we maintained in the present chapter this formalisation in order to highlight what could be obtained if other instruments were available to the government. Moreover, the general approach of the model will allow to discuss when necessary the implications on a multi instruments framework set-up.

2.2 Political framework

Firms know that the government's choice of the trade policy depends on their proposed contribution schedule. Their objective is to exert the most efficient influence through lobbying activity in order to obtain the highest protection rate. Through the use of the strategic contribution schedule, firms are able to modify entirely the objective function of the government. Contrary to G & H 94, the contribution of lobbies will not only increase the weight granted to the profit of the organised sectors.

In the first stage, firms maximise the following welfare function

$$W_i^c = \pi_i - C_i \tag{III.9}$$

where C_i is the contribution they expect to pay. A firm maximises its profit with respect to the contribution schedule such that:

$$\nabla\pi(c_\tau^{i,*}) - \nabla C_i(c_\tau^{i,*}) = 0 \tag{III.10}$$

The contribution schedule is shaped to optimally respond to the trade policy choice of the government. This is one crucial difference compared to the G & H (94) model where the optimal contribution schedule only reflects optimally the effect of the trade policy on the lobbies' welfare. Indeed, their model yields a government's objective function, that characterises in turn the equilibrium trade policy, where the weight of the welfare is $1 + a$, or $1 + \phi$ as in the first chapter.

In other words, the framework of G & H 94 is not strongly based on the contribution schedule but rather to the contribution in itself. Indeed, the contribution that is truthful everywhere allows to determine how the surplus generated by the political relation between firms and the government is shared. The fact the contribution schedule is truthful everywhere can be simplified as in Bagwell and Staiger (1999). That is, by adding a coefficient that increases the relative importance of the producer surplus compared to the other components of the social welfare.

Two key dimensions have to be discussed in order to underline this difference.

The first one is the nature of the contribution schedule. The second one is the game in itself. As for the first one, the main question is whether this contribution schedule depends on the trade policy or not. If the contribution schedule depends on the trade policy, this would imply that the contribution is more complex than a linear function of the trade policy. Since the government has the power to set the trade policy, firms cannot manipulate the trade policy itself. So the contribution schedule cannot depend on it. Moreover, one may arguably question the ability of lobbies to design complex contribution schedules in reality. Kirchsteiger and Prat (2001) ran an experiment to compare the use of the contribution schedule in a Bernheim and Whinston (1986b) fashion and the use of what they have labeled a natural contribution. The latter consisting in simply devoting one's entire financial power to the preferred solution and 0 to all other possibilities. They show that in many cases, people choose the natural equilibrium. Lobbies are better organised than individuals and probably can design slightly more complex offers but probably not much more complicated than linear ones.

In addition, and this is connected to the second dimension, this game is particular in the sense that lobbies are designing the shape that helps to determine the contribution the government receives. Therefore, there are no reasons to think the political influence is achieved through a pecuniary transfer. Conceivably, the political influence could be the result of a networking activity.[11] For instance, in France, the latter is predominant since direct contributions from firms to political parties are forbidden. The networks of the *grandes écoles* such as Polytechnique, the Ecole Nationale de l'Administration (ENA) or HEC (among others) provide the major political leaders and CEOs. These networks are the most efficient mean of influence in France. Is it then possible to design a rule that precisely depends on the trade policy? Probably not, but a lobby can evaluate its own importance for the local economy. This will provide the lobby with a strong argument to induce the government to be sensitive to its preferences. Moreover, this refers to two standard hypotheses mentioned in chapter 2. Governments may give more voice to firms that

[11] Hence the contribution in the government's objective would be the value it grants to the action to serve private interests.

contribute strongly to growth or that may seriously hurt the social welfare (through the threat of relocate for instance).

As for the nature of the game, since firms first choose the contribution schedule and then the government chooses the level of trade policy, the contribution schedule cannot depend on the trade policy. Indeed, the model is solved in backward induction. Therefore, the government stage yields an optimal tariff that is reintroduced in the welfare of the firms. Consequently, the optimal contribution schedule obtained after the first stage cannot depend on the trade policy. This aspect is discussed in section 4.3. This is resumed in the following lemma.

Lemma 3. *The contribution schedule is a constant with respect to trade policy. This induces the contribution to be a linear function of the trade policy.*

3 Policy choices

We now characterise precisely the effect the trade policy on the welfare function. As it will further be shown, these effects have a crucial role in the determination of the equilibrium trade policy. The main contribution of this new game is to show how firms internalise the effect of the trade policy on social welfare when they design the contribution schedule.

Let us denote the derivative of imports demand relative to the trade policy m_i'. In price competition, the effect of a marginal policy change on the social welfare is given by

$$\frac{\partial W}{\partial p_i} = y_i(p_i)(\lambda - 1) + (p_i - p_i^w)m_i' \tag{III.11}$$

Where y_i is the output of the economy in sector i. The first term of the right hand side (RHS) captures the marginal effect of the trade policy on the consumer and producer surpluses.

Since the welfare of a lobby is restrained to the profit of the firm, a marginal change of the policy in sector i has no effect on the welfare of the other lobbies.

This particular model structure induces the weight of the profit to determine the effect. Since consumers are not represented by lobbies and since all firms are assumed to influence the government ($I_i = 1$ and $\alpha_L = 0$ in the proposition 2 in G & H 94), the two effects would cancel each other if λ was equal to one. Generally, this weight is assumed to be greater than one, as in Bagwell and Staiger (1999, 2001) for instance. Consequently, the main force that retains the government to set a positive tariff comes from the elasticity of imports to the local prices. This highlights the terms of trade effect that clearly induces the government to set a positive tariff, if sufficiently large. Indeed, a large country would transfer a part of its policy towards the rest of the world through world price. Thus reducing the negative effect of the second term of the RHS.

This effect is driven by price competition. In a competition *à la* Cournot, this effects does not old anymore. In return for this, it allows to consider some strategic interactions that will prove to be interesting in the analysis of the lobbying activity.

For oligopolistic competition, the effect of a marginal policy change on the social welfare is then given by :

$$\frac{\partial W}{\partial \tau_i} = m_i + \frac{\partial p_i}{\partial \tau_i}(1 - p_i) + \frac{\partial d(\tau_i)}{\partial \tau_i} + \lambda \frac{\partial \pi_i}{\partial \tau_i} + \tau_i m' i \tag{III.12}$$

Whatever the form of the competition, the marginal effect of a marginal change on the contributions received by the government is given by

$$\frac{\partial \alpha \sum_{i=1}^{N} C_i}{\partial \tau_i} = \alpha c_{i,\tau_i} \tag{III.13}$$

τ_i being a non specified trade policy vector. The effect is increased by the weight of private gains relative to the social welfare, which corresponds to the lobbying efficiency. The optimal policies set by the government comes directly from the equations above and is equal to

$$(p_i^* - p_i^w) = -\frac{y_i(p_i)(\lambda - 1) + \alpha c_{p_i}}{m_i'} \tag{III.14}$$

for price competition and

$$\tau_i^* = -\frac{-d(\tau_i^*)\frac{\partial p_i}{\partial \tau_i^*} - y_i + d(\tau_i^*) + \lambda\frac{\partial \pi_i(\tau_i^*)}{\partial \tau_i^*} + \alpha c_{\tau_i^*}}{m_i'} \tag{III.15}$$

for quantity competition.

Since m_i' is negative, both equation depends positively on the contribution schedule.[12] In the G & H 94 model, free trade is obtained when either $I_i = \alpha_L = 1$ or $I_i = \alpha_L = 0$. Therefore, if the sector is organised and the share of the population represented by this sector is 1, then free-trade is implemented. Similarly, if the sector is unorganised and represents no consumer, free-trade prevails in that sector. In the set-up of this chapter, α_L is equal to 0 and $I_i = 1$ for all sectors. The coefficient λ as a role similar to the share of the population represented by a sector. When the government grants the same weight to consumer and producer surpluses, free trade prevails whenever all sectors are organised and represent a negligible share of the population. If the weight of the producer surplus is higher, then free trade is impossible to implement.[13]

To highlight this, let consider the example of a truthful equilibrium. This would imply that $c_{p_i} = \partial \pi_i / \partial p_i$. Therefore, the equation becomes :

$$(p_i^* - p_i^w) = -\frac{y_i(p_i)(\lambda - 1 + \alpha)}{m_i'} \tag{III.16}$$

The condition to obtain free-trade is now $\lambda + \alpha = 1$. That is, if α is equal to one, free trade is possible when the government is totally not interested in profits. If $\alpha > 0$, there are several situations allowing free-trade. Despite the assumptions that the population share represented by lobbies is negligible and that all sectors are organised, free-trade may prevail without assuming that α_i is nil. On the contrary, given these assumptions, the G & H 94 framework would necessitate to set $a \to \infty$ in order to obtain free trade. Moreover, when comparing to the Bagwell and Staiger

[12] This would be reversed in the case of a subsidy.

[13] For convenience, we write λ and α instead of λ_i and α_i. However, this discussion holds even when each lobby has its own influence and that the government grants a differentiated weight for each sector.

(1999)'s framework, including an explicit political economy framework allows to consider values of λ inferior to 1, if α is superior to 0. This introduces then a refinement of the interpretation of their model.

In order to go further in this comparison, we need to present the equilibrium trade policies once the contribution schedules have been designed.

4 Design of the contribution schedule

The strategy adopted in this section is to expose separately both frameworks to ease the reading. In addition, the insights of both games, be they similar, have different implications whether firms compete through prices or quantities. At the end of the next subsection, we will discuss two alternative approaches that will prove to be fundamental in what distinguishes our framework from the G & H (94)'s one.

4.1 Price competition

In the perfect competition framework, the objective of the firm is an *ad valorem* tariff.

$$\tau_i^* = -\frac{y_i(p_i)(\lambda - 1) + \alpha c_{p_i}}{p^w m_i'} \tag{III.17}$$

The firm maximises its profit with respect to the contribution schedule as depicted in section 2.2. The profit and the contribution are expressed as functions of the firm's objective. This is the core of the game proposed in this chapter. The fact that the contribution schedule is the partial of the contribution is then used to make appear the contribution schedule in the optimisation program of the firm.

$$\frac{\partial \pi_i^c}{\partial c_{p_i}} = \frac{\partial \pi_i(t_i^*(c_{p_i}))}{\partial c_{p_i}} - \frac{\partial C_i(p_i^*)}{\partial c_{p_i}} \tag{III.18}$$

We can use the particularity of our contribution schedule to solve this program :[14]

$$\begin{aligned} \frac{\partial C_i(p_i^*)}{\partial c_{p_i}} &= \frac{\partial C_i(p_i^*)}{\partial p_i^*}\frac{\partial p_i^*}{\partial c_{p_i}} \\ &\Leftrightarrow \\ \frac{\partial C_i(t_i^*)}{\partial c_{p_i}} &= c_{p_i}\frac{\partial p_i^*}{\partial c_{p_i}} \end{aligned} \tag{III.19}$$

Then the following result for the optimal contribution schedule is obtained :

$$c_{p_i}^* = \frac{\partial \pi_i(\tau_i^*)}{\partial \tau_i^*}\frac{\partial \tau_i^*}{\partial c_{p_i}}\frac{1}{\partial p_i^*/\partial c_{p_i^*}} \tag{III.20}$$

Proposition 6. *The optimal contribution set by a firm in order to influence the government in price competition is :*

$$c_{p_i}^* = \frac{\partial \pi_i(\tau_i^*)}{\partial \tau_i^*}\frac{1}{p^w} \tag{III.21}$$

As expected, the contribution schedule depends on the reaction of the profit to the *ad valorem* tariff. It is decreasing in the world price. Therefore, the result is quite similar to the result of Grossman and Helpman (1994). Indeed, the contribution schedule is shaped to represent the "true preference" of the firm. Considering that $\tau_i^* = \frac{p_i^* - p_i^w}{p^w}$, it is straightforward that $\frac{\partial \tau_i^*}{\partial p_i^*} = \frac{1}{p^w}$. Then the contribution schedule is equal to :[15]

$$c_{p_i}^* = \frac{\partial \pi_i(\tau_i^*)}{\partial p_i^*} \tag{III.22}$$

Therefore, the contribution schedule designed by the firm is truthful as defined in the lemma 2 in Bernheim and Whinston (1986b) or in the proposition 1 in Grossman and Helpman (1994). It truly reflects the preferences of a firm. This result is

[14] The subsection 4.3 discusses this particular point.

[15] Here, this last derivative is constant because of the uniqueness of the trade policy instrument. Adding other ones would yield different results. Since all instruments would influence the objective set by firms as explained in section 2.2.

obtained without assuming that the game between firms and the government is a common agency framework. However, another assumption is needed to reach this result.

Proposition 7. *When the contribution schedule does not affect directly the contribution, the optimal trade policy yielded in this chapter, (τ^*_{Ch3}), is equal to the one of Grossman and Helpman (τ^*_{GH}).*[16]

Despite this model is not based on a common agency framework and despite the linearity of the contribution, the result is the same. Hence, this provides a support to the questioning of Dixit and Romer (2006) and confirms an expected result. If the information is symmetrical, then the principals are able to offer the best contract to the agent. However, this also sheds light on the question of the modeling as mentioned in the previous subsection. All in all, we know that it is not necessary to use a common agency framework in this type of game and that considering the propriety of the contribution schedule as given or not has strong implications on the results. That is, assuming the contribution is linear or to find it is linear change the result.

Although deriving the contribution with respect to its own non constant derivative represents a mathematical deadlock, the question merits to be addressed. Is it conceivable that the contribution is not affected directly by the contribution schedule? This chapter does not to provide an answer to the mathematical deadlock but to this last question. Therefore, as this will be addressed in section 4.3, this necessitates to assume that the contribution schedule does not depend on the trade policy.

4.2 Cournot competition

We now quickly turn to quantity competition. Intuitively the mechanisms and therefore the results are unchanged in a Cournot fashion competition. Indeed, the contribution schedule designed follows the same rule. However, this setting will allow to derive the model in the case of a homogenous good.

[16] See proof in appendix.

Here, the firms' objective is a penetration rate. The objective of the lobbies is the unique difference compared to perfect competition, since the model presented here do not develop the third stage involving competition between firms. The objective is the following :

$$m_i^* = \frac{[m_i' - d(\tau_i^*)\frac{\partial p_i}{\partial \tau_i^*} - y_i + d(\tau_i^*) + \lambda \frac{\partial \pi_i(\tau_i^*)}{\partial \tau_i^*} + \alpha c_{\tau_i^*}]m^w}{m_i'} \tag{III.23}$$

Then the firm maximizes its profit with respect to the contribution schedule as depicted in the previous subsection. The profit and the contribution are expressed as functions of the objective chosen by the firm

$$\frac{\partial \pi_i^c}{\partial c_{m_i}} = \frac{\partial \pi_i(m_i^*(c_{m_i}))}{\partial c_{m_i}} - \frac{\partial C_i(m_i^*)}{\partial c_{m_i}} \tag{III.24}$$

We proceed as we did previously and use the particularity of the contribution schedule to solve this program

$$\begin{aligned} \frac{\partial C_i(m_i^*)}{\partial c_{m_i}} &= \frac{\partial C_i(m_i^*)}{\partial m_i^*}\frac{\partial m_i^*}{\partial c_{m_i}} \\ &\Leftrightarrow \\ \frac{\partial C_i(m_i^*)}{\partial c_{m_i}} &= c_{m_i}\frac{\partial m_i^*}{\partial c_{m_i}} \end{aligned} \tag{III.25}$$

Then we have the following result for the optimal contribution schedule

$$c_{m_i}^* = \frac{\partial \pi_i(m_i^*)}{\partial m_i^*}\frac{\partial m_i^*}{\partial c_{m_i}}\frac{1}{\partial m_i^*/\partial c_{m_i}} \tag{III.26}$$

Consequently, the result is identical except that the nature of the trade policy (tariff or local price) and the subsequent objective are different. The following proposition is then derived:

Proposition 8. *The optimal contribution set by a firm in order to influence the*

government in quantity competition is

$$c^*_{m_i} = -\frac{\partial \pi_i}{\partial m^*_i} m^w \tag{III.27}$$

As for price competition, we find that the contribution schedule is truthful. The truthful equilibrium can be defined by considering that the contribution schedule have to maximise the profit function of the firm. Indeed, in this model, the contribution schedule is the variable with respect to which the profit is maximised instead of the trade policy. Then from the propositions 6 and 9, the following corollary is straightforward :

Corollary 3. *Whatever the form of the competition and whenever a common agency framework is not used, the contribution schedule designed by a firm is truthful when it is assumed to only influence indirectly the contribution level.*

Contrary to this statement, the contribution schedule is never truthful when one considers that the contribution schedule influences directly the contribution of the firm. That is, the contribution is a linear function of the trade policy. This is the object of the next subsection.

4.3 On the influence of the contribution schedule

From equation 3 we know the contribution schedule does not depend on the trade policy. The equation in this section justifies this result. Indeed, the implicit idea in this chapter is to derive the contribution with respect to its own derivative. This is of course not feasible directly. However, when firms are making their offer to the government, they arguably are conscious that this offer will affect their contribution. Therefore, this suggests that the contribution schedule should have an effect on the contribution. The framework on which this chapter refers to is also about this concept. How a trade policy is influenced by firms' contributions given that the latter depends on the former?

Two considerations are then conceivable. First, the simple idea that in order to have such effect the derivative can not depend on the variable with respect to which

its primitive is derived, in other words the trade policy here. Hence assuming that we can do this derivation is equivalent to assume that the contribution is a linear function of the trade policy. The fact the contribution is linear being then not a logical result but an assumption. Second, similarly to the previous subsections, one could assume that through the transformation into the trade policy, we capture the unique and indirect effect of the contribution schedule on its primitive as it plays only through the trade policy. That is, the contribution schedule influence passes through its effect on the trade policy. The latter then operates a transformation of the contribution schedule. It would not then depend on the trade policy anymore.

This second solution has been preferred in the previous two subsections since this solution allows to find the result of Grossman and Helpman. However, the other solution, that is assuming the contribution schedule does not depend on the trade policy, may yield strong insights mostly through the comparison of both outcomes. Formally, if this is so, the derivative of the contribution with respect to the contribution schedule is a bit more complex. Indeed, it is equivalent to consider the contribution schedule as a variable with no particular attributions compared to others.

Moreover, we believe this is the right mean for allowing lobbies to take account of their contribution to the social welfare. Indeed, this standard method allows lobbies to totally encompass the reaction of the government with respect to the trade policy.

Since the contribution is assumed to be both a linear function of the trade policy and the primitive of the contribution schedule, we may write the contribution $C_i = c_{\tau_i}\tau_i + B^o$. The derivation of this expression with respect to c_{τ_i}, considering that the trade policy is a function of c_{τ_i}, yields :

$$\frac{\partial C_i}{\partial c_i} = c_i \frac{\partial \tau_i}{\partial c_i} + \tau_i(c_i)$$

We then derive the following proposition :

Proposition 9. *If the contribution is assumed to be a linear function of the tariff. Then the equilibrium contribution schedule is*

$$c_i^* = \frac{\partial \pi_i}{\partial \tau_i}\left(\frac{e_{\tau_i}}{e_{\tau_i}+1}\right)$$

Where $e_{\tau_i} = \tau_i'(c_i^*)c_i^*/\tau_i(c_i^*)$ *is the elasticity of the trade policy to the contribution schedule. Hence this establishes as a rule that, depending on the reaction of the government to the contribution schedule, which mostly depends on import's reaction to tariff and of the efficiency of lobbying, the contribution schedule designed will be more or less large.*

That is, the offer may be moderate or strong according to the situations of each firm-sector.

Hence in this configuration, it is impossible to find the result of Grossman and Helpman.[17] As explained, this is due to the trade off between the assumption and the game. In the solution that yields their result, the fact the government's stage ensures the tariff disappears from the contribution schedule is endogenous. Therefore, the game is the reason why we obtain a constant contribution schedule, which could not have been otherwise in this setting. However, this is feasible at the cost of assuming that lobbies do not consider that their offer affects directly the contribution they will pay.

In this proposition, the elasticity could be of different magnitude. It is useful to recall that the direct effect of the contribution schedule from the first stage is $-\alpha c_i/(p_w m_i' h(.))$, where $h(.)$ denotes the coefficient that weighs the trade policy, τ_i, after the social welfare has been derived.[18]

In order to understand the following result, one needs to remember that the contribution schedule is the slope of the contribution with respect to the trade policy. If the slope is low, this a moderated offer. If the slope is large, the offer is strong. That is, a small increase of the protection implies a large raise of the contribution.

[17] Except for an elasticity of the trade policy to the contribution schedule that goes to infinity.

[18] This is not a rigorous notation but it is easily understandable. For instance, if once derived the social welfare is equal to $\zeta\tau_i + \phi$, then $h(.)$ is equal to ζ. However, this notation has been preferred since the derivative of the welfare can be complex.

The equilibrium outcome is low if the efficiency of the lobbying activity is high, which is not surprising. Hence the more important for the social welfare the lobby, the more moderated the designed contribution schedule. Second, it is also low if the world price in sector i is high. Third, an important reaction of the demand of imports to the trade policy (a large m_i') reduces the contribution schedule. On the contrary, a raise of what would have been the 'socially' optimal trade policy increases the contribution schedule. A government that naturally has the intention to protect a sector is harder to influence or more precisely induces firms to moderate there proposal. Similarly, firms largely affected by a raise of the trade policy have to propose larger contribution schedules. Interestingly, this last effect states that a firm highly sensitive to the trade policy makes an offer that is bigger. This is the truthful contribution effect.

In a nutshell, it appears that the effect of the trade policy on the social welfare may affect the design of the contribution schedule. Hence, the determination of the equilibrium is not just affected by an additional weight on the profits of the organised sectors in the social welfare.

4.4 Comparison with the Grossman & Helpman outcome

In order to compare both outcomes, we will use the perfect competition framework. The notations p_{Ch3} and p_{GH} will denote the outcome of this chapter and the outcome of Grossman and Helpman (1994), respectively. Additionally, we will assume that the output of the economy y_i is a linear function of the domestic price such that $y_i = \omega p_i + \gamma$. This subsection is particularly on the situation where $\partial \pi_i / \partial p_i > 0$ and $\partial^2 \pi_i / \partial^2 p_i < 0$. Therefore, this implies that $\omega < 0$ and $\gamma > 0$.

The optimal policy that corresponds to the G & H 94 framework is given by equation (III.16). With the linear output, the optimal policy becomes

$$p^*_{i,GH} = \frac{-\gamma(\lambda - 1 + \alpha) + p_w m_i^{'}}{m_i'[1 + \omega(\lambda - 1 + \alpha)]} \tag{III.28}$$

We now turn to the optimal policy that emerges when using the framework

presented in the previous subsection. The equation after the government stage is solved is

$$p_{i,Ch3} = \frac{-\omega p_{i,Ch3}(\lambda - 1) - \gamma(\lambda - 1) + p_w m_i^{'} - \alpha c_i}{m_i^{'}} \tag{III.29}$$

The firms stage yields an optimal contribution schedule that is introduced in the equation just above, this yields the optimal trade policy

$$p_{i,Ch3}^{*} = -\frac{\alpha\gamma - \gamma(\lambda - 1) - p_w m_i^{'}}{\alpha\omega} \tag{III.30}$$

The difference between both outcomes is equal to :

$$p_{i,Ch3}^{*} - p_{i,GH}^{*} = \frac{[m_i^{'}[1 + \omega(\lambda - 1 + \alpha)] - \omega\alpha][p_w m_i^{'} - \gamma(\alpha + \lambda - 1)]}{\omega\alpha m_i^{'}[1 + \omega(\lambda - 1 + \alpha)]} \tag{III.31}$$

From this result, the following proposition holds :

Proposition 10. *If* $m_i^{'} > \frac{\alpha}{\lambda - 1 + \alpha}$, *then*

1. $p_{i,Ch3}^{*} < p_{i,GH}^{*}$ *for a sufficiently large* ω *in absolute value.*
2. $p_{i,Ch3}^{*} > p_{i,GH}^{*}$ *for a low* ω

If $m_i^{'} < \frac{\alpha}{\lambda - 1 + \alpha}$, *then*

1. $p_{i,Ch3}^{*} > p_{i,GH}^{*}$ *for all* ω *that are not in the range* $\left[-\frac{m_i^{'}}{m_i^{'}(\lambda - 1 + \alpha) - \alpha}; -\frac{1}{\lambda - 1 + \alpha}\right]$.
2. $p_{i,Ch3}^{*} < p_{i,GH}^{*}$ *for the values of* ω *that belongs to the range just above.*[19]

This proposition then states that there is a trade-off between the reaction of the demand of imports to the trade policy and the effect of the trade policy on the profit. If the former is large enough, then the trade policy obtained through a

[19] See proof in appendix.

strategic contribution schedule is higher if the profit is relatively insensitive to the trade policy, i.e a low ω. If the reaction of the demand of imports is small, then both firms very affected by the trade policy and those almost unsensitive will obtain a higher protection through a strategic contribution schedule.

These results are in line with the observation that highly protected sectors may signal a strong influence or a threat from imports.

5 The homogenous good case

An interesting case to analyse is the situation of a homogenous good. Indeed, since lobbies are firms the consumer side of the lobby has been suppressed. Hence no trade off between free trade (as a consumer) and strong protection (as an owner of a specific factor). However, the design of the contribution schedules may be affected by the strategies of other lobbies if goods are substitutable. The simplest situation to analyse is when the goods are homogenous. Therefore, if one should consider imperfectly substitutable goods, the truth lies between both situations.

The optimal policies are unique. There is one for perfect competition and one for quantity competition. We do not derive a price competition model for analysing the effect. As explained above, the effect are roughly the same that those prevailing if goods were imperfectly substitutable. However, if the good is homogenous, the firm that sets the lower price takes the whole market and then is alone facing the government. Hence quantity competition should bring some more interesting results.

The equilibrium policy is the following :

$$\tau^* = -\frac{-d(\tau^*)\frac{\partial p}{\partial \tau^*}) - y + \lambda \sum_{i=1}^{N} \frac{\partial \pi_i(\tau^*)}{\partial \tau^*} + \alpha \sum_{i=1}^{N} c_i}{m'} \tag{III.32}$$

The contribution schedule and profit still being denoted with a subscript i because they may differ from a firm to another. Indeed, firms are not supposed to be identical. y denotes the total domestic production.

We find the following expressions used by a firms whether it is in a Cournot competition :

$$m^* = \frac{[m' - d(\tau^*)\frac{\partial p}{\partial \tau^*} - y + d(\tau^*) + \lambda \sum_{i=1}^{N} \frac{\partial \pi_i(\tau^*)}{\partial \tau^*} + \alpha \sum_{i=1}^{N} c_{\tau,i}]m^w}{m'} \quad \text{(III.33)}$$

This result give the optimal policy set by government. Since m' is negative, the tariff depends positively on the contribution schedule.

The program of a representative firm is the same. But now the optimal contribution schedule of each firm is a reaction function to the other contribution schedules. This is due to the fact that the policy choices depend on all the contributions. Therefore, the more a firm is sensitive to the policy set, the more it will pay to the government.

Each firm has a profit that is increasing in τ. The higher the marginal cost, the less an increase of τ is important (relatively). Therefore, the higher the cost, the lower is the firm payment.

Proposition 11. *When firms produce a homogenous good, the more productive firms design the highest contribution schedules and therefore achieve the highest contributions, ceteris paribus.*

This proposition contrasts with a result of Grossman and Helpman (1994) where they find that the more generous contributors are the less productive special interest group. This suggests that, depending on the degree of substitutability between goods, there is a trade off between two effects. When goods are close to be homogenous, the more productive firms pay higher contributions; whereas when goods are not substitutable, the less productive pay higher contributions.[20] This trade-off is then clearly due to the competition that arises between varieties in the consumer surplus and between lobbies when they influence the government. However, this modeling does not take into account the free-riding problem that may occur. According to Pecorino (1998), there is a free-riding problem in lobbying. In

[20] When we say 'higher contribution', it means that the variable component of the contribution will be the higher for these firms. As the next subsection underlines, this does not imply that the whole contribution will be higher as it depends on the competition between lobbies.

this simple setting, it is quite clear that if one firm pays, then all the other firms enjoy the effect of this contribution.

Hence an additional feature of this model, which recalls those of the first chapter, is the consideration of substitutability between goods. The latter affects the equilibrium policies. The competition between lobbies (or firms) influences the equilibrium policy and the variable part of the contribution, not only the total contribution paid.

5.1 Contributions level

As this chapter's framework uses derivative to yield the equilibrium policies, the possibility of the presence of a constant in the contribution has not been discussed. As in G & H 94 however, there are no reasons that the contribution does not comprise a constant as it is the primitive of the contribution schedule.

Moreover, this constant has a strong impact on the sharing of the surplus the political relationship yields. Considering that point, this chapter proposes no particular feature. Thus, the Bernheim and Whinston (1986b) methodology applies. Since there are no considerations on which share of the population is organised or not, the results are expected to be the same as in chapter one. The competition between lobbies is of course affecting strongly the share of the surplus the government obtains.

6 Application to a simple two countries framework

The important insights of a model such than the one of Grossman and Helpman are in its application to standard questions in international economics. In that spirit, they have written two papers that study the impact of politics on free trade agreement (Grossman and Helpman, 1995a) and on international trade (Grossman and Helpman, 1995b), respectively. In the present chapter, we derive a very simple two countries model in order to assess the following question : What could be the

consequences of active political relations on a hypothetical multilateral negotiations? This question is a topical one since many economists are currently working on it. The underlying idea in these articles is that politics may influence the formation of multilateral agreements and the negotiations within the former. Hence both an *ex ante* and an *ex post* influence. The main aspect of this research is to bring into light politics as a motive to enter a trade agreement and as a force that shapes the agreement reached between members of an international organisation. Contrary to Grossman and Helpman (1995a) or to Bagwell and Staiger (2001) who find an effect of politics on the incentives to enter a trade agreement but no direct effects of the former on the latter, this new strand has highlighted the importance of political concerns on the decision. In other words, politics represent an incentive to enter or not a trade agreement.

Ornelas (2005) shows that entering a trade agreement may reduce the strength of lobbies by reducing their expected payoffs. If lobbies pay contribution to a government that is a member of a free trade area (FTA)–with independent trade policies towards the rest of the world–then the potential increase of trade barriers decided by a government should benefit to all firms originating of the FTA's members. The cost of influencing the government remains then unchanged whereas the gains this action generates decrease. Maggi and Rodriguez-Clare (2007) highlight the role of the time inconsistency problem in the relations between lobbies and a government as a driving force that induces the latter to enter an FTA. These articles show, among others, that political interactions play a major role in the FTA formation. This induces to think that there are no reasons that these interactions do not influence negotiations once the FTA have been created. A recent work on this subject is Horn et al. (2006). They show that, since contracts negotiated in international fora are incomplete, the politics may influence the formation of the final contract.

In this section, we only focus on the effect of political influence on the possibility to reach an agreement or not. Hence we are more concerned here on the *ex post* aspect of the political relation. Regarding the international trade framework, we use a very simple model *á la* Brander (1981). We let the model implicit and mainly focus

on the answer to the previous question. We assume that the contribution has the following form : $C_i = c_i\tau_i + B$.[21] In order to link politics and international trade, a Bagwell and Staiger (1999) framework is used. Finally, the good is homogenous and there are no transports costs. So the influence of one firm on its domestic market has an effect on the profit of the other firms since both firms are present on both markets.

Given this framework, an international agreement is assumed to be easier to reach if there are many possibilities to equalise the tariffs of both countries.[22] In order to assess this, we assume the multilateral organisation that manages the negotiation has the right to impose a value to λ, which is the weight the governments grant to the producer surplus in the social welfare. Finally, for tractability purposes, it is assumed that the efficiency of the lobbying activity is the same in both countries.

This very simple conception of an international organisation allows to derive the following result when both firms are able to influence their home government :

Result 1. *The weight of the producer surplus the international organization should impose in order to reach an agreement is :*

$$\lambda = \frac{c[(h-1)(9-6\alpha)] + a[(j-1)(2+2\alpha)]}{6(h-1)c - 2(j-1)a} \tag{III.34}$$

Where h (hence positive) is the ratio of the marginal costs of both firms (c is the country A's marginal cost), j is the ratio (hence positive) of the market sizes of both countries (a is the country A's market size).

Bagwell and Staiger find the parameter λ should lay between 1 and 3. Although we may accept that $\lambda < 1$, it obviously cannot be negative. We find here that many solutions that would ensure this equality to be true are to set a negative λ. However, if the lobbying activity is not very efficient (i.e α is small), then if one country is both the most productive and the largest, then it is possible to reach an agreement.

[21] Hence, the form that is different from the one developed by G & H 94.

[22] This is measured through the possible values this framework allows. For instance, λ is supposed to be comprised between 0 and 3.

To the contrary, if α is large, then it is easier to reach an agreement if each country has an advantage.

If only one firm can influence its government (here, in country A), the following result holds :

Result 2. *The weight of the producer surplus the international organization should impose in order to reach an agreement is :*

$$\lambda = \frac{c(h-1)9 + a(j-1)5 - 9c_{\tau_a}\alpha}{6(h-1)c - 2(j-1)a} \tag{III.35}$$

Here, the contribution schedule appears. As it is positive, it is then more difficult to obtain a positive λ than in the previous result. This is straightforward since, contrary to the two influenced governments situation, both contribution schedules terms do not cancel each others. But this allows to have a precise idea of what would happen if both firms were able to influence their respective governments. The larger the difference of efficiency is, the harder reaching an agreement is.

Finally, let suppose there is no influence at all, then the following result holds :

Result 3. *The weight of the producer surplus the international organization should impose in order to reach an agreement is :*

$$\lambda = \frac{c(h-1)9 + a(j-1)5}{6(h-1)c - 2(j-1)a} \tag{III.36}$$

This last result is obviously the one that offers the most solutions. However, under particular circumstances it may be easier to reach an agreement when both firms pay. That is, the optimal λ of the last situation is smaller than in the first one. Therefore offering less room of maneuver to find some couples (a, c) that allows to reach an agreement.

This small application of the model developed in this section allows to observe the importance of structural characteristics of countries. The fact that the worse situation is a pure unilateral lobbying is due to the divergence of interests between

both countries. Surprisingly, when both countries are subject to influence this may make easier to reach an agreement. As explained in the previous section, this is due to the "moderation" of the lobbies induced by the methodology employed, compared to G & H (94).

