KDI SCHOOL

WORKING PAPER SERIES

KDI 국제정책대학원

KDI School of Public Policy and Management

KDI SCHOOL WORKING PAPER SERIES

Regionalism and Conflict: Peace Creation and Peace Diversion

Costas Hadjiyiannis
University of Cyprus

Maria S. Heracleous
University of Cyprus

Chrysostomos Tabakis
KDI School of Public Policy and Management

September, 2014
Working Paper 14-04

* We are grateful to the KDI School of Public Policy and Management for providing financial support.

Regionalism and Conflict: Peace Creation and Peace Diversion*

Costas Hadjiyiannis,[†] Maria S. Heracleous,[‡] and Chrysostomos Tabakis[§]

September 2014

Abstract

We investigate the implications of preferential trade agreements (PTAs) for interstate conflict. We set up a two-stage game with three competing importers, where first, two of the countries decide on whether to initiate war against each other, and subsequently, all three countries select their import tariffs. We show that PTAs produce both a "peace-creation" and a "peace-diversion" effect, whereby they reduce the likelihood of conflict between member countries (peace creation), but could render the eruption of war between member and non-member countries more likely (peace diversion). This paper is the first to identify and explicitly model the peace-diversion effect of PTAs, and is also the only one in this literature to endogenize countries' terms of trade. We use data from the Correlates of War project to empirically test these predictions, and after controlling for endogeneity, we find robust evidence of both peace creation and peace diversion in relation to free-trade-area as well as customs-union establishment.

Keywords: Preferential trade agreements; regionalism; military conflict; war.

JEL classification: D74; F14; F15; F51; F52.

*The authors would like to thank Iacovos Avraamides and Kyriakos Petrou for excellent research assistance. The authors would also like to thank participants at the ASSET Annual Meeting, the Australasia Meeting of the Econometric Society, the ETSG Conference, the Resource Insecurity, International Trade and the Environment Workshop (University of Exeter), the 2nd Seminar on Asia and Pacific Economies (XJTLU), and seminars at the KDI School, Kookmin University, Sogang University, University of Cyprus, and Yonsei University for very helpful comments and suggestions. Any errors are ours.

[†]University of Cyprus – *Corresponding author:* E-mail: costash@ucy.ac.cy. Tel.: +357–22893714. Address: Department of Economics, University of Cyprus, P.O. Box 20537, Nicosia, 1678 Cyprus.

[‡]University of Cyprus

[§]KDI School of Public Policy and Management

1 Introduction

It is widely believed among historians and political scientists that the most important reason for establishing the European Coal and Steel Community (ECSC) in 1951—the original predecessor of the European Union (EU)—was the desire to avoid another devastating major war in Europe. In the words of the Schuman Declaration, which was presented by French foreign minister Robert Schuman on 9 May 1950 and proposed the creation of the ECSC, the pooling of coal and steel production would make any war between age-old rivals France and Germany "not merely unthinkable, but materially impossible."[1] The pacifying role of the EU and its forerunners was recognized by the Norwegian Nobel Committee in 2012, which awarded to the EU the Nobel Peace Prize. In its official announcement, the committee stated, "The stabilizing part played by the EU has helped to transform most of Europe from a continent of war to a continent of peace."[2]

In this paper, we investigate both theoretically and empirically the implications of preferential trade agreements (PTAs) for interstate conflict. In particular, we explore whether, in line with the EU case, PTAs reduce the likelihood of conflict between member countries. At the same time, since PTAs have important ramifications for the bilateral trade relationship between member and non-member countries, we also analyze the impact of PTAs on the likelihood of war between PTA members and non-member states.

On the theoretical side, we develop a three-country competing-importers model, where two of the countries are "enemies," as they contest part of each other's resources. The countries engage in a two-stage game, in the first stage of which, the two enemies decide on whether to wage war against each other. In the second stage, all three countries select their import tariffs. Countries at war do not trade with each other and, additionally, bear a fixed cost of destruction. Moreover, in the event of war, the victor seizes its adversary's contested resources, with the probability of prevailing in an armed conflict being a function of the relative military expenditures of the enemy countries. We solve this dynamic game under the scenario of no regionalism, which is our benchmark scenario, and under four different PTA scenarios,

[1] See http://europa.eu/about-eu/basic-information/symbols/europe-day/schuman-declaration/index_en.htm.

