THE GROWTH OF REGIONAL ECONOMIC INTEGRATION AGREEMENTS AND THE MIDDLE EAST

Scott L. BAIER*, Jeffrey H. BERGSTRAND**, Peter EGGER***

Abstract - One of the most notable events of the world economy over the past twenty years has been the phenomenal growth in the number of international economic integration agreements, such as free trade agreements. This paper discusses the roles of "competitive liberalization" by nations' governments and possible "domino effects" in the process of regionalism. Country pairs that tend to form free trade agreements tend to be closer to each other, more remote from the rest of the world, and larger and more similar in economic size. We examine the role of these economic factors for predicting the likelihoods of bilateral free trade agreements between Israel with Egypt, Jordan, and Saudi Arabia.

Keywords - ECONOMIC INTEGRATION, FREE TRADE AGREEMENTS, TRADE, TRADE POLICY

JEL Classification : F10, F12, F13, F15.

* John E. Walker Department of Economics, Clemson University, Clemson, SC 29634 USA and Federal Reserve Bank of Atlanta.
** Department of Finance, Mendoza College of Business and Fellow, Kellogg Institute for international Studies, University of Notre Dame, and CESifo, Notre Dame, Indiana 46556, USA ; email : jbergstr@nd.edu
*** Ifo Institute for Economic Research, Ludwig-Maximilian University of Munich, CESifo, and Centre for Globalization and Economic Policy, University of Nottingham, Ifo Institute, Poschingerstr. 5, 81679 Munich, Germany.

1. THE *NEW* REGIONALISM

One of the most notable events of the world economy over the past twenty years has been the phenomenal growth in the number of international economic integration agreements (EIAs). EIAs are treaties between economic units – in the case of international EIAs, between nations – to reduce policy-controlled barriers to the flow of goods, services, capital, labor, etc. Most – though not all – EIAs tend to be "regional" (or continental) in scope and most tend to be free (or preferential) *trade* agreements. According to the World Trade Organization (WTO) website, in 2006 there are approximately 300 regional trade agreements that are either planned, have concluded negotiations, or are in force. Interestingly, of the 250 agreements notified to the General Agreement on Tariffs and Trade (GATT) and WTO between 1947-2002, about half were notified *since 1995*. Moreover, over 100 more agreements have been notified to the WTO between 2002 and 2007. Thus, there has been a virtual explosion in the number of EIAs in the past decade. This "latest wave" of regional trade and cooperation agreements that comes on the heels of the 50th anniversary of the most noted economic integration agreement of modern times, the1957 Treaty of Rome, is now referred to as the "*New Regionalism.*"
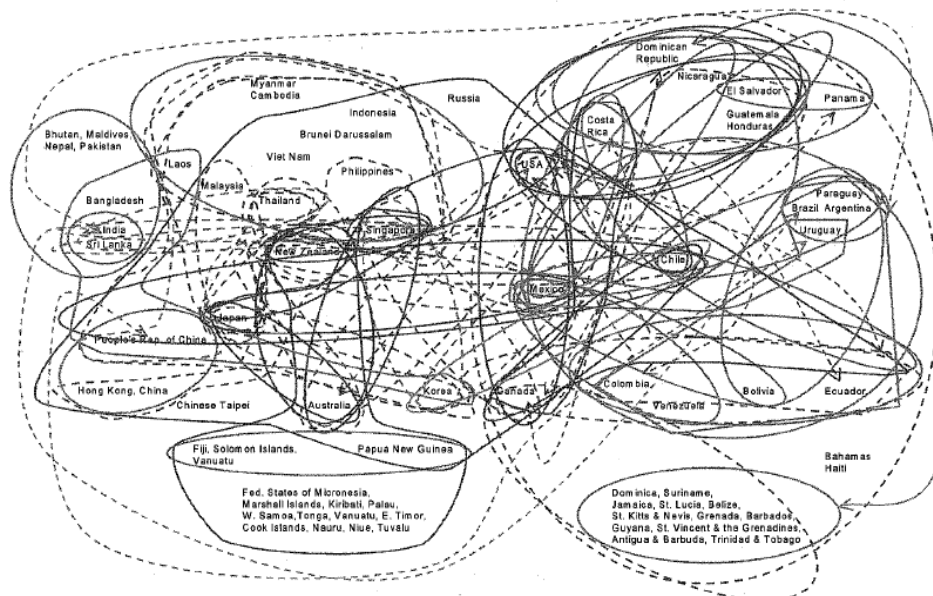
This wave has culminated in – what Jagdish Bhagwati and Arvind Panagariya (1999) have famously termed – a seeming "spaghetti bowl" of EIAs. Figure 1 from Estevadeordal (2006) illustrates vividly this "spaghetti bowl," with each line representing an EIA between one country and another (or with a group of countries). However, one aim of this paper is to convince the reader that – instead of looking at this web of agreements as a spaghetti bowl – economists and policy makers should see this as a "market for regionalism."

By contrast, the Middle East is at a crossroads in terms of the process of globalization and regional economic integration. On one hand, some countries in the Middle East – such as Israel and the United Arab Emirates (UAE) – are among the highest per capita income in the world and have international trade, investment, and migration with respect to the rest-of-the-world; unlike most countries in the Middle East, Israel and the UAE trade extensively internationally. Among Middle Eastern countries, Israel and the UAE require fewer signatures on export and import documentation than most other Middle East countries, have delivery times that are among the lowest in the world, and have infrastructure for international trade that rivals that in other developed countries.

However, many other countries in the Middle East and North Africa (MENA) are virtually isolated from the process of globalization and focus instead on internal strategies for development, continuing to fall behind in raising standards of living relative to countries that are highly interconnected with the world economy. For example, Syria ranks in the 11th percentile in trade facilitation measures by the World Bank, Iran ranks 18th, and Algeria ranks 35th. Not surprisingly, all three countries trade well below their "potentials" and many MENA countries trade half of what standard trade

models would predict, likely due to extensive barriers to trade, cf., Peridy (2005). Moreover, Iran has no economic integration agreements with other countries, near or far, and is not a member of the WTO.