7 Conclusion

This chapter provides then three major contributions. The nature of the relation between the government and the lobbies is questioned. First, it appears that even when one relaxes the common agency framework, the same equilibrium outcome than Grossman and Helpman (1994) is obtained. Formally, the most important assumption behind this result is related to the effects of the contribution schedule. Either the latter is supposed to influence directly the welfare of the lobbies, including the contribution itself, or only through its effect on the trade policy. This distinction yields very different results. In both cases, the contribution is found to be a linear function of the trade policy. However, the direct effect of the contribution schedule induces firms to moderate their influence in many circumstances. This is because they take into account the incentives of the government to help them.

In particular, the efficiency of the lobbying activity is found to increase the influence of firms. We also find that when the demand of imports reacts strongly to the trade policy, this reduces the contribution schedule to fall. Thus inducing the government to increase in a smaller extent the tariff as the payoff associated to a raise of the trade policy is smaller. A raise of the 'socially' optimal tariff, that is the propensity of the government to be protectionist, increases the contribution schedule. Firms are induced to pay more for an identical increase of the trade policy.

Finally, a very simple application of this framework to a two countries-one good set-up is proposed in order to assess the difficulty to reach an agreement when both countries are subject to influence. Surprisingly, there exists some situations in which two governments subject to influence makes easier to reach an agreement than none. This last result highlights the complexity of the management of an international organisation. As the model shows, according to the structural characteristics of the

countries involved in the negotiations, an agreement may be reached or not, easily or hardly.

Consequently, we may wonder what structural determinants influence the negotiation. In the case of an international organisation such that the WTO, these determinants according to this chapter and the first one would be the relative situation of a government compared to the other members. The market size and the production cost have a strong influence just as the efficiency of the lobbying activity. In an international organisation such that the IMF, the story is a little bit different. If an agreement is not reached, this means the country asking for a loan will not receive it. Therefore, we expect there are some structural characteristics that will help the members who decide to lend or not to reach a consensus. Hence two questions are still pending. First, the question of the structural determinants and second, the question of the political influence that prevails in these international fora. The last chapter is aimed to partly answer to these two questions. It first develops the reasons why one could believe that political influence is active and unequal treatment between members may occur in these organisations. Second, it tries to analyse the case of the IMF in order to determine the structural characteristics that may explain the probability to have a loan with a particular concern on the geopolitical characteristics.

III.A Proof of proposition 8

Proof. The profit is :

$$\pi^C = \pi(\tau_i) - C(\tau_i) \tag{III.37}$$

If one derive with respect to c_{τ_i}. We obtain the following equation :

$$\begin{aligned} \frac{\partial \pi^C}{\partial c_{\tau_i}} &= 0 \\ &\Leftrightarrow \\ \frac{\partial \pi}{\partial \tau_i}\frac{\partial \tau_i}{\partial c_{\tau_i}} &= \frac{\partial C}{\partial c_{\tau_i}} \end{aligned} \tag{III.38}$$

If C is assumed to depend on c_{τ_i} only through the tariff, then $\frac{\partial C}{\partial c_{\tau_i}} = \frac{\partial C}{\partial \tau_i}\frac{\partial \tau_i}{\partial c_{\tau_i}}$. Substituting in the above equation allows to divide both side by $\frac{\partial \tau_i}{\partial c_{\tau_i}}$ and we then obtain the result of Grossman and Helpman (1994), that is a truthful outcome.

However, since the contribution is assumed to be linear, one could wonder if the result is the same.

In order to check this, consider that $\frac{\partial \pi}{\partial \tau_i} = \gamma\tau_i + \mu_i$. Once derived, the consumer surplus may be written such that $\frac{\partial CS}{\partial \tau_i} = \sigma\tau_i + \psi$. Similarly, the trade policy revenues may be rewritten, once derived, $\frac{\partial TPR}{\partial \tau_i} = \omega\tau_i + \nu$.

Hence, following the definition of a locally truthful contribution schedule, the optimal trade policy would be :

$$\tau_{GH} = \frac{-\nu - \psi - (\alpha + \lambda)\mu_i}{m_i' + (\alpha + \lambda)\gamma + \sigma + \omega} \tag{III.39}$$

Consider now the method proposed in this chapter. First, from the government stage, we obtain the following equilibrium trade policy :

$$\tau_{Ch3} = \frac{-\nu - \psi - \lambda\mu_i - \alpha c_{\tau_i}}{m_i' + \sigma + \omega + \lambda\gamma} \tag{III.40}$$

Then, the next stage allows to determine the equilibrium contribution schedule. We have then

$$c_{\tau_i} = \gamma\tau_i(c_{\tau_i}) + \mu_i \tag{III.41}$$

This yields the following result

$$c_{\tau_i} = \frac{-\gamma(\nu + \psi + \lambda\mu_i) + \mu_i(m_i' + \gamma\lambda + \sigma + \omega)}{m_i' + \gamma(\lambda + \alpha) + \sigma + \omega} \tag{III.42}$$

Finally, this last equation is reintroduced in the optimal tariff formula in order to obtain the optimal trade policy applied once the game is finished.

$$\tau_{Ch3} = -\frac{1}{m_i' + \gamma\lambda + \sigma + \omega}\left[(\nu + \psi + \lambda\mu_i) + \alpha\frac{-\gamma\lambda(\nu + \psi\lambda\mu_i) + \mu_i(m_i' + \gamma\lambda + \sigma + \omega)}{m_i' + \gamma(\lambda + \alpha) + \sigma + \omega}\right] \tag{III.43}$$

When we solve for $\tau_{Ch3} = \tau_{GH}$, all terms disappear. Therefore both equilibrium trade policies are strictly equal.

□

On the contrary, assuming that the contribution schedule affects directly the contribution would yield the following result :

$$\frac{\partial\pi}{\partial\tau_i}\frac{\partial\tau_i}{\partial c_{\tau_i}} = \frac{\partial C}{\partial c_{\tau_i}}\tau_i + \frac{\partial\tau_i}{\partial c_{\tau_i}}c_{\tau_i} \tag{III.44}$$

III.B Proof of proposition 10

Proof. The difference between both trade policies is equal to :

$$p^*_{i,Ch3} - p^*_{i,GH} = \frac{[m_i^{'}[1+\omega(\lambda-1+\alpha)]-\omega\alpha][p_w m_i^{'} - \gamma(\alpha+\lambda-1)]}{\omega\alpha m_i^{'}[1+\omega(\lambda-1+\alpha)]} \quad \text{(III.45)}$$

Therefore, we need to study the sign of each terms in square bracket in order to determine the sign of the difference.

The sign of the second term of the numerator is always negative since $p_w m_i^{'} < 0$, $\gamma > 0$ and $\alpha + \lambda - 1 > 0$.

The first term of the numerator is surely negative if $m_i^{'} > \frac{\alpha}{\lambda-1+\alpha}$.

Finally, the denominator is negative for sufficiently large values (in absolute value) of ω, that is such that $\omega < -\frac{1}{\lambda+\alpha-1}$.

Hence, if the condition on $m_i^{'}$ is verified, that is for low values of λ and α, and if the condition on ω holds, then the difference is negative.

If the condition on ω does not hold, then the difference is positive.

Now consider the condition on $m_i^{'}$ is not verified.

If $\omega < -\frac{m_i^{'}}{m_i^{'}(\lambda+\alpha-1)-\alpha}$, then the numerator is negative.

Therefore, the difference is positive if and only if the denominator is negative, that is for $\omega < -\frac{1}{\lambda+\alpha-1}$.

If this condition does not hold, then the difference is negative. That is, if $\omega\epsilon\left[-\frac{m_i^{'}}{m_i^{'}(\lambda-1+\alpha)-\alpha}; -\frac{1}{\lambda-1+\alpha}\right]$.

□

Chapter IV

Geopolitics in international organizations [1]

> " *Some large IMF-supported programs raise concerns because they appear to suggest that a country's geopolitical importance [...] play a role in IMF loan decisions"*
>
> de Rato y Figaredo (2004)

> " *It is important to recognize that when geopolitical considerations weigh heavily, the IMF tends to be diverted from the principles that normally govern its provision of financial support"*
>
> Mussa (2002)

As written in the general introduction, several institutions have been created after World War II in order to provide international public goods and deal with some political and economic issues on a multilateral basis. More recently, the globalization process has intensified the usefulness of some of these organizations. Indeed, it is increasingly clear that the maintenance of international financial stability and global policy issues call for enhanced international cooperation.

In an elegant essay celebrating the century of the *American Journal of Internal Law*, Steinberg and Zasloff (2006) expose the beliefs, when the journal had been created, that international law would help to circumvent power. However, as they notice, the journal has since published many articles which aim is to explain how

[1] This chapter is based on two manuscripts jointly written with Julien Reynaud.

power constrains international law. They gather all these views into four broad categories according to the motivations of the approach. The first strand relies on the just above mentioned classical view that international law will reduce the role of power. The second one named "realism" is founded both against the first strand and on the observation of the rise of fascism in the 30's, in particular the repeated aggressions it has entailed. Articles in this category view the international law just as the reflect of power. A point of view the third strand has opposed. The "structural realism" thinks the international law as a more complex object where social sciences help to understand that law may also affect the behaviour of states. Finally a last view has emerged from the past century. It assumes that interests, identities and international law are all endogenous with respect to each other. There are no doubts that this last view is the closest from the approach of power used in economics. As there are no doubts that the last two strands have brought the idea that political interests may shape international law and that the latter may influence political power.

Hence arguably, the transfer of sovereignty from the country level to the international level has created some tensions.[2] Jackson (2003) argues that "*in some of these circumstances (. . .) a powerful tension is generated between traditional core "sovereignty", on the one hand, and the international institution, on the other hand*". This may be partly due to the fact that the multilateral approach has not always respected the principle of equal treatment (Mavroidis, 2000). Indeed, it is widely accepted that decision-making in international organizations tends to be dominated by a few large countries (see for example Bini Smaghi, 2006b; Leech, 2002, regarding the IMF). First, the powers, i.e. quotas or voting shares for the IMF, are not always equitably apportioned relatively to countries' economic size. Second, some countries have means to influence others, and can then divert international organizations from

[2] For instance, some Law principles such that *in dubio mitius* broadly states the following rule: If there are any doubts on the interpretation of an international rule, then the court has to favour the interpretation that is the most respectful of the sovereignty of the involved parties. Of course, this description is probably not sufficiently precise to satisfy a jurist but it gives the flavour of the principle. Indeed, if there is conflict of interest between international and national law, then the latter should be favoured. Steinberg (2004) however underlines, concerning the WTO dispute settlement procedure, that "*The Appellate Body has leaned toward the less deferential approach in deciding whether to interpret WTO agreements, favoring gap filling, ambiguity clarification, and dynamism.*"[p.260].

their original function, for instance by deviating from their initial engagements. Steinberg (2004), for example, emphasizes the ongoing debate around the good functioning of the WTO dispute settlement body. He distinguishes studies that think the new system favours powerful members and encourages them to adopt a "rule breaking behaviour", from those arguing the new system prevents these countries from behaving in such a way. Whatever the point of view, both assume that the powerful members tend to divert the institution from its governing principles by using their relative economical size, at the expense of other members.

The International Monetary Fund (IMF) has recently been subjected to particularly fierce criticisms as many have argued that the institution is failing to fulfil its main objectives: the provision of emergency finance for the resolution of balance of payment crises and the surveillance of the world economy. Many of the problems the IMF is facing are rooted in its governance structure since the Fund is dominated by a rather narrow group of advanced economies (Bini Smaghi, 2006b). According to Truman (2006), the IMF is enduring an "identity crisis" mainly caused by the imbalance of power among its members. As a result there are indications that a number of its members have lost faith in the institution.

Similarly, the difficulties the WTO meets to close the Doha round have raised a lot of criticisms. The developing countries still have many difficulties in obtaining their "due" importance in negotiations. In parallel, these are always the same major countries that block negotiations because of their reluctance to give up protectionist trade policies. Another concern is about the Dispute Settlement. Bütler and Hauser (2000) have developed a theoretical model of the procedure. It appears that mutually agreed solution is an outside option that transforms the dispute settlement into a black box. As Bown (2005) emphasises, there is also a strong free riding dimension. Countries affected by a trade barrier may not enter the procedure as an interested third party since they expect large countries to do so and consequently to obtain its elimination. He first proves that countries with a large economic stake are more likely to enter the procedure. After this unavoidable control, he still obtains some results that shed light on several political economy determinants. He finds that the commitment into a preferential trade agreement with the respondent, the lack

of capacity to retaliate through the withdrawal of trade concessions, being poor or small, and an important dependance on the respondent for bilateral assistance, make a country less likely to enter a WTO dispute.

Hence it seems that WTO may not be able to ensure an equal treatment of all countries. For instance, Shoyer (2003) shows that a country may have a greater influence on the selection of the Panel in a WTO dispute thanks to diplomatic or institutional advantages. In a recent article, Srinivasan (2007) draws a *brief history* of the Dispute Settlement Mechanism. He refers to several political scientists to highlight a "diplomatic" viewpoint of the procedure which main aim would be to help countries during negotiations. This mechanism should then allow countries to be treated on an equal footing. The fact that, as Srinivasan recalls, the two 'countries' that were complaining of the lack of legality of the GATT Dispute Procedure were the US and the EU is emblematic. As these two countries are probably those that have the largest influence on an international juridical decision. He also insists on the view that trade agreements as many international agreements are incomplete contracts. It points out that there is an uncertainty on many aspects. Horn et al. (2006) propose a model where incompleteness of the WTO agreements has two dimensions. It can either take the form of a lack of *rigidity* or a too large *discretion*. These two features of the contract will then constitute a tradeoff for signatories. Mavroidis (2000) argues that the WTO fails in guarantying to all countries an equal treatment in the sense that it cannot enforce all members respect the contract. Therefore, despite the quality of the latter, some countries through economic and political power will succeed in being more influent than others, what Mavroidis calls the "'persuasive' power".

As Steinberg writes:

> "In practice, powerful WTO members each have a unilateral veto over the selection of Appellate Body members, and a candidate's approach to judicial decision making figures prominently in those members' decisions on whether to block a candidacy. Powerful WTO members can also defy a decision that is politically unpalatable at home, refusing to comply with it, if they are willing to suffer retaliation and shirk legal obligations.", Steinberg (2004)[p.249].

So, as one will see concerning the Fund, some members enjoy a factual veto power rather than a legal veto. Inasmuch consequences of such actions have been the selection of Appellate Body members and hence the modification of its report, this is a practical concern that highlights the power some members enjoy. Countries may also use diplomatic threat to induce the DSB not to use or promulgate a rule. Additionally powerful countries may use their economic power to shape the issue of negotiations. For instance, the Uruguay Round has been closed because the United States and the European Community have jointly induced all other members to accept an agreement much less powerful than initially. So members, via an unequal treatment, may enjoy a large political room of manoeuvre. This may materialise into many forms, in particular as the first three chapters study, by the interference of firms in negotiations. Many principles and agreements in the GATT/WTO only consider nation-states as responsible to their rules and not private parties (Zedalis, 2007). Hence if agreements have this approach, this means that governments are implicitly responsible for private parties' acts. This introduces "legally" the influence relation between governments and private interests. Petersmann (2007) points out the 'Member-driven governance' of the WTO. This induces European Community's and US' politicians to insist on the role of domestic courts and raises questions on the respect of the balance of power in organisations such the WTO or the IMF.

However, one might also argue the countries may use this power from themselves. Comparing between the Dispute Settlement Mechanisms (DSM) of several Preferential Trade Agreements, Kono (2007) shows that the main issue of Dispute Settlement Mechanisms is to "*promote cooperation by facilitating governments' reciprocal strategies and raising the reputational costs of noncompliance.*" Hence arguing that a more legalistic structure of DSM does not improve trade facilitation. So the main aspect that dispute are settled. Arguably, governments do not really care about the structure of the DSM. This induces to believe the international agreements help countries to achieve some goals. But that the rules they set are not really respected as the only important point is to settle the dispute, to face the problem. Consequently, this is not surprising that many facts tend to prove that the WTO and IMF principles are regularly breached.

These governance issues raise as a consequence questions regarding the fair distribution of IMF loans. A large number of academic studies have then examined the determinants of the IMF's lending decisions. In the first half of the 1990s, researchers have focused on the economic determinants of IMF loans (Joyce, 1992; Conway, 1994; Bird, 1995; Knight and Santaella, 1997). In the second half of the 1990s, others have focused on other determinants such as political ones (Edwards and Santaella, 1993; Thacker, 1999; Vreeland, 1999; Bird, 2000; Przeworski and Vreeland, 2000; Dreher and Vaubel, 2004; Vreeland, 2001; Dreher, 2004; Barro and Lee, 2005; Sturm et al., 2005; Harrigan et al., 2006; Joyce, 2004, for a survey). However, as argued by Petersmann (2007) quoting an American legal philosopher, Garcia (2005), the 'five circumstances' (identified by another legal philosopher, Rawls (1989)) that justify the need for a legal environment at a national level are more and more present at the international level. These are the following: "Scarcity of resources, shared geographical spaces, capacity to help and harm each other, non-altruistic behaviour of most people and conflicting claims whose peaceful settlement requires 'principles of justice"'. These principles refer partly to geopolitics. These 'circumstances' are typically what will create some tensions between countries. As there are no harmonized international legal system countries may use international organizations to cope with these problems.

The aim of this chapter is to explore the hypothesis that some countries have "a geopolitical interest in diverting [the IMF] from the principles that normally govern its provision of financial support" (Mussa, ibid, and de Rato y Figaredo, ibid) by studying the geopolitical importance of loans recipients. After defining the concept and relevance of geopolitics in the context of an international organization with a particular focus on the IMF, we collected and built various indicators that, according to related literature, are subjects of geopolitical stakes. As Baldwin (1979) argues, there is no unique geopolitical variable. Indeed, geopolitics may concern many different areas, thus inducing that, regarding on the area, the same country's geopolitical importance may switch from the highest to an insignificant level.[3]

[3] Baldwin argues that "Planes loaded with nuclear weapons may strengthen a state's ability to deter nuclear attacks but may be irrelevant to rescuing the Pueblo on short notice." (p. 164)

Consequently, the geopolitical importance of a country is an unobservable variable. Nevertheless, it is possible to statistically extract the underlying factor of commonly known determinants of the geopolitical importance of countries and to capture its distribution over the globe. In a first step, we identify geopolitical determinants that may play in the distribution of IMF loans and extract the underlying factor. In the second step, inspired by the economic geography recent findings Hanson (2005), we compute a geopolitical potential, à la Harris potential, by taking the country's geopolitical factor and the sum of others countries geopolitical factor over their relative distance. Using this technique allows a global coverage when judging of a country's geopolitical importance. In the third and last step, in line with existing literature, we estimate a supply function of IMF loans distinguishing between concessional facilities, i.e. the Poverty Reduction and Growth Facility (PRGF), and non-concessional facilities supported by the General Resources Account (GRA). Regarding the latter, we focus on Stand-By Agreements (SBAs) and Extended Fund Facility (EFF) which share the largest part regarding overall IMF financing. This distinction is crucial since these facilities are most of the time pooled together in related studies. Yet, these loans are very different in terms of financial conditions and overall objectives. Moreover, non-concessional loans are generally conditional on the adoption of appropriate policies to resolve a country's macroeconomic difficulties and to enable the government to repay the Fund. According to the IMF, conditionality also gives confidence to the borrowing country by clarifying the terms on which the IMF will continue to make its financial resources available. However, according to critics, conditionality may be a way through which the Fund leading members could increase or serve their influence over other members for geopolitical purposes. Therefore, it might well be that the geopolitical factors have a different impact on the Fund's propensity to sign PRGFs or SBAs.

Since we focus on lending, and given that no industrial country has made use of the Fund's financial support for the last three decades, our panel comprises 107 IMF developing and emerging economies over the period 1990-2003 sampled at the yearly frequency.

Our results provide empirical support to the view that geopolitical considerations

are an important factor in shaping IMF lending decisions. Economic determinants are still valid for both facilities and turn out to play more for SBA. This is in a sense a reassuring result, since SBA are very large loans. Moreover, we show that the Fund favoured geopolitically important countries when lending non-concessional facilities while concessional ones tend to be attributed to non-geopolitically important countries. Focusing on non-concessional loans, we separate the lending process in two steps: First the Executive Directors decide to lend and second they agreed together with the borrowing country's government on an effective amount and on characteristics of the conditionality. Using a selection model, we show that decision to lend is influenced by the borrowing country's geopolitical potential and that the amount effectively drawn is rather influenced by the diplomatic bargaining power of the borrowing countries.

The remainder of the chapter is organised as follows. Section 2 is devoted to the understanding of geopolitics, and its role within the IMF. Section 3 explains the choice of variables and the techniques. Section 4 describes the data and discusses methodological issues. Section 5 exposes the empirical results and the robustness checks. Finally, section 6 concludes.

1 Geopolitics and International Organizations: What about the IMF?

There is a vast literature on the economic and political determinants of IMF lending decisions (see Joyce, 2004; Sturm et al., 2005, for a survey). However, the question of whether some countries may have a geopolitical interest in shaping the Fund's decisions has, to our best knowledge, received much less attention. In this chapter, we put forward the hypothesis that leading members of international organizations use the institution's prerogatives to increase or serve their influence over other members for geopolitical purposes. Boughton (2004) recently supported the view that IMF involvement in the Eastern Europe countries was not purely financially driven, but rather ideological. In the IMF, this means that creditors (i.e. the G7

members) may use the Funds' financing facilities to increase or serve their influence over debtors.

Diverting the IMF, for geopolitical purposes, from its principles to serve particular interest is possible since decisions to lend are taken by the Executive Board (the Board). The Board is responsible for conducting the day-to-day business of the IMF. It is composed of 24 Directors, who are appointed or elected by member countries or by groups of countries, and the Managing Director, who serves as its Chairman. The Board usually meets several times a week and carries out its work largely on the basis of papers prepared by IMF staff. Decisions are officially voted, but in practice, Directors never vote. The Chairman evaluates the positions of Directors following their interventions and passes a decision when a consensus seems to be reached. Therefore, it is straightforward that, if some countries are better negotiators or have means to influence others, they can succeed in influencing the Board's decisions. Bini Smaghi (2004, 2006a,b) and Leech and Leech (2006) have illustrated this using voting power index derived from cooperative game theory and found that the G7 and the US are over influential at the board, respectively.

Therefore, in studying the determinants of IMF loans, researchers have focused on particular factors that might be of interests for leading IMF members. For example, Thacker (1999) found that political realignment[4] of the borrowing country on the US position is positively related to the probability of receiving a loan. Oatley and Yackee (2004) found that the more US banks are exposed in the borrowing country, the larger the loan. Finally, Oatley (2002) found that commercial bank debt of G7 countries into the borrowing country influences the size of the loan.

Others have focused on country specificities such as political stability (Edwards and Santaella, 1993), political freedom (Rowlands, 1995) and democracy indicators (Thacker, 1999; Vreeland, 1999; Dreher and Vaubel, 2004). They found that the more borrowing countries are close to cultural and political standards developed in developed countries, the higher the probability to receive IMF funds.

More recently, IMF staff has argued that some members are influencing the distribution of loans because of particular geopolitical interest in the borrowing

[4] This means a move towards the US position, rather than to be aligned.

country. We begin by introducing hereafter a rather heuristic definition of geopolitics:

> "Geopolitics traditionally indicates the links and causal relationships between political power and geographic space; in concrete terms it is often seen as a body of thought assaying specific strategic prescriptions based on the relative importance of land power" (Øyvind Østerud, 1988).

Geopolitics has then to be related to the importance of land power: the size, the position in the World, the resources that are natural and built by man. In this chapter, we develop the idea that geopolitics could play a role in International Organisations because:

> "Some countries are better in converting their resources into effective influence, just as some skilled card players win despite weak hands" (Joseph S. Nye, 1990)

This idea, already mentioned by Baldwin (1979) as one of the two reasons[5] explaining "the paradox of unrealized power", refers to the fact that a country with resources identified as strategic does not necessarily succeed in being powerful. According to Baldwin, this country has the resources but has not the knowledge to use it in order to convert them into power. Similarly, some countries have no resources but have means to convert strategic resources into power. Then, the latter are interested in using resources of the former. A good example is the importance of oil reserves. Indeed, these reserves do not provide wealth at the moment but may in the future. Moreover, they may provide wealth and thus political power at the domestic level, if they are exploited domestically, but could also be appropriated externally. However, these reserves provide geopolitical power as of today since most (of industrial) economies are very dependent and do not posses large initial endowments.[6] Finally, there is a last group of countries, mainly those that have both the know-how and the resources (or the control of other countries' resources). They

[5] The other one is the already mentioned bad estimation of what creates power.

[6] We do not focus on the measurement of country's ability to transform strategic resources into effective power. Also, we believe that this could be of some interest to study it in correspondence with the ability of this country to be listening in international fora.

represent the dominant countries and try to maintain this domination by protecting other countries' resources. The fact that they dominate has allowed them to obtain a great importance in the (recently created) International Organizations. Indeed, as argued by Popke (1994), the role of the IMF "has increasingly come to be scripted through the discourse of US security". Moreover, "the IMF itself draws on discourses, in order to script the role of the countries with which it interacts (...). The IMF disseminates a form of power/knowledge by casting itself as the sole authority over a wide range of issues". Popke finally argues that this power plays through IMF's surveillance and structural adjustment programs. The aim is therefore to deflect "blame for monetary problems away from the industrialized nations and onto the nations of the third world".

This leads to the idea developed in Harrigan et al. (2006), that IMF loans (the country chosen, the amount and the conditionality of loans) could be used by creditors to control or to appropriate strategic resources from debtors. The distinction between the use and the possession of resources is then representative of what makes the difference between politics and geopolitics, and justifies the hypothesis just above. To put it in a nutshell, the question of geopolitics is not why should a country have an interest in another one, but rather what could be of interest in the borrowing for the dominant members of the IMF. Implicitly, we then suppose the Fund's economists perform almost perfect estimations of the potential recipient countries situations. If loans were granted only on economic criteria, then there should be no selection distortion. Therefore, the objective of this chapter is first, to define what factors could make some countries geopolitically attractive to IMF leading countries and second to assess empirically whether these factors play in the probability to receive IMF finance.

2 Geopolitical determinants of the importance of nations

2.1 Definition issues

In this section we attempt to identify some relevant proxies for some of the key factors that determine the geopolitical importance of nations. Listing all the sources of geopolitical importance is a difficult task. The search for determinants of country's geopolitical importance faces in our view two main constraints. First, one should not search for a determinant, neither for some determinants, but rather for a *range of interacting determinants*. Indeed, as Baldwin (1979) argues, geopolitics may concern many different areas, thus inducing that, regarding on the area, the same country's geopolitical importance may switch from the highest to an insignificant level. Keeping this in mind, we attempt to propose a statistical analysis of the geopolitical determinants which deals with this inconvenient, namely a *common factor analysis*. Indeed, while many studies investigate the relation between independent and dependent variables, factor analysis is used to study the patterns of relationship among many variables, with the goal of discovering something about the nature of the factor that affect them, even though those variables were not measured directly. In our case, measuring directly the geopolitical importance of a country is not possible. In a factor analysis, this will refer to the inferred independent variable, i.e. the factor. In other words, factor analysis looks for the factors which underlie the variables. It is therefore very useful for our study since we do not pretend to propose an absolute definition of the geopolitical importance of countries, but rather extract an underlying factor behind possible determinants. More formally, with x_i an observation, the factor analysis states that, with $i = 1, 2 \ldots, p$:

$$x_i = \sum_{r-1}^{k} l_{ir} f_r + e_i \tag{IV.1}$$

where f_r is the common *r-th* vector, k is specified and e_i is a residual that

represents sources of variation affecting only x_i. In other words, if a correlation matrix can be explained by a general factor, it will be true that there is some set of correlations of the observed variables such that the product of any two of those correlations equals the correlation between the two observed variables.

The method used to estimate the factor scores is the "regression estimator" (Thomson, 1951). Formally, it has the following form (Kosfeld and Lauridsen, 2007):

$$gf_T = \Lambda^{'}\left(\Lambda\Lambda^{'} + \Sigma_u\right)^{-1} X^{'} = \left(I + \Lambda^{'}\Sigma_u^{-\frac{1}{2}}\Lambda\right)^{-1}\Lambda^{'}X^{'} \tag{IV.2}$$

Where Λ is the factor matrix, $\Lambda^{'}$ is given by $\Xi = F.\Lambda^{'}$, with the left hand side being the matrix of the "true" regressor values. The matrix of observations X, is then given by the following equality: $X = \Xi + U$, where U stands for the errors matrix. That is, if we refer to (1), it is the matrix of the e_i. Finally, the last term to define is the covariance matrix of unique factors u_j, given by: $\sum_u = diag(\sigma^2_{u_1}\sigma^2_{u_2}...\sigma^2_{u_p})$. The product $\Lambda\Lambda^{'}$ is the cross-factors matrix of the Λ with each other.

Regarding the structure of the factor, two questions arise: How many factors should we use? How many variables should we use? Darlington et al. (1973) exposes a simple rule: The fewer factors, the simpler the hypotheses. Since simple hypotheses generally have logical scientific priority over more complex hypotheses, hypotheses involving fewer factors are considered to be preferable to those involving more factors. That is, you accept at least tentatively the simplest hypothesis (i.e. involving the fewest factors) that is not clearly contradicted by the set of observed correlations. So that the clearer the true factor structure, the smaller the sample size needed to discover it. Thus, the rules about number of variables are very different for factor analysis than for regression, i.e. it is perfectly acknowledged to have many more variables than cases. In fact, the more variables the better, as long as the variables remain relevant to the underlying factor. Regarding the number of factors to be selected, we will display model-selection criteria, AIC and BIC, and run maximum-likelihood tests. Each model will be estimated using maximum likelihood, and thus will permit to select the best LR ratio. We will also display

the Kaiser-Meyer-Olkin measure of sampling adequacy that permits to discriminate whether overall variables have enough in common to warrant a factor analysis.

The second constraint in dealing with the geopolitical importance of a country is related to the fact that one should not only take into account the geopolitical importance of this country, but rather its importance and the importance of its neighbours, i.e. its geographical position. Indeed, while dealing with geopolitics, one should not omit the importance of the region and the importance of geographic relations between states. For example, one could not ignore the geopolitical importance of Turkey given by its geographical situation between Europe and the Middle-East. Keeping this in mind, we attempt to deal with this inconvenient by proposing an additional statistical analysis of the geopolitical determinants, namely a *potential analysis*. We bring together the concept of geopolitical importance of states and the potential analysis taken from International Economics. Generally, in the location decision analysis (of FDI for example), a variable labelled market potential is presented. This idea is related to Harris' 1954 influential market-potential function, which states that the demand for goods produced in a location is the sum of purchasing power in other locations, weighted by transport costs. The concept was later strengthened by Fujita et al. (1999) stating that nominal wages are higher near concentrations of consumer and industrial demand (Hanson, 2005). In this chapter, we adapt this concept adding to country's factor the scores of its neighbours to their relative distance. By doing so, we are able to catch both the geopolitical importance of a particular country and also its importance in the World. Formally, the geopolitical potential of a country will be computed as follows:

$$gp_{it} = \sum_{j=1}^{n} \frac{gf_{jt}}{d_{ij}} \tag{IV.3}$$

where gp_i is the geopolitical potential of country i, gf_i is the geopolitical factor of country i as calculated in (2) and d_{ji} the relative distance in kilometers between country j and i. However, due to (i) the large number of countries in our database and (ii) the weak magnitude of the factors compared to that of the bilateral distance,

(3) is expected to be highly correlated to (2). A pairwise correlation test between gf_i and gp_i shows a correlation of 0.46 significant at the 1% level. Therefore, we compute (3) without taking into account the geopolitical factor of the borrowing country but only the weighted sum of its neighbors:

$$gpf_{it} = \sum_{j \neq i} \frac{gf_{jt}}{d_{ij}} \tag{IV.4}$$

2.2 Variables entering the geopolitical factor

Variables proxying the geopolitical importance of countries may be classified in 4 areas as follow: (i) the energetic, (ii) the nuclear, (iii) the military and (iv) the geographical areas. One could have computed some data on the political regimes in place in the potential recipient countries. However, we believe these variables have a direct effect on the decision of the Fund. Indeed, the Fund does not wish to see its money mismanaged. It seems obvious that the variables found to be robustly significant in Sturm et al. (2005), namely government stability, the quality of the bureaucracy and a dummy variable indicating the extent of political opposition, have an incidence on the quality of the management of the IMF loan. At least, it increases the risk the Fund's money will be mismanaged. Including these variables would then necessitate to add some additional control variables to test whether the Fund acts as a rational lender or not. This question will be partly studied in the penultimate section of this chapter.

Energetic Area

Capturing the relative importance of land power refers directly to energetic resources. Of course, many resources might be useful in building a geopolitical factor, but we are here interested in resources that are/might be strategic since we are searching for potential power. In this case, oil and gas resources appear to be fundamental. For example, Rose (2007) uses oil and gas proven reserves as proxies of geopolitical importance of country in a gravity equation to study bilateral trade. Moreover, more than 90% of world's energetic rent comes from oil and gas

(Eifert et al., 2003).[7] In that spirit, we use the data on oil and gas proven reserves, rather than actual oil and gas production, to capture countries potential rent as we argued above that what matters is rather the (unexploited) potential. One needs also to take into account, for strategic purposes, the country's ability to transport these resources. Indeed, it is sometimes the case that a country is geopolitically important not because it owns large resources but because they need to transit via this country to be exported. Therefore, we use also oil and gas pipelines since they are expected to proxy countries' ability to transport energy for internal or external purposes.

We expect the endowment in reserves and pipelines to play positively in the probability of obtaining IMF facilities. Indeed, regarding reserves, dominant countries may be willing to control or to appropriate these future sources of energy, thus lending them more easily through the IMF (Harrigan et al., 2006). Finally, we expect the possession of large pipelines infrastructures to increase the probability of obtaining an IMF facility since they facilitate the transportation of national or foreign resources, and therefore should be subject to protection or to appropriation.

Nuclear Area

After having proxied countries' energetic importance, we should also take into account countries' endowment in nuclear energy. Indeed, this resource is at the cross-section between energetic and military powers. Therefore, we computed a variable accounting for the size of civil nuclear capacity and a dummy variable to capture whether a country has the nuclear weapon.