[2] See http://nobelpeaceprize.org/en_GB/laureates/laureates-2012/announce-2012/.

involving a free-trade-area (FTA) or a customs-union (CU) agreement either between the two enemies or between one of the enemies and the third country.

In the absence of regionalism, we find that war takes place if and only if the military expenditures of the two enemies are sufficiently asymmetric. Furthermore, a PTA between the enemy countries, in the form of either an FTA or a CU agreement, renders, in general, the eruption of war less likely, in the sense that an even larger asymmetry in military spending between the two enemies is then required for war to break out in equilibrium. This stems from the fact that a PTA between the enemies increases their welfare under peace (and thus, the opportunity cost of war) via (i) eliminating the inefficient Nash trade barriers between them; and (ii) improving their terms of trade vis-à-vis the third country—due to the PTA's tariff-complementarity effect in the case of an FTA agreement, or as a result of both its market-power and tariff-complementarity effects in the case of a CU agreement. Hence, at a more general level, our results establish that PTAs exert a "peace-creation" effect on their member countries, which is in line with the EU experience.

However, our analysis illustrates that PTAs could also be detrimental to peace. More specifically, in the case of a CU agreement between one of the adversaries and the third country, the former is less likely to start a war in comparison with our benchmark scenario, since the CU raises, via its terms-of-trade ramifications, the country's welfare under peace relative to its expected welfare under war. Nevertheless, the opposite holds for the other adversary that is not part of the CU, as that country faces instead a decrease in its welfare under peace relative to its expected welfare under war. Therefore, the overall effect of the CU in question on the likelihood that the enemy countries go to war is ambiguous. On the other hand, our findings demonstrate that an FTA agreement between one of the enemy countries and the third country renders, unambiguously, the eruption of war more likely, as both enemies are then more likely to initiate war against each other. More generally, our results show that CU agreements produce a "peace-diversion" effect on non-member countries, while FTA agreements exert such an effect on member as well as on non-member countries. At a broad level, the peace-creation and peace-diversion effects of PTAs that emerge from our analysis are somewhat reminiscent of their trade-creation and trade-diversion effects originally identified by Viner (1950).

We use data on militarized interstate disputes (MIDs) from the Correlates of War (COW) project to empirically test these predictions. Our sample consists of 260,781 annual country-pair ("dyadic") observations over the period 1958–2000. To enhance comparability with the existing literature, the empirical strategy adopted is based on Martin et al. (2008) and Vicard (2012). We address the possible endogeneity bias related to membership of FTAs and CUs by (i) controlling for a large number of potential common determinants of both regionalism and interstate conflict; (ii) taking advantage of the panel dimension of our data set and controlling for country-pair fixed effects; and finally, (iii) employing an instrumental-variables (IV) strategy. Our empirical results provide robust evidence of both peace creation and peace diversion in relation to FTA as well as CU establishment.

Few papers look at the interplay between regionalism and interstate conflict. In particular, Mansfield et al. (1999) and Mansfield and Pevehouse (2000), using data on MIDs over the period 1950–1985, find that PTAs produce a peace-creation effect on their member countries. In another, more recent, empirical study, Vicard (2012) provides evidence that deep PTAs, such as CUs and common markets, reduce the probability of conflict between member countries, but shallow PTAs, such as FTAs and partial scope agreements, have no such effect. On the other hand, Martin et al. (2012) look at the reverse question, and find that country pairs with a higher frequency of old wars are more likely to sign PTAs, whereas a higher frequency of recent wars has the exact opposite effect. Finally, Schiff and Winters (1998) develop a theoretical model in which they *assume* that trade reduces frictions between hostile neighboring countries, and explore whether a PTA can generate welfare gains for its members under those conditions and how such a PTA would evolve over time. We differ from these papers in two important ways. First, this is the first paper to identify and explicitly model the peace-diversion effect of PTAs. Second, this is the only paper in this literature to endogenize countries' terms of trade, proposing a novel mechanism through which regionalism can affect interstate conflict.