Figure 1. The "spaghetti bowl" of FTAs in the Americas and Asia Pacific (2005)

Source: Integration and Regional Programs Department, IDR.

Against this background, this paper has four goals in mind. First, in section 2, we discuss two important and intuitive "concepts" concerning the rapid – and seemingly unrelenting – growth of "regionalism" in the world for the past 20 years. Two important theses from the 1990s – C. Fred Bergsten's "competitive liberalization" hypothesis and Richard Baldwin's "domino theory" are discussed as useful ways to conceptualize the rationale for the growth of regionalism. In the same section, however, we will summarize briefly the "state-of-the-art" in terms of more formal *ex ante* computable general equilibrium (CGE) and *ex post* econometric approaches toward evaluating the potential gains from trade-policy liberalization for countries' economic welfare. We will note that the "mixed" evidence (in terms of the effects on per capita incomes of trade liberalizations) does not really seem quite "in line" with the rapid and aggressive trade policy liberalizations observed – especially the growth of regional and bilateral trade and investment agreements. The completion of free trade agreements is a costly endeavor. The expected benefits – in terms of trade, specialization, and growth – need to be quite large for policy makers to pursue such major policy changes; the apparent mixed gains observed seem small compared to the likely nontrivial costs.

In section 3, we discuss an alternative framework addressed in Baier and Bergstrand (2004) to evaluate the potential gains from EIAs that formalizes the intuition suggested in the "competitive liberalization" hypothesis. Based upon a combined theoretical-econometric methodology suggested by Nobel laureate Daniel McFadden (1975, 1976), we discuss a theoretical model that conjectures the relationships between numerous country pairs' economic characteristics and the likelihood of an EIA between that country pair. We summarize the results of an econometric implementation of the theory and find results very consistent with the notion that country pairs' governments *select into* EIAs based upon economic characteristics consistent with their maximizing the economic welfare of their countries' households and the notion of "competitive liberalization." The results indicate that the country pairs that actually form EIAs *tend* to be the ones whose economic characteristics suggest they would on net *benefit* from an agreement. In other words, *ex post* evidence suggests that country pairs that have chosen EIAs have "chosen well."

In section 4, we discuss some newer results. The work in Baier and Bergstrand (2004) is essentially a "static" model; it explains and predicts which country pairs in long-run equilibrium should have EIAs, given their particular economic characteristics. However, it does not explain the "dynamic" path of regionalism. We report some newer preliminary findings that help explain the growth of regionalism, complement the "domino theory," and feature prominently the roles of economic geography, economic size, and GDP similarity.

Finally, in section 5, we discuss some tentative implications of the theory and empirical evidence for regional economic integration in the Middle East.

2. *WHY* PURSUE REGIONAL ECONOMIC INTEGRATION? *COMPETITIVE LIBERALIZATION* AND THE *DOMINO EFFECT*

As just noted, the growth of regionalism is one of the phenomenal stylized facts of the last 20 years. However, trade liberalization by governments is not a costless endeavor, in either economic or political terms. The vocal and persistent anti-globalization participants, increased voter concern over trade liberalization and EIAs, and anti-liberalization lobbying by import-competing firms make political passage of EIAs quite difficult in countries.

Despite these apparent (but unmeasurable) costs and impediments, regionalism has proceeded at an accelerating pace internationally. What drives the growth of regionalism?

In section 2.1., we summarize two intuitive and related explanations for the growth of regionalism, C. Fred Bergsten's (1996) "competitive liberalization" hypothesis and Richard Baldwin's (1995) "domino theory" of regionalism. Then, in section 2.2., we discuss the state of quantitative evaluation of the effects of trade openness on per capita incomes. The first of two types of quantitative models to evaluate the potential net gains from EIAs

are computable general equilibrium (CGE) models, which provide *ex ante* quantitative estimates of the trade and per capita income gains from EIAs. Such models suggest quantitatively small economic gains, which seem inconsistent with the aggressive growth of regionalism. Second, we discuss empirical evidence from applied econometric analyses to date on the effect of "trade openness" on per capita incomes. While several earlier studies have suggested consistent positive effects of trade on economic growth, methodological developments and challenges in more recent studies have resulted in a more "mixed" picture of the effects of trade on growth empirically, which seems – as with the implications of CGE analyses – inconsistent with the aggressive (and not costless) growth of EIAs.

2.1. Competitive Liberalization and the Domino Theory of EIAs

More than a decade ago, C. Fred Bergsten, Director of the Peterson Institute for International Economics in Washington, DC, coined the term "competitive liberalization" in a working paper titled "Competitive Liberalization and Global Free Trade: A Vision for the Early 21st Century" (1996). The term aimed to summarize the evolving process of bilateral and regional economic integration agreements (EIAs) evolving in the United States and in the world. The term "competitive liberalization" essentially captures that governments are acting in a competitive manner – much like firms in industries with large numbers of suppliers – to set policy-based trade and investment barriers that benefit (perhaps, maximize) the economic welfare of their nations' households and the economic profits of their nations' firms. Bergsten's thesis is best captured in the following excerpt:

> [. . .] it is first essential to understand why so many countries, in so many different parts of the world, with such different economic systems, at such different stages of development, have all headed in the same direction. There are of course different national circumstances which explain the detailed strategies and timing of the individual initiatives. The overarching force, however, has been the process of competitive liberalization. (1996, p. 2)

The notion is basically that countries' governments in the long-run must look after their consumers' and firms' best interests. Even the United States is less than half its *relative size* in the world economy than it was fifty years ago ; in 1960, the United States contributed 40 percent of the free world's GDP, but in 2007 only 20 percent. The diminishing relative size of virtually all players in the global economy (China and India being the notable exceptions) implies that governments must act competitively to ensure the long-run economic development of their economies, noting of course that political considerations are relevant in the short run.

While Bergsten's thesis is quite prescient, unfortunately he does not motivate clear and persuasive rationales for it in his paper. Among the few rationales, the clearest economic one is the following. He argues that trade liberalization has followed bilateral-and-regional agreements, rather than the alternative unilateral or multilateral approaches, because – with 151 members of the WTO to date and most of the easier (and more transparent) tariff-rate

reductions already completed – the cost of negotiating free trade multilaterally among 151 members by reducing opaque, behind-the-border barriers to trade is likely very high relative to negotiating liberalization on a bilateral or regional level.