The impact of these variables on the probability to obtain an IMF loan is ambiguous. On the one hand, the non allocation of an IMF loan may be seen by dominant countries willing to retain their position as a tool to counteract the rising power of nuclear weapons' holders. On the other hand, the international community may be interested in ensuring the economic stability of nuclear powers in order to reduce the risk that they use or sell their weapons. Additionally, the possession of nuclear weapons may increase countries' bargaining power in the international arena,

[7] This figure seems unrealistically high. The high price of oil barrel may explain it. However, some argue the share that oil and gas represent together is smaller. But still, these two energetic resources represent a very large share of the total energetic rent which undoubtedly exceeds 50%.

and therefore their ability to "lobby" to obtain an IMF loan. Jo and Gartzke (2007) study the determinants of nuclear weapons proliferation and found that signatories to the Treaty on the Non-Proliferation of Nuclear Weapons are less likely to initiate nuclear weapons programs, but the NPT has not deterred proliferation at the system level. Moreover, they found that the United States hegemony has the potential to encourage nuclear proliferation since the US appears much more willing to intervene, advocating in our case for a positive relation between the allocation of loans and the nuclear capacity of countries.

Military power

Within the notion of geopolitics lies the concept of military power. Indeed, at its very start, the discipline gained attention largely through the work of Sir Halford Mackinder in England and his formulation of the Heartland Theory in 1904. This theory hypothesized the possibility for a huge empire to be brought into existence which didn't need to use coastal or transoceanic transport to supply its military industrial complex, and that this empire could not be defeated by all the rest of the world coalitioned against it.[8] To proxy the military importance of countries, we use three variables: First, we needed to proxy the military potential of a country for domestic and regional purposes. In this spirit, we collected the number of US soldiers established in the borrowing country. We focus only on the US army because of its global importance and because the US dominates the Fund's decision making process (Bini Smaghi, 2004, 2006a,b; Leech, 2002; Harrigan et al., 2006). Second, we needed to control for conflicts and the deployment of multilateral forces since conflicts usually deter inflows of aids to the country. We collected therefore the United Nation military strengths established in the borrowing country. Third and lastly, we built a weighted index of country's involvement in Non-Proliferation Treaties (NPT) in order to provide a measure of the international "good willing". We constructed this index by collecting data for all the international Treaties (13), except regional ones. If a country has implemented a Treaty, then it is coded 1, 0 otherwise. To appreciate the proximity between each country and the International

[8] Joseph S. Nye (1990) also argues that ability to win a war is the historic source of power. Military power still a factor explaining power in spite of the rise of other factors such that economic growth or technology.

Community, we weight each Treaty, year by year, by its relative importance. The latter is given by the number of depositors (implementation of the Treaty) of a Treaty divided by the total number of depositors for all NPT.[9] Therefore, the more a Treaty has been implemented by other countries, the more it contributes to the index. For example, the Geneva Protocol, created in 1925, has a weight of almost 16.5% in the index in 1990. The Mine Ban Convention, signed in 1997 (so it has no weight for the first 7 years of the data) has a weight of 9.9% at the end of the period. However, the Geneva protocol weight has lost 7 percentage points in 1997. Moreover, the NPT related to nuclear weapon loses less weight than the Geneva protocol does (from 19% to 13%). Finally, the weight of some Treaties like the Certain Conventional Weapons Convention present at the beginning of the period has increased at the end of the period, thus implying there is not a bias in favour of recently created Treaties.

We expect IMF loans to be positively correlated with these military factors. Indeed, the US troops variable exhibits the geopolitical importance for the US, and thus for an important number of US allies (Le Billon and El Khatib, 2004). We expect the US and its military allies to influence loan decisions in order to favour countries where their troops are present. Regarding the NPT index, the effect of the variable relating to NPT is more ambiguous. On the one hand, signing such treaties signals countries' cooperative behaviour and submission to an "international rule of law" which may impact positively on the odds of obtaining an IMF loan. On the other hand, their participation in such a treaty reduces their threat to the world. In this context the international community may be less interested in ensuring the economic stability of such countries through the concession of an IMF program. Finally, we have no predefined expectations regarding the UN strength proxy since this variables is rather a control variable than a determinant.

Geographic area

Finally, we also need to take into account the pure geographic characteristics

[9] One could have considered that the important signal is to sign the same treaties than the major countries at the IMF. However, this would imply a precise rule to rank the deposits of two treaties, one that has not been signed by the USA and France and one that has not been signed by Japan and Germany. Consequently, we have decided to assume that the important signal is to follow the international community taken as a whole.

of countries. In this part, we use traditional proxies of geographic importance of countries (Ades and Chua, 1997; Houtum, 2005; Bernholz, 2006): The area in kilometre squared to proxy the physical size of the country. To proxy the size in terms of representativeness, we collect data on the population of countries. To control whether the country is not just filed with desert or mountains and if this country has important transportation capacities, we collected the length of the roads. Finally, and central to the geopolitical analysis, we also use the number of borders and the length of the coast lines. All these variables are supposed to capture size as well as geographic determinants of transportation ability within the country. They should all play positively on the probability to receive IMF loans.

2.3 Description of variables entering the geopolitical factor and outcome of the factor analysis

Variables entering the factor analysis are reported in Table 1 below. We report the units and the sources of collected data in the appendix. The factor analysis ran, we report below the outcome. We calculated the Kaiser-Meyer-Olkin measure of sampling adequacy to determine the fit of our factor regarding variables entering the sample. We also report a correlation table of the variables with the factor. Not surprisingly, the only variable poorly correlated is the UN military strength variable as discussed before. The fit is rather good and is classified as 'meritorious' with a value of 0.8015, from a scale ranging from 0 to 1. Finally, we also report AIC and BIC selection criteria. They both, together with the Eigen values, advocate for the use of a single factor analysis. Not reported here, we also ran maximum-likelihood tests on the adequate number of factors. The latter suggests that a one factor model provides an adequate model. All results are shown in table 2 and 3 below.

Variable	Observations	Mean	Std. Dev.	Min	Max	Unit	Source
Oil reserves	1568	6.14	21.13	0	132.46	Billion Barrels	Oil & Gaz Journal and
Gaz reserves	1568	39.28	183.78	0	1680.00	Trillion Cubic Feet	BP Statistical Review
Oil pipelines	1568	2183.57	7199.54	0	72283	Kilometers	CIA World factbook
Gaz pipelines	1568	4844.36	17177.70	0	156285	Kilometers	
Civil nuclear capacity	1568	759.11	3087.74	0	21743	MWe	Nuclear Energetic Agency
Possession of nuclear weapon(s)	1568	0.16	0.37	0	1	Dummy: 1 if posseses nuclear weapon. 0 if not	International Energetic Agency (author computation)
Number of US military troops	1651	504.52	3590.62	0	41344	Number of soldiers US	Department of Defense
UN military strength	1568	575.02	3390.62	0	38599	Number of soldiers	United Nation Peacekeeping Department
NPT index	1568	0.61	0.24	0	0.9930502	Index (0 to 1, author computation)	United Nation Organization
Length of roads	1568	117654.40	429089.70	12	3851440	Kilometers	
Area	1554	848394	2037358	431	17100000	Kilometers squarred	CIA World factbook
Number of borders	1568	4.14	2.63	0	17	Unit	
Length of coastlines	1568	2473.05	7199.35	0	54716	Kilometers	

Table IV.1: Description of the variables

Variable	Kaiser-Meyer-Olkin measure of sampling adequacy	Correlation with factor
Oil reserves	0.7911	0.8964
Gaz reserves	0.8117	0.8626
Oil pipelines	0.8670	0.8677
Gaz pipelines	0.8711	0.8641
Civil nuclear capacity	0.7294	0.4356
Possession of nuclear weapon	0.8273	0.5076
Number of US military troops	0.6443	0.1641
UN military strength	0.3833	-0.0481
NPT index	0.6468	0.1371
Length of coastlines	0.8384	0.3090
Area	0.7550	0.5027
Length of roads	0.8322	0.4402
Number of borders	0.6016	0.2610
Overall	0.8015	-

Table IV.2: Factor selection criteria (Kaiser-Meyer-Olkin)

Factor n^o	Eigenvalue	Difference	Proportion	Cumulative	Log. Like	DF_m	DF_r	AIC	BIC
Factor1	4.35512	3.39043	0.7019	0.7019	-1553.667	14	77	3135.335	3206.157
Factor2	0.96469	0.17876	0.1555	0.8574	-960.8392	27	64	1975.678	2112.265
Factor3	0.78593	0.28186	0.1267	0.9841	-583.487	39	52	1244.974	1442.266
Factor4	0.50407	0.22034	0.0812	1.0653	-330.9682	50	41	761.9363	1014.874

Table IV.3: Factor selection criteria (AIC and BIC)

3 Data and methodological issues

3.1 The data: description of the independent and dependent variables

Explanatory variables

Variables entering the geopolitical factor and potential have been described in the section above. When estimating the probability to receive IMF loans and the determinants of the size of these loans, one should control for economic determinants. Sturm et al. (2005) have ran an Extreme Bond Analysis to discriminate between economic and political determinants of IMF loans using a panel model for 118 countries over the period 1971-2000. They found three very robust economic variables explaining the distribution of IMF loans: the ratio of international reserves to imports of goods and services in current US$, the growth of real GDP and the log of GDP per capita at market prices. The ratio of total debt service to exports of goods and services is also found to be significant but to a lesser extent. We build therefore our model upon their findings and include these variables in our estimations.[10] The expected signs of these variables are respectively (i) negative, as a low reserves to imports ratio increases the risk of meeting balance of payments difficulties; (ii) negative, as a country experiencing high growth rates is less subject to economic difficulties and (iii) ambiguous, depending on the systemic aspect of the lending decision. That is, a higher GDP per capita means less need for help, but also means a higher risk for the region surrounding the country if it meets some difficulties. Finally, the debt service to exports ratio is expected to be positively linked since a heavy debt burden relative to exports increases countries' need for external finance to service that debt. All economic data are taken from the International Monetary Fund International Financial Statistics database.

Dependent variables

Our dependent variables are the ratio of the amount of IMF loans agreed and drawn to the borrowing country's quota, in accordance to IMF Articles of

[10] We have also run our estimations with additional economic variables (current account balance and total external debt). Results are unchanged but too many observations were lost due to the lack of data.

Agreements. Indeed, IMF loans are granted to ease the adjustment policies and reforms that a country must make to correct its balance of payments problem and restore conditions for strong economic growth. They are mainly provided under an "arrangement", which stipulates the specific policies and measures a country has agreed to implement to resolve its balance of payments problem. The economic program underlying an arrangement is formulated by the country in consultation with the IMF, and is presented to the Fund's Executive Board in a Letter of Intent. Over the years, the IMF has developed various facilities to address the specific circumstances of its diverse membership. More specifically, IMF finance is divided into two resources account: First, the concessional loans allow low-income countries to borrow through the Poverty Reduction and Growth Facility (PRGF) and the Exogenous Shocks Facility (ESF). Second, non-concessional loans are provided mainly through Stand-By Arrangements (SBA), and occasionally using the Extended Fund Facility (EFF), the Supplemental Reserve Facility (SRF), and the Compensatory Financing Facility (CFF). The IMF also provides emergency assistance to support recovery from natural disasters and conflicts, in some cases at concessional interest rates. Except for the PRGF and the ESF, all facilities are subject to the IMF's market-related interest rate and some carry a surcharge (mainly for large loans). The rate of charge is based on the Special Drawing Rights interest rate, which is revised weekly to take account of changes in short-term interest rates in major international money markets. The amount that a country can borrow from the Fund varies depending on the type of loan, but is typically a multiple of the country's IMF quota. The limit is fixed according to the Articles of Agreements to 100% of the quota per year and 300% on a cumulative basis of 3 years regarding the SBA for example. Of course, these limits can be extended in special occasions. For example, South Korea and Turkey got more than 1500% of their quota during financial distress, respectively in 1997 and in 1999/2000.

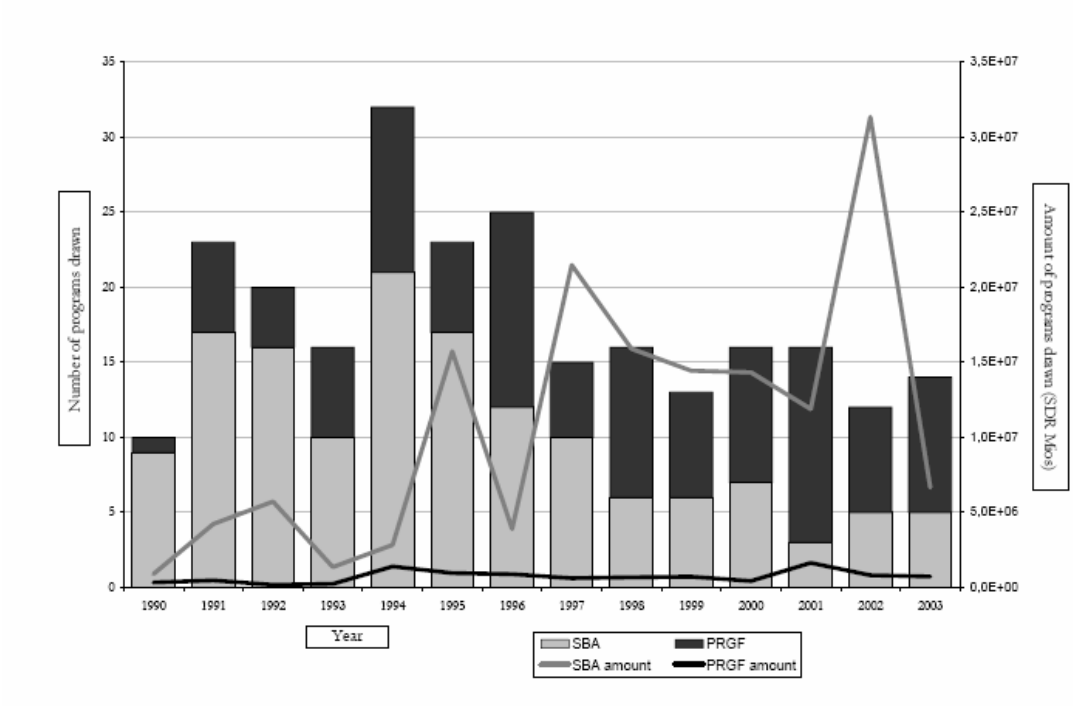
Since we focus on lending and given that industrial countries have not made use of the Fund's financial support for the last three decades, our panel comprises 107 IMF developing and emerging economies over the period 1990-2003 sampled at the yearly frequency. Overall, our panel encloses nearly 99% of the total amount lend by

the IMF during the sample period. 299 agreements have been agreed accounting for over 237,633,199 thousands of SDR and 255 agreements have been drawn, i.e. the money actually received by the borrowing country, accounting for over 160,956,076 thousands of SDRs. Table 4 below shows descriptive statistics for our dependent variables. Overall, agreements are slightly equally distributed between SBA and PRGF, 46% and 42% of total loans drawn respectively as shown in Chart 1 (in bars) below. However, looking at the amount lent, Chart 1 (in lines) exhibits the sheer size of SBA compared to PRGF. Indeed, SBA represent more than 80% of total loans, compare to 6% for PRGF. This distinction has some economic bases since PRGF are oriented to support low-income countries, and therefore their needs are much less important than emerging markets. Interestingly however, the amount and the number of PRGF are increasing over time. We will therefore focus on SBA and EFF for non-concessional loans and on PRGF for concessional ones since the rest of loans are anecdotic. Finally, looking at the regional distribution of loans is also quite informative. Chart 2 below represents the percentage of numbers of SBA (in black) and of PRGF (in grey) to total IMF loans per region over our sample period. Interestingly, we notice that the bulk of SBA drawn are in direction of Europe (including Turkey), Asia and South America, whereas PRGF drawn are mainly oriented to support African countries.

	Stand-by Agreements		Extended Fund Facility		Poverty Reduction and Growth		Structural Adjustment	
	Agreed	Drawn	Agreed	Drawn	Agreed	Drawn	Agreed	Drawn
Programs sum	188 561 431	131 343 846	34 877 525	19 369 402	13 910 293	9 996 578	283 950	246 250
Programs sum / Total lent over the period 1990-2003	79,3%	81,6%	14,7%	12,0%	5,9%	6,2%	0,1%	0,2%
Mean (for borrowing countries)	1 201 028	1 113 083	1 125 081	744 977	130 003	93 426	70 988	61 563
Mediane (for borrowing countries)	100 000	86 770	353 160	144 625	73 380	51 890	40 040	29 090
Standard deviation (for borrowing countries)	3 726 691	3 097 080	1 610 927	1 203 137	160 870	126 356	74 717	82 527
Number of programs	157	118	31	26	107	107	4	4
Number of programs / Total programs over the period 1990-2003	52,5%	46,3%	10,4%	10,2%	35,8%	42,0%	1,3%	1,6%

Table IV.4: Description of the dependant variables

Figure IV.1: Evolution of the relative total amounts and numbers of SBA and PRGF 1.pdf



3.2 Methodology issues

Our panel is unbalanced with a total of 1523 observations. As described above, our dependent variables are left censored to 0 and uncensored on the 'right side'. This calls for a censored regression model such as the Tobit estimator. The model is therefore specified hereafter, as in Barro and Lee (2005):

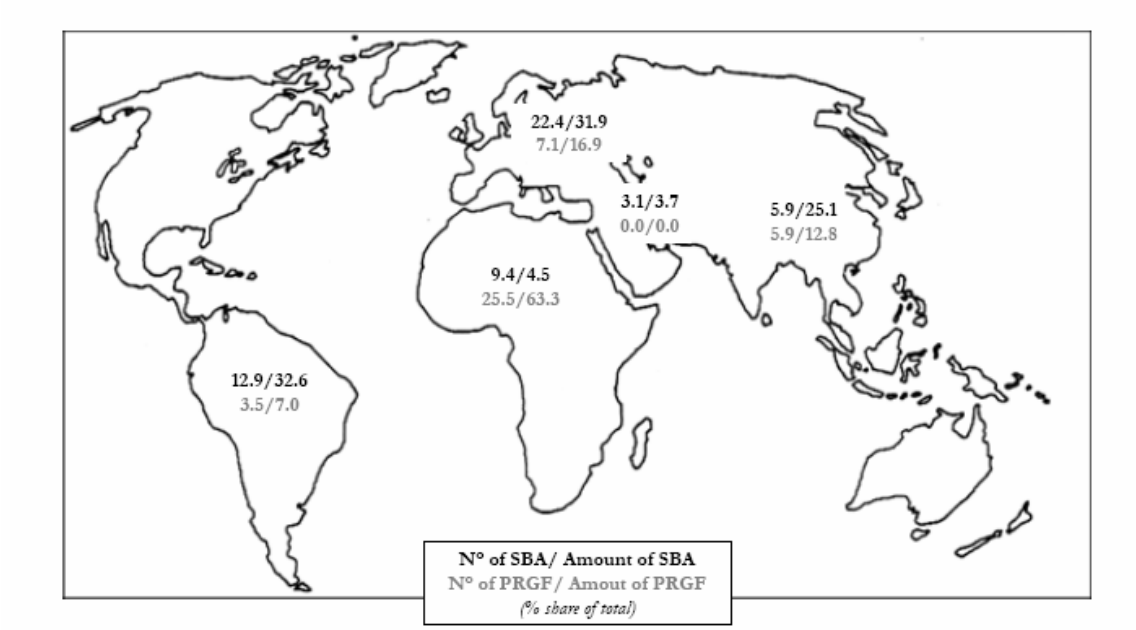
$$L_{it}^{*} = \alpha + \beta X_{it} + \delta G_{it} + \gamma^{*} T_{t} + \mu_{it} \tag{IV.5}$$

$$L_{it} = max[0, L_{it}^{*}] \tag{IV.6}$$

where the dependent variable, L_{it}, is the loan-size variable for country i during

Figure IV.2: Geographical repartition of the recipients and the funds of SBA and PRGF

2.pdf



period t. $L_{it} = 0$ if the country did not have a loan agreement with the IMF during period t. The vector X_{it} denotes the country-specific economic macro-aggregates that influence the existence and size of IMF programs. As discussed before, this vector includes the ratio of foreign reserves to imports, debt service to exports, per capita GDP and GDP growth. The regression also includes time dummies to control for common effects of external factors such as world interest rates. G_{it} comprises the measures of country's geopolitical importance as discussed in section 3. It includes: First, the geopolitical factor of countries gf_i; second, their geopolitical potential gp_i and gpf_i and third, a proxy of the diplomatical bargaining power of countries that we will use as a robustness checks, namely the number of G7 Embassies and Consulates in the borrowing country as used by Rose (2007) and computed by the authors. Finally, the variable μ_{it} is a random error term.

Equation (5) can be viewed as a reduced-form model of supply for IMF loans from a debtor's perspective.[11] To minimize reverse-causality problems, all explanatory variables are measured as lagged values. Some variables enter as their log values to deliver the best goodness-of-fit.[12] Moreover, we use random-effects specifications for the error term since the probability that a country is favored by the IMF during one period is likely to be persistent over time, as argued by Barro and Lee (2005). This assumption is supported by econometrical tests. Finally, the Breusch and Pagan Lagrangian multiplier test indicates that for SBA, our sample shows some heteroskedasticity. This does not allow us to use the standard Tobit estimator since this one is not able to correct for heteroskedasticity. We are therefore bounded to estimate (5) using interval regressions, but this does not change the equation estimated. We may therefore produce robust variance estimates of marginal effects.

4 Estimation results

4.1 Core results

Core results are shown in tables 5 and 6. In each tables, we estimate separately models of supply for SBA and for PRGF. This distinction is crucial even though these facilities are most of the time pooled together in related studies. Yet, these loans are very different in terms of conditionality and overall objective.

Regarding the economic model (odd columns) for SBA, countries experiencing relatively weak growth in real GDP are found to demand more credit as expected. Indeed, the estimated parameters are found significant at the 1% level and negative for SBA as in Sturm et al. (2005). Moreover, the positive relation between IMF lending and GDP per capita may reflect the Fund's reluctance to provide stabilization loans to countries that are not creditworthy (Barro and Lee, 2005). As argued by Knight and Santaella (1997), countries experiencing relatively low levels of international reserves relative to imports are found to request and receive

[11] However, since IMF agreements involve the participation of both debtors and creditors, the model may also represent the reduced-form model of demand of IMF loans.

[12] To keep the zero observations when making the log transformations, we added 1.00E-7 to each observation. The results are not sensitive to the specific values added for the log transformations.

more IMF credit. Indeed, these countries will be less able to meet balance of payments difficulties through reserves use and hence will be more likely to ask for loans. Finally, a heavy debt burden relative to exports increases countries' need for external finance to service that debt. As in Rowlands (1995), we found this estimated parameter significantly and positively related for SBA.

The picture is however reversed for PRGF, at least for GDP growth and per capita GDP. Indeed, the parameter estimated of per capita GDP is significant and negative. In accordance to Knight and Santaella (1997), we find that poor countries are more likely to ask for finance. Indeed, these countries have limited access to private international capital markets and may need technical assistance to develop well-functioning institutions. Interestingly, we find that GDP growth is significant with a positive sign. Harrigan et al. (2006) found the similar result without explaining it. We believe that since access to PRGF is mainly conditioned to a certain level of GDP per capita, since PRGF have no conditionality and account for small amount compare to SBA, these loans are granted more easily. Moreover, as their name suggests it, PRGF are granted to foster growth. Thus, growth rate has to be already positive before the loan to enhance a positive effect of that kind of loan. This represents in our view an argument to the critics claiming that the IMF has become too much of an aid agency Rowlands (1995).

Although the above economic model provides useful insights into the determinants of IMF programs, its explanatory power may be improved including variables capturing countries' geopolitical potential as argued by IMF staff (see citations above). Even columns in tables 5 and 6 present our model including the geopolitical factor of countries, i.e. gf_i in G_{it}. Our factor is found to be significant at the 1% level and positively related to SBA, whereas it is significant at the 10% level and negatively related to PRGF. Therefore, our results exhibit that the IMF Executive Board is favouring geopolitically important countries when lending non-concessional facilitites, and favouring non-geopolitically important countries when lending concessional ones. The results for the supplemented models show a strong improvement of the explanatory power of the estimations.

	(Panel A)				*(Panel B)*			
Dependent variable / Explanatory variables	*Stand-by Agreements to quota (%)*				*Poverty Reduction and Growth Facilities to quota (%)*			
	Agreed		*Drawn*		*Agreed*		*Drawn*	
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*
Growth of GDP	-4.475	-4.315	-4.184	-3.990	1.872	1.888	1.431	1.442
	(4.14)^a	(4.09)^a	(4.01)^a	(3.89)^a	(2.82)^a	(2.85)^a	(2.73)^a	(2.75)^a
Log of GDP per capita	1.005	0.908	0.895	0.788	-0.834	-0.767	-0.665	-0.612
	(5.24)^a	(4.99)^a	(4.59)^a	(4.26)^a	(12.45)^a	(10.45)^a	(11.12)^a	(9.72)^a
FX reserves to imports	-0.789	-1.104	-1.399	-1.961	-0.873	-0.822	-0.701	-0.662
	(1.85)^c	(2.12)^b	(2.63)^a	(2.84)^a	(2.20)^b	(2.02)^b	(2.18)^b	(2.01)^b
Debt service	4.079	3.407	3.701	3.041	0.791	0.812	0.573	0.588
	(3.10)^a	(2.75)^a	(2.92)^a	(2.57)^b	(1.65)^c	(1.73)^c	(1.49)	(1.57)
Geopolitical factor: gfi		0.554		0.706		-0.160		-0.127
		(3.61)^a		(3.84)^a		(1.70)^c		(1.76)^c
Constant	-10.523	-9.581	-9.661	-8.616	2.777	2.291	2.262	1.876
	(5.20)^a	(5.05)^a	(4.56)^a	(4.39)^a	(4.89)^a	(3.82)^a	(4.80)^a	(3.84)^a
Pseudo-R^2 for Tobit estimations	*0.0930*	*0.1090*	*0.1090*	*0.1322*	*0.1520*	*0.1550*	*0.1611*	*0.1643*
Observations	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*
Countries	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*

Interval regression estimator - Marginal effect reported - Robust absolute value of t statistics in parentheses
^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%

Table IV.5: Core results: Model of supply for IMF loans and geopolitical factor

Dependent variable / Explanatory variables	*(Panel A)*				*(Panel B)*			
	Stand-by Agreements to quota (%)				*Poverty Reduction and Growth Facilities to quota (%)*			
	Agreed		*Drawn*		*Agreed*		*Drawn*	
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*
Growth of GDP	-4.499	-4.434	-4.313	-4.097	1.914	1.874	1.463	1.437
	(4.21)^a	(4.23)^a	(4.14)^a	(4.07)^a	(2.91)^a	(2.82)^a	(2.81)^a	(2.73)^a
Log of GDP per capita	0.902	0.875	0.761	0.748	-0.800	-0.831	-0.639	-0.654
	(5.16)^a	(5.21)^a	(4.44)^a	(4.43)^a	(10.89)^a	(11.17)^a	(9.98)^a	(10.44)^a
FX reserves to imports	-0.803	-0.835	-1.478	-1.609	-0.865	-0.872	-0.695	-0.698
	(1.76)^c	(1.78)^c	(2.47)^b	(2.47)^b	(2.18)^b	(2.18)^b	(2.17)^b	(2.17)^b
Debt service	4.590	3.154	4.607	2.553	0.623	0.791	0.442	0.572
	(3.29)^a	(2.71)^a	(3.25)^a	(2.39)^b	(1.26)	(1.65)^c	(1.12)	(1.49)
Geopolitical potential: gpi	0.083		0.120		-0.018		-0.014	
	(3.00)^a		(3.47)^a		(1.18)		(1.16)	
Diplomatic bargaining power		0.931		1.194		-0.012		-0.037
		(3.13)^a		(3.54)^a		(0.09)		(0.33)
Constant	-9.773	-11.214	-8.730	-10.708	2.544	2.777	2.083	2.261
	(5.26)^a	(5.17)^a	(4.63)^a	(4.55)^a	(4.16)^a	(4.90)^a	(4.17)^a	(4.82)^a
Pseudo-R^2 for Tobit estimations	*0.1035*	*0.1034*	*0.1372*	*0.1312*	*0.1540*	*0.1520*	*0.1631*	*0.1612*
Observations	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*
Countries	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*

Interval regression estimator - Marginal effect reported - Robust absolute value of t statistics in parentheses
^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%

Table IV.6: Core results: Model of supply for IMF loans, geopolitical potential and diplomatic importance of countries

As described above, we constructed a different way to estimate G_{it} using potential analysis gp_i. Indeed, we argue that one should not only take into account the geopolitical importance of a country, but also its geographical importance. We introduce gp_i in (5) and the results are, in many respects, similar to those found in the previous table. Table 6 above shows the result of our model using the geopolitical potential of countries (odd columns). Even columns show the results using Rose's 2007 proxy for diplomatic linkages between countries. In our case, we computed the log of the number of G7 Embassies and Consulates in the borrowing countries since the G7 represents over 45% of voting shares in the IMF Executive Board, which translates according to Bini Smaghi (2006a,b) into more than 90% of voting power. This measure is supposed to proxy the borrowing country's diplomatic bargaining power, and thus its capacity to negotiate in particular the amount of loans drawn. We emphasize that our proxy for geopolitical importance is supposed to capture rather a supply effect: leading members of the IMF favored geopolitically important countries; while this proxy for diplomatic importance is supposed to capture rather a demand effect: the borrowing country's ability to bargain with G7 countries. In other words, we make the underlying hypothesis that the supply effects should rather play on the decision to lend while demand effects are expected to influence the amount of the loan. Indeed, decision to lend is taken by the Executive Board that decides together with staff support to lend under the General Resource Account (non-concessional loans) or not and proposes an amount. Consequently, an IMF staff mission is sent to the borrowing country and the structural policies together with the conditions and the more precise estimation of country's financial needs is set. Differences between the amount agreed and the one drawn can be substantial as exposed in table 4. 157 agreements have been reached to lend through SBA whereas only 118 have been drawn according to our sample. Conversely, 107 PRGF have been agreed and the same number has been drawn. We therefore expect that there might be a selection effect analyzing SBA since the lending process is proceeding in two steps. First, the decision to lend is taken at the Executive Board that decides together with staff support to lend under the General Ressource Account (non-concessional loans) or not and proposes an amount. Second, an IMF staff mission is

sent to the borrowing country and the structural policies together with the conditions and a more precise estimation of country's financial needs is set hand in hand with borrowing country's government. We expect that there might be a selection effect analyzing SBA differentiating between supply and demand effects that may play in the first and in the second steps of the lending process, respectively. Consequently, since our proxy for geopolitical importance is supposed to capture rather a supply effect, we expect that it plays in the selection step, while our proxy for diplomatic importance, supposed to capture rather a demand effect, is expected to play rather on the outcome step, i.e. on the amount of the loan. Additionally to the standard Heckman selection model 1979, we tested the Sartori (2003) selection model without exclusion restrictions as further robustness checks. Results of the Satori model are available upon request and results of the Heckman model are shown in table 7 below. We tested the explanatory power of our proxies for geopolitical importance and for diplomatic importance of countries both on the first and on the second step of SBA lending process. The results confirm that supply effects, proxied by the geopolitical potential, influence rather the decision to lend SBA whereas demand effects, proxied by the G7 diplomatic bargaining power, are influencing the characteristics of the loans as shown by the significance of both proxies in the Heckman model. As a robustness check, we estimated in the second column of table 7 the selection model introducing our exclusion variable, gp_i, in the second step to verify its non significance. Moreover, the results show that all parameters estimated of the economical variables are significant in the first step whereas only the parameters estimated of the foreign-exchange reserves to imports and the debt service are significant in the second step. This is an interesting result advocating in favour of IMF objectives. Indeed, while the decision to lend seems more influenced by the objective to stabilize the International Monetary System, largely supported countries are rich, in recession and geopolitically important; the amount of the SBA is rather set in accordance to the objective to alleviate the debt burden.

Another concern in this chapter is to follow the international trade literature concerning the geopolitical factor. The method of calculation of the internal distance is problematic and depending of it, this may introduce a bias in the potential.

Step 1: Selection	*Dependent variable / Explanatory variables*	*Stand-by Agreements agreed (dummy: 1 for loan, 0 otherwise)*	
	Growth of GDP	-1.675	-1.675
		(5.00)[a]	(5.00)[a]
	Log of GDP per capita	0.283	0.283
		(5.34)[a]	(5.34)[a]
	FX reserves to imports	-1.062	-1.062
		(3.72)[a]	(3.72)[a]
	Debt service	1.314	1.314
		(3.68)[a]	(3.68)[a]
	Geopolitical potential : gpi	0.042	0.042
		(4.87)[a]	(4.87)[a]
	Constant	-3.205	-3.205
		(8.55)[a]	(8.55)[a]
Step 2: Amount	*Dependent variable / Explanatory variables*	*Stand-by Agreements to quota (%)*	
	Growth of GDP	0.452	-0.306
		(0.36)	(0.03)
	Log of GDP per capita	-0.124	0.008
		(0.48)	(0.01)
	FX reserves to imports	2.391	1.884
		(2.37)[b]	(0.30)
	Debt service	2.125	2.735
		(1.81)[c]	(0.36)
	Geopolitical potential : gpi		0.020
			(0.08)
	Diplomatic bargaining power	0.731	0.730
		(2.32)[b]	(2.33)[b]
	Constant	1.110	-0.831
		(0.39)	(0.03)
	Wald test	*98,81*[a]	*122,97*[a]
	Mills: λ	-1.287[c]	-0.693
	ρ	-0.661	-0.409
	σ	1.948	1.694
	Observations	*1163*	*1163*
	Countries	*98*	*98*

Heckman selection model - Two-steps estimator
Absolute value of z statistics in parentheses
[c] *significant at 10%;* [b] *significant at 5%;* [a] *significant at 1%*

Table IV.7: Heckman selection model for SBA

Therefore, this could explain the fact that the geopolitical potential is less significant than the geopolitical factor. Dividing each country's geopolitical factor by its internal distance may affect the result since the factor analysis is bounded to an interval $[-1.75, 2.19]$ and country's internal distance $[13.84, 2754.81]$ in log terms. We extract from the geopolitical potential the part due to other countries' proximity and estimate our model with the geopolitical factor adding the latter. Results are shown in table 8 below. They are robust for SBA but still are losing significance for the PRGF estimation. We investigate in the next section another possible explanation.

What arises from tables 5 to 8 is the fact that countries that are geopolitically important are favored by the IMF when loans are softly concessional. Indeed, using an econometrical study, we are able to confirm the declarations of de de Rato y Figaredo (2004), the current IMF Managing Director, that "some large IMF-supported programs raise concerns because they appear to suggest that a country's geopolitical importance [...] play a role in IMF loan decisions". We confirm that concessional loans, i.e. PRGF, are not influenced by geopolitical concern and to the contrary, the less geopolitically important countries are, the more loan they get, which reflects in our view the development objectives of these loans. Moreover, countries with stronger diplomatic bargaining power, proxy by the number of G7 Embassies and Consulates, are more likely to receive non-concessional loans. Performing a correlation analysis between our geopolitical factor and geopolitical potential to our proxy for diplomatic linkages is instructive as shown in table 7 below. The results show that our geopolitical factor proxying the geopolitical importance of countries is correlated up to 70% with our proxy for diplomatic bargaining power.