Our paper is also naturally related to the literature on the impact of international trade on interstate conflict. More particularly, a voluminous body of research has empirically investigated the long-standing "liberal peace hypothesis" that trade promotes peace. Many studies find a negative relationship between bilateral trade and bilateral conflict, lending support to

the liberal peace hypothesis (see, for example, Polachek, 1980; Oneal and Russett, 1999). A number of papers, though, either find no evidence of the pacifying effect of economic interdependence (see, for instance, Kim and Rousseau, 2005) or even find that trade increases conflict (see, for example, Barbieri, 1996), which are in line with the theories of the neo-Marxist and realist/neo-realist schools of thought in political science. On the theory side, Skaperdas and Syropoulos (2001) and Garfinkel et al. (2009, 2012) develop models of trade with an insecure resource, and compare the effects of autarky and free trade on the intensity of competition between countries (through arming) over the contested resource as well as on their welfare. In their analyses, the world relative price of the contested resource emerges as the pivotal factor. Last, Martin et al. (2008) investigate both theoretically and empirically the ramifications of trade for war, and find that bilateral trade openness deters bilateral war, while multilateral trade openness increases the probability of war between any given pair of countries. None of these papers, however, shares our focus on regionalism and its implications for interstate conflict via its terms-of-trade effects.

The remainder of the paper is organized as follows. The next section sets out the basics. Section 3 solves our dynamic game under our benchmark scenario of no regionalism. Sections 4 and 5 explore, theoretically, the impact of FTA and CU agreements on interstate conflict. Section 6 provides empirical evidence in support of our theoretical predictions. Finally, Section 7 concludes.

2 The Model

We assume the world consists of three countries, A, B, and C, that trade three goods, a, b, and c, with trade being subject to the imposition of specific (non-prohibitive) import tariffs. Country J is endowed with three units of good j that are uniformly distributed over its territory, and zero units of the other two goods, where $J \in \{A, B, C\}$ and $j \in \{a, b, c\}$. On the consumption side, we maintain the assumptions that demand functions are symmetric across countries and goods, and that the demand for any given good in any country is independent of the other two goods' prices. More specifically, the demand for good $i \in \{a, b, c\}$ in country J is of the linear form $C\left(P_i^J\right) = \alpha - \beta P_i^J$, where $\alpha > 3$, $\beta > 0$ are constants and P_i^J is good

i's price in country J. Given our setup, country J exports good j to the other two countries, that is, we have a competing-importers framework.

Countries A and B are "enemies," as they contest a fraction $\mu < 1$ of each other's territory. This territorial dispute between countries A and B induces them to engage in the production of "guns," which, for simplicity, is assumed to be a non-consumption, non-tradable good. Arming has two offsetting welfare effects. On the one hand, gun production consumes a country's endowment, or resources, in a uniform manner across its territory. On the other hand, a country's allocation of resources to arming enhances its chances of prevailing in a military conflict, should such a conflict arise. More specifically, should countries A and B go to war, country A prevails with probability $g^A/\left(g^A + g^B\right)$ and, thereby, seizes the whole of country B's disputed territory while retaining its own contested territory, where g^A, $g^B < 1$ denote the fraction of their endowment that countries A and B, respectively, devote to gun production. Therefore, in the event of victory, country A appropriates $3\mu\left(1 - g^B\right)$ units of good b, with $3\left(1 - g^B\right)$ being country B's post-arming, pre-war endowment of good b. Symmetrically analogous relationships hold for country B. War, however, entails substantial costs for the participant countries even in the event of victory. In particular, should countries A and B engage in military conflict, they lose, respectively, K^A units of good a and K^B units of good b (on top of each losing its contested territory to the other if defeated), where K^A, K^B are a priori known to both countries. K^A, K^B can be thought of as the fixed cost of destruction born by countries A and B as a result of the military dispute. In addition, in the event of war, bilateral trade between countries A and B is totally disrupted.

To keep our analysis as straightforward as possible, we introduce two simplifying assumptions. First, any endowment a country seizes through war can only be used for domestic consumption, that is, it cannot be exported. Second, there is no territorial dispute between country C and either country A or country B; thus, country C devotes no resources to the production of guns (that is, $g^C = 0$).