The other rationales he cites include that import-substitution policies of the 1960s and 1970s failed, leading to the surfacing of more conservative market-oriented governments globally, allowing the alternative policy of liberalization to be pursued. He also cites that national security motives have been an important motivating force. While such concerns – such as the Cold War and eliminating further wars between France and Germany – were probably central to the beginning of the European Community, it is less clear that they have motivated other regional agreements. Bergsten also notes that regional agreements create insurance against future government administrations reneging upon free-market policies; however, as Bergsten admits the argument would also work for multilateral agreements, and not just regional agreements. A considerable amount of the remainder of the paper is to argue that such regionalism should be used as a "building bloc" for further multilateral liberalization; this is made even more clear in his followup article, cf., Bergsten (2002). However, Bergsten (1996) planted an important seed.

A more formal approach to explain the growth of regionalism has been put forward in several papers by Richard Baldwin (1995, 1997, 2006, 2007), which all share a common thread of his "domino theory" of regionalism. Baldwin (1995, 1997) lays out the essential arguments; further, as Baldwin (1995, 1997) notes the theory is a political-economy one. First, any (exogenous) EIA formation – such as the initial European Economic Community in 1958 – produces trade and investment "diversion" (assuming the EIA includes both trade and investment liberalization). Second, this diversion generates new political economy forces calling for "pressure for inclusion" (Baldwin, 1997, pp. 877-8). Baldwin illustrates the model's economic insight with the following scenario. Suppose the EEC exists as a customs union, where the physical transport costs of goods within the EEC is less than that with non-members. An exogenous lowering of intra-EEC policy barriers (e.g., deeper integration, such as the formation of the European Union) causes non-member firms to incur negative (economic) profits, i.e., classic Vinerian trade "diversion" due to relative price changes. Applying a special interest group political economy framework, governments choose trade policy to maximize their objective, which is a function of special-interest donations, social welfare, and a factor that represents some (exogenous) resistance to membership (say, some unspecified "nationalism" factor). The change in EEC members' internal prices cause profits and welfare of non-members to change, inducing a movement to a new equilibrium where EEC membership is larger in numbers of countries.

While a useful start to understanding the "growth" of regionalism, the framework has numerous limitations. First, it can only explain expansions and contractions, and does not at all explain the creation of possible *competing* (and new) EIAs, such as the formation of the European Free Trade Association (EFTA) in 1960 on the heels of the EEC's Treaty of Rome. Consequently, it

just explains the expansion of the EEC, but does not explain the formation of the EEC-EFTA relationship, much less the endogenous formation of the North American Free Trade Agreement (NAFTA). Second, countries are all *symmetric*, so it cannot explain the roles of relative economic size of countries *versus* the relative economic size of agreement membership. Is the relative size of the United States a factor in why NAFTA has three members, the EEC six members, and (original) EFTA seven members? Third, the model requires an oligopolistic market structure with long-run *non-zero* economic profits rather than allowing a competitive market structure. Fourth, the countries are all symmetric except for a key *exogenous* variable (R, the "nationalism" resistance to membership variable) which ensures that not all non-members join or not-join the EEC in response to the intra-EEC policy shock and that (by assuming different values of R) ensures only a portion of the non-members join.

Despite numerous limitations, the "domino theory" remains a useful starting point toward understanding better the development of regionalism in the past 50 years. This is not to say there have not been other theories of "regionalism". However, we refer to Baldwin (2006, 2007) for useful discussion of other important papers. For the remainder of this paper, we draw upon Bergsten (1996) and Baldwin (1995, 1997) to provide guidance for developing another approach to better understand the growth of regionalism.

2.2. Trade Openness and Standards of Living

Before we discuss an alternative approach, it is important first to develop a common ground on the benefits of trade. Most trade economists share a view that openness to trade will enhance standards of living by enabling countries to benefit from increased economic specialization. If the trade is between two different economies in terms of productivities or relative factor endowments, trade will enhance traditional comparative advantages, and both countries' representative consumers can benefit from increased specialization (albeit with consequences for the distribution of incomes within economies, i.e., the Stolper-Samuelson theorem). If trade is between two similar economies in terms of productivities and relative factor endowments, countries can still gain potentially from economies of scale in production and increased varieties in consumption (or in intermediates for production) ; this is intra-industry trade, which is at the core of the "New Trade Theory," cf., Helpman and Krugman (1985).
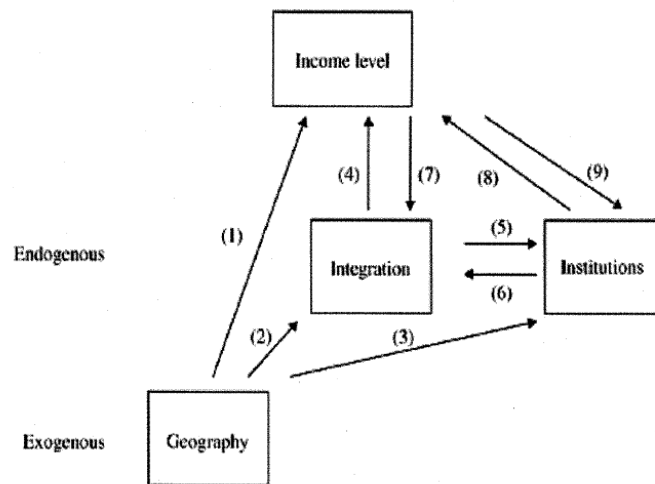
Two major premises of trade economists, many policy makers, Bergsten's "competitive liberalization" hypothesis, and Baldwin's "domino theory" are that: (1) trade liberalization increases trade (*Premise 1*), and (2) such increased trade raises standards of living (*Premise 2*). The public – certainly much of the public in the United States – is certainly not convinced of *Premise 2*. Hence, the starting point for any analysis of trade policy's link to standards of living must first address whether increased trade (openness) of economies enhances standards of living (on average), or changes factors that enhance consumers' welfare/utility (such as increased variety of goods).