4.2 Robustness checks

4.2.1 On the inter- and intra-individual groups correlation

As a first robustness check, we estimate our model using cluster analysis. Indeed, cluster analysis permits to control for two complementary characteristics of panel data: (i) the highest intra-individual homogeneity and (ii) the highest inter-

	(Panel A)		*(Panel B)*	
Dependent variable / Explanatory variables	*Stand-by Agreements to quota (%)*		*Poverty Reduction and Growth Facilities to quota (%)*	
	Agreed (1)	*Drawn (2)*	*Agreed (3)*	*Drawn (4)*
Growth of GDP	-4.375	-4.157	1.912	1.461
	$(4.15)^a$	$(4.01)^a$	$(2.90)^a$	$(2.80)^a$
Log of GDP per capita	0.868	0.726	-0.759	-0.606
	$(5.00)^a$	$(4.23)^a$	$(10.11)^a$	$(9.46)^a$
FX reserves to imports	-1.013	-1.774	-0.825	-0.664
	$(2.01)^b$	$(2.70)^a$	$(2.03)^b$	$(2.02)^b$
Debt service	3.945	3.978	0.705	0.507
	$(2.92)^a$	$(2.93)^a$	(1.47)	(1.32)
Geopolitical factor gf_i	0.393	0.444	-0.129	-0.104
	$(2.63)^a$	$(2.88)^a$	(1.26)	(1.30)
Geopolitical potential	0.054	0.088	-0.011	-0.008
without factor: gpf_i	$(1.94)^c$	$(2.70)^a$	(0.66)	(0.63)
Constant	-9.362	-8.309	2.244	1.841
	$(5.11)^a$	$(4.47)^a$	$(3.66)^a$	$(3.70)^a$
Pseudo-R^2 for Tobit estimations	*0.1080*	*0.1443*	*0.1557*	*0.1649*
Observations	*1163*	*1163*	*1163*	*1163*
Countries	*98*	*98*	*98*	*98*

Interval regression estimator - Marginal effect reported - Robust absolute value of t statistics in parentheses

^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%

Table IV.8: Potential analysis with decomposed potential

	Geopolitical factor: gf_it	Geopolitical potential: gpf_it	Geopolitical potential without factor gp_it	Log of G7 Embassies and Consulates
Geopolitical factor: gf_it	1.0000			
Geopolitical potential: gpf_it	0.4617 (0.0000)	1.0000		
Geopolitical potential without factor: gp_it	0.4095 (0.0000)	0.9966 (0.0000)	1.0000	
Log of G7 Embassies and Consulates	0.7017 (0.0000)	0.2479 (0.0000)	0.2075 (0.0000)	1.0000

Significance level in parenthesis

Table IV.9: Correlation analysis of geopolitical factor, potential and diplomatic importance of countries

individual heterogeneity. Table 9 above shows the estimation when clustering for countries. The results are, in many respects, similar to those found in the previous tables. As cluster analysis controls for the variances of intra and extra groups, standards errors are diminished leading to a small decrease in the significance of our factor of geopolitical importance of countries. This is less problematic in the case of SBA than in the case of PRGF in which the geopolitical factor loses its significance at the 10% level. The loss in significance may thus be explained by the heterogeneity of countries receiving PRGF. Indeed, since PRGF is not subject to conditionality, the restrictions to obtain a loan can be roughly summarized by the level of GDP per capita whereas the conditionality of SBA make these loans subject to more macroeconomic scrutiny. Therefore, the recipient group of PRGF is more likely to exhibit heterogeneity than the SBA one.

	(Panel A)						*(Panel B)*					
Dependent variable / Explanatory variables	*Stand-by Agreements to quota (%)*						*Poverty Reduction and Growth Facilities to quota (%)*					
		Agreed			*Drawn*			*Agreed*			*Drawn*	
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*
Growth of GDP	-4.315	-4.506	-4.434	-3.990	-4.312	-4.097	1.888	1.909	1.874	1.442	1.460	1.437
	(3.77)^a	(3.91)^a	(3.93)^a	(3.49)^a	(3.75)^a	(3.64)^a	(2.82)^a	(2.83)^a	(2.78)^a	(2.68)^a	(2.71)^a	(2.66)^a
Log of GDP per capita	0.908	0.880	0.875	0.788	0.740	0.748	-0.767	-0.802	-0.831	-0.612	-0.639	-0.654
	(3.80)^a	(3.89)^a	(3.90)^a	(3.30)^a	(3.48)^a	(3.45)^a	(8.25)^a	(9.01)^a	(8.81)^a	(7.95)^a	(8.41)^a	(8.52)^a
FX reserves to imports	-1.104	-0.833	-0.835	-1.961	-1.532	-1.609	-0.822	-0.861	-0.872	-0.662	-0.691	-0.698
	(1.61)	(1.35)	(1.31)	(2.44)^b	(2.36)^b	(2.16)^b	(2.31)^b	(2.40)^b	(2.42)^b	(2.31)^b	(2.41)^b	(2.42)^b
Debt service	3.407	4.504	3.154	3.041	4.450	2.553	0.812	0.653	0.791	0.588	0.461	0.572
	(2.83)^a	(3.17)^a	(2.74)^a	(2.50)^b	(2.96)^a	(2.36)^b	(1.41)	(1.14)	(1.37)	(1.34)	(1.04)	(1.29)
Geopolitical factor gfi	0.554			0.706			-0.160			-0.127		
	(2.84)^a			(3.14)^a			(1.40)			(1.46)		
Geopolitical potential: gpi		0.083			0.114			-0.014			-0.012	
		(2.61)^a			(2.91)^a			(1.03)			(1.06)	
Diplomatic bargaining power			0.931			1.194			-0.012			-0.037
			(2.66)^a			(3.11)^a			(0.07)			(0.26)
Constant	-9.581	-9.564	-11.214	-8.616	-8.515	-10.708	2.291	2.563	2.777	1.876	2.090	2.261
	(3.87)^a	(4.03)^a	(4.10)^a	(3.32)^a	(3.53)^a	(3.55)^a	(3.43)^a	(3.91)^a	(4.39)^a	(3.48)^a	(3.91)^a	(4.35)^a
Observations	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*
Countries	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*

Cluster analysis - Interval regression estimator - Marginal effect reported - Robust absolute value of t statistics in parentheses
^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%

Table IV.10: Robustness checks: Cluster analysis

4.2.2 On the sample size

The size of our sample is reduced due to the fact that most of the poor countries have less accurate statistical collections process than the most developed one. We may, by dropping the reserves to exports and the debt service variables[13], increase the size of our sample to reduce the inter-heterogeneity between PRGF recipients as the countries introduced are expected to be all of a similar development level, dealing thus with the above section robustness check. Table 11 below show the results of the estimation of our supply function for PRGF restricting the economic determinants to increase our sample size.[14] Indeed, we are now able to include 107 countries (98 before) accounting for 1425 observations (1163 before). As expected, our geopolitical factor regains its significance in the expected sign enforcing the fact that non-geopolitically important countries are more likely to receive PRGF.

[13] These two variables are found to be less significant than GDP and per capita GDP.
[14] Results for SBA are unchanged.

Dependent variable / Explanatory variables	*Stand-by Agreements to quota (%)*						*Poverty Reduction and Growth Facilities to quota (%)*					
	Agreed			*Drawn*			*Agreed*			*Drawn*		
Growth of GDP	-5.185	-5.443	-5.405	-5.129	-5.385	-5.326	2.049	2.069	2.015	1.582	1.598	1.561
	(3.86)^a	(3.72)^a	(4.04)^a	(3.51)^a	(3.40)^a	(3.67)^a	(3.25)^a	(3.16)^a	(3.18)^a	(3.17)^a	(3.06)^a	(3.12)^a
Log of GDP per capita	0.796	0.843	0.704	0.671	0.674	0.570	-0.798	-0.811	-0.864	-0.635	-0.647	-0.683
	(3.83)^a	(3.33)^a	(3.69)^a	(3.10)^a	(2.79)^a	(2.91)^a	(12.01)^a	(9.15)^a	(12.21)^a	(11.15)^a	(8.29)^a	(11.34)^a
Geopolitical factor gfi	0.781			0.923			-0.223			-0.178		
	(3.98)^a			(4.02)^a			(2.53)^b			(2.61)^a		
Geopolitical potential: gpi		0.045			0.083			-0.028			-0.022	
		(1.75)^c			(2.39)^b			(2.08)^b			(2.10)^b	
Diplomatic bargaining power			1.375			1.591			-0.048			-0.055
			(3.69)^a			(3.88)^a			(0.35)			(0.50)
Constant	-8.925	-9.170	-10.951	-8.070	-7.967	-10.444	2.613	2.691	3.181	2.044	2.114	2.499
	(4.24)^a	(3.74)^a	(4.51)^a	(3.58)^a	(3.27)^a	(3.89)^a	(4.86)^a	(4.39)^a	(6.09)^a	(4.89)^a	(4.13)^a	(6.00)^a
Observations	*1425*	*1425*	*1425*	*1425*	*1425*	*1425*	*1425*	*1425*	*1425*	*1425*	*1425*	*1425*
Countries	*107*	*107*	*107*	*107*	*107*	*107*	*107*	*107*	*107*	*107*	*107*	*107*

Cluster analysis - Interval regression estimator - Marginal effect reported - Robust absolute value of t statistics in parentheses
^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%

Table IV.11: Robustness checks on the sample

4.2.3 On the factor analysis: Testing the variables entering the factor

Another robustness check consists in controlling the adequacy of our factor analysis. This may be done by testing the robustness of the factor itself regarding the variables entering it and by computing the factor using another technique. The latter will be tested in the next sub-section. We focus here on the variables entering the factor analysis.

First, tables 16 to 19[15] show the results of estimations where all the geopolitical variables entering the factor are tested separately, still controlling for economic determinants and time effects. Regarding the top panel on SBA, all variables, except the UN military strength one, are significant and positively linked to the decision and the amount to lend through SBA. This enforces the robustness of our factor analysis. Indeed, the fact that all variables entering the factor are significant and positive advocates for the use of the factor analysis to proxy the unobserved geopolitical importance of countries. Regarding the bottom panel of PRGF, results are less significant. This is non-surprising since the significance of our factor is less robust as discussed above. The only four significant variables are the oil reserves (in the bottom right and left parts), nuclear plant and nuclear weapon (only for the amount drawn) and the population. This suggests that when we say that the IMF tends to favoured less geopolitical important countries when lending through the PRGF resources, the Fund lend to countries with small endowment in resource, which is in line with its development objective, and without the nuclear civil and military power. In the latter case, one might argue that the IMF is willing to lend to countries that do not represent a nuclear threat, but one should also take into account that poor countries are less likely to be enough economically developed to build up nuclear power. We can in this case cite the example of Pakistan which is a large recipient of PRGF and possesses both civil and military nuclear powers.

Another robustness check consists in taking out variables, one by one, of the sample during the computation process of the factor analysis and by doing the same but in taking out groups of variables. Table 20-21 and 22[16] present the results of

[15] In appendix.
[16] In appendix.

these checks respectively. In the first place, variables are taken out one by one in the following order: Oil reserves, gas reserves, oil pipelines, gas pipelines, civil nuclear power plants, possession of nuclear weapon(s), US troops presence in the country, UN military strength in the country, NPT index, coastlines, area, lengths of roads, population and the number of borders. Results are robust to the different specifications for SBA and show more volatile significance for PRGF as pointed out in the preceding sub-section. Regarding the latter, results are non-surprisingly stronger when dealing with energetic and nuclear powers as shown in table 14 below in which variables are, in a second place, taken out by groups organized as the following: Energetic, nuclear, military and geographic variables. Both tables reinforce the robustness of the construction of our factor analysis.

4.2.4 On the factor analysis: Testing a different estimation of the factor

A last robustness check consists in using a different method to estimate our factor. As it has been pointed out by Kosfeld and Lauridsen (2007), the Thomson estimator may be a biased minimum variance estimator. They also prove that another method, namely the Bartlett estimator (Bartlett, 1938), is the best linear unbiased estimator. Therefore, it is necessary to check whether the Bartlett estimation method shows some results comparable to those of the Thomson's one. However, Lawley and Maxwell (1962) shows that both methods are linear transformations of each other, thus inducing that there is no remarkable differences between them. Table 23[17] exhibits the result of the factor analysis run with the Bartlett estimation method. It appears that coefficients and significance are slightly changed but their magnitudes remain the same.

5 Hyperloans

Geopolitics has then an important role in the IMF lending practice. Similar to the WTO situation where the fact that some countries have more power than others could be harmful since they have the possibility, through the lack of retaliation of

[17] In appendix.

Dispute Settlement Procedure, to break the rules and not respect their commitments. Similarly, the question of the possibility to break the rule in the Fund is logical as it is known that some countries obtained much larger loans than the maximum staten by the Article of Agreement.

In this section, we put forward that when other considerations than economic ones[18] enter the lending decision, such as geopolitical ones, the Fund's practices may distort incentives ex-ante by increasing the probability the Fund will bail-out a country. The question is then whether large loans are more influenced by geopolitical criteria than others as the IMF can also goes outside its mandate by lending more than its Statute (the Article of Agreement, AoA) permit (de Rato y Figaredo, 2004).

5.1 Hypotheses

Fund's loans are disaggregated to obtain more accurate results. There is either the General Resource Account (GRA), including Stand-By Arrangements (SBA) and Extended Fund Facility (EFF), or the Poverty Reduction and Growth Facility (PRGF) program, dedicated to least developed countries.[19]

Regarding GRA, the IMF loan decision process is divided in two steps, first the Staff assesses country's economic situation and it proposes a solution to the Board that votes on this basis. Second, a mission evaluates in more detail the exact amount to be lent in accordance to the home country's public authorities. Consequently, the original access approved to IMF finance does not necessarily map the exact amount disbursed for at least two reasons (Ghosh et al., 2007): first, the program may fail as the 1999/2000 Turkish one. Second, the borrowing country may choose not to withdrawn the total amount or to treat the loan as precautionary.

In the second step, we assume that the economic estimates made by the Staff on countries financial needs are 'almost' perfect. If loans were granted only on economic criteria, then there should be no selection distortion. In the first step however, some

[18] According to the Articles of Agreement (AoA), the only criteria to take into account are economic

[19] Actually, PRGF programs only exist since 2000. They have replaced the ESAF programs. The main difference between both programs is the establishment of list of eligible countries to PRGF. We will refer in the remaining of the chapter to PRGF, as ESAF from 1990 to 1999 and PRGF from 2000 to 2003.

countries may be favored according to their geopolitical importance. Indeed, this voting rule represents more geopolitical than economic preferences as Mussa and de Rato y Figaredo stated.

Since decision at the Fund are taken in two steps, we expect that a selection effect differentiating between supply and demand effects that may play in the first and in the second steps of the lending process, respectively. Indeed, geopolitical criteria are assumed to be representative of the supply effect whereas the economic criteria stand for demand effect.

Hypothesis 4. *As the lending decision is taken by voting at the Board. Geopolitical determinants are expected to play rather on the selection process.*

The main difference between GRA and PRGF is the nature of conditionality. Indeed, while the programs designed through the GRA are mainly driven from Fund's studies and then marginally negotiated, those proposed through PRGF are mainly designed by the country itself, with an active participation of Development Organizations, such that the World Bank. Taking this into account, another way to identify lending distortions is to spot countries getting more than mentioned in the Article of Agreements (loans that we call *hyper-loans*). Indeed, a country's getting GRA should not legally get more than 100% of its quota in a year and more than 300% of its quota on a three years basis. In PRGF, the country can not get more than 140% of its quota.

Hypothesis 5. *Geopolitical considerations are expected to play more actively in GRA programs, as loans are larger and as the Board is more implicated in GRA programs lending decisions.*

However, getting *hyper-loans* could also be due to the ongoing financial liberalisation that has generated some crises which scope is far larger than anticipated when the AoA has been written in 1944. Thus, the criteria would still be economic, but adapted to modern times. If this is so, a neutral to risk comportment should be observed from the Funds. As the PRGF programs are accepted in the context of the Heavily Indebted Poor Countries (HIPC) Initiative, the comparison with countries

that obtain a GRA should allow to observe if the IMF reacts differently when facing countries identified as indebted and others.

Hypothesis 6. *Debt is supposed to positively explain PRGF programs selection, and negatively GRA programs selection, especially for large loans.*

5.2 Method and Data

The empirical investigation is divided in three steps: (i) First, we investigate the determinants of the probability of being selected for an loans differentiating between GRA and PRGF. (ii) Second, we evaluate the determinants of the amount received as percentage of countries' quota. For these two steps, we tested first the standard economic model of IMF loan Sturm et al. (2005) and second we add our geopolitical variables one after one to discriminate between them and their impact on the selection and on the amount lent. (iii) In the third step, we use a Heckman selection model. Once we have disentangle factors playing in the selection step, i.e. supply factors, and factors playing in the outcome step, i.e. the demand factors, we are able to test the hypothesis of a selection distortion. Finally, to study whether large loans exhibits different result, we also test whether recidivist countries and those that benefit from high loans exhibit results significantly different.

The economic model taken from Sturm et al. (2005) includes the following variables: (i) The ratio of international reserves to imports of goods and services in current US$ and the growth of real GDP at market prices. The ratio of total debt service to GDP and the debt service to exports ratio.[20] The geopolitical variables include traditional proxies of geographic importance of countries (Ades and Chua, 1997; Bernholz, 2006; Houtum, 2005): the area in kilometer squared and the number of borders, to proxy the physical size and location of the country, respectively. To proxy the size in terms of representativeness, we use the population of countries. Moreover, geopolitics also refers to the relative importance of land power, i.e. energetic resources. We include the proven oil reserves and the nuclear

[20] Estimations were also run with more economic variables (such as the current account balance). Results are in line with the model presented here but too many observations were lost due to the lack of data.

power capacities of countries. Finally, geopolitics also refers to the military power of states. To proxy the military importance of countries, taking into account possible endogeneity bias with using military spending for example, we include US soldiers' presence from 1990 to 2003 over the world. This variable exhibits the geopolitical importance for the US, the leading members in the Board (Bini Smaghi, 2006a; Leech, 2002) and thus for an important number of US allies (Le Billon and El Khatib, 2004).

5.3 Results

Table 12 presents the result for the GRA. Regarding the economic model for GRA in the probit model, economic variables are shown to have the expected signs as they respect what the past literature has found. Indeed, growth has a negative impact (Sturm et al., 2005), as the reserves to imports (Knight and Santaella, 1997) and the debt to GNI ratios have. To the contrary, debt service has a positive impact (Rowlands, 1995). Interestingly, all these variables except debt service loose their significance in the linear regression. The debt service is then the only one to have a significant and positive effect on the amount perceived. Turning to the geopolitical variables, the oil reserves and the nuclear capacity seems to be discriminating as they play positively on the probability to be chosen for a GRA program but are not significant to explain the amount of the loans. Therefore, these two variables will serve as exclusion variables in the Heckman selection model.

Table 13 show the result of the estimation applied to on PRGF and expected signs as well. As PRGF are aimed to enhance growth, growth rate has a positive impact on the probability to obtain a PRGF. The ratio of reserves to imports is found to be negative (Knight and Santaella, 1997). Debt service is not significant and the debt to GNI ratio is significant and positive. This last result is thus in line with the HIPC Initiative hypothesis. Therefore, hypothesis 6 is verified.[21] In the OLS regression, the main variable that explains the amount is the ratio reserves to imports. This support the fact that PRGF programs are not negotiated to help

[21] Same estimations have been run taken into account that since 2000, a list of eligible countries to PRGF exists, the results are qualitatively the same.

countries to face crisis, but to enhance growth and reduce poverty. The geopolitical variables exhibit sensitively the same results, as the same two variables seem to be discriminating. Therefore, this confirms that oil reserves and nuclear capacity have to be the exclusion variables.

	Probit (Agreed Program)							OLS (Drawn amount)						
$gdpg^{t-1}$	-1.542^{a}	-1.548^{a}	-1.503^{a}	-1.534^{a}	-1.552^{a}	-1.534^{a}	-1.561^{a}	-0.833	-0.822	-0.795	-0.596	-0.543	-0.837	-0.827
	(4.31)	(4.46)	(4.25)	(4.31)	(4.31)	(4.30)	(4.39)	(0.93)	(0.92)	(0.91)	(0.66)	(0.61)	(0.93)	(0.93)
$resimports^{t-1}$	-0.331^{c}	-0.398^{b}	-0.309^{c}	-0.348^{b}	-0.318^{c}	-0.342^{b}	-0.359^{b}	0.168	0.032	0.208	-0.084	-0.110	0.174	0.124
	(1.96)	(2.08)	(1.76)	(2.04)	(1.95)	(2.02)	(2.09)	(0.28)	(0.04)	(0.34)	(0.13)	(0.18)	(0.29)	(0.21)
$debtservice^{t-1}$	1.476^{a}	1.268^{a}	1.234^{a}	1.439^{a}	1.551^{a}	1.449^{a}	1.358^{a}	5.313^{a}	5.128^{a}	5.202^{a}	4.812^{a}	4.666^{a}	5.329^{a}	5.089^{a}
	(4.07)	(3.44)	(3.33)	(3.89)	(4.10)	(3.99)	(3.69)	(4.02)	(4.71)	(3.82)	(3.62)	(3.80)	(3.99)	(4.00)
$debttogni^{t-1}$	-0.057^{a}	-0.048^{a}	-0.045^{a}	-0.057^{a}	-0.058^{a}	-0.057^{a}	-0.052^{a}	0.002	0.005	0.009	0.008	0.016	0.001	0.003
	(5.40)	(4.49)	(4.31)	(5.41)	(5.41)	(5.45)	(4.74)	(0.06)	(0.12)	(0.28)	(0.26)	(0.52)	(0.04)	(0.09)
$logoilres$		0.023^{a}							0.025					
		(3.45)							(1.12)					
$lognucl$			0.016^{a}							0.009				
			(2.98)							(0.57)				
$logarea$				0.012							0.142^{c}			
				(0.49)							(1.89)			
$logpop$					-0.027							0.287^{a}		
					(0.87)							(2.73)		
$logpaysfront$						0.008							-0.004	
						(0.80)							(0.32)	
$logusmil$							0.030^{b}							0.067^{b}
							(1.97)							(1.70)
Constant	-0.625^{a}	-0.458^{b}	-0.671^{a}	-0.766^{b}	-0.185	-0.613^{a}	-0.453^{b}	-0.740	-0.554	-0.699	-2.314^{b}	-5.375^{a}	-0.754	-0.296
	(3.05)	(2.20)	(2.98)	(2.10)	(0.33)	(2.98)	(2.05)	(1.44)	(0.59)	(1.36)	(2.35)	(2.89)	(1.45)	(0.63)
R^2	-	-	-	-	-	-	-	0.33	0.34	0.33	0.34	0.36	0.33	0.34
Observations	1156	1156	1156	1156	1156	1156	1156	152	152	152	152	152	152	152

Notes: a,b,c denotes respectively significance at the 0.01,0.05 and 0.10% level. Robust z statistics in parentheses. All models are estimated using fixed time effects.

Table IV.12: Probit and OLS regressions on the selection and amounts drawn on GRA programs, respectively

	Probit (Agreed Program)							OLS (Drawn amount)						
$gdpg^{t-1}$	0.759^{c}	0.915^{b}	0.794^{c}	0.766^{c}	0.762^{c}	0.772^{c}	0.751^{c}	0.148	0.181	0.145	0.135	0.126	0.129	0.080
	(1.85)	(2.06)	(1.89)	(1.87)	(1.85)	(1.90)	(1.86)	(0.40)	(0.46)	(0.39)	(0.36)	(0.36)	(0.34)	(0.23)
$resimports^{t-1}$	-0.501^{b}	-0.420^{b}	-0.488^{b}	-0.513^{b}	-0.511^{b}	-0.519^{b}	-0.467^{b}	-0.539^{b}	-0.560^{b}	-0.567^{b}	-0.551^{b}	-0.575^{b}	-0.526^{c}	-0.518^{b}
	(2.32)	(2.22)	(2.32)	(2.32)	(2.28)	(2.43)	(2.18)	(2.03)	(2.08)	(2.15)	(2.04)	(2.23)	(1.96)	(2.05)
$debtservice^{t-1}$	0.133	0.425	0.409	0.113	0.114	0.089	0.236	0.129	0.161	0.238	0.123	0.226	0.152	0.311
	(0.35)	(1.16)	(1.07)	(0.29)	(0.30)	(0.23)	(0.63)	(0.31)	(0.41)	(0.65)	(0.30)	(0.61)	(0.36)	(0.83)
$debttogni^{t-1}$	0.021^{a}	0.014^{b}	0.016^{a}	0.021^{a}	0.021^{a}	0.020^{a}	0.019^{a}	-0.008	-0.009	-0.010^{c}	-0.008	-0.011^{c}	-0.008	-0.010
	(3.68)	(2.49)	(3.04)	(3.69)	(3.74)	(3.64)	(3.39)	(1.24)	(1.42)	(1.72)	(1.22)	(1.67)	(1.26)	(1.66)
$logoilres$		-0.040^{a}							-0.006					
		(5.42)							(0.81)					
$lognucl$			-0.031^{a}							-0.016				
			(3.14)							(1.22)				
$logarea$				0.014							-0.014			
				(0.53)							(0.37)			
$logpop$					0.013							-0.063		
					(0.39)							(1.42)		
$logpaysfront$						0.017							-0.006	
						(1.31)							(0.67)	
$logusmil$							-0.019							-0.020^{c}
							(1.59)							(1.99)
Constant	-1.772^{a}	-2.198^{a}	-2.941^{a}	-1.937^{a}	-1.982^{a}	-1.757^{a}	-1.897^{a}	1.095^{a}	0.762^{a}	0.855^{a}	1.262^{b}	2.107^{a}	1.095^{a}	0.801^{a}
	(6.52)	(7.99)	(6.28)	(4.84)	(3.29)	(6.47)	(6.65)	(6.52)	(3.28)	(3.31)	(2.62)	(2.95)	(6.50)	(4.02)
R^2	-	-	-	-	-	-	-	0.32	0.33	0.35	0.33	0.35	0.33	0.36
Observations	1156	1156	1156	1156	1156	1156	1156	82	82	82	82	82	82	82

Notes: a,b,c denotes respectively significance at the 0.01,0.05 and 0.10% level. Robust z statistics in parentheses. All models are estimated using fixed time effects.

Table IV.13: Probit and OLS regressions on the selection and amounts drawn on PRGF programs, respectively

We now turn to a more coherent analysis in which selection biases are taken into account using a Heckman model (1979) in table 14. First, a noticeable exception appears in the outcome. Indeed, the only economic variables significant, in the amount equation for GRA, after controlling for selection bias is the debt to GNI ratio while these signs are reversed in the selection equation. The amount process seems therefore to be in line with the AoA regarding economic variables. However, this is not the case regarding the selection step. One explanation comes from the significance of the geopolitical variables. The Funds tend therefore to favour countries with high oil reserves and nuclear capacity when lending GRA while the opposite is true with PRGF, answering then our Hypothesis 4. This last result is not surprising as countries that obtain such programs are poor, without the capacity to develop the nuclear technology and with low oil reserves. Moreover, the debt to GNI ratio, once we controlled for selection bias, has more impact than the reserves to imports ratio, contrarily to the results of the OLS regression. The ratio debt to GNI is negative, therefore suggesting that whereas the Funds selects more countries that has high debt, it has a risk adverse comportment in the PRGF case as the amount is negatively influenced by the debt. Interestingly, the opposite is true for the GRA programs, thus suggesting that the Fund may be less adverse to risk when the amount granted are large, as this is the case in GRA compared to PRGF. An alternative explanation would be that the IMF fears the possible consequences that would occur if it does not lend to a large country. Hence, it prefers to lend a large loan in spite of the higher risk.

Regarding the selection, the results are totally identical for the GRA and the PRGF when compared with the probit regressions results.

Finally, table 15 presents the selection process of countries whose loans exceed what the AoA states. The remarkable result for the GRA programs is that, while the economic variables all have the same signs than in table 12, the oil reserves and nuclear capacity now have a very significant and positive impact, thus suggesting that when the IMF goes outside its mandate, it effectively takes into account geopolitical considerations. Moreover, as the Heckman model suggests it, it may be risk lover in this case. The PRGF also exhibits similar results when looking at

economic variables. Similarly to the results mentioned above, oil reserves now are positive strongly significant. The nuclear capacity is dropped as no country that benefit from loans higher than the AoA states produces nuclear energy.

Dpdt variable		GRA		PRGF	
		(1)	(2)	(3)	(4)
Step 1: Amount					
	$gdpg^{t-1}$	1.912	1.914	0.043	-0.277
		(1.28)	(1.23)	(0.16)	(0.68)
	$res_imports^{t-1}$	.2668	0.404	-0.488^{c}	-0.281
		(0.38)	(0.56)	(1.94)	(0.90)
	$debtservice^{t-1}$	1.563	1.545	0.105	0.048
		(1.01)	(0.96)	(0.41)	(0.13)
	$debttogni^{t-1}$	0.092^{c}	0.099^{c}	-0.011^{a}	-0.018^{b}
		(1.65)	(1.68)	(2.06)	(2.04)
	cons	3.396	3.278	1.532^{a}	2.552^{a}
		(1.64)	(1.54)	(3.55)	(3.02)
Step 2: Selection					
	$gdpg^{t-1}$	-1.560^{a}	-1.53^{a}	0.915^{b}	0.794^{c}
		(4.71)	(4.62)	(2.03)	(1.83)
	$res_imports^{t-1}$	-0.390^{c}	-0.321	-0.420	-0.488^{c}
		(1.84)	(1.60)	(1.55)	(1.71)
	$debtservice^{t-1}$	1.095^{a}	1.059^{a}	0.425	0.41
		(2.92)	(2.85)	(0.95)	(0.91)
	$debttogni^{t-1}$	-0.044^{a}	-0.041^{a}	0.014^{b}	0.016^{b}
		(3.59)	(3.36)	(1.99)	(2.45)
	$logoilreserves$	0.018^{b}		-0.04^{a}	
		(2.29)		(4.72)	
	$lognucl$		0.011^{c}		-0.031^{a}
			(1.83)		(2.80)
	Constant	-0.833^{a}	-0.9^{a}	-2.198^{a}	-2.94^{a}
		(2.65)	(2.85)	(7.33)	(6.43)
Wald test		101.08^{a}	98.54^{a}	64.12^{a}	51.85^{b}
Mills		-2.048^{b}	-2.038^{c}	-0.201	-0.668^{c}
ρ		-0.896	-0.895	-0.586	-0.996
Observations		1156	1156	1156	1156

Notes: a,b,c denotes respectively significance at the 0.01,
0.05 and 0.10% level. Standard deviations in parenthesis.

Table IV.14: Heckman selection model - Two steps estimator

Probit (Agreed program)	GRA							PRGF						
gdpg	-1.272^{b}	-1.252^{b}	-1.221^{b}	-1.145^{b}	-1.207^{b}	-1.265^{b}	-1.331^{b}	0.638	0.622	0.636	0.590	0.616	0.647	0.633
	(2.18)	(2.19)	(2.17)	(1.98)	(2.13)	(2.17)	(2.26)	(1.05)	(0.98)	(1.04)	(0.96)	(1.01)	(1.08)	(1.09)
$res_{i}mports$	−0.174	−0.339	−0.145	−0.376	−0.278	−0.183	−0.226	-0.922^{c}	−0.816	-0.865^{c}	-0.898^{c}	-0.885^{c}	-0.928^{c}	−0.770
	(0.84)	(1.18)	(0.65)	(1.50)	(1.05)	(0.89)	(1.03)	(1.89)	(1.54)	(1.79)	(1.73)	(1.75)	(1.94)	(1.62)
debtservice	2.395^{a}	2.103^{a}	2.051^{a}	1.989^{a}	2.131^{a}	2.371^{a}	2.233^{a}	0.558	0.634	0.719	0.600	0.607	0.540	0.810
	(4.83)	(4.03)	(3.97)	(3.89)	(4.18)	(4.71)	(4.44)	(0.78)	(0.90)	(0.98)	(0.83)	(0.84)	(0.76)	(1.12)
debtgni	-0.054^{a}	−0.031	-0.034^{c}	-0.047^{b}	-0.044^{a}	-0.054^{b}	−0.044	0.009	0.004	0.005	0.009	0.008	0.009	0.005
	(2.73)	(1.63)	(1.94)	(2.54)	(2.27)	(2.75)	(2.13)	(1.33)	(0.56)	(0.66)	(1.32)	(1.16)	(1.31)	(0.67)
logoilreserves		0.054^{a}							-0.035^{a}					
		(4.37)							(2.65)					
lognucl			0.021^{a}							(-)				
			(2.64)											
logarea				0.157^{a}							-0.056			
				(3.11)							(1.29)			
logpop					0.130^{b}							-0.047		
					(2.48)							(0.78)		
$logpaysfrontalier$						0.007							0.011	
						(0.35)							(0.52)	
logusmil							0.062^{c}							-0.051^{a}
							(1.80)							(2.82)
Constant	-2.303^{a}	-2.099^{a}	-1.866^{a}	-4.247^{a}	-4.497^{a}	-2.296^{a}	-1.693^{a}	-2.235^{a}	-2.595^{a}	-2.281^{a}	-1.551^{a}	-1.534^{c}	-2.310^{a}	-2.618^{a}
	(5.20)	(4.64)	(4.58)	(5.83)	(4.43)	(5.17)	(3.80)	(5.31)	(5.85)	(5.13)	(3.10)	(1.82)	(5.25)	(5.75)
Observations	1082	1082	1082	1082	1082	1082	1082	816	816	695	816	816	816	816

Notes: a,b,c denotes respectively significance at the 0.01, 0.05 and 0.10% level. Standard deviations in parenthesis.