The timing of actions undertaken by the three countries is as follows:

- Stage 1: Countries A and B decide simultaneously on whether to wage war against each other, taking g^A and g^B as given. In the event of war, they experience the aforementioned changes in their endowments and bilateral trade relationship.

- Stage 2: All three countries simultaneously pick their import tariffs.

To explore the ramifications of trade and regionalism for interstate conflict, we solve this two-stage game under five different scenarios: (i) no regionalism, which is our benchmark scenario; (ii) an FTA agreement between countries A and B; (iii) an FTA agreement between countries A and C; (iv) a CU agreement between countries A and B; and (v) a CU agreement between countries A and C. For each scenario, we solve the game backwards in order to identify its subgame-perfect Nash equilibria in pure strategies.

3 Conflict in the Absence of a PTA

We start by solving our two-stage game under the benchmark scenario, that is, under no regionalism. To this end, we first look at stage 2 and derive the Nash equilibrium tariffs as a function of the stage-1 outcome. There exist three possible stage-1 outcomes to consider: (i) peace; (ii) war between countries A and B, in which country A prevails; and (iii) war between countries A and B, in which country B prevails.

Let us begin with peace. Letting τ_j^{-J} denote the tariff of country $-J$ on good j, the no-arbitrage condition yields $P_j^{-J} = P_j^J + \tau_j^{-J}$, where $J \in \{A, B, C\}$, $-J \in \{A, B, C\} \setminus \{J\}$, and $j \in \{a, b, c\}$. The equilibrium prices can then be obtained from the usual market-clearing conditions: $C\left(P_j^J\left(\overrightarrow{\tau}_j\right)\right) + \sum_{-J} C\left(P_j^{-J}\left(\overrightarrow{\tau}_j\right)\right) = 3\left(1 - g^J\right)$, where $\overrightarrow{\tau}_j$ represents the vector of tariffs good j faces internationally.[3]

We define the welfare of country J as the sum over each (consumption) good of consumer surplus, producer surplus, and tariff revenue:

$$W^{J^{nregpeace}} = \int_{P_j^J\left(\overrightarrow{\tau}_j\right)}^{\frac{\alpha}{\beta}} C\left(P\right) dP + \sum_{-j} \int_{P_{-j}^J\left(\overrightarrow{\tau}_{-j}\right)}^{\frac{\alpha}{\beta}} C\left(P\right) dP + \int_0^{P_j^J\left(\overrightarrow{\tau}_j\right)} 3\left(1 - g^J\right) dP + \sum_{-j} \tau_{-j}^J M_{-j}^J\left(\overrightarrow{\tau}_{-j}\right), \quad (1)$$

where $-j \in \{a, b, c\} \setminus \{j\}$, and M_{-j}^J represents the imports into country J of good $-j$. Setting $\left(\partial W^{J^{nregpeace}} / \partial \tau_{-j}^J\right) = 0$ and solving for τ_{-j}^J, we obtain countries' best-response tariffs. For

[3] Recall here that $g^C = 0$ throughout our analysis.

instance, country A's best-response tariff on good b equals:

$$\tau_b^{A^R} = \frac{3(1-g^B)+\beta\tau_b^C}{8\beta}, \tag{2}$$

with symmetrically analogous relationships holding for the rest of the countries and goods. As equation (2) illustrates, there is strategic complementarity between countries' tariff policies. The intuition is straightforward. A higher tariff, for example, on good b by country C implies, ceteris paribus, more units of b being shipped to country A. Thus, a higher τ_b^C raises the tariff-revenue gain for country A from marginally increasing τ_b^A, inducing country A to impose a higher tariff on good b. Finally, using the best-response tariff functions, the Nash equilibrium tariffs are readily derived:

$$\tau_{-j}^{J^{nregpeace}} = \frac{3\left(1-g^{-J}\right)}{7\beta}. \tag{3}$$

Let us consider next the second possible stage-1 outcome: war between countries A and B, in which country A prevails. As we discussed above, in such a case, country A seizes the whole of country B's disputed territory and, as a result, obtains $3\mu\left(1-g^B\right)$ units of good b, which can be used solely for domestic consumption. Moreover, due to the destruction brought about by the military conflict, country B loses (additionally) K^B units of good b, while country A loses K^A units of good a. Finally, bilateral trade between countries A and B ceases. Therefore, national welfare for countries A and B is now, respectively, given by:

$$\begin{aligned} W^{A^{nregwinsA}} &= \int_{P_a^A(\tau_a^C)}^{\frac{\alpha}{\beta}} C\left(P\right)dP + \int_{P_b^A}^{\frac{\alpha}{\beta}} C\left(P\right)dP + \int_{P_c^A(\tau_c^A,\tau_c^B)}^{\frac{\alpha}{\beta}} C\left(P\right)dP \\ &+ \int_0^{P_a^A\left(\tau_a^C\right)} \left[3\left(1-g^A\right)-K^A\right]dP + \int_0^{P_b^A} 3\mu\left(1-g^B\right)dP + \tau_c^A M_c^A\left(\tau_c^A,\tau_c^B\right) \text{ and} \end{aligned} \tag{4}$$

$$\begin{aligned} W^{B^{nregwinsA}} &= \int_{P_b^B\left(\tau_b^C\right)}^{\frac{\alpha}{\beta}} C\left(P\right)dP + \int_{P_c^B(\tau_c^A,\tau_c^B)}^{\frac{\alpha}{\beta}} C\left(P\right)dP \\ &+ \int_0^{P_b^B\left(\tau_b^C\right)} \left[3\left(1-\mu\right)\left(1-g^B\right)-K^B\right]dP + \tau_c^B M_c^B\left(\tau_c^A,\tau_c^B\right). \end{aligned} \tag{5}$$

On the other hand, national welfare for C is still given by (1), as the war between A and B does not affect country C's endowment, nor does it disrupt C's bilateral trade with either of the adversaries.

Straightforward calculations yield the following Nash equilibrium tariffs:

$$\tau_c^{A^{nregwinsA}} = \frac{3}{7\beta} = \tau_c^{B^{nregwinsA}}, \tag{6}$$

$$\tau_a^{C^{nregwinsA}} = \frac{3\left(1-g^A\right)-K^A}{3\beta}, \text{ and} \tag{7}$$

$$\tau_b^{C^{nregwinsA}} = \frac{3\left(1-\mu\right)\left(1-g^B\right)-K^B}{3\beta}. \tag{8}$$

The welfare ramifications for the three countries of the third possible stage-1 outcome—war between countries A and B, in which country B prevails—are symmetrically analogous to the ones of the second possible stage-1 outcome—war between countries A and B, in which country A prevails—which we have just analyzed. The Nash equilibrium tariffs under the scenario that country B has won the war against country A in stage 1, then, equal:

$$\tau_c^{A^{nregwinsB}} = \frac{3}{7\beta} = \tau_c^{B^{nregwinsB}}, \tag{9}$$

$$\tau_a^{C^{nregwinsB}} = \frac{3\left(1-\mu\right)\left(1-g^A\right)-K^A}{3\beta}, \text{ and} \tag{10}$$

$$\tau_b^{C^{nregwinsB}} = \frac{3\left(1-g^B\right)-K^B}{3\beta}. \tag{11}$$

Last, we turn to stage 1, where countries A and B decide simultaneously on whether to wage war against each other, taking g^A and g^B as given. To do so, they compare their welfare under peace against their expected welfare under war. For example, country A compares $W^{A^{nregpeace}}$ against $\left(g^A/\left(g^A+g^B\right)\right)W^{A^{nregwinsA}} + \left(g^B/\left(g^A+g^B\right)\right)W^{A^{nregwinsB}}$. To solve the first stage of the game, we need to resort to numerical analysis.[4] As Figure 1 illustrates, war takes place if and only if countries' military expenditures (that is, g^A and g^B) are sufficiently asymmetric. Intuitively, war is optimal for a given country if (i) its probability of prevailing is sufficiently high; and (ii) the endowment it will appropriate in the event of victory is sufficiently large. If g^A and g^B are sufficiently asymmetric, both of the aforementioned conditions are satisfied for the country with the relatively high military expenditures, which has thereby an incentive to initiate war against the country with the relatively low level of arming.