Historically, the link to economic welfare from trade liberalization has been quantified *ex ante* using computable versions of general equilibrium models. General equilibrium models have long been a defining tool of international trade, and the use of computable general equilibrium (CGE) models – such as Tom Hertel's GTAP model at Purdue University or Alan Deardorff and Robert Stern's Michigan Model of World Trade – have long been used to evaluate *ex ante* and quantitatively the general equilibrium comparative static effects of a change in trade policy. While such models have been extraordinarily useful for decades, they remain *ex ante* models; they cannot tell us anything empirically and *ex post* about the effects of trade policies on trade, or of trade on economic standards of living (and welfare). Moreover, it is well known that the trade policy liberalizations, including EIAs, do not generate large net gains to overall economic welfare and per capita GDPs. See DeRosa and Gilbert (2005) for a useful summary.

An alternative method to quantify the effects of trade on growth has been the use of econometric techniques, along with empirical data. With time, the collection of better data, and advancements in econometric techniques, researchers are in a better position to evaluate *empirically* the *ex post* effects of trade policies on trade, and the effects of trade on per capita incomes – all potentially observable variables. It is to this literature I turn and now summarize briefly. For brevity, I draw upon a few select and influential articles to summarize the still controversial *ex post* empirical evidence of the effects of trade on per capita incomes. Rodrik, Subramanian, and Trebbi (2004) summarized well the major "deep determinants" of per capita income growth. The three major categories are : geography, institutions, and trade (or integration). Figure 2, from Rodrik et al. (2004), illustrates the potential causal relationships between the three deep determinants and economic advance, with all three determinants having direct impacts, but also indirect impacts (creating potential endogeneity bias in estimating their effects). For brevity, I leave to this article and others (cf., Frankel and Romer, 1999) a discussion of the theoretical relationships between these variables, highlighting here only a summary of the empirical relationships in the literature.

Briefly, some of the earlier literature on the effect of trade on growth found that trade had an economically and statistically significant impact on economic growth (more accurately, an impact on the level of per capita income, not the growth rate thereof), cf., Michaely (1977), Dollar (1992), and Edwards (1993). Owing to the long-standing concern that trade and economic activity are both endogenous, one of the more prominent articles to date, by Frankel and Romer (1999), constructed an instrumental variable for trade – using a gravity equation based upon populations and numerous (exogenous) geography variables to predict trade levels. One of the important conclusions from Frankel and Romer (1999) is that OLS coefficient estimates of trade on growth do not have significant endogeneity bias upward; the use of instrumental variables confirmed in their study a sizeable impact of trade on growth (although there is no explicit role for trade policy's effect on trade).

Figure 2. The "deep" determinants of income

Source : Rodrik et al. (2004).

However, Rodriguez and Rodrik (2000) and Rodrik, Subramanian, and Trebbi (2004) have criticized the conclusions of such work, arguing that – once the role of institutions is accounted for properly – the effect of trade on growth is insignificant. Rodrik, Subramanian, and Trebbi (2004) provide empirical evidence that institutions "trump" the importance of trade (and of geography) as the key "deep determinant" of economic growth.

To date, the literature has still not produced convincing evidence that trade "causes" growth, although I sense that international trade economists are still optimistic of finding stronger empirical evidence in support. Further developments in econometric analysis of the issue will be needed to find convincing support for, what many believe, is a strong rationale for trade liberalization.

Thus, *ex ante* CGE models such as GTAP and the Michigan Model have typically found small, but positive, effects of trade policy liberalizations on countries' per capita incomes. The empirical work just surveyed finds mixed results that trade "causes" growth using *ex post* cross-country econometric techniques; there is not yet overwhelming and convincing evidence. Hence, the literature still leaves unresolved the issue of how effective trade liberalization is potentially for enhancing nations' standards of living, and clearly more work needs to be pursued here, especially with regard to more *ex post* empirical analysis. In the absence of convincing quantitative evidence on the link from trade openness to economic growth, the question remains: *Why* have policy makers worldwide pursued aggressive – and not costless – competitive liberalizations of trade via the channel of bilateral and regional EIAs?

3. AN ECONOMETRIC APPROACH TO PREDICTING
THE GAINS FROM EIAS

In an earlier paper, Baier and Bergstrand (2004), Scott Baier and I asked the question: Suppose the world is in a long-run equilibrium, what are the likely economic and possibly political factors that can explain empirically (*and theoretically*) whether or not a pair of countries is likely to (*and should*) have a bilateral EIA in any given year (in our case, 1996)? The motivation for this question was Bergsten's "competitive liberalization" hypothesis, spurred notably by the quote above. The more obvious motivation was the concluding sentence: "...The overarching force, however, has been the process of competitive liberalization" (p. 2).

However, the more subtle motivation was the first sentence: "... it is first essential to understand why so many countries, in so many *different* parts of the world, with such *different* economic systems, at such *different* stages of development, have all headed in the same direction" (p. 2). In contrast to our agreement with the concluding sentence, we took issue with the first sentence. Instead, we conjectured two hypotheses, one theoretical and one empirical. First, we believed that there are systematic economic characteristics that pairs of countries share – that can potentially be modeled using an accepted general equilibrium framework built upon the work of Krugman (1991a, b) and Frankel, Stein and Wei (1995) – to predict whether or not a pair of countries in an N-country world would gain or lose, on net, in terms of utilities of their representative consumers (or median voters) from forming a free trade agreement (FTA). Second, using McFadden (1975, 1976), this model would then suggest a set of economic characteristics that pairs of countries would share that could explain *empirically* the likelihood of the pairs forming or not forming an FTA. In fact, we found that the vast bulk of FTAs in our sample could be predicted using our simple econometric model, and (in the context of the theory) the results indicated that the vast majority of country pairs that have an FTA *should have* an FTA, in the sense that the their economic characteristics are consistent with a predicted net welfare gain for the pair's representative consumers (or median voters).[1]

The remainder of this section summarizes the model behind this and the empirical findings, and provides guidance for other theoretical and empirical work on the "growth" of regionalism in the next section.