Table IV.15: Hyperloans Probit - GRA 100 % - PRGF 140 %

6 Conclusions

In this study, we have developed a conceptual framework to explain how and why geopolitics can be present and can have some influence over loan decisions and sizes in the International Monetary Fund. By introducing a new concept, the *geopolitical* potential, and a method yet unused in this literature, we intended to find evidence that country's geopolitical importance plays a role in IMF loan decisions. Since the *geopolitical* importance of states is unobservable, we used in a first step a factor analysis. In a second step, we introduce the concept of geopolitical potential to capture the geopolitical importance of the borrowing country but also its geographical importance. The impact of these geopolitical factor and potential have been differentiated whether the Fund lend through concessional facilities (Poverty Reduction and Growth Facility (PRGF)) and non-concessional facilities supported by the General Resources Account (GRA), focusing on Stand-By Arrangements (SBAs) which are the most important facilities funded by the GRA. This distinction is crucial since non-concessional loans are generally conditional on the adoption of appropriate policies to resolve a country's macroeconomic difficulties and to enable the government to repay the Fund. However, conditionality may also be a way through which the Fund leading members could increase or serve their influence over other members for geopolitical purposes.

Our results shed light on how geopolitics may influence the Funds' lending practices. Economic determinants are still valid for both facilities and turn out to play more for SBA. This is in a sense a reassuring result regarding the management of IMF funds, since SBA represent more than 80% of total IMF lending. More importantly, our geopolitical factor and potential are strong determinants of IMF loans. Still, they influence differently the probability to sign a SBA and a PRGF. Indeed, the Fund favoured geopolitically important countries through SBA, while countries receiving PRGF seem to not be selected according to their geopolitical importance. These results are robust when controlling for the diplomatic importance of borrowing countries and also to different econometric specifications. Regarding SBA, we identify the differences between the decision to lend and the final amount

drawn to the borrowing countries. Using a selection model enable to distinguish between the supply factors, the fact that IMF leading members wish to favour a particular country, and the demand ones, the fact that borrowing countries are able to bargain on the amount finally drawn to the country. These steps are therefore identified and we proposed a discriminant supply factor through the geopolitical potential concept and a discriminant demand factor through the diplomatic bargaining power.

This new approach proposed in this study, as well as the method newly applied in this field, seem appropriate to study the case of IMF lending practices. We do not intend to provide a judgmental analysis on whether it is a good thing that the IMF favour geopolitically important countries. However, the conclusions of our analysis may question the positive externalities of conditionality since the decision to lend with conditionality, i.e. through SBA, is influenced not only by economics factors, but also geopolitical ones. Moreover, while decision may be biased by geopolitical interests, the effective amount drawn to SBA receipts is however not influenced by geopolitical interests but is rather subject to diplomatic bargaining powers.

Furthermore, we believe that geopolitics may also play strongly in other international organizations. This constitutes therefore an interesting path to expand this work.

To conclude, the last section of this chapter shows that geopolitics have a significant role in selection bias in the IMF lending decision. While it suggests that the Funds is coherent with its objective when negotiating PRGF programs, it seems that the IMF is more influenced by geopolitics and less careful when dealing with large loans. Consequently, it seems that the Fund tends to go outside its mandate both through hyper-loans and by taking into account geopolitics. Overall, the moral hazard might therefore be initiated with these distortions in the lending process.

IV.A Robustness Checks

Dependent variable / Explanatory variables	*Stand-by Agreements to quota (%)*													
	Agreed													
Growth of GDP	-4.377	-4.391	-4.414	-4.371	-4.382	-4.298	-4.486	-4.558	-4.441	-4.551	-4.258	-4.632	-4.388	-4.443
	(4.10)^{a}	(4.09)^{a}	(4.16)^{a}	(4.14)^{a}	(4.03)^{a}	(3.90)^{a}	(4.19)^{a}	(4.15)^{a}	(4.15)^{a}	(4.22)^{a}	(4.06)^{a}	(4.26)^{a}	(4.18)^{a}	(4.15)^{a}
Log of GDP per capita	0.907	0.945	0.862	0.861	0.927	0.958	0.942	1.004	0.920	0.912	1.074	0.904	1.118	1.055
	(4.91)^{a}	(5.01)^{a}	(4.79)^{a}	(4.80)^{a}	(4.83)^{a}	(5.02)^{a}	(5.34)^{a}	(5.30)^{a}	(5.10)^{a}	(5.06)^{a}	(5.28)^{a}	(5.22)^{a}	(5.18)^{a}	(5.22)^{a}
FX reserves to imports	-0.932	-0.960	-0.918	-0.958	-0.739	-0.882	-0.874	-0.727	-0.889	-0.647	-1.165	-0.895	-1.118	-0.905
	(1.95)^{c}	(2.01)^{b}	(1.86)^{c}	(1.96)^{c}	(1.70)^{c}	(1.95)^{c}	(1.98)^{b}	(1.76)^{c}	(1.93)^{c}	(1.45)	(2.44)^{b}	(1.98)^{b}	(2.12)^{b}	(2.07)^{b}
Debt service	3.857	3.889	3.589	3.724	3.748	3.871	3.894	3.923	3.894	3.867	3.383	3.617	3.332	3.828
	(3.00)^{a}	(2.99)^{a}	(2.80)^{a}	(2.90)^{a}	(2.91)^{a}	(3.03)^{a}	(3.05)^{a}	(3.11)^{a}	(3.02)^{a}	(3.00)^{a}	(2.76)^{a}	(2.89)^{a}	(2.76)^{a}	(2.99)^{a}
Log of Proven Oil Reserves	0.053													
	(2.71)^{a}													
Log of Proven Gaz Reserves		0.041												
		(2.50)^{b}												
Log of Oil pipelines			0.049											
			(3.28)^{a}											
Log of Gaz pipelines				0.040										
				(2.92)^{a}										
Log of civil nuclear plant power					0.034									
					(2.64)^{a}									
Dummy for nuclear weapon possession						1.149								
						(3.51)^{a}								
Log of US military strength							0.081							
							(1.79)^{c}							
Log of UN military strength								0.035						
								(1.32)						
Index of Non-Proliferation Treaties									1.704					
									(2.69)^{a}					
Log of km. of coastlines										0.041				
										(2.41)^{b}				
Log of total area											0.223			
											(3.06)^{a}			
Log of km. of roads												0.166		
												(3.09)^{a}		
Log of population													0.322	
													(3.09)^{a}	
Log of borders														0.064
														(1.99)^{b}
Constant	-9.374	-9.786	-9.273	-9.785	-9.500	-10.270	-9.532	-10.036	-11.003	-9.995	-13.477	-11.639	-16.308	-10.753
	(4.93)^{a}	(4.99)^{a}	(4.94)^{a}	(4.96)^{a}	(4.69)^{a}	(5.08)^{a}	(5.39)^{a}	(5.68)^{a}	(5.26)^{a}	(5.16)^{a}	(5.11)^{a}	(5.19)^{a}	(4.65)^{a}	(5.21)^{a}
Observations	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*
Countries	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*

Interval regression estimator - Marginal effect reported - Robust absolute value of t statistics in parentheses
^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%

Table IV.16: Robustness checks on variables entering the factor - SBA - Part 1

Dependent variable / Explanatory variables	*Stand-by Agreements to quota (%)*													
								Drawn						
Growth of GDP	-4.070	-4.080	-4.137	-4.063	-4.065	-4.003	-4.222	-4.264	-4.125	-4.234	-3.936	-4.386	-4.047	-4.158
	(3.92)^{a}	(3.90)^{a}	(4.03)^{a}	(4.00)^{a}	(3.84)^{a}	(3.74)^{a}	(4.10)^{a}	(4.01)^{a}	(4.01)^{a}	(4.08)^{a}	(3.90)^{a}	(4.15)^{a}	(4.00)^{a}	(4.02)^{a}
Log of GDP per capita	0.779	0.820	0.727	0.683	0.790	0.852	0.820	0.895	0.801	0.804	0.983	0.780	1.035	0.927
	(4.23)^{a}	(4.32)^{a}	(4.12)^{a}	(4.01)^{a}	(4.09)^{a}	(4.36)^{a}	(4.64)^{a}	(4.66)^{a}	(4.41)^{a}	(4.41)^{a}	(4.62)^{a}	(4.47)^{a}	(4.52)^{a}	(4.53)^{a}
FX reserves to imports	-1.646	-1.732	-1.647	-1.798	-1.367	-1.548	-1.558	-1.341	-1.610	-1.294	-1.893	-1.666	-1.929	-1.479
	(2.66)^{a}	(2.71)^{a}	(2.60)^{a}	(2.72)^{a}	(2.46)^{b}	(2.66)^{a}	(2.71)^{a}	(2.61)^{a}	(2.70)^{a}	(2.33)^{b}	(3.02)^{a}	(2.77)^{a}	(2.75)^{a}	(2.71)^{a}
Debt service	3.546	3.581	3.264	3.376	3.297	3.528	3.457	3.532	3.541	3.522	2.956	3.157	2.951	3.564
	(2.85)^{a}	(2.84)^{a}	(2.65)^{a}	(2.74)^{a}	(2.67)^{a}	(2.86)^{a}	(2.88)^{a}	(2.97)^{a}	(2.86)^{a}	(2.84)^{a}	(2.55)^{b}	(2.67)^{a}	(2.59)^{a}	(2.88)^{a}
Log of Proven Oil Reserves	0.066													
	(2.97)^{a}													
Log of Proven Gaz Reserves		0.056												
		(2.98)^{a}												
Log of Oil pipelines			0.062											
			(3.45)^{a}											
Log of Gaz pipelines				0.063										
				(3.58)^{a}										
Log of civil nuclear plant power					0.046									
					(3.81)^{a}									
Dummy for nuclear weapon possession						1.206								
						(3.86)^{a}								
Log of US military strength							0.120							
							(2.20)^{b}							
Log of UN military strength								0.037						
								(1.41)						
Index of Non-Proliferation Treaties									1.947					
									(2.96)^{a}					
Log of km. of coastlines										0.044				
										(2.42)^{b}				
Log of total area											0.261			
											(3.27)^{a}			
Log of km. of roads												0.213		
												(3.45)^{a}		
Log of population													0.360	
													(3.16)^{a}	
Log of borders														0.036
														(1.23)
Constant	-8.276	-8.718	-8.204	-8.325	-8.307	-9.458	-8.338	-9.113	-10.212	-9.152	-13.169	-10.969	-16.229	-9.802
	(4.30)^{a}	(4.35)^{a}	(4.35)^{a}	(4.29)^{a}	(4.00)^{a}	(4.43)^{a}	(4.74)^{a}	(5.04)^{a}	(4.62)^{a}	(4.52)^{a}	(4.54)^{a}	(4.54)^{a}	(4.20)^{a}	(4.56)^{a}
	1163 98	*1163 98*	*1163 98*	*1163 98*	*1163 98*	*1163 98*	*1163 98*	*1163 98*	*1163 98*	*1163 98*	*1163 98*	*1163 98*	*1163 98*	*1163 98*

Interval regression estimator - Marginal effect reported - Robust absolute value of t statistics in parentheses
^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%

Table IV.17: Robustness checks on variables entering the factor - SBA (Continuing) - Part 2

Dependent variable / Explanatory variables	*Poverty Reduction and Growth Facilities to quota (%)*													
	Agreed													
Growth of GDP	1.898	1.889	1.902	1.875	1.842	1.835	1.883	1.900	1.899	1.850	1.868	1.875	1.863	1.874
	(2.84)^{a}	(2.83)^{a}	(2.86)^{a}	(2.82)^{a}	(2.82)^{a}	(2.81)^{a}	(2.83)^{a}	(2.84)^{a}	(2.84)^{a}	(2.79)^{a}	(2.83)^{a}	(2.88)^{a}	(2.84)^{a}	(2.83)^{a}
Log of GDP per capita	-0.751	-0.790	-0.790	-0.819	-0.790	-0.793	-0.842	-0.838	-0.817	-0.859	-0.837	-0.815	-0.838	-0.833
	(10.18)^{a}	(10.79)^{a}	(9.50)^{a}	(9.28)^{a}	(11.25)^{a}	(11.67)^{a}	(11.96)^{a}	(12.27)^{a}	(11.50)^{a}	(11.31)^{a}	(12.59)^{a}	(11.32)^{a}	(12.89)^{a}	(12.38)^{a}
FX reserves to imports	-0.836	-0.812	-0.883	-0.869	-0.820	-0.827	-0.884	-0.901	-0.798	-0.838	-0.868	-0.862	-0.777	-0.877
	(2.07)^{b}	(2.01)^{b}	(2.21)^{b}	(2.17)^{b}	(2.06)^{b}	(2.04)^{b}	(2.22)^{b}	(2.26)^{b}	(2.05)^{b}	(2.14)^{b}	(2.14)^{b}	(2.17)^{b}	(1.90)^{c}	(2.21)^{b}
Debt service	0.757	0.787	0.832	0.791	0.854	0.835	0.772	0.883	0.739	0.772	0.784	0.808	0.798	0.785
	(1.60)	(1.68)^{c}	(1.75)^{c}	(1.66)^{c}	(1.82)^{c}	(1.77)^{c}	(1.62)	(1.74)^{c}	(1.51)	(1.61)	(1.64)	(1.70)^{c}	(1.70)^{c}	(1.64)
Log of Proven Oil Reserves	-0.023													
	(1.91)^{c}													
Log of Proven Gaz Reserves		-0.014												
		(1.33)												
Log of Oil pipelines			-0.007											
			(0.80)											
Log of Gaz pipelines				-0.002										
				(0.26)										
Log of civil nuclear plant power					-0.025									
					(1.57)									
Dummy for nuclear weapon possession						-0.581								
						(1.55)								
Log of US military strength							0.006							
							(0.29)							
Log of UN military strength								-0.010						
								(0.68)						
Index of Non-Proliferation Teaties									-0.475					
									(1.10)					
Log of km. of coaslines										0.005				
										(0.52)				
Log of total area											-0.053			
											(0.99)			
Log of km. of roads												-0.022		
												(0.77)		
Log of population													-0.109	
													(1.70)^{c}	
Log of borders														0.004
														(0.16)
Constant	2.029	2.366	2.449	1.528	2.130	2.549	2.866	2.657	2.962	2.925	3.459	1.711	4.574	2.769
	(3.18)^{a}	(3.85)^{a}	(3.72)^{a}	(1.59)	(3.15)^{a}	(4.48)^{a}	(4.45)^{a}	(4.45)^{a}	(5.01)^{a}	(4.89)^{a}	(3.93)^{a}	(2.19)^{b}	(3.77)^{a}	(4.88)^{a}
Observations	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*
Countries	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*

Interval regression estimator - Marginal effect reported - Robust absolute value of t statistics in parentheses
^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%

Table IV.18: Robustness checks on variables entering the factor - PRGF - Part 3

Dependent variable / Explanatory variables	*Poverty Reduction and Growth Facilities to quota (%)*													
	Drawn													
Growth of GDP	1.449	1.443	1.454	1.433	1.404	1.399	1.432	1.456	1.452	1.418	1.428	1.433	1.421	1.433
	(2.74)^{a}	(2.73)^{a}	(2.77)^{a}	(2.73)^{a}	(2.72)^{a}	(2.72)^{a}	(2.74)^{a}	(2.76)^{a}	(2.75)^{a}	(2.70)^{a}	(2.74)^{a}	(2.80)^{a}	(2.74)^{a}	(2.74)^{a}
Log of GDP per capita	-0.603	-0.632	-0.629	-0.658	-0.628	-0.630	-0.666	-0.668	-0.654	-0.680	-0.667	-0.647	-0.667	-0.664
	(9.40)^{a}	(9.91)^{a}	(8.95)^{a}	(8.69)^{a}	(10.35)^{a}	(10.67)^{a}	(10.96)^{a}	(10.94)^{a}	(10.37)^{a}	(10.38)^{a}	(11.21)^{a}	(10.35)^{a}	(11.46)^{a}	(11.04)^{a}
FX reserves to imports	-0.675	-0.655	-0.710	-0.699	-0.656	-0.663	-0.702	-0.726	-0.648	-0.679	-0.698	-0.690	-0.620	-0.704
	(2.06)^{b}	(2.01)^{b}	(2.19)^{b}	(2.16)^{b}	(2.05)^{b}	(2.03)^{b}	(2.19)^{b}	(2.26)^{b}	(2.06)^{b}	(2.14)^{b}	(2.13)^{b}	(2.16)^{b}	(1.88)^{c}	(2.19)^{b}
Debt service	0.546	0.570	0.606	0.573	0.624	0.609	0.571	0.659	0.537	0.561	0.567	0.587	0.577	0.569
	(1.44)	(1.51)	(1.59)	(1.49)	(1.66)^{c}	(1.61)	(1.50)	(1.62)	(1.36)	(1.46)	(1.47)	(1.55)	(1.54)	(1.48)
Log of Proven Oil Reserves	-0.018													
	(1.85)^{c}													
Log of Proven Gaz Reserves		-0.011												
		(1.30)												
Log of Oil pipelines			-0.006											
			(0.83)											
Log of Gaz pipelines				-0.001										
				(0.16)										
Log of civil nuclear plant power					-0.021									
					(1.71)^{c}									
Dummy for nuclear weapon possession						-0.492								
						(1.70)^{c}								
Log of US military strength							0.000							
							(0.03)							
Log of UN military strength								-0.009						
								(0.83)						
Index of Non-Proliferation Treaties									-0.332					
									(0.98)					
Log of km. of coastlines										0.003				
										(0.40)				
Log of total area											-0.041			
											(0.96)			
Log of km. of roads												-0.020		
												(0.86)		
Log of population													-0.094	
													(1.84)^{c}	
Log of borders														0.003
														(0.15)
Constant	1.696	1.950	1.993	1.336	1.719	2.069	2.268	2.148	2.393	2.353	2.789	1.454	3.812	2.255
	(3.27)^{a}	(3.89)^{a}	(3.73)^{a}	(1.72)^{c}	(3.17)^{a}	(4.42)^{a}	(4.34)^{a}	(4.41)^{a}	(4.90)^{a}	(4.78)^{a}	(3.95)^{a}	(2.30)^{b}	(3.86)^{a}	(4.79)^{a}
Observations	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*
Countries	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*

Interval regression estimator - Marginal effect reported - Robust absolute value of t statistics in parentheses
^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%

Table IV.19: Robustness checks on variables entering the factor - PRGF (Continuing) - Part 4

Dependent variable / Explanatory variables	*Stand-by Agreements to quota (%)*													
	Agreed													
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*	*(13)*	*(14)*
Growth of GDP	-4.305	-4.305	-4.303	-4.311	-4.329	-4.333	-4.314	-4.316	-4.318	-4.311	-4.334	-4.304	-4.323	-4.324
	(4.09)^{a}	(4.09)^{a}	(4.07)^{a}	(4.08)^{a}	(4.11)^{a}	(4.11)^{a}	(4.08)^{a}	(4.09)^{a}	(4.09)^{a}	(4.08)^{a}	(4.09)^{a}	(4.07)^{a}	(4.07)^{a}	(4.09)^{a}
Log of GDP per capita	0.922	0.912	0.927	0.932	0.919	0.911	0.909	0.908	0.912	0.912	0.866	0.913	0.862	0.901
	(5.03)^{a}	(5.01)^{a}	(5.04)^{a}	(5.05)^{a}	(5.03)^{a}	(5.01)^{a}	(4.98)^{a}	(4.99)^{a}	(5.00)^{a}	(5.00)^{a}	(4.84)^{a}	(4.98)^{a}	(4.79)^{a}	(4.96)^{a}
FX reserves to imports	-1.135	-1.122	-1.125	-1.119	-1.122	-1.103	-1.094	-1.105	-1.097	-1.104	-1.051	-1.094	-1.048	-1.091
	(2.15)^{b}	(2.14)^{b}	(2.16)^{b}	(2.15)^{b}	(2.14)^{b}	(2.12)^{b}	(2.12)^{b}	(2.12)^{b}	(2.12)^{b}	(2.13)^{b}	(2.03)^{b}	(2.11)^{b}	(2.06)^{b}	(2.09)^{b}
Debt service	3.282	3.282	3.385	3.370	3.450	3.434	3.425	3.408	3.425	3.405	3.502	3.458	3.523	3.435
	(2.67)^{a}	(2.68)^{a}	(2.74)^{a}	(2.73)^{a}	(2.77)^{a}	(2.76)^{a}	(2.75)^{a}	(2.75)^{a}	(2.76)^{a}	(2.74)^{a}	(2.80)^{a}	(2.77)^{a}	(2.81)^{a}	(2.76)^{a}
Geopolitical factor: gfi	0.571	0.580	0.547	0.553	0.550	0.543	0.547	0.556	0.548	0.547	0.574	0.539	0.564	0.557
	(3.78)^{a}	(3.79)^{a}	(3.66)^{a}	(3.67)^{a}	(3.45)^{a}	(3.45)^{a}	(3.60)^{a}	(3.61)^{a}	(3.57)^{a}	(3.61)^{a}	(3.59)^{a}	(3.52)^{a}	(3.55)^{a}	(3.59)^{a}
Constant	-9.639	-9.576	-10.202	-9.751	-9.660	-9.613	-9.593	-9.581	-9.610	-9.609	-9.333	-9.629	-9.299	-9.552
	(5.07)^{a}	(5.06)^{a}	(5.08)^{a}	(5.08)^{a}	(5.09)^{a}	(5.07)^{a}	(5.04)^{a}	(5.05)^{a}	(5.05)^{a}	(5.05)^{a}	(4.98)^{a}	(5.05)^{a}	(4.95)^{a}	(5.04)^{a}
Observations	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*
Countries	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*
	Poverty Reduction and Growth Facilities to quota (%)													
	Agreed													
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*	*(13)*	*(14)*
Growth of GDP	1.884	1.887	1.878	1.888	1.891	1.891	1.890	1.888	1.887	1.887	1.890	1.889	1.891	1.889
	(2.84)^{a}	(2.85)^{a}	(2.84)^{a}	(2.86)^{a}	(2.85)^{a}	(2.85)^{a}	(2.85)^{a}	(2.85)^{a}	(2.84)^{a}	(2.85)^{a}	(2.85)^{a}	(2.84)^{a}	(2.85)^{a}	(2.85)^{a}
Log of GDP per capita	-0.780	-0.771	-0.771	-0.766	-0.771	-0.770	-0.767	-0.767	-0.769	-0.769	-0.758	-0.768	-0.759	-0.763
	(10.59)^{a}	(10.55)^{a}	(10.78)^{a}	(10.90)^{a}	(10.57)^{a}	(10.47)^{a}	(10.47)^{a}	(10.44)^{a}	(10.50)^{a}	(10.53)^{a}	(9.77)^{a}	(10.47)^{a}	(9.79)^{a}	(10.30)^{a}
FX reserves to imports	-0.828	-0.832	-0.803	-0.809	-0.828	-0.826	-0.823	-0.822	-0.826	-0.821	-0.823	-0.823	-0.833	-0.820
	(2.03)^{b}	(2.04)^{b}	(1.97)^{b}	(1.99)^{b}	(2.03)^{b}	(2.03)^{b}	(2.02)^{b}	(2.02)^{b}	(2.03)^{b}	(2.02)^{b}	(2.03)^{b}	(2.02)^{b}	(2.05)^{b}	(2.02)^{b}
Debt service	0.821	0.823	0.801	0.813	0.806	0.808	0.809	0.812	0.813	0.811	0.814	0.807	0.810	0.810
	(1.75)^{c}	(1.76)^{c}	(1.71)^{c}	(1.74)^{c}	(1.72)^{c}	(1.72)^{c}	(1.73)^{c}	(1.73)^{c}	(1.74)^{c}	(1.73)^{c}	(1.74)^{c}	(1.72)^{c}	(1.73)^{c}	(1.73)^{c}
Geopolitical factor: gfi	-0.138	-0.154	-0.173	-0.186	-0.151	-0.150	-0.162	-0.160	-0.155	-0.160	-0.159	-0.159	-0.155	-0.163
	(1.45)	(1.64)	(1.81)^{c}	(2.01)^{b}	(1.63)	(1.62)	(1.72)^{c}	(1.70)^{c}	(1.66)^{c}	(1.71)^{c}	(1.62)	(1.68)^{c}	(1.58)	(1.72)^{c}
Constant	2.383	2.324	1.223	2.284	2.323	2.317	2.288	2.291	2.305	2.302	2.224	2.295	2.235	2.267
	(3.96)^{a}	(3.87)^{a}	(1.41)	(3.91)^{a}	(3.89)^{a}	(3.87)^{a}	(3.82)^{a}	(3.82)^{a}	(3.85)^{a}	(3.85)^{a}	(3.59)^{a}	(3.83)^{a}	(3.59)^{a}	(3.76)^{a}
Observations	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*
Countries	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*

Interval regression estimator - Marginal effect reported - Robust absolute value of t statistics in parentheses
^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%

Table IV.20: Robustness checks on different possible factors - Agreed Amounts - Part 1

Dependent variable / Explanatory variables	*Stand-by Agreements to quota (%)*													
	Drawn													
	(15)	*(16)*	*(17)*	*(18)*	*(19)*	*(20)*	*(21)*	*(22)*	*(23)*	*(24)*	*(25)*	*(26)*	*(27)*	*(28)*
Growth of GDP	-3.973	-3.975	-3.970	-3.984	-4.008	-4.011	-3.989	-3.991	-3.995	-3.987	-4.017	-3.977	-4.009	-3.999
	(3.90)^{a}	(3.90)^{a}	(3.86)^{a}	(3.88)^{a}	(3.92)^{a}	(3.93)^{a}	(3.89)^{a}	(3.89)^{a}	(3.90)^{a}	(3.89)^{a}	(3.90)^{a}	(3.88)^{a}	(3.89)^{a}	(3.89)^{a}
Log of GDP per capita	0.808	0.796	0.813	0.821	0.802	0.790	0.789	0.788	0.792	0.793	0.731	0.793	0.723	0.779
	(4.31)^{a}	(4.29)^{a}	(4.32)^{a}	(4.34)^{a}	(4.32)^{a}	(4.29)^{a}	(4.26)^{a}	(4.26)^{a}	(4.28)^{a}	(4.28)^{a}	(4.09)^{a}	(4.27)^{a}	(4.05)^{a}	(4.24)^{a}
FX reserves to imports	-2.025	-1.991	-1.995	-1.961	-1.980	-1.964	-1.940	-1.963	-1.948	-1.954	-1.899	-1.939	-1.869	-1.952
	(2.88)^{a}	(2.86)^{a}	(2.87)^{a}	(2.85)^{a}	(2.84)^{a}	(2.84)^{a}	(2.84)^{a}	(2.84)^{a}	(2.83)^{a}	(2.85)^{a}	(2.78)^{a}	(2.83)^{a}	(2.80)^{a}	(2.82)^{a}
Debt service	2.888	2.896	3.009	3.008	3.095	3.065	3.063	3.043	3.061	3.038	3.159	3.101	3.184	3.071
	(2.48)^{b}	(2.50)^{b}	(2.56)^{b}	(2.56)^{b}	(2.61)^{a}	(2.59)^{a}	(2.58)^{a}	(2.58)^{a}	(2.59)^{a}	(2.57)^{b}	(2.64)^{a}	(2.61)^{a}	(2.65)^{a}	(2.59)^{a}
Geopolitical factor: gfi	0.727	0.729	0.688	0.675	0.699	0.701	0.695	0.707	0.699	0.694	0.747	0.688	0.731	0.715
	(4.00)^{a}	(3.97)^{a}	(3.91)^{a}	(3.84)^{a}	(3.65)^{a}	(3.69)^{a}	(3.83)^{a}	(3.83)^{a}	(3.80)^{a}	(3.83)^{a}	(3.86)^{a}	(3.77)^{a}	(3.81)^{a}	(3.85)^{a}
Constant	-8.714	-8.640	-9.202	-8.845	-8.715	-8.637	-8.623	-8.616	-8.650	-8.648	-8.276	-8.665	-8.218	-8.574
	(4.41)^{a}	(4.40)^{a}	(4.40)^{a}	(4.42)^{a}	(4.43)^{a}	(4.42)^{a}	(4.38)^{a}	(4.39)^{a}	(4.40)^{a}	(4.39)^{a}	(4.31)^{a}	(4.39)^{a}	(4.29)^{a}	(4.38)^{a}
Observations	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*
Countries	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*

	Poverty Reduction and Growth Facilities to quota (%)													
	Drawn													
	(15)	*(16)*	*(17)*	*(18)*	*(19)*	*(20)*	*(21)*	*(22)*	*(23)*	*(24)*	*(25)*	*(26)*	*(27)*	*(28)*
Growth of GDP	1.439	1.441	1.434	1.441	1.444	1.444	1.444	1.442	1.441	1.441	1.444	1.443	1.444	1.443
	(2.75)^{a}	(2.75)^{a}	(2.74)^{a}	(2.76)^{a}	(2.75)^{a}	(2.75)^{a}	(2.75)^{a}	(2.75)^{a}	(2.75)^{a}	(2.75)^{a}	(2.75)^{a}	(2.74)^{a}	(2.75)^{a}	(2.75)^{a}
Log of GDP per capita	-0.621	-0.614	-0.614	-0.610	-0.615	-0.615	-0.612	-0.612	-0.613	-0.613	-0.605	-0.613	-0.607	-0.609
	(9.84)^{a}	(9.82)^{a}	(9.97)^{a}	(10.08)^{a}	(9.80)^{a}	(9.73)^{a}	(9.73)^{a}	(9.72)^{a}	(9.76)^{a}	(9.78)^{a}	(9.20)^{a}	(9.72)^{a}	(9.21)^{a}	(9.61)^{a}
FX reserves to imports	-0.666	-0.669	-0.647	-0.652	-0.666	-0.665	-0.663	-0.662	-0.665	-0.661	-0.663	-0.663	-0.671	-0.660
	(2.03)^{b}	(2.04)^{b}	(1.96)^{b}	(1.98)^{b}	(2.03)^{b}	(2.02)^{b}	(2.02)^{b}	(2.01)^{b}	(2.02)^{b}	(2.01)^{b}	(2.03)^{b}	(2.02)^{b}	(2.05)^{b}	(2.01)^{b}
Debt service	0.597	0.598	0.580	0.589	0.584	0.585	0.586	0.588	0.589	0.588	0.590	0.585	0.587	0.587
	(1.59)	(1.59)	(1.55)	(1.57)	(1.55)	(1.56)	(1.56)	(1.57)	(1.57)	(1.57)	(1.57)	(1.55)	(1.56)	(1.56)
Geopolitical factor: gfi	-0.112	-0.124	-0.138	-0.149	-0.119	-0.118	-0.127	-0.126	-0.123	-0.126	-0.125	-0.125	-0.120	-0.129
	(1.53)	(1.72)^{c}	(1.87)^{c}	(2.09)^{b}	(1.67)^{c}	(1.66)^{c}	(1.76)^{c}	(1.75)^{c}	(1.71)^{c}	(1.76)^{c}	(1.66)^{c}	(1.72)^{c}	(1.60)	(1.78)^{c}
Constant	1.942	1.895	1.058	1.865	1.903	1.899	1.876	1.876	1.887	1.885	1.825	1.883	1.841	1.856
	(3.96)^{a}	(3.88)^{a}	(1.52)	(3.92)^{a}	(3.91)^{a}	(3.89)^{a}	(3.84)^{a}	(3.84)^{a}	(3.87)^{a}	(3.87)^{a}	(3.64)^{a}	(3.86)^{a}	(3.65)^{a}	(3.79)^{a}
Observations	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*
Countries	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*

Interval regression estimator - Marginal effect reported - Robust absolute value of t statistics in parentheses
^{c} *significant at 10%;* ^{b} *significant at 5%;* ^{a} *significant at 1%*

Table IV.21: Robustness checks on different possible factors - Part 2 - Drawn Amounts

	Stand-by Agreements to quota (%)								*Poverty Reduction and Growth Facilities to quota (%)*							
	Agreed				*Drawn*				*Agreed*				*Drawn*			
	PFR1	*PFR2*	*PFR3*	*PFR4*	*PFR1*	*PFR2*	*PFR3*	*PFR4*	*PFR1*	*PFR2*	*PFR3*	*PFR4*	*PFR1*	*PFR2*	*PFR3*	*PFR4*
Growth of GDP	-4.302	-4.340	-4.318	-4.335	-3.962	-4.021	-3.996	-4.022	1.856	1.892	1.889	1.893	1.415	1.445	1.443	1.446
	(4.07)^a	(4.12)^a	(4.08)^a	(4.07)^a	(3.87)^a	(3.94)^a	(3.89)^a	(3.88)^a	(2.86)^a	(2.85)^a	(2.85)^a	(2.84)^a	(2.76)^a	(2.75)^a	(2.75)^a	(2.74)^a
Log of GDP per capita	1.011	0.920	0.913	0.859	0.916	0.802	0.793	0.711	-0.807	-0.773	-0.769	-0.757	-0.641	-0.617	-0.613	-0.607
	(5.22)^a	(5.04)^a	(4.99)^a	(4.72)^a	(4.52)^a	(4.33)^a	(4.27)^a	(3.98)^a	(12.21)^a	(10.58)^a	(10.51)^a	(9.50)^a	(11.02)^a	(9.80)^a	(9.76)^a	(8.95)^a
FX reserves to imports	-1.133	-1.109	-1.089	-0.987	-1.969	-1.963	-1.929	-1.784	-0.801	-0.830	-0.827	-0.834	-0.641	-0.669	-0.666	-0.673
	(2.23)^b	(2.13)^b	(2.11)^b	(1.98)^b	(2.90)^a	(2.83)^a	(2.83)^a	(2.72)^a	(1.96)^b	(2.04)^b	(2.03)^b	(2.06)^b	(1.95)^c	(2.03)^b	(2.02)^b	(2.06)^b
Debt service	3.158	3.475	3.444	3.661	2.751	3.117	3.085	3.340	0.823	0.806	0.810	0.803	0.597	0.584	0.587	0.581
	(2.63)^a	(2.78)^a	(2.77)^a	(2.87)^a	(2.43)^b	(2.62)^a	(2.60)^a	(2.72)^a	(1.76)^c	(1.72)^c	(1.73)^c	(1.71)^c	(1.60)	(1.55)	(1.56)	(1.54)
Geopolitical factor$^\gamma$	0.564	0.535	0.543	0.528	0.649	0.688	0.690	0.711	-0.184	-0.146	-0.157	-0.152	-0.157	-0.115	-0.123	-0.116
	(3.94)^a	(3.34)^a	(3.55)^a	(3.31)^a	(4.09)^a	(3.55)^a	(3.78)^a	(3.69)^a	(1.75)^c	(1.58)	(1.67)^c	(1.51)	(1.90)^c	(1.61)	(1.72)^c	(1.49)
Constant	-10.264	-9.680	-9.618	-9.844	-9.474	-8.723	-8.655	-8.636	2.589	2.337	2.302	1.114	2.102	1.915	1.887	0.989
	(5.18)^a	(5.10)^a	(5.05)^a	(4.92)^a	(4.51)^a	(4.45)^a	(4.39)^a	(4.26)^a	(4.56)^a	(3.92)^a	(3.84)^a	(1.24)	(4.50)^a	(3.94)^a	(3.87)^a	(1.37)
Pseudo-R^2 for Tobit estimations	*0.1057*	*0.1031*	*0.1039*	*0.1020*	*0.1314*	*0.1295*	*0.1309*	*0.1289*	*0.1553*	*0.1546*	*0.1549*	*0.1546*	*0.1651*	*0.1638*	*0.1641*	*0.1636*
Observations	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*
Countries	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*

Interval regression estimator - Marginal effect reported - Robust absolute value of t statistics in parentheses
^{c} *significant at 10%;* ^{b} *significant at 5%;* ^{a} *significant at 1%*
$^\gamma$ *Bartlett scoring method*
Using different variables in the factor analysis:
PFR1: all variables except the energy ones
PFR2: all variables except the nuclear ones
PFR3: all variables except the military ones
PFR4: all variables except the geographic ones

Table IV.22: Robustness checks on groups of variables in the factor

Dependent variable / Explanatory variables	*Stand-by Agreements to quota (%)*						*Poverty Reduction and Growth Facilities to quota (%)*					
	Agreed			*Drawn*			*Agreed*			*Drawn*		
Growth of GDP	-4.333	-4.494	-4.395	-4.016	-4.309	-4.184	1.892	1.914	1.918	1.446	1.463	1.465
	(4.09)^a	(4.21)^a	(4.16)^a	(3.91)^a	(4.14)^a	(4.03)^a	(2.84)^a	(2.91)^a	(2.90)^a	(2.75)^a	(2.81)^a	(2.80)^a
Log of GDP per capita	0.890	0.883	0.842	0.760	0.735	0.689	-0.768	-0.794	-0.757	-0.613	-0.635	-0.605
	(4.91)^a	(5.15)^a	(4.91)^a	(4.19)^a	(4.41)^a	(4.12)^a	(10.08)^a	(10.64)^a	(9.70)^a	(9.42)^a	(9.80)^a	(9.12)^a
FX reserves to imports	-1.066	-0.804	-0.972	-1.903	-1.484	-1.724	-0.836	-0.866	-0.838	-0.673	-0.696	-0.675
	(2.07)^b	(1.75)*	(1.96)*	(2.80)^a	(2.46)^b	(2.66)^a	(2.06)^b	(2.19)^b	(2.07)^b	(2.05)^b	(2.18)^b	(2.07)^b
Debt service	3.528	4.594	4.101	3.187	4.610	4.137	0.808	0.622	0.688	0.585	0.443	0.495
	(2.81)^a	(3.29)^a	(2.99)^a	(2.65)^a	(3.25)^a	(3.00)^a	(1.72)*	(1.26)	(1.44)	(1.55)	(1.12)	(1.29)
Geopolitical factor$^\gamma$: gf_i	0.511		0.331	0.666		0.388	-0.134		-0.102	-0.104		-0.080
	(3.43)^a		(2.29)^b	(3.69)^a		(2.57)^b	(1.50)		(1.04)	(1.51)		(1.06)
Geopolitical potential$^\gamma$: gp_i		0.077			0.111			-0.017			-0.013	
		(3.01)^a			(3.45)^a			(1.21)			(1.17)	
Geopolitical potential			0.055			0.086			-0.012			-0.009
without factor$^\gamma$: gpf_i			(2.10)^b			(2.79)^a			(0.76)			(0.73)
Constant	-9.488	-9.651	-9.224	-8.465	-8.576	-8.113	2.296	2.511	2.233	1.887	2.060	1.840
	(5.01)^a	(5.28)^a	(5.09)^a	(4.36)^a	(4.65)^a	(4.46)^a	(3.75)^a	(4.06)^a	(3.55)^a	(3.79)^a	(4.08)^a	(3.62)^a
Pseudo-R^2 for Tobit estimations	*0.1032*	*0.1058*	*0.1086*	*0.1303*	*0.1396*	*0.1447*	*0.1545*	*0.1535*	*0.1549*	*0.1635*	*0.1627*	*0.1640*
Observations	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*	*1163*
Countries	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*

Interval regression estimator - Marginal effect reported - Robust absolute value of t statistics in parentheses
^{c} *significant at 10%;* ^{b} *significant at 5%;* ^{a} *significant at 1%*
$^\gamma$ *Bartlett scoring method*
Using Bartlett scoring method

Table IV.23: Factor and potential analysis using the Bartlett estimation method

General Conclusion

This thesis highlights the increasing complexity of political relations at the national and international levels. There are more countries and this induces a higher heterogeneity between international organisations members. In parallel, some MNE have developed activities on the five continents and some are much more powerful than countries. These modifications of the international trade then necessitated an analysis of new phenomena linked to the coexistence of two levels of decision and the increasing number of actors entering political relations in a broad sense.