[4]The numerical analysis was carried out using Mathematica. The file is available from the authors upon request.

4 Conflict in the Presence of an FTA

We next examine the implications of an FTA agreement for interstate conflict. Two scenarios are considered: (i) an FTA agreement between countries A and B, that is, an FTA agreement between the enemy countries; and (ii) an FTA agreement between countries A and C, that is, an FTA agreement between one of the enemy countries and the third country. In the former scenario, should countries A and B engage in military conflict, their FTA breaks down and there is no bilateral trade any longer between them.

4.1 An FTA between Countries A and B

We start by examining stage 2 and solving for the Nash equilibrium tariffs as a function of the stage-1 outcome. As before, we need to consider three possible stage-1 outcomes: (i) peace; (ii) war between countries A and B, in which country A prevails; and (iii) war between countries A and B, in which country B prevails. Let us start with peace. In such a case, the FTA between countries A and B is preserved, meaning that $\tau_b^A = \tau_a^B = 0$. Otherwise, the welfare for country $J \in \{A, B, C\}$ is still given by (1). It is direct to show that the Nash equilibrium tariffs then equal:

$$\tau_c^{A^{ftaABpeace}} = \frac{3}{7\beta} = \tau_c^{B^{ftaABpeace}}, \tag{12}$$

$$\tau_a^{C^{ftaABpeace}} = \frac{3\left(1-g^A\right)}{8\beta}, \text{ and} \tag{13}$$

$$\tau_b^{C^{ftaABpeace}} = \frac{3\left(1-g^B\right)}{8\beta}. \tag{14}$$

Two observations can be readily made. First, $\tau_c^{A^{ftaABpeace}} = \tau_c^{B^{ftaABpeace}} = \tau_c^{A^{nregpeace}} = \tau_c^{B^{nregpeace}} = (3/7\beta)$. Second, $\tau_a^{C^{ftaABpeace}} < \tau_a^{C^{nregpeace}}$ and $\tau_b^{C^{ftaABpeace}} < \tau_b^{C^{nregpeace}}$, reflecting the tariff-complementarity effect of FTA formation.[5] To gain some insight into these results, note that the reduction to zero of the tariffs of countries A and B on each other has a negative impact on their exports to country C, lowering the tariff-revenue gain for country C from

[5]The term "tariff complementarity" was first introduced by Bagwell and Staiger (1999). However, in their competing-exporters model, the tariff-complementarity effect of PTAs works to reduce the tariffs of member countries vis-à-vis non-member countries. By contrast, in our competing-importers framework, it works to lower the tariffs of non-member countries vis-à-vis member countries.

marginally raising τ_a^C or τ_b^C. Therefore, the removal of all trade barriers between A and B induces C to reduce its import tariffs on goods a and b. On the other hand, because of our assumption that the demand for any given good in any country does not depend on the other two goods' prices, the optimal tariff choices of countries A and B vis-à-vis country C are unaffected by their FTA agreement.

Under the other two possible stage-1 outcomes—war between countries A and B, in which either country A or country B prevails—the FTA breaks down and bilateral trade between A and B ceases. Thus, under the two different stage-1 war outcomes, the stage-2 subgames (and their tariff equilibria) are identical with the corresponding benchmark ones.

Finally, let us consider stage 1. To solve the first stage of the game, numerical analysis is required anew. As Figure 2 demonstrates, for sufficiently small g^B, the likelihood of country A waging war against country B decreases as a result of their FTA agreement, meaning that for such values of g^B, the FTA between countries A and B has a "peace-creation" effect on country A. Intuitively, the FTA agreement between countries A and B has no effect on A's expected welfare under war, whereas it does raise, for sufficiently small g^B, A's welfare under peace via (i) its tariff-complementarity effect, which acts to improve A's terms of trade vis-à-vis country C; and (ii) totally eliminating the inefficient Nash trade barriers between A and B.