3.1. A Summary of the Theoretical Framework

In the spirit of Krugman (1991a,b), Frankel, Stein and Wei (1995), and Frankel (1997), Baier and Bergstrand (2004) created a model of a world economy recognizing explicitly inter- and intra-continental trade costs,

---

[1]An implicit assumption of the work is that multilateral trade liberalization is prohibitively costly. The same assumption has been used in the literature, cf., Grossman and Helpman (1995).

asymmetric country sizes, and asymmetric relative factor endowments. The motivation for the model started with Krugman (1991a), which used a simple model of three symmetric (or identical) economies where firms produced slightly differentiated goods under increasing returns to scale in production to show that – in a world with *no* trade costs – regional FTAs decreased economic welfare of households unambiguously. However, Krugman (1991b) showed that in the same model – but with prohibitive inter-continental trade costs – regional FTAs increased economic welfare unambiguously. Frankel, Stein and Wei (1996) cleverly labeled this the "Krugman vs. Krugman" debate. Frankel, Stein, and Wei's extension of Krugman's model usefully allowed for a continuum of inter-continental trade costs, distinguishing "natural" (within continents) from "unnatural" (across continents) FTAs. Frankel, Stein, and Wei could then show the cross-over point – in terms of inter-continental trade costs – at which on net welfare changed from positive to negative. Using some empirical estimates of the costs of inter-continental trade based upon a gravity model of trade, one conclusion from Frankel's (1997) book was that – if all continents followed the European example – the regionalization of the world economy would be "excessive."

In order to establish a quantitative model to predict which pairs of countries should or should not have an FTA, Baier and Bergstrand (2004) extended the Frankel-Stein-Wei model to allow for asymmetric economies – both in terms of economic size and in relative factor endowments – and for asymmetric inter- and intra-continental transport costs. The model has six countries on three continents with countries on the same continent facing (Samuelson) iceberg-type intra-continental trade costs and countries on different continents facing additional iceberg-type inter-continental trade costs. Each country is endowed with two factors of production, capital (K) and labor (L).

There are two industries, goods and services, with preferences for the two sectors' outputs of the Cobb-Douglas type. Preferences for each sector's output are of the constant-elasticity-of-substitution (CES) type, common to the trade literature. Each sector's products are slightly differentiated, with each product produced under increasing returns to scale; consumers value variety. The productions of goods and services use capital and labor in different relative factor intensities. Standard demand functions are generated, the details of which are discussed in Baier and Bergstrand (2002, 2004).

If governments are welfare maximizers, then – in the context of this model – certain economic characteristics are likely to favor FTAs' formation in some pairs of countries relative to others. For example, two important economic factors are intracontinental and intercontinental trade costs. First, countries on the same continent (i.e., "natural" trade partners) benefit more from an FTA than countries on different continents ("unnatural" trade partners), because the former trade more. Second, trade between countries diminishes as inter-continental trade costs increase. This suggests that the net benefits of a natural FTA increase, and the net costs of an unnatural FTA decrease, as intercontinental trade costs rise.

Third, pairs of economies with larger GDPs tend to benefit more from FTAs than pairs of smaller countries, due to economies of scale in production and increased varieties of products available in larger economies. Fourth, as two countries' GDPs become increasingly different, the likelihood of an FTA decreases. A larger economy's benefit from an FTA diminishes as the two countries become more dissimilar in size (for a given total economic size) because the breadth of variety in imports contracts for the larger economy. Fifth, due to the presence of two industries and two factors – the wider the relative factor endowments of a country pair, the more likely an FTA (if inter-continental transports are sufficiently high) due to the gains of exchange relative comparative advantages, i.e., inter-industry trade. It is important to note – as perhaps surmised already – that most (if not all) of these economic factors are also well established as economic determinants of *bilateral trade flows.*

Based upon the qualitative-choice econometric model of McFadden (1975, 1976), Baier and Bergstrand (2004) used a probit model to try to establish the relative importance of these factors for explaining – and potentially predicting – the likelihood of an FTA between country pairs. We employed a sample of bilateral pairings among 54 countries, or 1431 observations for FTAs observed in 1996 [(54x53)/2 = 1431]. These probabilities were predicted using bilateral distances, GDP sizes, GDP similarities, relative K/L ratios, and indexes of remoteness (or multilateral resistance) as explanatory variables, cf., Baier and Bergstrand (2004).

3.2. A Summary of the Empirical Results

The empirical probit model actually worked quite well. As a measure of overall fit, the pseudo-R^2 value of the full specification is 73 percent for 1431 country pairs. We note that, for a (more recently constructed) wider sample of 96 countries in 1995, the pseudo-R^2 remains high at 67 percent. Of the 286 FTAs in 1996 in our original sample, the model predicted 85 percent (or 243) correctly. Of the remaining 1145 pairs with no FTAs, the model predicted correctly 97 percent (1114=1145-31).

We draw attention to three empirical outcomes. First, we note that the most likely FTAs in 1996 (using exogenous geographic variables and GDPs and K/L ratios from 1960) were the earliest FTAs. A suggestive implication from all this is that this model can also *potentially* reveal to us information about the *growth of regionalism*. We will return to this theme later.

Second, of the top 200 pairs (of 1431) that were the most likely to have an FTA in 1996, only 6 pairs did not have one: Iran-Iraq, Iran-Turkey, Chile-Peru (FTA being negotiated), Japan-South Korea (FTA being negotiated), Hong Kong-South Korea, and Panama-Venezuela.

Third, of the 1000 pairs (of 1431) that were the least likely to have an FTA in 1996, only 4 pairs actually had an FTA: Portugal-Turkey, Egypt-Iraq, Mexico-Chile, and Mexico-Bolivia.

3.3. Inferences

Why does the model work so well? We believe the model is consistent with the notion of "competitive liberalization". National governments realize countries are unique in economic characteristics. In the interest of liberalizing markets to improve productivity levels and levels of living standards, national governments select into arrangements with other countries for which they share certain economic characteristics, such as similar economic size, close proximity, or remoteness from other countries. Empirically, most pairs of countries with FTAs tend to have the key economic characteristics that the theoretical model suggests should be present for an FTA to enhance (on net) the welfare of pairs' representative consumers. In many (if not most) cases, these are pairings where countries already trade extensively with one another. This is consistent with Bergsten's "competitive liberalization" notion that economic welfare may be the dominant long-run "overarching" force in driving regionalism, despite political factors influencing timing, etc. Hence, the same *observable* variables that explain trade patterns – gravity-equation variables – *also explain* the likelihood of an FTA because of likely net benefits for producers and consumers from creating such an FTA.