The first chapter proposes an original framework aimed to analyse the effect of a new type of trade barriers. The more complete international contract the WTO is has induced many countries to use more complex strategies in order to protect domestic industries. For instance, the implementation of more stringent standards or of new regulations that induce an additional cost. From the seminal work of Grossman and Helpman (1994), the main avenue was to assume that each sector represents a common interest. The sole variations were then the dichotomic aspect organised/ unorganised or the assumptions that lobbying is costly then inducing a trade off since the object of influence is a public good. This framework introduces opposed interests within a sector based on the idea that since the new regulation implies an additional cost, all actors of the sector are not on an equal footing since their productivities differ. The rationalisation effect in the sector is proved to be a good motive for the more productive firm. Consequently, they are able to obtain the implementation of the new regulation in spite of its negative effect on welfare. Most of the results of Grossman and Helpman (1994) are confirmed at a more microlevel, except in the case of the effect of the share of the population represented represented in lobbies. Indeed, at the opposite of their result, this share, when increasing, reduces

the tensions between lobbies and increases the surplus the latter obtain from the political relation. Moreover, some mechanisms are proved to be very different. The heterogeneity between firms is the unique motivation for lobbying. The heterogeneity between active lobbies plays for the government by increasing the surplus he gets. On the contrary, the homogeneity within a given lobby reinforce its bargaining power *vis-a-vis* other lobbies and the government.
These results have many interesting insights. In particular, the model shows the importance of the ownership structure of lobbies. Hence, the question of the relation between foreign interests and home government about regulations decision is of interest.

The second chapter develops an empirical study of the influence of foreign firms in developing countries. More precisely, whether a foreign is able to influence the nature a new rule or regulation that is about to modify its the business environment. Three theoretically based assumptions are proposed to justify whether a foreign firm should be more influent than its domestic counterparts or not. The three hypotheses are that the foreign firm expected contribution to growth, her liability of foreignness and her experience at an international level will respectively increase, decrease and again increase her influence relatively to her domestic counterparts. This chapter shows that foreign firms are not always more influent than a domestic firm. Indeed, in the day to day business, foreign and domestic MNE are treated on an equal footing at the expend of pure domestic firms. In addition, hybrid MNE, defined as an MNE owned by home and foreign capitals, have even more influence than other MNE. In contrast with the previous results, it appears that domestic firms are slightly less disadvantaged when considering influence of elected officials rather than nominated ones. This last result is partly in the same spirit that the result of Grossman and Helpman (1994). Nevertheless, in general, the main driving force to firms' influence is their multinationality. The latter represents their ability to influence, that is their experience in this activity, and the credibility of their threat to relocate. These aspects suppose then that firms are trying to use their whole bargaining power over the government.
This intuition raised by the second chapter is the object of the third one. The

political contributions approach pioneered by Grossman and Helpman (1994) models the political relations between firms and a government as a common agency framework, thus inducing a form of simultaneous decision as firms are first movers but the government is the one that *in fine* chooses the trade policy.

Hence, chapter three provides a new way to model relations between firms and a government. The main aspect of this framework is to consider the contribution schedule that firms propose to the government as the strategic variable they design. Consequently, the outcome of this game takes the standard form of a subgame perfect Nash equilibrium. As expected, inasmuch we consider the contribution schedule is a strategic instrument that only influences the effective contribution through its effect on the trade policy, the result of this model is exactly the same than the result of the common agency framework of Grossman and Helpman (1994), derived from the model of Bernheim and Whinston (1986b). However, if one considers that the contribution schedule influences the effective contribution both through its effect on the trade policy and directly, the truthful outcome of Bernheim and Whinston (1986b) is not obtained anymore. This leads lobbies to take account of the considerations the government towards its situation. Hence, if the government is not inclined to "naturally" act in favour of the lobby, the latter will adopt an aggressive strategy. In the opposed situation, this induces lobbies to moderate their offer to the government. This dual strategy may possibly yield two equivalent trade policies either due to a strong influence of the lobby or a strong will of the government to help a lobby. This chapter brings then some insights on the role of political concerns of the governments. In particular, in international organisations, it appears that it is difficult to assess certainly whether a government has protected a sector because of its effect on the national welfare, i.e because of its difficulties, or because a strong lobbying activity has influenced it. This is consistent with the observation concerning the lobbying activity of two sectors regularly pointed at as sectors that benefit from a good help of developed countries governments, the USA in the first place.
Hence, looking at non economic determinants seem now the only method to assess with certitude whether the government serves private interests or not. This is a hard task in the case of the WTO as the decisions are mainly made through informal

negotiations. However, since the IMF officially states in its articles of agreement the conditions to the obtaining of a loan, it is easier to test this.

Chapter four proposes then to test empirically whether the IMF is diverted from its principles. Indeed, since governments are those that decide whether a country should obtain a loan or not, it may well be that governments are tempted to take account of national concerns when taking an international decision. A special attention is bring to the geopolitical determinants in the loan decision. Indeed, we argue that these determinants are, by nature, less influenced by economic variables than others such than political ones. A conceptual framework is developed in order to explain how and why geopolitics can be present and can have some influence over loan decisions and sizes in the International Monetary Fund. By introducing a new concept, the *geopolitical* potential, and a method yet unused in this literature, we intended to find evidence that country's geopolitical importance plays a role in IMF loan decisions. Since the *geopolitical* importance of states is unobservable, we used in a first step a factor analysis. In a second step, we introduce the concept of geopolitical potential to capture the geopolitical importance of the borrowing country but also its geographical importance. The impacts of these geopolitical factor and potential have been differentiated whether the Fund lend through concessional facilities (Poverty Reduction and Growth Facility (PRGF)) and non-concessional facilities supported by the General Resources Account (GRA), focusing on Stand-By Arrangements (SBAs) which are the most important facilities funded by the GRA. This distinction is crucial since non-concessional loans are generally conditional on the adoption of appropriate policies to resolve a country's macroeconomic difficulties and to enable the government to repay the Fund. However, conditionality may also be a way through which the Fund leading members could increase or serve their influence over other members for geopolitical purposes.

These four chapters have then been developed on a strong new political economy basis with an implicit new institutional economy background. It is an attempt to deal with new issues that have arisen recently: a strong role of international organisations with a small enforcement power towards their members. Indeed, in spite of the transfer of sovereignty from governments to these institutions, the former

remain the unique political entities in the world. Consequently, internal political relations interfere unavoidably in international negotiations and in the shaping of international institutions. If the new political economy aims to remain on a positive approach, it cannot ignore the role of international institutions in that they influence in turn the internal political relations. Nowadays, the new political economy and the new institutional economy are closely related and this is a way through which it would be probably fascinating to search.

In particular, a recent but fast growing literature brings some new insights on the active role of political motives, hence political relations, in the creation of international fora and the negotiations within them. Maggi and Rodriguez-Clare (2007) link the need to enter into international agreement to a time inconsistency problem in the relation between firms and governments. Ornelas (2005) highlight that entering into a Free Trade Agreement can directly reduce the incentives for lobbying of the domestic sectors. Generally, this thesis has let implicit the effect of firms' influence on the international negotiations, decisions or agreements creation. However, it suggests many future researches in this way. Considering the relations between the WTO's direction and the governments as a political relations partly similar to the one occurring between a government and domestic firms is one of them. As the penultimate section of the chapter one emphasises, this is made possible as the interconnections between sectors through the consumer surplus present in the welfare functions of lobbies could be close to the idea that countries are trading with each other. Developing a theoretical framework that would provide a supply and a demand functions for IMF loans would help to precisely disentangle the path through which the geopolitical considerations influence loan decisions. Proposing a formal framework of international negotiations could allow to derive some meaningful testable implications of the role of domestic political relations on the issue of the negotiations.

These future directions for research are of course not all inclusive. Those are directly derived from the chapters developed in this thesis. Other aspects of this new research field such than the effect of diplomatic relations on the stability of the multilateral system such the WTO or the IMF are crucial. The increasing

role of developing countries in the international trade and its implication on the international political economy is also a topical question. All of these research avenues have in common to be where two strands of the recent economic literature converge.

Résumé en français

Alors que la mondialisation du commerce suit son cours, les souverainetés de chaque pays se confrontent de plus en plus souvent. Parfois, les pays ont même à transférer une partie de leur souveraineté. La dilution des détenteurs de pouvoir souverain, couplée au manque de lois internationales, a rendu plus complexes les relations internationales. Au fur et à mesure que la complexité grandit, des failles juridiques apparaissent dans les règles qui gouvernent les relations entre pays dans l'arène internationale. Ces failles conduisent certains acteurs, qu'ils soient des Groupes d'Intérêts Spéciaux (GIS) ou des gouvernements, à tenter de tirer parti de leur pouvoir. Le classique "Equilibre des pouvoirs" de David Hume[22] est remis en cause par ces nouvelles relations internationales car celles-ci font intervenir des relations d'influence. De nos jours, l'influence revêt une importance cruciale en ce sens qu'elle est le vecteur de tous les moyens permettant de prendre l'ascendant sur un partenaire. Il y a, dès lors, de nombreuses raisons de croire que l'équilibre des pouvoirs n'est plus équilibré.

Deux faits importants sont caractéristiques du processus actuel de mondialisation. D'un côté, de fortes organisations internationales ont émergé au cours du siècle précédent et de l'autre, les firmes multinationales (FMN) ont acquis un pouvoir financier sans précédent. Le premier est la conséquence de l'émergence de nombreux pays sur la scène internationale rendant le maintien d'un équilibre coopératif fondé sur des relations bilatérales impossible. Les organisations internationales furent ainsi créées afin de répondre au besoin d'une coordination au niveau multilatéral. Le second fut la concrétisation d'un processus débuté plus d'un siècle

[22] Il définit le concept dans recueil Essays Moral and Political, 1741-1744, et plus précisément dans l'essai intitulé Of the balance of Power. L'aspect principal de ce concept est la coordination d'Etats si ceux-ci voient l'un d'entre eux développer un pouvoir trop important.

auparavant; l'activité de lobbying et la mondialisation ont permis le développement de puissantes FMN. Le nombre croissant de pays rend plus ardue la tâche consistant à assurer un traitement équitable à tous les pays. En outre, de fortes tendances protectionnistes s'opposent à l'accomplissement de cet objectif. Deux champs de recherche relativement récents traitent de ces problématiques: la Nouvelle Economie Institutionnelle et la Nouvelle Economie Politique.

La Nouvelle Economie Institutionnelle est souvent présentée comme trouvant ses origines dans les travaux de Ronald Coase. Son principe fondamental est d'incorporer le rôle des institutions sur l'économie. En effet, ces deux éléments sont à l'évidence au coeur d'une relation de causalité circulaire. Ainsi, ce corpus se trouve au confluent de l'économie de la science politique et cherche à examiner les effets des institutions sur les grandes variables économiques tels la croissance ou le commerce. Toutefois, l'approche ainsi développée ne se limite aux aspects normatifs de la relation entre institutions et économie. En effet, elle tient également compte des pressions politiques qui apparaissent dans les fora internationaux ou les accords régionaux et revêt ainsi également une dimension positive. A titre d'exemple, le fait que la diplomatie ne soit pas indépendante des relations commerciales n'est pas occulté.

La Nouvelle Economie Politique, quant à elle, est souvent mentionnée comme étant due aux travaux de Mancur Olson. Lorsque l'on s'intéresse à l'économie politique, deux courants se distinguent. D'un côté, un aspect traditionnel vise à étudier les politiques économiques et est principalement fondé sur une approche normative; de l'autre côté, la Nouvelle Economie Politique est essentiellement développée autour d'une approche positive. Par conséquent, le premier mentionné s'intéresse à ce qui devrait être fait afin d'optimiser une fonction objectif donnée. De façon complémentaire, le second explique que ces politiques optimales ne peuvent être mises en place à cause de pressions faites sur les preneurs de décisions et ainsi explique comment ces pressions affectent la politique finalement mise en place.

Paul Collier propose une définition de l'économie politique qui, en réalité, semble plus proche de la Nouvelle Economie Politique. Il écrit que "*L'économie politique porte sur les sources du pouvoir politique et sur ses usages à des fins économiques*"

[p.2][23]. Ensuite, il argumente que le pouvoir peut être soit un objectif en soi, soit un moyen d'atteindre d'autres objectifs comme la redistribution des revenus. Il convient de citer à nouveau Paul Collier "*Afin de remplir ces objectifs, le pouvoir politique dispose de deux instruments : la fourniture de biens publics ou privés financés par la taxation, et la réglementation de l'activité économique privée. L'économie politique s'intéresse alors à la manière avec laquelle les institutions et les intérêts influencent ces choix.*"[p.2][24]. Alan Drazen insiste sur ce qui, selon lui, devrait être au coeur de la Nouvelle Economie Politique en affirmant que "*l'hétérogénité et les conflits d'intérêts sont essentiels à l'économie politique et devraient être à la base de ce champs d'étude.*"[p.5][25]. La Nouvelle Economie Politique traiterait donc à la fois de l'hétérogénéité en terme de dotation en pouvoir politique mais également en termes d'objectifs finaux souhaités. Ces hétérogénéités donnant lieu à l'apparition de conflits d'intérêts dont l'émergence est elle-même influencée par les institutions.

L'influence peut prendre un grand nombre de formes, des contributions électorales aux pots de vins en passant par les réseaux. Les GIS disposent ainsi d'un grand nombre de possibilités. De même, dans la mesure où les organisations internationales sont récentes, elles offrent de nombreuses failles que les gouvernements peuvent exploiter. La mondialisation, par le développement des relations entre acteurs et des gains possibles dus au commerce, a ainsi mis l'influence sur le devant de la scène. Celle-ci est donc supposée avoir deux dimensions. Premièrement, elle correspond à la capacité d'obtenir d'un preneur de décision qu'il dévie de sa politique optimale. Deuxièmement, c'est la capacité à obtenir des institutions qu'elles ne respectent pas leurs propres principes, telles que les lois nationales ou les accords juridiques internationaux. **Cette thèse propose donc d'apporter de nouveaux éléments dans la compréhension des effets de l'influence politique**. De façon plus précise, une attention particulière sera accordée à deux types de relations liées à la Nouvelle Economie Institutionnelle et à la Nouvelle Economie Politique : les

[23] "*Political economy is about the sources of political power and its uses for economic ends.*"
[24] "*To further these objectives political power has two instruments: the provision of public and private goods financed by taxation, and the regulation of private economic activity. Political economy investigates how interests and institutions shape these choices.*"
[25] "*heterogeneity and conflict of interests are essential to political economy and should be the organizing principles of the field.*"

relations politiques entre des firmes et des gouvernements, ces deux acteurs pouvant être domestiques ou étrangers, et les négociations entre plusieurs gouvernements dans les fora internationaux. A l'évidence, ces deux aspects ne sont pas indépendants car si les firmes ont la capacité d'influencer les gouvernements, eux-mêmes disposant de marges de manoeuvre lors des négociations internationales, la déduction d'un rôle indirect probable des firmes sur l'issue des négociations semble inévitable.

La littérature en économie politique est relativement ancienne mais néanmoins conserve un attrait fort dû à son pouvoir explicatif sur l'actualité quotidienne. Pour illustrer cela, nous pouvons faire référence au fait anecdotique suivant : le *Journal of Political Economy* est une des plus vieilles revues d'économie. En effet, seules deux revues lui sont antérieures, le *Quarterly Journal of Economics* et *The Economic Journal* ont en effet été fondés respectivement en 1886 et 1891. Malgré sa longue histoire, l'économie politique fut régulièrement alimentée par de nouvelles théories, rappelant ainsi que depuis son avènement, l'économie politique a toujours été fortement liée aux autres corpus de l'économie. Mais cet aspect si intéressant représente également une limite. Ainsi, Dixit et Romer soulignent, lors d'une présentation faite en 2006, qu'il n'existe pas de structure commune à toute l'économie politique. Très couramment, les modèles sont construits pour expliquer des phénomènes extrêmement précis et s'arment ainsi d'une kyrielle d'hypothèses afin de rester proche de la réalité. Ainsi, aucun modèle ne fut développé pour mettre en évidence globalement les principaux mécanismes qui régissent l'économie politique dans son ensemble. Déjà en 1995 dans sa contribution au *Handbook of International Economics*, Rodrik regrettait que "*la littérature d'économie politique a perdu de vue les questions essentielles qui ont motivé son développement*"[26]. Toutefois, en dépit du manque d'un modèle unificateur, certains mécanismes sont communs à tous les modèles développés en Nouvelle Economie Politique.

Afin de comprendre les développements récents de la Nouvelle Economie Politique, seul un retour en arrière de quarante ans est donc nécessaire. Le livre que Mancur Olson écrivit en 1965 a posé les fondements aux principales hypothèses et problématiques de la Nouvelle Economie Politique. Comme le titre le suggère,

[26] "*the political economy literature has lost sight of the very questions that have motivated it*".

tout est lié à l'action collective[27]. Celle-ci est la principale force de direction de ce corpus à cause de la présence d'hétérogénéités et de conflits d'intérêts.

Deux aspects principaux sont à considérer lorsque l'on se réfère à la Nouvelle Economie Politique. Primo, une action d'influence réussie trouve ses origines dans la coordination des unités qui composent le groupe d'influence. Secundo, le moyen utilisé pour influencer, c'est-à-dire la nature de ce qui a permis d'influencer le décideur ainsi que l'environnement institutionnel qui peut affecter les relations politiques. Les racines de la Nouvelle Economie Politique telle qu'elle se pratique aujourd'hui reposent sur la théorie des jeux car elle permet de comprendre comment les joueurs parviennent à s'organiser, donc à surmonter le problème traditionnel du passager clandestin. En outre, elle aide également à découvrir l'importance de l'ordre dans lequel les différents joueurs agissent dans les jeux d'économie politique, compte tenu d'éventuelles modifications dues à l'environnement institutionnel. Pour rendre hommage à la contribution de Mancur Olson aux sciences économies, nous pouvons dire qu'il a décrit ce qui pourrait être "la main visible du lobbying". Chaque acteur agit au nom de ses intérêts privés mais serait dans l'impossibilité d'y parvenir seul; la coordination devenant la seule issue leur permettant d'arriver à leurs fins grâce à un pouvoir de négociation suffisant.

Chaque concession obtenue par un lobby ou un syndicat est un bien public fourni à tous leurs membres. Ainsi, des problèmes identiques à ceux rencontrés dans le cas des services publics surviennent. Le plus notoire est le celui du passager clandestin qui correspond au fait que les membres d'un groupe préfèrent laisser les autres membres payer pour obtenir une action qui sert son intérêt propre. Mais ce n'est pas l'unique problème auquel un GIS doit faire face. Si un gouvernement est enclin à toucher des revenus privés, alors tous les détenteurs de facteurs spécifiques sont incités à faire du lobby auprès de celui-ci. La difficulté à organiser une action collective empêche un certain nombre d'entre eux d'influencer les élus et autres représentants officiels, mais pas tous. Ainsi, la rivalité entre les différents groupes d'intérêt spéciaux est un aspect important de la relation d'influence politique. Becker (1983) est une des premières contributions qui étudie les effets de la concurrence

[27] Le titre original du livre est *The logic of Collective Action.*

entre les groupes de pression; elle pose des fondements théoriques à des nombreuses hypothèses faites par des travaux antérieurs. Becker explique clairement ce qui les mécanismes en jeu en économie politique :

> "Chaque individu appartient à des groupes particuliers–définis par profession, industrie, revenu, position géographique, l'âge ou d'autres caractéristiques–qui sont supposés avoir recours à l'influence politique afin d'améliorer le bien-être de ses membres. La concurrence entre les groupes de pression pour obtenir de l'influence détermine la structure d'équilibre des taxes, subventions et autres faveurs politiques."[28] (Becker, 1983)[p. 372]

Les divergences d'intérêt ainsi que la concurrence entre ces groupes de pression déterminent donc les politiques d'équilibre. La concurrence entre les GIS doit réduire les tendances protectionnistes affectant les choix politiques. Plus précisément, tous les facteurs sont représentés par des lobbies différents. Ainsi, plus il y a de facteurs représentés, plus il y a de lobbies et de concurrence entre lobbies. Par ailleurs, plus le nombre de membres partageant les mêmes caractéristiques est important, bien que cela réduise le nombre de lobbies, plus le problème du passager clandestin est accru. Mayer (1984) démontre l'importance de la propriété des facteurs de production, ce qui est connecté à l'hétérogénéité de dotation, ou "l'hétérogénéité *ex post*" comme l'appelle Drazen. En outre, Mayer montre que, comme Baldwin (1976) en avait fait l'hypothèse, les groupes de petite taille parviennent à s'assurer une protection des importations grâce aux gains relativement plus importants de certaines industries comparés aux faibles pertes subies par les autres groupes. Ainsi, ces derniers jugent non rentable de se lancer dans une activité de lobbying contre cette protection des petits groupes organisés dès lors que cette activité induit un coût. Malgré l'irréfutabilité de cette logique, le nombre de membres dans un groupe d'intérêt spécial a un autre effet qui peut contre balancer le premier évoqué.

Jusqu'à ce que Paul Pecorino (1998) ne publie son travail, il a toujours été admis que plus le nombre d'acteurs partageant les mêmes intérêts est grand, plus

[28] "Individuals belong to particular groups–defined by occupation, industry, income, geography, age and other characteristics–that are assumed to use political influence to enhance the well-being of their members. Competition among these pressure groups for political influence determines the equilibrium structure of taxes, subsidies, and other political favors.".

le problème du passager clandestin est accru. Pourtant, dans un modèle simple de *trigger strategy*[29], Pecorino montre qu'il n'y a aucune raison de croire que l'effet standard du grand nombre de protagonistes qui accroît les incitations à faire défaut, domine systématiquement l'effet de l'accroissement de la sanction associée à la défection. Ce deuxième effet qui n'avait jusque là pas été mis en évidence est simplement dû à une sanction plus élevée en cas de déviation justifiée par le fait que l'équilibre non coopératif devient de moins en moins souhaitable à mesure que le nombre de membres dans un groupe augmente. Par conséquent, plus la sanction est élevée, moins l'incitation à se comporter en passager clandestin est forte. Similairement, Pecorino montre que, sous certaines conditions, le nombre de protagonistes n'explique pas la difficulté à maintenir l'équilibre coopératif. Ainsi, son travail apporte sans aucun doute de nouveaux éléments à la Nouvelle Economie Politique et souligne que même les principales certitudes peuvent être remises en cause.

Un grand nombre de détenteurs d'un facteur devrait réduire la capacité d'un groupe à se coordonner mais il devrait également réduire l'opportunité de faire défaut. Si l'on revient à la question de la firme, la réalité souligne que les lobbies sont plutôt constitués de firmes que de consommateurs détenant des facteurs spécifiques de production. Toutefois, cette constatation empirique ne modifie en rien le raisonnement exposé dans les deux précédents paragraphes. Le pouvoir financier des firmes devrait leur permettre de consacrer plus de ressources financières à l'activité de lobbying, mais le nombre d'acteurs à influencer s'est lui aussi accru. Aujourd'hui, les pays actifs dans le commerce international sont plus nombreux et certaines décisions affectant le commerce international sont prises par des organisations internationales. Ceci représente une partie de la logique d'ensemble, celle se complétant par l'intuition suivante : si les firmes essaient de, voire parviennent à, influencer les gouvernements, cela suppose que ces derniers ont un intérêt à être à l'écoute des souhaits des entreprises. Autrement dit, certaines raisons poussent les gouvernements à être protectionnistes.

Afin d'expliquer les tendances protectionnistes des gouvernements, la théorie

[29] Il n'existe vraisemblablement pas de traduction largement admise pour ces termes.

économique a mis en avant l'effet des termes de l'échange. Par exemple, Bagwell et Staiger (1999) rappellent que les grandes économies peuvent tirer profit de la manipulation des politiques commerciales au travers de leurs effets sur les prix mondiaux et étrangers[30]. Un pays suffisamment grand a en effet les moyens de transférer au reste du monde une partie de la distorsion induite par sa propre politique commerciale laquelle, si elle est assez grande, peut réduire les coûts de la politique commerciale au point de rendre l'attitude protectionniste optimale. Les gouvernements sont ainsi tentés de manipuler certains instruments pour protéger certaines entreprises domestiques et cela incite les lobbies à se former pour obtenir une protection encore plus importante. Ajoutons à cela le fait que le libre échange est une issue certes désirable, mais nombreux sont les pays qui ne sont pas incités à ouvrir leurs frontières en premier à cause du dilemme du prisonnier créé par l'effet des termes de l'échange. Il est bénéfique pour chaque pays de laisser les autres s'ouvrir sans faire de même. Ceci mène à la situation sous optimale d'un monde protectionniste et donc au besoin évident d'une coordination organisée au plan international pour surmonter le dilemme du prisonnier, rôle que tentent de remplir les organisations internationales. Les motivations liées aux termes de l'échange représentent un lien majeur entre l'émergence des organisations internationales et de l'activité de lobbying.

Dans la citation de Pascal Lamy, trois dimensions sont apparentes et soulignent ce lien. Premièrement, les gains globaux liés au libre échange ne peuvent être remis en cause si celui-ci est total et obtenu au niveau multilatéral. Mais l'hétérogénéité des pays (qu'elle soit en matière de préférences ou de productivité par exemple) implique que ces gains ne sont pas positifs et égaux pour tous, ceci entraînant de forts conflits d'intérêts entre les Nations. Ceci signifie que certains pays, ou certains secteurs de ces économies, savent à l'avance qu'ils vont perdre à la mondialisation. Deuxièmement, les pressions politiques que subissent les gouvernements lors de leurs choix en matière de politique commerciale affectent celles-ci en orientant les choix

[30] Les effets des termes de l'échange sur le prix mondial est un concept relativement ancien car sa mise en évidence est attribuée à Bickerdike (1906) et Johnson (1953). Néanmoins, Bagwell et Staiger (1999) ont montré que par le biais d'une discrimination entre ses partenaires commerciaux en fonction de leurs volumes d'importations, un pays peut avoir un effet sur les prix mondiaux.

vers le protectionnisme, c'est-à-dire que le pouvoir de décision de ces politiques est remis en cause par d'autres. Enfin, il est très compliqué de maintenir un système multilatéral stable, ce dernier point faisant davantage référence à la Nouvelle Economie Institutionnelle mais est une conséquence des deux premiers. De surcroît, Joseph Stiglitz insiste sur le fait que les économies avancées sont les principaux acteurs qui empêchent les institutions internationales d'assurer des bénéfices justes et équitables du commerce à tous les pays. De ce fait, il défend l'idée que les dotations différentes en matière de pouvoir à travers le monde affectent la redistribution des gains au commerce entre les Nations.

En ce qui concerne la première dimension, les économistes s'accordent à dire que le libre échange a de nombreux effets bénéfiques sur les économies nationales. De façon générale, le commerce international permet un meilleur usage des ressources ainsi qu'une meilleure réallocation des facteurs lorsque les pays qui échangent sont asymétriques (HOS). Lorsque les partenaires commerciaux sont symétriques, le libre échange permet une spécialisation dans différentes variétés au sein d'une industrie (Krugman, 1991). En dépit des possibles pertes pour certains pays, il est clair que le monde dans son ensemble se trouverait dans une situation plus favorable avec des échanges plus libres. Pourtant, d'un point de vue empirique, il semble que la mondialisation est loin d'être totale. Dans une revue de la littérature très détaillée, Anderson et Van Wincoop (2004) mettent en lumière le niveau toujours incroyablement élevé des coûts au commerce.

Ces barrières au commerce peuvent être divisées en deux catégories larges : les coûts locaux de distribution et les coûts internationaux au commerce. La distance conserve un rôle important dans la deuxième catégorie. En outre, d'autres déterminants telles les différentes langues ou, d'une façon plus générale, la proximité culturelle sont également cruciaux. Mais ils ne représentent pas pour autant des barrières que les organisations internationales tentent de supprimer, là n'est pas leur rôle. A l'inverse, les barrières comme les politiques commerciales ou les réglementations nationales ou encore la qualité (relative) des institutions sont au coeur des objectifs de l'Organisation Mondiale du Commerce (OMC). Ces barrières ont également en commun d'être partiellement ou entièrement les conséquences de

décisions politiques et toutes doivent être prises en compte. Comme Anderson et Van Wincoop (2004) le montrent, juger du succès de la mondialisation sur les seules estimations des barrières standard n'est pas pertinent[31]. Nombreuses sont les forces qui empêchent la mondialisation de s'accomplir intégralement et ces deux forces opposées sont caractéristiques de la diversité d'intérêts et de l'effet de celle-ci, via les décisions politiques, sur le niveau des barrières au commerce. A un niveau global, les pays font preuve d'une forte volonté à promouvoir un libre échange équitable en devenant membres des principales organisations internationales. Mais à un niveau plus microéconomique, tous ces acteurs conscients de pertes qu'ils risquent de subir à cause du libre échange s'organisent et essaient de faire pression sur les preneurs de décisions. Ces deux niveaux sont largement influencés par l'évolution des environnements à la fois économiques et politiques, que ce soit sur le plan national ou international.

Baldwin et Martin (1999) mettent en avant que le monde a connu deux vagues récentes de mondialisation entre lesquelles, grossièrement entre les deux guerres mondiales, les économies ont eu tendance à se fermer. Ainsi, de nombreuses industries se sont développées en dépit de forts désavantages comparatifs. Elles furent ensuite menacées par la mondialisation croissante et tentèrent de l'endiguer. A l'inverse, certaines firmes peuvent, quant à elles, gagner à la mondialisation. D'après Melitz (2003), à mesure que le commerce mondial se développe, les entreprises les plus productives exportent vers les marchés étrangers et réalisent ainsi des profits plus importants alors que les moins productives d'entre elles sortent du marché ou ne sont présentes que sur le marché domestique[32]. Par conséquent, les multinationales ont un pouvoir financier de plus en plus important et le nombre croissant d'interactions entre pays les poussent à influencer les gouvernements plus souvent puisqu'elles sont implantées dans plus de pays. D'un côté, les

[31] Celles-ci représentent, selon leurs estimations, moins de 10% de l'ensemble de barrières au commerce.