However, as Figure 2 illustrates, for "extreme" values of g^B, the likelihood of A initiating war against B increases as a result of their FTA agreement. The intuition is slightly more involved in this case. In particular, as we argued above, the FTA between countries A and B leaves A's expected welfare under war unaffected. On the other hand, under peace, the FTA in question has (i) a positive effect on P_a^A, reducing consumer surplus in country A; but also (ii) a negative effect on P_b^A, raising the surplus of consumers in country A. For extreme values of g^B, country B's post-arming endowment of good b that is available for consumption globally is "small," substantially weakening the relative strength of the latter consumer-surplus effect. In fact, it turns out that for such values of g^B, the FTA agreement between A and B leads, under peace, to a decrease in A's overall welfare mainly via inflicting on it a consumer-surplus loss. In any case, as this scenario arises only for unrealistically high values of g^B, we choose to ignore it in our subsequent analysis.

Parallel results hold for country B. Hence, for the (empirically) relevant range of g^A and g^B, an FTA agreement between the enemy countries has a peace-creation effect on both of them, rendering the eruption of war less likely.

4.2 An FTA between Countries A and C

We now examine the impact of an FTA agreement between countries A and C on the likelihood that the enemy countries go to war. Given the FTA between A and C, we have, by definition, that $\tau_c^A = \tau_a^C = 0$. In order to derive the stage-2 Nash equilibrium tariffs, suppose first that the stage-1 outcome is peace. It can be readily shown that under this scenario, the Nash equilibrium tariffs equal:

$$\tau_b^{A^{ftaACpeace}} = \frac{3\left(1-g^B\right)}{7\beta} = \tau_b^{C^{ftaACpeace}}, \tag{15}$$

$$\tau_a^{B^{ftaACpeace}} = \frac{3\left(1-g^A\right)}{8\beta}, \text{ and} \tag{16}$$

$$\tau_c^{B^{ftaACpeace}} = \frac{3}{8\beta}. \tag{17}$$

Suppose next that war breaks out in stage 1, in which country A prevails. Straightforward calculations yield the following Nash tariffs:

$$\tau_c^{B^{ftaACwinsA}} = \frac{3}{8\beta} \text{ and} \tag{18}$$

$$\tau_b^{C^{ftaACwinsA}} = \frac{3\left(1-\mu\right)\left(1-g^B\right) - K^B}{3\beta}. \tag{19}$$

Alternatively, if country B wins the war, the tariffs that emerge in Nash equilibrium equal:

$$\tau_c^{B^{ftaACwinsB}} = \frac{3}{8\beta} \text{ and} \tag{20}$$

$$\tau_b^{C^{ftaACwinsB}} = \frac{3\left(1-g^B\right) - K^B}{3\beta}. \tag{21}$$

Note that $\tau_a^{B^{ftaACpeace}}$, $\tau_c^{B^{ftaACpeace}}$, $\tau_c^{B^{ftaACwinsA}}$, and $\tau_c^{B^{ftaACwinsB}}$ are strictly lower than, respectively, $\tau_a^{B^{nregpeace}}$, $\tau_c^{B^{nregpeace}}$, $\tau_c^{B^{nregwinsA}}$, and $\tau_c^{B^{nregwinsB}}$, which stems from the tariff-

complementarity effect of FTA formation.

Finally, we turn to stage 1. The results from our numerical analysis are depicted in Figure 2. As the figure illustrates, country A is more likely to initiate war against country B as a result of its FTA agreement with country C. Intuitively, there are two offsetting forces at work here. In particular, the FTA agreement between countries A and C increases A's welfare under peace via (i) eliminating the inefficient Nash trade barriers between A and C; and (ii) its tariff-complementarity effect, which works to improve A's terms of trade vis-à-vis country B. However, through the former channel, the FTA in question also raises A's expected welfare under war. Our numerical analysis does reveal that the pro-war force (that is, the latter one) dominates. To gain some insight into this, recall that under war, country A only trades with country C; thus, the removal of all trade barriers between A and C has a significantly larger (positive) welfare impact on A under war than under peace.