The reader might ask a seemingly obvious question: If national governments are simply maximizing consumers' welfare, why not simply predict bilateral FTAs with bilateral trade flows? First, there is an "endogeneity" issue. Predicting the likelihood of an FTA based upon a probit regression using trade flows on the RHS will likely yield biased coefficient estimates. The reason is that "unobservable" variables – such as institutional and political factors – that likely influence the decision by governments to form FTAs also tend to influence trade flows. In cross-sectional data, these unobservable (to the econometrician) variables likely influence both FTA and trade variables.

Second, the probit specification we use helps identify the "economic characteristics" that influence the decision to form an FTA: economic geography variables, factors influencing intra-industry trade, and factors influencing inter-industry trade.

Third, we also conducted numerous sensitivity analyses of the results to other potentially important economic variables *and political* variables that were outside the scope of the theoretical model. First, the empirical model assumed that the formation of an FTA between pairs of countries are independent draws from a distribution, which is not likely to reflect reality. This lack of independence can potentially influence the econometric results. Using a cluster analysis technique, we re-estimated the results and found that there was no significant effect of possible interdependence on the empirical results. Second, the results may be sensitive to the size of the "bloc" that a member pair may be part of. We introduced two other variables to account the relative economic size of the "bloc". Again, these variables, while statistically significant, had no major bearing upon the empirical results. Third, we accounted for the level of protection of non-members. However, the lack of variation in this variable

precluded any significant results. We considered a large array of institutional and political variables motivated by the literature. Of nine such variables included, only the average level of a pair's per capita CO_2 emissions had a negative and statistically significant effect on the probability of an FTA. Motivated by Trefler (1993), we considered the level of "import penetration" as a variable, reflecting possible import-competing firms' political and economic influence. The coefficient estimate was negative and statistically significant as expected. Finally, to address Grossman and Helpman (1995) issues, we included "imbalances" in trade, but the variable's coefficient estimate was insignificant. In sum, none of the alternative specifications had any material impact upon the baseline empirical findings.

4. THE GROWTH OF REGIONALISM

Having summarized our earlier work on the long-run determinants of bilateral FTAs, there are numerous ways to extend this work: introducing more short-run political timing aspects, investigating different levels of integration, and addressing dynamic issues. In this section, I discuss some recent research looking at explaining theoretically and empirically the role of initial conditions in explaining the *growth* of regionalism. I summarize some preliminary findings.

The analysis in Baier and Bergstrand (2004) was interested in determining a set of exogenous economic factors (predetermined in 1960) that could predict the probability of an EIA. Using McFadden's qualitative choice framework, we used these predetermined (as of 1960) variables to predict the probability of an EIA in 1996. Country pairs with the economic characteristics that tended to be associated with net welfare gains from an EIA would have higher probabilities. A key finding in that study was that 85 percent of the 286 country pairs with EIAs in 1996 could be predicted to have a probability of greater than ½. Moreover, 97 percent of the 1114 country pairs without an EIA in 1996 could be predicted; their probabilities were less than ½.

However, that study ignored the relative values and rankings of all 1431 probabilities calculated. If all country pairs faced some common exogenous cost of forming an FTA, then country pairs with the highest probabilities of an FTA would likely form first. Hence, the probabilities provide information about predetermined (initial) conditions that may explain the timing of the EIA associated with a particular country pair, that is, the "sequencing" of economic integration. Our "testable" theoretical proposition is that the higher is a country pair's probability of an EIA (in the context of the theory, reflecting a higher net welfare gain from an FTA) the earlier its formation occurred.

The empirical analysis here is simple. We took all 286 country pairs that had EIAs in 1996 from Baier and Bergstrand (2004). We then eliminated only those country pairs whose EIA formation's timing was widely-acknowledged to have been altered by political considerations. First, any country that was under the "Soviet bloc" was eliminated; for instance, Hungary was under the Soviet bloc and so Austria-Hungary was eliminated (1995 EIA when the EU formed an

FTA with Hungary and Austria was in the EU). Second, we also eliminated any country pair with Spain and Portugal, because of those nations' repressive regimes until the 1980s. This left 138 pairs; there was a large number of Central and Eastern European countries in our original sample. We have two variables. The RHS variable is the probability of the country pair having an EIA, along with a constant. The LHS variable is the year of EIA formation.

To illustrate our approach, we simply regressed the Time-to-EIA-Date-of-Entry on a constant and the Predicted Probability of having an EIA (from Baier and Bergstrand, 2004; each prediction determined by time-invariant variables or economic conditions in 1960); the expected coefficient sign was negative. The Predicted Probability had a statistically significant negative coefficient estimate, with a t-statistic of 9.77. The R^2 of the regression was 41 percent. Moreover, the coefficient estimate had a straightforward economic interpretation. For every 1 percentage point increase in the probability of having an EIA (based upon time-invariant variables and initial GDP conditions in 1960), the time to an EIA's date of entry fell by 4 months.

We make two important caveats. First, the timing of EIAs is subject both to political variables as well as *time-varying* economic variables, such as changing relative prices as in the "domino theory." Second, the approach used here is not a well-defined econometric analysis; this is being pursued in current research. However, these preliminary results are supportive of the notion that economic variables are important in the "timing" of regionalism – similar to the notion in Baier and Bergstrand (2004) that such variables are important in the "choice" of partners in EIAs.

A simple analogy for this approach is the following. In the neoclassical growth literature, a large literature exists on convergence in per capita incomes. With the neoclassical growth model at the conceptual core, work of the determinants of economic growth and convergence, such as Barro and Sala-i-Martin (1995), suggests that growth rates are influenced by initial conditions. For instance, the empirical literature on economic growth suggests that the lowest per capita income countries initially should have the highest growth rates (ultimately, in theory, converging to the same steady state, other things equal). Similarly, one might expect that country pairs with the highest likelihood of forming an EIA – based implicitly upon the greatest net benefit from having EIA – would (for some given cost of forming an EIA) form an FTA the earliest.