[32] D'après le classement du magazine *Fortune*, les profits des 100 plus grandes entreprises américaines se sont accrus de plus de 2000% de 1960 à 2000. De décennie en décennie, leurs profits ont toujours crû. Ce n'est pas le cas de celles classées de la 401^{me} à la 500^{me} places. Sur l'ensemble de la période, leurs profits ont augmenté encore plus mais elles ont connu une baisse entre 1980 et 1990. Ces chiffres sont à l'évidence quelque peu bruts. Par exemple, Louçã et Mendonça (2002) insistent sur le fait qu'il y a eu un roulement important dans les firmes qui composent le top 200 américain des firmes américaines manufacturières.

interactions stratégiques entre les pays au travers des prix mondiaux et des politiques commerciales incitent les grandes entreprises à réclamer un commerce plus libre. Dans la mesure où elles sont présentes sur des marchés en tant qu'exportatrices, elles pourraient être victimes des mesures de rétorsion déclenchées par l'attitude protectionniste de leur pays d'origine. De l'autre côté, les firmes domestiques souhaitent plus de protection ou les FMN peuvent sauter les barrières en procédant à des Investissements Directs à l'Etranger (IDE). Cette dernière stratégie peut entraîner des investissements "qui pro quo", comme Bhagwati et al. (1992) les ont appelé. Une fois la barrière franchie, les firmes étrangères demandent plus de protection au pays étranger dans lequel elles se sont implantées. Pour résumer, les entreprises ont des intérêts différents et leurs pouvoirs de négociation relatifs, liés à leurs ressources financières et à leur influence, peuvent soit conduire à des tendances protectionnistes soit contribuer à un commerce plus libre.

Le rôle de l'influence des groupes d'intérêts spéciaux est loin d'être anecdotique. En moins de 20 ans, certaines entreprises ont dépensé plus de 20 millions de dollars en contributions aux campagnes électorales américaines[33]. Encore plus surprenant est le chiffre du montant dépensé dans des activités de lobbying aux Etats-Unis au cours de l'année 2006[34]. L'année passée, 2,55 milliards furent ainsi consacrés à cette activité. Grossman et Helpman (2001) expliquent qu'il existe un grand nombre de groupes de pression dont les intérêts sont variés, voire opposés. Ceux-ci influencent les décisions politiques et économiques. Ils soulignent également l'importance grandissante de cet aspect de la politique au cours des années 90, tendance qui ne s'érode pas. A l'occasion des élections présidentielles américaines de l'année prochaine, les différents secteurs ont déjà contribué à hauteur de 111 millions de dollars[35].A la date du 30 juillet 2007, les principaux contributeurs se trouvaient être les secteurs du droit, des retraités et des investissements. Certains analystes prédisent que les montants totaux collectés vont battre des records, avec notamment plus de 500 millions de dollars pour certains candidats.

[33] Source: http//www.opensecrets.org

[34] Ce qui n'inclut donc pas les contributions aux campagnes électorales.

[35] Source: Chiffres collectés par la Commission Fédérale des Elections et organisés par le Centre pour une Politique Responsable, http//www.opensecrets.org.

La distinction entre lobbying et contributions aux campagnes met en lumière l'hétérogénéité des types de relations d'influence entre les groupes de pression. Alors que les plus grands secteurs payent plus dans les activités de lobbying qu'en contributions, l'importance relative des montants dépend très fortement du secteur observé. Il est surprenant d'observer deux des secteurs souvent montrés du doigt comme étant à l'origine (entre autres) des difficultés que connaît actuellement l'OMC pour mener à bien le Doha Round, en particulier à cause des attitudes protectionnistes de l'Union Européenne et des Etats-Unis, le textile et l'acier[36]. Il apparaît que tout deux n'ont jamais été fortement impliqués dans une activité de lobbying lors des dix dernières années. En outre, le total de contributions versées par chacun des deux secteurs à l'occasion des élections ayant eu lieu depuis seize ans est relativement petit si l'on compare avec d'autres secteurs. Cela contraste fortement avec l'industrie pharmaceutique qui est la première dépensière dans le lobbying avec plus d'un milliard de dollar dépensé en 10 ans. A l'inverse, cette industrie n'a guère contribué aux campagnes. Ces faits suggèrent que les relations politiques sont complexes; selon leur nature, les conclusions et explications qui en résultent sont très différentes. Comme nous le verrons, ceci laisse entendre que la nature des secteurs, les enjeux comme un grand nombre d'emplois menacés ou le fait qu'un secteur soit d'importance historique peuvent considérablement modifier la stratégie politique des entreprises.

En introduisant des règles auxquelles se conformer, l'OMC offre la possibilité de profiter des concessions faites par d'autres membres en échange du respect des principaux principes établis par l'organisation. Dès lors, survient le problème de la qualité contraignante des contrats. Il est en effet impossible d'écrire des contrats qui soient complets pour empêcher les gouvernements de dévier par rapport à leurs engagements, ce qui implique que des failles subsistent. Malgré le fait qu'ils soient membres de l'OMC, les pays ont toujours des incitations à abuser de leur pouvoir de négociation et de tirer parti de la moindre faille ou imprécision dans la réglementation de l'OMC. Deux dimensions des organisations internationales

[36] De façon régulière des différends ont lieu qui concernent ces deux secteurs, suggérant qu'ils subissent bien des pressions protectionnistes.

sont donc à distinguer. Tout d'abord, l'évolution de l'économie dans son ensemble a conduit à leur création, à savoir une dimension *ex ante*, et l'incomplétude des contrats entre les organisations internationales et leurs membres.

Par conséquent, l'influence politique qui est fortement reliée à la notion centrale des Sciences Politiques qu'est le pouvoir, joue au travers de deux canaux. Le pouvoir peut soit trouver ses racines dans les membres qui s'organisent après avoir pris la mesure du contexte international, afin de faire pression sur l'issue des négociations, soit les trouver dans une initiative isolée dont le but serait d'obtenir un traitement favorable. L'OMC permet d'illustrer cela en ce sens qu'un pays peut essayer de dévier d'une règle déjà établie ou bien il peut également tenter de s'organiser avec d'autres membres de façon à influencer favorablement les futures règles instituées. A l'instar de l'OMC, le Fonds Monétaire International (FMI) fournit une preuve de ces phénomènes. Les pays peuvent user de leur pouvoir pour obtenir plus que ce que le Fonds prévoit de leur donner[37]; ou s'organiser afin de permettre à un autre pays de bénéficier d'un traitement de faveur.

Le FMI a été créé pour répondre aux difficultés croissantes des pays à affronter eux-mêmes des crises financières internationales de plus en plus fréquentes. A mesure que les relations entre pays se multiplient, conséquence du processus de mondialisation, les crises frappent bien plus violemment qu'auparavant les faibles économies nationales. La conférence de Bretton Woods de 1944 a ainsi été le théâtre de la création de deux organisations jumelles, le FMI et la Banque Mondiale, dont le but est d'aider les pays qui font face à des difficultés temporaires de balance des paiements ou bien de promouvoir leur développement. De nos jours, l'objectif des organisations internationales est de gérer les problèmes induits par la mondialisation; l'implication de nombreux pays aux niveaux de développement variés étant la principale cause au besoin de telles institutions. Elles représentent ainsi une tentative pour faire face aux mêmes problèmes que ceux identifiés par Drazen comme étant au coeur de la Nouvelle Economie Politique, l'hétérogénéité des protagonistes (principalement en matière de développement), et les conflits d'intérêts potentiels

[37] Chaque pays a une limite maximale aux prêt qu'il peut attendre du FMI, celle-ci dépend des quotas de chacun calculés par le Fonds en fonction de leurs tailles économiques.

(dus à l'hétérogénéité ainsi qu'au dilemme du prisonnier, entre autres).

Par conséquent, les Etats se voient contraints de déléguer une partie de leur souveraineté aux organisations internationales pour profiter de la mondialisation alors que dans le même temps, les entreprises sont de plus en plus puissantes. Pourtant, le transfert de souveraineté des Etats vers les organisations internationales est sur le papier. Il ne fait aucun doute que tout pays découvrant un moyen d'accroître son pouvoir de négociation sur les autres membres l'utilisera. Tout comme le fait que les décisions qui influencent l'environnement économique des entreprises soient prises par les gouvernements n'empêche pas ces dernières de les influencer. La Nouvelle Economie Institutionnelle nous suggère que les institutions influencent l'environnement économique. De fait, la baisse des droits de douane dans la plupart des secteurs accomplie sous l'égide du GATT n'empêche pas les firmes de vouloir plus de protection, mais elle a obligé les entreprises ainsi que les gouvernements à développer de nouveaux instruments avec lesquels protéger leurs économies.

D'un point de vue théorique, les développements récents en économie internationale mettent en avant l'apparition de nouvelles formes de politiques commerciales. En particulier, les normes ou de façon plus large, les barrières techniques au commerce (BTC) possèdent des caractéristiques propres qui nécessitent une analyse spécifique. Depuis l'avènement de l'OMC, le principe de Traitement National oblige tous les membres à mettre en place les mêmes politiques pour les firmes étrangères et pour leurs alter ego domestiques. Ceci est inconcevable en ce qui concerne les barrières au commerce traditionnelles tels les droits de douane car ils ne peuvent pas, par nature, être imposés sur des produits domestiques. Toute contrepartie nécessiterait donc le recours à d'autres instruments, or il est bien connu qu'une telle attitude génère d'immenses distorsions. Cependant, puisque cela implique un équilibre des distorsions, l'OMC cherche à faire disparaître graduellement de tels accords. Par exemple, un processus de conversion de toutes les barrières traditionnelles au commerce sauf les droits de douane en droit de douane est

actuellement mis en oeuvre afin de leur appliquer les formules de baisses tarifaires[38]. De surcroît, les soixante dernières années ont abaissé les droits de douane à des niveaux très faibles grâce aux rounds de négociations successifs menés sous le GATT ou l'OMC. Cela corrobore les résultats d'Anderson et Van Wincoop (2004) qui présentent des niveaux très élevés de coûts au commerce mais confirment que les barrières traditionnelles au commerce ne représentent plus une grande partie de ceux-ci. De façon intéressante, les BTC étant peu transparentes et potentiellement bénéfiques pour la société, elles ont de grandes chances d'être des instruments de protection privilégiés puisque l'OMC est inopérante dans la plupart des cas[39].

Les droits de douane sont remis en cause à la fois aux niveaux international et national. L'OMC a pour objectif d'en obtenir l'élimination totale, d'un côté, et de l'autre, comme le souligne Rodrik (1995), le choix du droit de douane, voire plus généralement des politiques commerciales, comme instrument pour redistribuer des transferts aux groupes de pression est très critiquable. Il est clairement établi que des transferts directs seraient bénéfiques à tous les acteurs car ils n'entraînent pas de distorsion. Ainsi, le recours quasi systématique à l'hypothèse que les gouvernements ont pour seul instrument de politique commerciale les droits de douane pour satisfaire les lobbies devrait probablement être abandonné.

L'étude des barrières techniques au commerce est vraisemblablement prometteuse. Leur inévitable mise en oeuvre sur le territoire national supprime les distorsions induites par les droits de douane et, contrairement aux barrières traditionnelles, ce type de protection ne renforce pas le désavantage aux firmes étrangères que constitue les coûts de transport. Par conséquent, la mise en oeuvre de BTC ne peut pas être réduite à une simple mesure contre les intérêts étrangers. Comme le **premier chapitre** de cette thèse le montre, il existe même une motivation positive des gouvernements à les mettre en place.

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[38] Le principe consiste à estimer un équivalent tarifaire à un quota ou une restriction volontaire aux exportations donnés en se basant sur le niveau de protection qu'ils impliquent. Une fois ce niveau de protection déterminé, le droit de douane qui aurait le même effet est calculé et l'on transpose les premiers en ce dernier.

[39] Voir par exemple Horn et Weiler (2004) sur le différends déposé à l'OMC à l'encontre d'une réglementation française concernant l'amiante. Ils montrent sans équivoque l'ambiguïté inhérente aux questions de l'appréciation des effets et du but de ce type de réglementation socialement bénéfique.

Dans ce chapitre, nous nous appuyons sur le papier précurseur de Grossman et Helpman (1994) (H & G 94). Ils ont développé un modèle précis de lobbying qui fournit des fondations microéconomiques aux motivations politiques en faveur de la protection. Ils montrent comment le goût d'un décideur politique pour les revenus privés l'incite à mettre en place des politiques protectionnistes contre une population qui n'est pas organisée. La politique commerciale a ici la forme standard d'un vecteur de droit de douane et de subventions qu'un gouvernement peut mettre en place afin de protéger certaines industries.

Le but de ce chapitre est donc d'étudier la relation politique entre les gouvernements et les groupes de pression en utilisant le cadre théorique de G & H 94 dans lequel l'objet d'influence serait une norme technique. L'intérêt principal de ce chapitre réside donc dans ce que, contrairement au cas des droits de douane, toute augmentation de la protection peut se faire parallèlement à une amélioration des normes possiblement socialement bénéfique. Ainsi, si l'on souhaite être protégé, alors on doit souhaiter des réglementations plus contraignantes; cela induisant un arbitrage entre les deux résultats socialement bénéfiques que le libre échange et de meilleures normes. Toutefois, rendre une norme plus rigoureuse a pour conséquence une hausse des coûts supportés par les entreprises. En conséquence, si c'est l'unique moyen pour être protégé, certaines firmes ne préféreront sûrement pas l'être.

Ce chapitre a pour but de répondre à la question de la volonté des lobbies à demander plus de protection lorsque cela implique une nouvelle norme. Pour des raisons de simplicité, la question de la protection dans une économie ouverte n'est pas abordée dans ce chapitre. Toutefois, comme cela sera souligné dans l'antépénultième section, cette formalisation en économie fermée permet d'obtenir des résultats aisément transposables à un cadre d'une économie ouverte, la plupart des mécanismes pouvant entrer en jeu dans une économie ouverte sont prédictibles.

La forme de la réglementation considérée est très simple. Précisément, tout type de réglementation peut être pensé comme distordant le commerce en ce sens qu'il rend l'entrée sur un marché plus difficile. En effet, puisqu'une norme accroît les coûts supportés par les entreprises, une partie d'entre elles ne sera plus en mesure d'entrer

sur le marché, la norme aura donc la forme d'une taxe à l'entrée[40]. La disparition de certaines entreprises va s'avérer être l'intérêt principal de la réglementation par un effet de captation des profits. Pour l'observer, nous utilisons un modèle en concurrence monopolistique à la Dixit-Stiglitz dans lequel sont introduites des firmes hétérogènes.

Formellement, un gouvernement à la fois sensible à des intérêts publics et privés se voit proposer des agendas de contribution de la part de tous les lobbies actifs dans l'économie. Ensuite, il choisit le niveau de la variable endogène, la taxe sur l'entrée, qui lui permet de maximiser sa fonction objectif. Afin de se focaliser sur l'analyse des déterminants politiques à la mise en place d'une telle réglementation, cette dernière est supposée ne pas générer d'effet améliorant le bien-être social. Aussi, cette hypothèse associée à un cadre en économie fermée permet de se concentrer sur les conflits d'intérêts intra sectoriels entre des lobbies au sein d'une industrie définie où des entreprises souhaitent la mise en place de la réglementation, alors que d'autres ne la veulent pas. Ainsi, nous relâchons l'hypothèse de "lobby-secteur" afin d'introduire plusieurs lobbies dans une même industrie, ceux en faveur de la mise en place s'opposant aux autres. Les lobbies se rassemblent en deux groupes distincts, l'un en faveur de la réglementation tandis que l'autre y est opposé. Dès lors, la variation du niveau de la taxe à l'entrée influence la façon dont les lobbies se rassemblent.

Les contributions sont multiples. Tout d'abord, la mise en place de tout type de réglementation peut créer des conflits d'intérêts entre lobbies au sein d'un secteur. Deuxièmement, la concurrence n'est pas liée au nombre de lobbies actifs mais à l'ampleur des différences dans leurs structures de propriété. Troisièmement, la réglementation d'équilibre est plus importante (c'est-à-dire le coût fixe supplémentaire devant être payé par les firmes est plus grand) lorsque coût irréversible à l'entrée, la part de la population représentée par un lobby et que le paramètre de préférence sociale du gouvernement sont plus faibles. Nous montrons également que l'incitation à entrer dans une activité de lobbying en faveur d'une réglementation

[40] Cette forme est été choisie car l'aspect que le premier chapitre se veut d'étudier est la relation entre protection et réglementation, due au coût induit par la réglementation. Ce coût est supposé supporté par les firmes afin de créer un motif de protection.

dans un secteur est uniquement expliquée par la présence d'une hétérogénéité de productivité de firmes. Autrement dit, la concurrence entre les lobbies ne dépend pas de leur nombre mais du degré de rivalité entre eux, mesuré par l'hétérogénéité. Enfin, une plus grande part de la population totale représentée par chaque groupe de pression réduit à la fois le degré de rivalité et la réglementation d'équilibre, ce dernier résultat contrastant nettement avec ceux de la littérature antérieure.

De façon intéressante, le cadre théorique proposé dans ce chapitre puisqu'il porte sur une réglementation qui s'applique aux firmes domestiques peut se transposer facilement à la question d'une économie ouverte. Une question d'importance dans ce cas serait le traitement de l'influence des firmes étrangères. Un élément central serait alors l'asymétrie entre les pays impliqués dans le commerce international. Supposons alors que la firme étrangère la moins productive soit exactement aussi productive que la plus productive des entreprises domestiques, après déduction des coûts de transport. Si l'on considère tout d'abord que les firmes domestiques sont les seules aptes à influencer le gouvernement, toute nouvelle réglementation profitent alors essentiellement aux firmes étrangères puisqu'elles sont plus productives. Les firmes domestiques, y compris les plus productives d'entre elles, seraient alors moins intéressées dans l'obtention de la nouvelle norme, cela résultant donc dans une réglementation plus faible. Si au contraire, nous faisons l'hypothèse que les firmes étrangères sont également capables d'influencer le gouvernement local. Dans la mesure où toutes les firmes domestiques se verraient empêcher d'entrer le marché avant que la première firme étrangère ne soit concernée, une contribution plus forte serait versée, comparée à celle payée à l'équilibre en économie fermée. De fait, les firmes étrangères sont supposées, dans ce simple exemple, être financièrement plus puissantes que leur alter ego locaux.

En dépit de la simplicité de cet exemple ainsi que de l'omission volontaire d'un certain nombre d'effets, la question de l'influence des firmes étrangères est cruciale. Lorsqu'une réglementation est étudiée, les firmes locales et étrangères sont sur un pied d'égalité en ce sens qu'aucune n'est particulièrement discriminée. Le **deuxième chapitre** de cette thèse étudie empiriquement l'influence des firmes étrangères dans les pays en développement. Le choix des pays en développement étant dû à des

observations théoriques et factuelles, toutes suggérant que ces pays sont plus enclins à s'intéresser aux souhaits des entreprises étrangères.

Ce chapitre développe une étude originale car il étend l'étude de l'influence à pratiquement l'ensemble des régions du monde, contrairement à Hellman et al. (2002)[41], et car il pose la question de l'influence légale des entreprises, que nous appelons l'influence pure. Ce chapitre utilise la base de donnée du WBES[42] Ce chapitre présente donc une nouvelle recherche car les seules études qui ont cherché à tester que les firmes étrangères ont plus d'influence l'ont fait au sujet des Pays d'Europe Centrale et Orientale (PECO)[43]. De surcroît, ce chapitre a pour objectif d'étudier l'influence pure des firmes que nous définissons comme l'influence qui n'est pas obtenue par le recours à des paiements directs aux décideurs publics. Par conséquent, les données sont purgées de toute forme d'influence illégale, parmi lesquelles se trouvent les pots de vins.

Comme point de départ, ce chapitre propose trois arguments fondés théoriquement qui pourraient justifier d'un traitement différent des firmes locales de leurs contreparties étrangères. Le premier d'entre eux est la contribution attendue des entreprises étrangères à la croissance. En effet, les firmes qui investissent sur des marchés étrangers sont souvent les plus productives. C'est une des principales prédictions de la Nouvelle Economie Géographique (voir par exemple Melitz, 2003). Ainsi, les gouvernements des pays en développement pourraient être tentés de favoriser les firmes étrangères car ils espèrent que celles-ci vont contribuer à soutenir la croissance. Le second argument envisagé, dérivé de Caves (1996) est que les firmes pourraient souffrir du fait qu'elles sont étrangères. Dans un but électoral, le fait d'aider les firmes étrangères n'aurait pas un impact très fort sur l'issue du

[41] Cette étude empirique utilise la même base de donnée que ce chapitre. Cependant, leur étude ne fait pas la distinction entre influence légale et illégale et ne pose pas la question de la différence entre l'influence des firmes domestiques et étrangères.

[42] La Banque Mondiale fournit une vue d'ensemble de l'influence des firmes étrangères dans le World Business Environment Survey (WBES). Dans cette enquête se trouvent un grand nombre de questions au sujet des réglementations. Ainsi, en dépit de sa nature qualitative, l'enquête offre la possibilité de tester si les firmes étrangères ont plus d'influence sur les gouvernements domestiques que n'en ont les locales.

[43] Dans Hellman et al. (2003), ils étudient l'influence légale des firmes. Mais une fois de plus ils se focalisent sur les PECO et l'Asie Centrale et ne distinguent pas entre firmes domestiques et étrangères.

scrutin car celles-ci ne représentent pas uniquement des intérêts locaux mais aussi étrangers. En outre, le fait d'aider les firmes étrangères pourrait être mal perçu par les électeurs pour des considérations nationalistes. Ajoutons également que la littérature considère quasi systématiquement que les gouvernements ne prennent pas en compte les profits des firmes étrangères dans leurs objectifs. Enfin, la multinationalité est le dernier aspect qui, selon nous, peut justifier un traitement différencié. Elle correspond simplement à l'ensemble d'avantages dont une firme peut profiter au travers de son activité dans d'autres pays. En particulier, nous avançons l'idée que la composante principal de ce dernier argument est la menace de relocalisation rendue plus crédible par la détention d'actifs dans d'autres pays; ainsi que l'expérience dans l'activité de lobbying que les firmes ont acquises lors de précédentes implantations[44].

Le chapitre est organisé en trois étapes, chacune donnant lieu à une grande catégorie de contribution. Premièrement, alors que les firmes étrangères sont effectivement plus influentes que les entreprises domestiques, ceci s'avère être faux dès lors que l'on considère la possibilité qu'une firme domestique puisse elle aussi être une multinationale. En outre, un nouveau statut est étudié, celui de la FMN hybride contrôlée à la fois par des capitaux domestiques et étrangers. Ces dernières apparaissent être les plus influentes parmi les différents types de FMN. Ces résultats suggèrent donc que le meilleur argument à avancer pour justifier d'une plus grande influence est la multinationalité qui, comme nous l'avons justifié, n'est pas l'apanage des firmes étrangères. Deuxièmement, ce chapitre fournit des éléments intéressants sur la propension d'un décideur public à écouter les volontés des entreprises selon que celui-ci est élu ou nommé. Sans surprise, ceux qui sont nommés sont plus ouverts à l'influence des firmes puisqu'ils ne sont pas menacés d'une sanction possible lors des prochaines élections. A l'inverse, les décideurs publics élus tendent à favoriser très légèrement les entreprises domestiques. A nouveau, ce résultat est attendu car le problème lié au fait d'être étranger est essentiellement pertinent lorsqu'il s'agit de décideurs devant rassembler des voix en vue de futures élections. Enfin,

[44] Autrement dit, les FMN ayant déjà été engagées dans d'autres pays ont déjà eu à développer des relations d'influence politique et sont logiquement plus habituées à ce type de négociations.

la troisième catégorie de contribution concerne les conditions d'entrée des firmes étrangères. Selon nos estimations, ces dernières parviennent effectivement à obtenir des améliorations sensibles de leur environnement et réussissent aussi à conserver ces avantages dans la durée.

Ainsi, dans la quête de l'influence des firmes, ce chapitre apporte des éléments utiles car il souligne l'importance de la multinationalité. Toutefois, dans les cadres théoriques dérivés de Grossman et Helpman (1994), le bien-être national est composé d'un bien-être social auquel viennent s'ajouter les gains privés du gouvernement. Le bien-être social est pondéré par un paramètre a, supposé être positif. Si un secteur est organisé, son bien-être va bénéficier d'un poids additionnel égal à un à l'équilibre. Par conséquent, une firme étrangère ne peut avoir un poids supérieur à un dans le bien-être national si elle cherche à influencer le gouvernement car son bien-être n'est pas pris en compte dans la fonction objectif du gouvernement. Cela implique que toutes les firmes domestiques et organisées ont, par définition, un poids plus important que leur alter ego étrangers. Ajoutons que si a venait à être supérieur à un, alors même les firmes ou secteurs locaux non organisés auraient un poids supérieur à celui d'une firme ou secteur étranger organisé à l'équilibre. Les résultats de ce deuxième chapitre laissent entendre que ceci n'est pas réaliste, au moins dans le cas des pays en développement. Il faudrait au minimum permettre que les firmes étrangères puissent avoir une influence sur le gouvernement domestique égale à celle des firmes domestiques, soit par hypothèse ou de façon endogène. Cette dernière possibilité pouvant être la conséquence de firmes étrangères affichant des profits plus élevés, cela leur conférant un avantage comparé aux firmes domestiques. Ainsi le pouvoir financier pourrait contre balancer leur désavantage lié à leur statut d'étranger. Si l'on retourne à l'exemple dérivé du chapitre 1, les firmes étrangères sont désavantagées relativement aux domestiques puisque leurs profits opérationnels ne sont pas pris en compte par le gouvernement local. Cependant, si elles sont supposées être plus productives, alors le fait de disposer de plus de ressources financières à consacrer à l'activité de lobbying pourrait faire contrepoids à l'absence d'intérêt du gouvernement pour leurs profits.

Le chapitre 2 offre une vue plutôt large de l'influence des firmes étrangères et

domestiques dans les pays en développement. Les firmes purement locales ont bien moins d'influence que les autres, mais elles en ont tout de même. Certains faits stylisés émergent de ce chapitre. Premièrement, la multinationalité est la principale force qui accroît l'influence des firmes, qu'elles soient domestiques ou étrangères. Cela fait référence à la crédibilité de la menace de relocalisation, à l'expérience en matière de lobbying et enfin leurs ressources financières plus importantes dues à leur taille si l'on se réfère à Melitz (2003). Deuxièmement, les firmes domestiques parviennent à combler partiellement cet écart qui les sépare des FMN lorsqu'elles s'adressent à des décideurs publics qui font face à l'attention du public au travers des urnes. Parallèlement, les firmes détenues par l'Etat ou précédemment détenues par celui-ci ont également plus d'influence que les autres firmes, toutes choses égales par ailleurs. Cela plaide en faveur du rôle positif des réseaux politiques sur les décisions politiques.

Ce chapitre laisse néanmoins un aspect sans réponse. Les firmes domestiques sont plus influentes lorsqu'elles sont également des FMN. En outre, elles sont encore plus influentes lorsqu'elles sont des FMN hybrides (détenues à la fois par des capitaux domestiques et étrangers). Lorsque l'on s'intéresse aux modèles théoriques de formation endogène du protectionnisme, il s'avère qu'ils n'apportent pas de réponse à ce fait. Dans les modèles à la Grossman et Helpman (1994), le fait de payer une contribution a un effet sur la politique commerciale d'équilibre qui est strictement égal à l'effet que cette politique a sur le bien-être des groupes de pression. Ce qui distingue une FMN hybride d'une FMN domestique ou étrangère n'est que la nationalité des propriétaires. Il n'y a aucune raison de croire que les profits des firmes hybrides sont plus sensibles aux réglementations domestiques que les autres FMN. Leur avantage réside dans la combinaison de ressources financières importantes et de leur multinationalité. Il semble clair que les raisons expliquant leur avantage ne proviennent pas de leur profit mais plutôt de leur capacité à être plus influentes que les autres. Les résultats de ce deuxième chapitre suggèrent donc qu'une firme, selon qu'elle soit détenue par des capitaux étrangers, domestiques ou les deux, peut bénéficier de niveaux d'efficacité variés lorsqu'elles influencent les autorités locales. Le **chapitre 3** développe un cadre théorique qui a vocation à expliquer ces différences

de traitement.

A notre connaissance, l'analyse théorique n'a pas envisagé, hormis au travers d'une élection, que l'influence puisse être le canal direct entre les lobbyistes et un gouvernement. En effet, du papier de Grossman et Helpman (1994) aux développements les plus récents, une part belle a été faite aux modèles d'agence commune. L'article de Grossman et Helpman, en s'appuyant sur les travaux précurseurs de Bernheim et Whinston (1986b), sont les premiers à avoir intégré ce type de cadre théorique afin d'expliquer les motivations à la fois du gouvernement et des firmes lorsqu'ils sont engagés dans une relation politique. A l'instar d'un modèle standard en agence commune, le gouvernement est un agent dont l'effort, ici le niveau de protection qu'il accorde aux secteurs domestiques, influence fortement le bien-être d'une multitude de principaux, les secteurs organisés dans leur travail. Ainsi, ces derniers introduisent dans la fonction objectif du premier une fonction additionnelle qui dépend de 'l'effort' réalisé afin de l'inciter à agir en faveur de leur bien-être. En d'autres mots, les lobbies proposent une contribution qui dépend du niveau de protection choisi par le gouvernement.

Ce cadre théorique a depuis été très souvent utilisé. Toutefois, Dixit et Romer (1997) posent la question du recours à un cadre d'agence commune alors que l'information est symétrique et qu'il n'y a pas de coopération entre les principaux. En effet, compte tenu de cela, on peut supposer qu'il existe d'autres moyens pour obtenir une action satisfaisante de la part du gouvernement. Cette question est d'importance dans la mesure où cela pourrait être un élément de réponse à la critique formulée par Rodrick (1995) : le fait que les transferts financiers soient utilisés pour influencer un gouvernement est un problème dans de nombreux modèles d'économie politique. En effet, dans son état de l'art, il fait référence à Austen-Smith qui, en 1991, argumentait que l'influence peut prendre une quantité de formes variées qui souvent n'impliquent pas de transfert pécuniaire.

Malgré cela, la théorie peut être partiellement malléable en matière d'interprétation. La désormais célèbre fonction à la Bentham souvent utilisée dans les approches théoriques des contributions, par exemple dans Dixit et al. (1997), représente un objectif pécuniaire. Par conséquent, ajouter une contribution à la fonction

objectif correspond, rigoureusement, à un transfert monétaire. Si l'instrument utilisé pour influencer le gouvernement est modifié, le dernier élément de la fonction objectif communément appelé contribution pourrait être vu comme la valeur que le gouvernement accorde à l'action de servir les intérêts privés. Autrement dit, cela indiquerait l'effet d'un euro dépensé par le groupe de pression et cet effet ne serait plus nécessairement une augmentation d'un euro dans la fonction objectif du gouvernement. Le troisième chapitre de cette thèse a pour but de proposer un cadre théorique adapté à cette problématique.

Les lobbies forment un instrument optimal afin d'influencer la valeur que le gouvernement attribue au fait d'agir en leur faveur. Tous les groupes de pression ne sont pas nécessairement sur un pied d'égalité en matière d'influence. La particularité de la modélisation proposée dans ce chapitre est qu'elle permet d'introduire cette hétérogénéité pas seulement dans la politique d'équilibre – déjà présente dans les derniers développements grâce aux différences dans les fonctions de bien-être des lobbies – mais également au niveau de l'influence que les groupes de pression parviennent à obtenir, ceci dépendant de leur capacité à tirer avantage des prédispositions 'naturelles' du gouvernement.

Les principaux apports de ce chapitre sont au nombre de trois. Tout d'abord, une nouvelle manière de formaliser le jeu qui intervient entre les firmes et le gouvernement est proposée. Celle-ci offre la possibilité d'obtenir des agendas de contribution formés de façon "indépendante". Ainsi, elle permet aux firmes d'avoir plus ou moins de pouvoir sur les décisions du gouvernement selon leur réaction ainsi que celle du gouvernement à la politique commerciale. En conséquence, ce chapitre met en avant l'importance de la réaction aux importations à la politique commerciale dans la réaction des firmes domestiques. Le modèle souligne l'importance de la nature du jeu ainsi que de la rationalité des protagonistes. Un cadre d'agence commune n'est effectivement pas nécessaire pour obtenir des agendas de contribution qui soient "truthful", tels décrits par Bernheim et Whinston (1986b). De surcroît, il apparaît que lorsque les firmes considèrent que leur offre faite au gouvernement, l'agenda de contribution, peut modifier directement la contribution qu'elles auront à payer, l'agenda de contribution n'est plus "truthful". Plus précisément, dans ce

cas, le modèle montre qu'accorder aux firmes la possibilité de prendre un avantage important sur le gouvernement introduit également une forme de modération de la part des firmes, ceci n'étant pas possible dans un cadre d'agence commune. L'effet est le suivant : si les firmes observent que le gouvernement est initialement enclin à les aider à cause de leur effet sur le bien-être social, alors elles ne formulent pas une offre élevée. A l'inverse, si le gouvernement semble insensible à la situation d'une firme, celle-ci sera contrainte de faire une offre élevée. Ce résultat est consistant avec l'idée que le même équilibre de protection peut être obtenu soit par l'influence des firmes soit par la sensibilité du gouvernement aux profits de certaines firmes ou secteurs. De fait, la constatation que les industries pharmaceutiques et de l'acier semblent faire l'objet d'une attention particulière dans les négociations menées à l'OMC ne peut s'expliquer simplement par leurs contributions ou leurs investissements dans l'activité de lobbying comme cela a été expliqué plus haut.

D'un point de vue plus descriptif, ce chapitre fournit également un résultat au sujet des biens homogènes. Il met en avant des implications directes de la concurrence entre les groupes de pressions sur les politiques d'équilibre. Ce qui contraste avec le résultat de Grossman et Helpman (1994) qui ne lient pas la concurrence entre les lobbies à l'équilibre obtenu.

Une dernière partie du chapitre 3 se propose d'analyser d'une façon très simple les implications au cas d'une économie ouverte. Un modèle à deux pays d'une grande simplicité est développé. Dans chaque pays se trouve une firme présente sur les deux marchés. Afin d'apprécier la question importante de l'effet de l'influence sur des négociations multilatérales, cette partie s'appuie sur une hypothèse très simple. Obtenir un accord revient à ce qu'une organisation internationale propose une politique qui se situe dans l'ensemble des politiques commerciales envisageables pour tous les pays. Ainsi, l'idée est simplement de déterminer dans quelle mesure il est contraignant d'égaliser les vecteurs de politiques commerciales pour tous les pays[45].

[45] Cette égalisation des politiques commerciales est une approche stylisées du résultat attendu de la combinaison de deux principes en vigueur à l'OMC. Les principes de réciprocité et de la Nation la plus favorisée impliquent ensemble un droit de douane commun pour tous les pays. Le premier implique que les droits de douane sont égaux pour toutes les paires de membres de l'OMC. Le second implique quant à lui et compte tenu de la conséquence du premier, que le droit de douane est le même pour toutes les paires de pays. En effet, ce dernier principe interdit aux membres de discriminer entre ses pays partenaires commerciaux.

La difficulté à atteindre l'égalisation est mesurée par la taille des intervalles de valeurs économiquement possibles qui la rendent possible. Il ressort que la situation qui met en scène une activité de lobbying dans les deux pays n'est pas pire que lorsque aucun pays n'est sujet à l'influence de groupes de pression. Certaines configurations de coût marginal et de taille de marché, propres à chaque pays, permettent plus facilement d'atteindre un accord lorsque les deux gouvernements sont à l'écoute des lobbies.

Comme cela fut déjà mentionné dans cette introduction, la théorie du commerce international conclurait, en 'autarcie', que l'aspect auto contraignant est presque parfait puisque les fora internationaux permettent une coordination qui supprime le dilemme du prisonnier. Toutefois, lorsque la théorie du commerce international s'ouvre à l'économie politique, principalement via le courant du protectionnisme endogène, elle met en avant la difficulté de se départir des "tendances protectionnistes" (Pascal Lamy, ibid). La politique est donc la force visible qui empêche les organisations internationales de se développer de façon harmonieuse. Comme le soulignent les politologues, la politique met en jeu de la stratégie, or celle-ci implique à la fois un but et moyen d'y parvenir. Aussi, l'identification du but devrait aider à concevoir les moyens et donc, à terme, de les empêcher.

Baldwin (1979) explique le paradoxe du pouvoir non réalisé[46] qui veut que certains pays possèdent des 'armes' mais ne savent s'en servir. Le résultat du chapitre 2 l'illustre en quelque sorte en ce sens que les firmes domestiques peuvent avoir des moyens d'influence mais apparaissent néanmoins bien moins efficientes. En outre, tous les pays n'ont pas une grande expérience de l'activité de lobbying, à entendre comme influence dans un sens très général qui incluerait les pots de vins ou le recours aux réseaux. Pourtant, chaque pays est dirigé par un gouvernement qui peut être influencé. Ainsi, comme le montre le chapitre 2, certains intérêts privés étrangers usent de leur expérience en la matière pour influencer les gouvernements des pays en développement. Ils obtiennent *de facto* d'importants avantages, en particulier lorsqu'ils pénètrent le marché.

De façon identique, les chapitres 1 et 3 défendent l'idée, bien qu'en ayant recours à différentes approches, que le mélange entre influence et économie ouverte peut

[46] Unrealised power.

générer des résultats très différents. Du premier mentionné, nous savons que permettre aux lobbies étrangers de faire pression sur le gouvernement local est un élément crucial. Du second évoqué, l'influence unilatérale rend impossible la conclusion d'un accord international. La question de la politique est d'une grande importance pour comprendre le fonctionnement des organisations internationales.

Comme le suggère la remise en cause du cadre en agence commune, les lobbies n'ont pas la possibilité de choisir la politique commerciale, mais simplement d'influencer sa détermination par le gouvernement. Le chapitre 3 a proposé une solution à ce problème particulier. Toutefois, il existe parfois des moyens d'influencer l'usage d'un instrument stratégique, en particulier lorsqu'il s'agit de ressources, qu'elles soient énergétiques, géographiques ou autres. Le dernier chapitre de cette thèse se propose d'apporter une contribution à ce sujet. En dépit de sa forte assise empirique, il fait référence sans équivoque à un cadre lié à la théorie de l'agence. Donc ce dernier chapitre inverse la problématique en considérant des variables dont l'usage est transférable et en supposant que les fora internationaux offrent un moyen d'influencer cet usage plutôt qu'une possibilité de surmonter les problèmes politiques. Autrement dit, les organisations internationales peuvent être détournées de leurs objectifs originaux.

Bernheim et Whinston ont développé deux articles fondamentaux qui ont influencé à la fois les théories de l'agence commune et l'économie politique moderne. Bernheim et Whinston (1986a) présente une approche théorique de l'agence commune. Ils montrent alors que quelque soit l'action décidée à l'équilibre, cela est fait efficacement. Grossman et Helpman (1994) se repose sur le travail de Bernheim et Whinston (1986b) afin de caractériser leur équilibre. Leur cadre théorique en agence commune peut s'appliquer au FMI. En effet, le Fonds pourrait incarner un agent. En accord avec le modèle, ses actions sont observables puisqu'il s'agit de montants prêtés. Les principaux seraient alors les nombreux pays qui composent les "constituancies" qui animent le Conseil Exécutif où la majeure partie des décisions sont prises.

Que nous considérions ou non que chaque prêt consenti à un pays modifie les possibilités et le montant du prêt que d'autres pays peuvent espérer, nous devrons

nous référer soit à la formalisation de Grossman et Helpman ou à celle développée dans le premier chapitre. Cependant, les conclusions seraient très généralement comparables en ce sens que les deux modélisations nous disent que lorsqu'un acteur est loin de l'opinion des autres, alors il paye plus. Si l'on transpose cela à la problématique du Fonds, cette prédiction implique que si un pays est le seul à trouver un intérêt à prêter à un pays donné, ce dernier ne bénéficiera que d'un faible prêt, voire d'aucun. Le FMI a aucune raison *ex ante* de prêter plus à un pays qu'à un autre. Une fois les critères économiques pris en compte, tous les débiteurs potentiels sont sur un pied d'égalité. Ce sont des pays qui utilisent leur pouvoir de vote ainsi que leur influence pour obtenir du Fonds un prêt plus élevé. Par conséquent, la similitude avec les théories usuelles du protectionnisme endogène est relativement apparente.

Ainsi, les trois premiers chapitres de cette thèse ont étudié l'influence des firmes étrangères ou domestiques sur les gouvernements. Ces relations politiques affectent à l'évidence de façon importante les politiques d'équilibre des pays. Or, comme cela a été avancé au préalable dans cette introduction, la mise en place d'organisations internationales fortes a nécessité un transfert partiel de souveraineté des pays aux instances exécutives de ces institutions. Certaines politiques sont désormais décidées au niveau international. Compte tenu de l'influence des firmes sur les gouvernements, il semble vraisemblable que les firmes soient en mesure d'influencer les décisions prises dans les organes internationaux. Si tel est le cas, cela signifie que les pays parviennent à atteindre des objectifs privés au travers des institutions internationales.

Le **chapitre 4** propose donc une étude originale afin d'estimer les effets de la géopolitique dans les pratiques de prêt du FMI. La géopolitique plutôt que la politique car c'est un concept qui met en jeu des critères plus stables. Comme nous le verrons, la géopolitique fait référence aux 'armes', qui souvent se trouvent être des ressources ou des localisations stratégiques. Ce chapitre répond donc à une partie du schéma évoqué plus haut qui prouverait l'influence qu'ont les firmes dans les organisations internationales.

Afin de répondre à cette question, nous avons besoin de montrer que l'environnement

des firmes ainsi que leurs intérêts propres peuvent être affectés par les décisions prises par les organisations internationales. Il semble clair que les décisions prises au sein de l'OMC ont un effet sur les firmes, qu'il soit direct ou indirect. En effet, elles sont souvent reliés au commerce ou aux droits de propriété intellectuelle. Dès lors, il ne fait aucun doute que cela influence directement l'environnement des affaires des firmes, ces dernières ayant alors une forte incitation à influencer les décisions prises à l'OMC.

En ce qui concerne le FMI, le lien est moins visible. Pourtant, un certain nombre d'études académiques s'est intéressé à l'hypothèse d'aléa moral en relation avec les pratiques de prêt du Fonds. Deux types d'aléa moral peuvent survenir. Premièrement, l'aléa moral du débiteur correspond à la possibilité qu'un pays dépense mal les fonds publics parce qu'il croit que le FMI va lui fournir un soutien financier en cas de crise. Ainsi, c'est le rôle de prêteur en dernier ressort qui génère l'environnement propice à un tel comportement. Deuxièmement, l'aléa moral privé établit que les investisseurs privés étrangers vont négliger le réel risque macroéconomique des pays en développement. A nouveau, ceci est dû au rôle de prêteur en dernier ressort. Par exemple, Mina et Martinez-Vazquez (2003) étudient la maturité des prêts afin d'identifier la présence d'aléa moral : si la probabilité d'un sauvetage par le Fonds est élevée, ce qui devrait réduire le risque perçu, la maturité des prêts devrait s'accroître. Ils trouvent que l'aléa moral ne survient qu'après une crise. Dans la même veine, plusieurs auteurs ont étudié la réaction des actions aux informations en rapport avec le Fonds, aux décisions du FMI ou encore aux programmes du FMI. Ils trouvent de façon générale un lien positif (Kho et Stulz, 2000; Brealey et Kaplanis, 2004; Hayo et Kutan, 2005; Evrensel et Kutan, 2006).

En outre, d'autres travaux se sont intéressés à l'évolution des fourchettes sur les marchés financiers afin de déterminer si les investisseurs sous-estiment le risque réel. Dell'Ariccia, Schnabel et Zettelmeyer travaillent sur les crises mexicaines et russes avec une méthodologie intéressante. Ils utilisent un raisonnement inverse pour identifier la présence d'aléa moral. Puisque la Russie n'a pas été aidée en dernier ressort par le Fonds, alors que les investisseurs pensaient qu'elle le serait, ils s'attendent à trouver une perception inchangée du risque par les investisseurs. Leur

conclusion établit que l'hypothèse d'aléa moral est concluante en ce qui concerne la crise russe. Haldane et Scheibe (2004) testent quant à eux l'impact positif éventuel des informations touchant le FMI sur les cours de bourse; ils trouvent que ces informations augmentent la valeur des actions, en particulier celles des banques, parmi lesquelles celles étant exposées voient leurs actions monter le plus fortement.

Toutes ces études, bien qu'elles ne soient pas toutes concluantes, semblent indiquer que l'aléa moral des investisseurs existe, justifiant par là même que si les firmes investissent dans des pays en développement dont le risque macroéconomique réel a été sous-estimé et qui subissent une crise, ces firmes auront en effet un fort intérêt à influencer les décisions de prêt du FMI.

Toutefois, le fait que les firmes souhaitent influencer les décisions prises au sein des organisations internationales n'est pas suffisant pour conclure qu'elles parviennent à leurs fins. De fait, quelle que soit l'organisation, les firmes n'ont pas de pouvoir de vote officiel pour influencer la prise de décisions. En conséquence, elles sont contraintes de s'adresser aux gouvernements des pays membres, comme l'illustrent les trois premiers chapitres de cette thèse, pour les inciter à peser sur les décisions prises par les institutions internationales. Et cela n'est possible que si les gouvernements conservent un pouvoir souverain au sein de ces organisations. Dans le cas contraire, les gouvernements devraient se conformer aux règles établies par ces organisations.

Nous devons alors montrer que les gouvernements ne transfèrent pas l'intégralité de la souveraineté qu'ils devraient transférer. Ces deux dimensions prises ensemble, l'intérêt du secteur privé à influencer les décisions internationales et le manque de transfert de souveraineté, impliquent que les firmes sont influentes. Plusieurs articles ont montré que cela est le cas à l'OMC. Par exemple, Shoyer (2003) montre qu'un pays peut avoir une grande influence sur la sélection des Panels lors de différends survenant à l'OMC, ceci grâce à des avantages diplomatiques ou institutionnels. Dans un récent article, Srinivasan (2007) dépeint une *brève histoire* de la procédure de règlement des différends. Il fait référence à plusieurs politologues pour souligner un point de vue "diplomatique" de la procédure dont le rôle serait essentiellement d'aider les pays au cours des négociations.

Ceci n'est pas le cas dans la procédure de règlement des différends de l'OMC. Bütler et Hauser (2000) ont développé une approche formelle de celle-ci. La forte occurrence de règlements à l'amiable est leur première préoccupation. A l'image des négociations informelles au sein de l'OMC, il n'y a pas de contrôle de l'équilibre dans l'issue du règlement à l'amiable. Si deux pays engagés dans un différend affirment être parvenus à un accord à l'organe de règlement des différends, alors le cas est clos. De façon plus générale, ce débat en Sciences Politiques est d'actualité. Jackson (2004) résume le principal sujet de discorde. D'un côté, certains avancent que l'OMC manque du pouvoir de mise oeuvre nécessaire pour inciter les pays à respecter ses propres règles. De l'autre côté, d'autres expliquent qu'en dépit de sa faiblesse en matière de rétorsion et autres sanctions, l'OMC fournit un ensemble de règles qui sont comparables à une loi internationale (Kono, 2007). C'est-à-dire que le fait que les pays puissent facilement violer les règles ne signifie pas qu'il n'existe pas de règle. Finalement, un consensus entre les deux vues a été partiellement atteint autour de la nature d'optimum de second ordre de la procédure de règlement des différends en ce sens qu'elle réduit les incitations à dévier, mais qu'elle n'a pas de moyens coercitifs pour forcer le respect de ces règles.

Vraisemblablement, que la myriade d'accords de l'OMC soient des lois ou non ne change rien au fait que les pays sont en mesure de dévier de leurs engagements puisque les rétorsions sont faibles. A titre d'exemple, il n'y a pas de sanctions rétroactives prévues par la procédure de règlement des différends, malgré les délais parfois longs qui peuvent impliquer des préjudices importants[47]. Si l'on récapitule, Staiger (1995) souligne la question essentielle de l'aspect auto exécutoire (*self enforcement*) des contrats qui devrait être dominant à l'OMC à cause du manque de pouvoir exécutif légal. La théorie du second ordre mentionnée plus haut fait référence à la capacité des règles de l'OMC à être partiellement auto exécutoire. Au sujet du FMI, Barro et Lee (2005) ont montré que les déterminants politiques ont une influence sur les décisions du Fonds. Puisque les règles officielles du FMI, les règlements d'accord (*The Articles of Agreement*), ne font référence qu'à des

[47] Le cas Etats-Unis-Venezuela sur les restrictions d'importations de carburant à l'OMC fut réglé au bout de pratiquement deux et demi, du dépôt de la plainte à la mise en conformité.

critères économiques, toute décision se basant sur des critères politiques réintroduit la souveraineté nationale dans le processus de décision. Pourtant, Sturm et al. (2005) ont quant à eux montré que les critères politiques n'ont pas un grand pouvoir explicatif au travers d'une Extreme Bounds Analysis[48]. Ainsi, il n'est pas évident que les gouvernements aient une marge de manoeuvre qui pourrait permettre aux groupes de pressions d'influencer les décisions du Fonds.

Néanmoins, certaines failles existent. Au FMI, tout tourne autour de la mise en application des règlements d'accord. Dans de nombreuses situations, ces derniers n'ont pas été respectés. Dans la mesure où il n'existe pas de mécanisme qui inciterait les pays à respecter les règles, certains d'entre eux vont au-delà de façon occasionnelle. De même, le fait que l'OMC fonctionne essentiellement par des négociations informelles pour atteindre un accord implique que les Etats puissants ont une grande marge de manoeuvre pour négocier avec les pays les plus faibles. *In fine*, un accord d'une telle complexité émerge, il est dès lors ardu d'apprécier les pays ayant obtenu plus ou moins que les autres. Un point commun de l'usage à des fins politiques, que ce soit au FMI ou à l'OMC, des failles réglementaires des organisations internationales est qu'il n'implique pas nécessairement un mauvais résultat. Il se pourrait que ces forces politiques soient nécessaires pour conclure un accord voire pour atteindre les objectifs initiaux.

En effet, il est possible d'argumenter que certaines considérations politiques entraînant un prêt élevé (plus que ce qu'autorise le Fonds) s'avèrent être une action bénéfique. Certains disent que la Turquie ne serait pas parvenue à surmonter ses difficultés si les montants prêtés avaient été limités aux plafonds officiels.

En conséquence, ce quatrième chapitre avance que de nombreux pays souhaitent qu'un membre du FMI obtienne un prêt à cause de son 'capital' géopolitique. Si l'on suit cette comparaison, un pays très important géopolitiquement a un effet sur le bien-être de nombreux autres pays. Ceci favorise une convergence d'opinions des membres du FMI et accroît le montant du prêt. Afin de capturer cet effet, une mesure originale de l'importance géopolitique est développée. Sa construction nécessite deux étapes. Dans un premier temps, un nombre important de variables liées aux

[48] Il n'existe pas de traduction satisfaisante de ces termes.

enjeux géopolitiques est rassemblé dans une base de donnée originale. En accord avec Baldwin (1979), nous considérons qu'il n'existe pas de variables géopolitiques uniques, définies. Une analyse en facteurs communs est utilisée afin d'extraire le vecteur commun à ces variables qui représente alors l'importance géopolitique intrinsèque d'un pays. Cette mesure obtenue est unique car elle prend en compte toutes les variables collectées et leurs effets pour 107 pays. Dans un second temps, une mesure standard de l'Economie Internationale est adaptée afin de tenir compte du fait qu'un pays proche d'autres pays géopolitiquement importants l'est également. Par conséquent, la mesure de potentiel de marché, développée par Harris (1954), est appliquée aux vecteurs communs obtenus lors de la première étape. Ce potentiel géopolitique prend alors en compte l'allocation des variables stratégiques ainsi que la proximité aux pays bien dotés.

Cette variable est ensuite utilisée pour tester si la pratique de prêt du FMI est influencée par la géopolitique. Une autre contribution importante de ce chapitre est la distinction de deux types de prêts du Fonds. D'un point de vue formel, les conditions à remplir pour obtenir chacun de ces deux types de prêt sont très différentes. D'un côté, les *Stand-by Agreement*[49] (SBA) sont importants et accordés sous des conditions très strictes. De l'autre côté, les programmes de Reduction de la Pauvreté et d'Aide à la Croissance (*Poverty Reduction and Growth Facility* reposent sur des conditions bien moins rigoureuses et sont considérablement plus faibles. La probabilité d'obtenir l'un ou l'autre pourrait dès lors être influencée très différemment par les considérations géopolitiques.

Les résultats de ce chapitre fournissent un support empirique à la vue comme quoi les considérations géopolitiques sont un facteur déterminant dans les décisions de prêt du FMI. Les déterminants économiques restent néanmoins pertinents pour les deux grands types de prêt et semblent avoir plus d'importance pour les SBA. Cela est plutôt rassurant dans la mesure où les SBA sont des prêts de grande importance. De surcroît, le Fonds favoriserait les pays géopolitiquement importants lorsqu'il prête de façon non concessionnelle, c'est-à-dire sans taux préférentiels,

[49] Ils représentent la majeure partie des prêts faits dans le cadre du Compte de Ressources Générales (*General Resources Account*, le principal programme au travers duquel le Fonds prête de l'argent, une attention particulière leur est donc apportée.

alors que les prêts concessionnels sont essentiellement attribués à des pays qui ne sont pas géopolitiquement importants. Lorsque l'on se focalise sur les prêts non concessionnels, le processus de décision est divisé en deux étapes : les directeurs exécutifs décident d'abord de prêter puis ils s'accordent avec le pays emprunteur sur un montant effectif et sur les caractéristiques de la conditionnalité. Par l'utilisation d'un modèle de sélection, il apparaît qu'une décision de prêter est influencée par l'importance du pays emprunteur alors que le montant effectivement prêté semble plutôt influencé par le pouvoir de négociation diplomatique des pays emprunteurs.

Ces quatre chapitres sont ainsi fondés fortement sur un cadre d'Economie Politique. Ils soulignent que les relations entre les firmes et les gouvernements, ou entre les gouvernements et les organisations internationales sont grandement influencées par les considérations politiques. Les trois premiers chapitres montrent que les firmes, qu'elles soient étrangères ou domestiques, ont une influence forte sur les gouvernements. Le dernier chapitre quant à lui témoigne du fait que les gouvernements peuvent effectivement utiliser les organisations internationales afin de servir leurs intérêts. Dans l'ensemble, ces quatre chapitres suggèrent que les firmes, malgré leur non représentation au sein des institutions internationales, ont probablement un rôle important dans les négociations et les décisions internationales.

Ainsi, cette thèse met en avant la complexité grandissante des relations politiques tant au niveau national qu'international. De plus en plus de pays sont présents, cela induisant une plus grande hétérogénéité entre les membres des organisations internationales. Parallèlement à cela, de grandes entreprises ont développé des activités sur les cinq continents et certaines sont aujourd'hui plus puissantes financièrement que des petits pays. Ces modifications du commerce international ont nécessité une analyse de nouveaux phénomènes liés à la coexistence de deux niveaux de décision et au nombre croissant d'acteurs des relations politiques, entendues dans un sens très général.

Le premier chapitre propose un modèle original dont le but est d'analyser l'effet d'un niveau type de barrière au commerce. Le contrat international plus complet que représente l'OMC a contraint de nombreux pays à avoir recours à des stratégies plus complexes pour protéger les industries domestiques. Par exemple, la mise en place

de normes ou de réglementations qui induisent un coût supplémentaire. Avec pour point de départ le travail de Grossman et Helpman (1994), la littérature a souvent considéré que chaque secteur représente un intérêt commun. Les uniques variations étaient alors l'aspect dichotomique organisé/non organisé ou les hypothèses sur le coût induit par l'activité de lobbying, ceux-ci induisant un arbitrage dû à la nature de bien public de ce qu'elles influencent. Ce modèle introduit des intérêts opposés au sein d'un secteur autour de l'idée que dès lors qu'une réglementation entraîne un coût supplémentaire, tous les acteurs du secteur ne sont pas sur un pied d'égalité à cause de leurs productivités différenciées. L'effet de rationalisation du secteur s'avère être une bonne motivation à l'influence d'une telle mesure pour les firmes les plus productives. Par conséquent, elles sont en mesure d'obtenir la mise en place de la nouvelle réglementation en dépit de son effet négatif sur le bien-être. La plupart des résultats de Grossman et Helpman (1994) sont confirmés à un niveau encore plus microéconomique, sauf pour l'effet de la part de la population représentée par des lobbies. En effet, à l'opposé de leur résultat, lorsque cette part augmente, cela réduit les tensions entre les lobbies et accroît le surplus que ces derniers retirent de la relation politique. Ajoutons que certains mécanismes sont très différents. L'hétérogénéité des firmes est l'unique motivation à l'activité de lobbying et celle-ci joue en faveur du gouvernement en augmentant le surplus qu'il obtient. *A contrario*, l'homogénéité au sein d'un lobby renforce son pouvoir de négociation vis-à-vis des autres lobbies et du gouvernement.

Ces résultats comportent de nombreux éléments intéressants. En particulier, le modèle montre l'importance de la structure de détention d'actifs des membres d'un lobby. Ainsi, la question de la relation entre intérêts privés et gouvernement local au sujet des décisions en matière de réglementation est d'intérêt.

Le deuxième chapitre développe une étude empirique sur l'influence des firmes étrangères dans les pays en développement. Plus précisément, si une firme étrangère est capable d'influencer la nature d'une nouvelle règle ou réglementation qui risque de modifier leur environnement. Trois hypothèses théoriquement fondées sont proposées afin de justifier d'une influence différenciée des firmes étrangères, comparées à leurs alter ego domestiques. Celles-ci sont que les gouvernements s'attendent à ce qu'elles

contribuent à leur croissance, leur statut d'étranger potentiellement mal perçu ou leur expérience sur le plan international; elles sont supposées respectivement augmenter, réduire et accroître l'influence des firmes étrangères par rapport à leurs équivalents domestiques. Ce chapitre montre que les firmes étrangères ne sont pas toujours plus influentes. En effet, dans la conduite des affaires au jour le jour, les Firmes Multinationales (FMN) étrangères et domestiques sont traitées similairement aux dépens des firmes purement domestiques. De surcroît, les FMN hybrides, définies comme détenues à la fois par des capitaux étrangers et domestiques sont plus influentes que les autres FMN. En contraste avec les précédents résultats, il apparaît que les firmes domestiques sont légèrement moins désavantagées lorsque l'on s'intéresse à l'influence des personnages publics élus, plutôt qu'à ceux nominés. Ce dernier résultat est partiellement dans le même esprit que le résultat de Grossman et Helpman (1994). Néanmoins, de façon générale, la principale force qui explique l'influence des firmes est leur multinationalité. Cette dernière représente leur capacité à influence tirée de leur expérience en matière de lobbying à l'étranger et de la crédibilité de leur menace de relocalisation. Ces aspects sont liés à l'idée que les firmes essaient de tirer profit de tout leur pouvoir de négociation sur le gouvernement.

Cette intuition soulevée par le deuxième chapitre fait en partie l'objet du troisième. L'approche par les contributions politiques, développée par Grossman et Helpman (1994), modélise les relations politiques entre des firmes et un gouvernement dans un cadre en agence commune, ceci conduisant à former simultanément les décisions étant donné que les entreprises sont les premiers joueurs mais que le gouvernement est celui qui, *in fine*, choisit la politique commerciale.

Ainsi, le chapitre trois propose une modélisation originale des relations entre firmes et gouvernements. Le principal aspect de ce cadre d'analyse est de considérer l'agenda de contribution proposé par la firme au gouvernement comme une variable stratégique qu'elles définissent. En conséquence, le résultat de ce modèle prend la forme d'une équilibre de Nash parfait en sous-jeux standards. Comme attendu, dans la mesure où l'on considère l'agenda de contribution comme un instrument stratégique qui n'influence la contribution effectivement payée uniquement au travers

de son effet sur la politique commerciale, alors le résultat est exactement le même que celui obtenu par Grossman et Helpman (1994), dérivé du modèle de Bernheim et Whinston (1986b). Au contraire, lorsque l'on considère que l'agenda de contribution influence la contribution effectivement payée à la fois par son effet sur la politique commerciale et directement, alors le résultat 'truthful' de Bernheim et Whinston (1986b) n'est plus retrouvé. Ceci conduit en effet les lobbies à tenir compte des considérations du gouvernement à leurs égards. Ainsi, si le gouvernement n'est pas "naturellement" enclin à agir en faveur d'un lobby, ce dernier adoptera une stratégie agressive. Dans la situation inverse, alors le lobby aura tendance à modérer son offre faite au gouvernement. Cette stratégie duale peut potentiellement générer deux politiques commerciales équivalentes, l'une étant due à une forte influence, l'autre à une volonté forte du gouvernement d'aider un lobby. Ce chapitre apporte donc des éléments nouveaux sur le rôle des considérations politiques des gouvernements. En particulier, dans les organisations internationales, il apparaît qu'il est difficile d'affirmer avec certitude si un gouvernement a protégé un secteur pour des raisons liées à ses difficultés ou si il l'a fait suite à une forte activité de lobbying des groupes de pressions. Ceci est en accord avec l'observation de l'activité de lobbying de deux secteurs régulièrement désignés comme des secteurs bénéficiant d'un soutien des gouvernements de pays développés, notamment les Etats-Unis.

Par conséquent, il semble que la seule méthode pour affirmer avec certitude qu'un gouvernement sert des intérêts privés soit d'observer des déterminants non économiques. C'est une tâche complexe dans le cas de l'OMC car les décisions prises en son sein sont souvent le fruit de négociations informelles. En revanche, dans la mesure où le FMI donne des règles officielles sur les conditions d'obtention d'un prêt, il est plus facile de vérifier l'effet de déterminants non économiques sur les décisions du Fonds.

Le chapitre quatre propose ainsi de tester empiriquement si le FMI est détourné de ses propres principes. En effet, les gouvernements étant ceux qui décident de l'accord d'un prêt ou non à un pays, il se pourrait qu'ils soient tentés d'introduire des considérations nationales alors qu'ils prennent des décisions internationales. Une attention particulière est portée sur les déterminants géopolitiques des décisions de

prêt. Il est avancé que ces déterminants sont, par nature, moins influencés par d'autres variables économiques que les déterminants politiques par exemple. Un cadre conceptuel est développé afin d'expliquer comment et pourquoi la géopolitique peut être présente et peut avoir de l'influence sur une décision de prêt ainsi que sur la taille de celui-ci au sein du FMI. En introduisant un nouveau concept, le potentiel géopolitique, et une méthode pas encore utilisée dans cette littérature, nous espérons démontrer que l'importance géopolitique d'un pays joue un rôle dans les décisions de prêt. Puisque l'importance géopolitique d'un pays n'est pas observable, nous avons utilisé dans un premier temps une analyse de facteurs. Dans un second temps, nous introduisons le concept de potentiel géopolitique afin de capturer l'importance géopolitique du pays emprunteur mais également l'importance de sa situation géographique. L'impact de ces facteur et potentiel géopolitiques a été estimé en distinguant entre les prêts concessionnels (PRGF) et non concessionnel (GRA). Cette distinction est cruciale car les prêts sont généralement conditionnés à l'adoption de politiques appropriées pour résoudre les difficultés macroéconomiques d'un pays et pour permettre le remboursement du Fonds. Toutefois, la conditionnalité peut également être un moyen par lequel les membres dominants du FMI peuvent accroître ou entretenir leur influence sur les autres membres pour des motifs géopolitiques.

Ces quatre chapitres ont été développés sur une forte base de Nouvelle Economie Politique, avec également un cadre implicite emprunté à la Nouvelle Economie Institutionnelle. Elle représente une tentative pour répondre à des nouvelles questions qui ont surgi récemment : un rôle fort des organisations internationales combiné avec un faible pouvoir de mise en application de leurs règles sur leurs membres. En effet, en dépit du transfert de souveraineté des gouvernements vers ces institutions, les premiers restent les seules entités politiques au monde. En conséquence, les relations politiques internes interfèrent de façon inévitable dans les négociations internationales et dans la formation des institutions internationales. Si la Nouvelle Economie Politique a pour but de conserver une approche positive, elle ne peut ignorer le rôle des institutions internationales en ce qu'elles influencent en retour les relations politiques internes. De nos jours, la Nouvelle Economie Politique et la Nouvelle Economie Institutionnelle sont fortement liées l'une à l'autre et ceci

représente une voie qu'il sera sûrement passionnant de suivre pour la recherche.

Une récente littérature dont le développement est rapide apporte des éléments nouveaux sur le rôle actif des motivations politiques, donc des relations politiques, sur la création des fora internationaux et sur les négociations en leurs seins. Maggi et Rodriguez-Clare (2007) relient le besoin d'entrer dans un accord international à un problème d'inconsistance temporelle dans le relation entre les firmes et les gouvernements. Ornelas (2005) souligne qu'entrer dans une zone de libre échange peut directement réduire les incitations des secteurs domestiques à avoir recours à une activité de lobbying. Généralement, cette thèse a laissé implicite l'effet de l'influence des entreprises sur les négociations internationales, les décisions ou la création d'accords internationaux. Néanmoins, elle suggère de nombreuses futures recherches à entreprendre. Si nous considérons les relations entre la direction de l'OMC et les gouvernements comme une relation politique partiellement similaire à celle ayant lieu entre les gouvernements et des firmes domestiques, est une de ces possibilités. Comme cela est mis en avant dans l'antépénultième section du premier chapitre, cela serait possible car les interconnections entre les secteurs au travers des surplus de consommateurs présents dans les bien-être de chaque lobby peut s'apparenter au fait que les pays commercent entre eux. Développer un modèle théorique qui fournirait une fonction d'offre et de demande pour les prêts du FMI permettrait de séparer précisément les chemins par lesquels les considérations politiques influencent les décisions de prêt. Proposer un modèle théorique de négociations internationales permettrait également d'obtenir des implications testables pleines de sens au sujet du rôle des relations politiques domestiques sur l'issue des négociations.

Ces futures voies de recherche ne sont, bien entendu, pas exhaustives. Elles sont directement dérivées des chapitres proposés dans cette thèse. D'autres aspects de ce nouveau champ de recherche tels que les effets des relations diplomatiques sur la stabilité de systèmes multilatéraux tels l'OMC ou le FMI sont également cruciaux. Le rôle croissant des pays en développement dans le commerce international et ses implications sur l'Economie Politique Internationale représente aussi une question d'intérêt. Toutes ces possibilités de recherche ont en commun de se situer au point

de convergence de deux courants récents de la littérature en Economie.

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Résumé

Cette thèse se propose de contribuer aux questions touchant à l'influence politique. En particulier, elle aborde deux angles distincts. D'un côté, l'influence des firmes, qu'elles soient étrangères ou domestiques, sur les gouvernements. De l'autre côté, l'influence des gouvernements sur les décisions prises par les organisations internationales.

Ainsi le premier chapitre présente un modèle théorique original dont le but est d'étudier la relation d'influence domestique entre les lobbies d'une part et le gouvernement d'autre part lorsque la politique dont ce dernier a la charge est une norme technique. Il y est montré que la concurrence interne au secteur est un fort déterminant de la capacité à influencer d'un lobby.

Le deuxième chapitre consiste en une étude empirique de l'influence des firmes étrangères dans les pays en développement. Une distinction originale est apportée au travers de la différenciation des multinationales selon qu'elles soient étrangères, domestiques, ou les deux, c'est à dire hybrides. Les principaux résultats sont que les firmes ont plus d'influence grâce à leur multinationalité et que les firmes étrangères parviennent à conserver durablement les avantages négociés à leur entrée.

Le troisième chapitre développe un modèle théorique qui a vocation à modifier la relation théorique qui existe entre les firmes et le gouvernement dans un même pays. Il est montré que lorsque les firmes estiment que leur offre est stratégique, c'est-à-dire qu'elle influence le niveau de contribution qu'elles vont effectivement payer, alors certaines firmes parviennent à valoriser leur poids dans l'économie pour réduire leur offre. A l'inverse, si l'offre n'est pas stratégique, alors nous retrouvons le résultat de Grossman & Helpman (1994) sans que le modèle soit de forme "agence commune".

Enfin, le quatrième chapitre propose une étude empirique basée sur un indice original d'importance géopolitique. Cet indice est obtenu en combinant une analyse en facteurs principaux sur un grand nombre de variables géopolitiques et un calcul du potentiel géopolitique afin d'inclure l'importance des pays voisins. Cet indice permet ensuite de mesurer le rôle de l'importance géopolitique dans la politique de prêt du Fonds Monétaire International. Il ressort de cette étude que la géopolitique a un rôle significatif dans l'obtention de prêt. Néanmoins, elle joue positivement lorsqu'il s'agit de prêts dont les montants sont importants et joue négativement ou pas lorsque les prêts sont petits. Enfin, cette dimension géopolitique entraîne un biais de sélection dans l'attribution des prêts.

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