Thus, economic forces seem to play an important role in explaining both the particular EIAs that exist in the world and, now, the timing of such agreements.

5. CONCLUSIONS AND IMPLICATIONS OF THE GROWTH OF REGIONALISM FOR THE MIDDLE EAST

What does this framework suggest for the Middle East, and for Israel in particular? We limit ourselves to four points.

First, earlier research (Baier and Bergstrand, 2004) suggests that country pairs that tend to form EIAs tend to have the economic characteristics that our theory suggests they *should have* to benefit on net from an EIA. That is, countries that have formed EIAs have "chosen well." The methodology from Baier and Bergstrand (2004) and Egger and Larch (2007) suggests that one can provide predicted probabilities of the likelihood of an EIA based upon economic and geographic considerations. I have done so for three possible EIAs: Israel-Egypt, Israel-Jordan, and Israel-Saudi Arabia. None of these pairs have EIAs, and Israel has peace treaties with only Egypt and Jordan. Israel and Egypt currently share four free-trade "zones" whereby exports to the United States from these countries receive duty-free treatment if at least 35 percent of the product is jointly produced by Israeli and Egyptian firms. Israel and Jordan share a similar agreement. However, both are far below the level of integration of a preferential or free trade agreement with each other.

Based upon the Egger-Larch version of the Baier and Bergstrand model, the predicted probability of an EIA between Israel and Egypt is 0.821. Based upon our model, this value suggests that the two countries would on net benefit from an EIA. This value is largely driven by the two countries' proximity, their joint GDP size, their GDPs' similarity, and their differing relative factor endowments. The predicted probability of an EIA between Israel and Jordan, however, is only 0.281. While not trivial, the smaller probability is strongly influenced by Jordan's much smaller economic size relative to Israel's, even though Israel and Jordan have significantly different capital-labor ratios and per capita incomes. Finally, the predicted probability of an Israel-Saudi Arabia EIA is 0.533, suggesting the two countries would benefit economically from an agreement.

A second point is that our research on endogenous EIAs has implications for the measured *ex post* quantitative effects of EIAs on trade between country pairs. Baier and Bergstrand (2007) examined the empirical implications for estimating *ex post* the effects of free trade agreements (FTAs) on trade flows of ignoring the self-selection of country pairs into FTAs. Two important points from this research is worth noting. First, the "partial" (or direct) effect of an FTA on bilateral trade (about 100 percent) is approximately *five times* larger when one accounts for endogeneity of FTAs relative to when endogeneity is not accounted for. Second, we found that the smallest country pairs tended to have the largest direct impacts on trade. For instance, in earlier work, Baier, Bergstrand, and McLaughlin (2008) found that the effect of the Gulf Cooperation Council FTA increased those members trade by about 300 percent, considerably more than the average increase of 100 percent. However, it is important to note, based upon considerations raised recently in Anderson and van Wincoop (2003) and Baier and Bergstrand (2007), that these "partial" effects tend in general equilibrium to be offset by changes in multilateral prices. Moreover, such offsetting "general-equilibrium" effects are largest for the smallest countries.

A third point is a subtle one. I believe that one of the important reasons why the *ex post* effects of EIAs in our empirical approach are considerably

larger than the *ex ante* effects generated by CGE models is that the latter models incorporate only specific economic changes (by assumption). By contrast, our approach allows the "treatment" effect to be determined by actual (*ex post*) trade flow responses. Our approach does not measure "treatment" from an EIA by a specific change in a tariff rate (to zero, in the case of an FTA). Rather, it allows "treatment" to be unspecified. Thus, our approach allows for *non-economic factors* to be introduced into the treatment.

Fourth and in conclusion, a very important parallel literature exists on the interrelationships between trade and *conflict*. This literature has been pursued by both economists and political scientists; we are not authorities on this literature. A useful and recent paper in this area that is readable by a wide audience is Polachek and Seiglie (2006), "Trade, Peace and Democracy." In this literature, many empirical authors have found that – after adjusting for endogeneity – conflict and trade influence each other simultaneously. Conflict reduces trade *and* trade reduces conflict. For instance, the partial estimated effect of elimination of a representative conflict is to increase trade by 40 percent, with a likely general equilibrium effect less than that.

In a very recent article, Kilchevsky, Cason, and Wandschneider (2007) examine empirically the relationship between economic interdependence (trade is the actual driving variable) and conflict specifically for 4 countries – Israel, Egypt, Jordan and Turkey – over the period 1979 to 1992. They find strong evidence that trade reduces conflict between these nations, and that in more "politically liberal" nations (i.e., more democratic ones) the stronger is the effect of trade on reducing conflict.

Thus, it is quite plausible that regional trade agreements have a stronger effect on countries' trade than *ex ante* CGE and earlier *ex post* gravity equation empirical work has suggested. The trade benefitting – and likely per capita income enhancing – effects of such EIAs may well be tied both to the broader and deeper liberalization of economic barriers and also the possible deeper reduction of *political* barriers between nations. Certainly, much more research in this area is warranted.

REFERENCES

Anderson James E., and Eric van Wincoop, 2003, "Gravity with *Gravitas*: A Solution to the Border Puzzle." *American Economic Review*, 93 (1), March, 170-192.

Baier Scott, and Jeffrey H. Bergstrand, 2002, "On the Endogeneity of International Trade Flows and Free Trade Agreements." Working paper, August (www.nd.edu/~jbergstr).

Baier Scott, and Jeffrey H. Bergstrand, 2004, "Economic Determinants of Free Trade Agreements." *Journal of International Economics*, 64 (1), October, 29-63.

Baier Scott, and Jeffrey H. Bergstrand, 2007, "Do Free Trade Agreements Actually Increase members' International Trade?", *Journal of International Economics*, 71 (1), March, 72-95.

Baier Scott, Jeffrey H. Bergstrand, and Patrick McLaughlin, 2008, "Regional and Inter-Regional Trade Agreements: Examining their Role for the Middle East." Paper presented at the conference, "Globalization in the 21st Century," jointly sponsored by the William Cohen Center for International Economic Policy and Commerce at the University of Maine (USA) and the Emirates Center for Strategic Studies and Research (UAE).

Baldwin Richard, 1995, "A Domino Theory of Regionalism." In *Expanding Membership of the European Union*, edited by Richard Baldwin, Pentti Haaparanta, and Jaakko Klander, New York, NY: Cambridge University Press.

Baldwin Richard, 1997, "The Causes of Regionalism." *The World Economy*, 20 (7), November, 865-888.

Baldwin Richard, 2006, "Multilaterising Regionalism: Spaghetti Bowls as Building Blocs on the Path to Global Free Trade." *The World Economy*, 29 (11), November, 1451-1518.

Baldwin Richard, 2007, "The Logic of Trade Blocs as Building and Stumbling Blocks on the Road to Global Free Trade: A Survey.' Working paper, Graduate Institute of International Studies, January.

Barro Robert, and Xavier Sala-i-Martin, 1995, *Economic Growth*. New York, NY: McGraw-Hill.

Bergsten C. Fred, 1996, "Competitive Liberalization and Global Free Trade: A Vision for the Early 21st Century," Peterson Institute for International Economics, Working Paper 96-15 ,Washington,DC.

Bergsten C. Fred, 2002, "A Competitive Approach to Free Trade." *Financial Times*, December 4.

Bhagwati Jagdish, and Arvind Panagariya, 1999, "Preferential Trading Areas and Multilateralism." In *Trading Blocs*, edited by Jagsish Bhagwati, Pravin Krishna, and Arvind Panagariya. Cambridge, MA: MIT Press.

DeRosa Dean, and John P. Gilbert, 2005, "Predicting Trade Expansion under FTAs and Multilateral Agreements," Peterson Institute for International Economics, Working Paper 05-13, Washington, DC.

Dollar David, 1992, "Outward-Oriented Developing Economies Really Do Grow More Rapidly: Evidence from 95 LDCs, 1976-1985." *Economic Development and Cultural Change*, 40 (3), April, 523-544.

Edwards Sebastian, 1993, "Openness, Trade Liberalization, and Growth in Developing Countries." *Journal of Economic Literature*, 31 (3), September, 1358-1393.

Egger Peter, and Mario Larch, 2007, Interdependent Preferential Trade Agreement Memberships: An Empirical Analysis." Working paper, April.

Estevadeordal Antoni, 2006, "The Rise of Regionalism." Presentation at the conference, *The New Regionalism: Progress, Setbacks, and Challenges*. Washington, DC : Inter-American Development Bank, February 9-10.

Frankel Jeffrey, 1997, *Regional Trading Blocs*. Washington, DC : Peterson Institute for International Economics.

Frankel Jeffrey, Ernesto Stein, and Shang-Jin Wei, 1995, "Trading Blocs and the Americas: The Natural, the Unnatural, and the Super-Natural." *Journal of Development Economics*, 47, 61-95.

Frankel Jeffrey, and David Romer, 1999, "Does Trade Cause Growth ?" *American Economic Review*, 89 (3), June, 379-399.

Grossman Gene, and Elhanan Helpman, 1995, "The Politics of Free Trade Agreements." *American Economic Review*, 85 (4), 667-690.

Helpman Elhanan, and Paul Krugman, 1985, *Market Structure and Foreign Trade.* Cambridge, MA: MIT Press.

Kilchevsky Amichai, Jeffrey Cason, and Kirsten Wandschneider, 2007, "Peace and Economic Interdependence in the Middle East." *The World Economy*, 30 (4), April, 647-664.

Krugman Paul, 1991a, "Is Bilateralism Bad?" In *International Trade and Trade Policy*, Elhanan Helpman, Assaf Razin (ed.), Cambridge, MA : MIT Press.

Krugman Paul, 1991b, "The Move Toward Free Trade Zones." In *Policy Implications of Trade and Currency Zones*, Proceedings of a Federal Reserve Bank of Kansas City conference.

McFadden Daniel, 1975, "The Revealed Preferences of a Government Bureaucracy: Theory." *Bell Journal of Economics*, 6 (2), 401-416.

McFadden Daniel, 1976, "Quantal Choice Analysis: A Survey." *Annals of Economic and Social Measurement*, 5 (4), 363-390.

Michaely Michael, 1977, "Exports and Growth: An Empirical Investigation." *Journal of Development Economics*, 4, 49-53.

Peridy Nicolas, 2005, "Toward a Pan-Arab Free Trade Area: Assessing Trade Potential Effects of the Agadir Agreement." *The World Economy*, 33 (3), September, 329-345.

Polachek, Solomon W., and Carlos Seiglie, 2006, "Trade, Peace and Democracy: An Analysis of Dyadic Dispute.," Institute for the Study of Labor Working paper No. 2170.

Rodriguez Francisco and Dani Rodrik, 2000, "Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-National Evidence." In *Macroeconomics Annual 2000*, Ben Bernanke and Kenneth Rogoff (ed.), Cambridge, MA : MIT Press.

Rodrik Dani, Arvind Subramanian, and Francesco Trebbi, 2004, "Institutions Rule: The Primacy of Institutions Over Geograph and Integration in Economic Development." *Journal of Economic Growth*, 9, 131-165.

Wooldridge Jeffrey, 2002, *Econometric Analysis of Cross-Section and Panel Data*. Cambridge, MA: MIT Press.

LE DÉVELOPPEMENT DES ACCORDS D'INTÉGRATION RÉGIONALE : LE CAS DU MOYEN-ORIENT

Résumé - *L'un des événements les plus frappants de ces deux dernières décennies dans l'économie mondiale est certainement la croissance exceptionnelle du nombre d'accords d'intégration régionale, comme par exemple les zones de libre-échange. Cet article discute le rôle de la « libéralisation concurrentielle » des pays et les « effets domino » possibles dans le processus du régionalisme. Les pays qui forment des zones de libre-échange tendent à être proches géographiquement, plus éloignés du reste du monde, et d'une certaine taille économique. Nous analysons le rôle de ces facteurs économiques pour discuter la probabilité de former un accord régional entre Israël et l'Egypte, la Jordanie et l'Arabie Saoudite.*