At the same time, as Figure 2 demonstrates, country B is more likely as well to wage war against country A as a result of the FTA agreement between A and C. The intuition underlying this finding is straightforward. Once again, there are two conflicting forces at play. On the one hand, the FTA between A and C lowers B's welfare under peace via its tariff-complementarity effect, which acts to worsen B's terms of trade vis-à-vis both FTA partners. On the other hand, via inducing the deterioration of B's terms of trade vis-à-vis country C, the FTA in question also decreases B's expected welfare under war. Clearly, the pro-war force (that is, the former one) is relatively stronger and hence, the FTA between countries A and C increases the likelihood of country B initiating war against its enemy. To sum up, an FTA agreement between one of the enemy countries and the third country produces a "peace-diversion" effect on both adversaries, rendering the eruption of war more likely.

5 Conflict in the Presence of a CU

We finally examine the ramifications of a CU agreement for interstate conflict. In the same spirit as above, we consider two alternative scenarios: (i) a CU agreement between countries A and B, that is, a CU agreement between the enemy countries; and (ii) a CU agreement between countries A and C, that is, a CU agreement between one of the enemy countries and

the third country. Note that in the former scenario, the CU between the enemy countries only survives under peace.

5.1 A CU between Countries A and B

Suppose first that the stage-1 outcome is peace. In such a case, the CU between the enemy countries is preserved, meaning that $\tau_b^A = \tau_a^B = 0$ and that countries A and B have a common external tariff vis-à-vis country C. Straightforward calculations reveal that in Nash equilibrium:

$$\tau_c^{A^{cuABpeace}} = \tau_c^{B^{cuABpeace}} = \frac{6}{5\beta}, \tag{22}$$

$$\tau_a^{C^{cuABpeace}} = \frac{3\left(1-g^A\right)}{8\beta}, \text{ and} \tag{23}$$

$$\tau_b^{C^{cuABpeace}} = \frac{3\left(1-g^B\right)}{8\beta}. \tag{24}$$

Observe that $\tau_c^{A^{cuABpeace}} = \tau_c^{B^{cuABpeace}} > \tau_c^{A^{nregpeace}} = \tau_c^{B^{nregpeace}}$, which is due to the market-power effect of CU formation. In particular, as the CU members harmonize their external tariff policies, the CU enjoys more market power (that is, a greater ability to affect world prices) than either of its members taken individually. This naturally results in countries A and B jointly implementing more restrictive import policies as compared with their unilateral policies in the absence of the CU. By contrast, $\tau_a^{C^{cuABpeace}} < \tau_a^{C^{nregpeace}}$ as well as $\tau_b^{C^{cuABpeace}} < \tau_b^{C^{nregpeace}}$, reflecting the tariff-complementarity effect of CU formation.

If instead war breaks out in stage 1—in which either country A or country B prevails—the CU, then, breaks down and bilateral trade between A and B is totally disrupted. Therefore, under the two different stage-1 war outcomes, the stage-2 subgames (and their tariff equilibria) are exactly the same as the corresponding benchmark ones.

Last, we look at stage 1. Figure 3 depicts the findings that emerge from our numerical analysis. As the figure shows, the likelihood that countries A and B wage war against each other decreases as a result of their CU agreement, that is, the CU agreement between A and B produces a peace-creation effect on both of the enemy countries. Intuitively, the CU between A and B has no effect on their expected welfare under war, but it does raise their welfare

under peace via (i) eliminating their inefficient Nash trade barriers against each other; and (ii) its market-power and tariff-complementarity effects, which work to improve A's and B's terms of trade vis-à-vis country C.

5.2 A CU between Countries A and C

We finally investigate the implications of a CU agreement between countries A and C for military conflict between the enemy countries. Given the CU between countries A and C, we have, by definition, that $\tau_c^A = \tau_a^C = 0$ and that countries A and C impose a common tariff on non-member country B (if they both trade with B). Under the scenario of peace in stage 1, the following tariffs arise in Nash equilibrium:

$$\tau_b^{AcuACpeace} = \frac{6\left(1-g^B\right)}{5\beta} = \tau_b^{CcuACpeace}, \tag{25}$$

$$\tau_a^{BcuACpeace} = \frac{3\left(1-g^A\right)}{8\beta}, \text{ and} \tag{26}$$

$$\tau_c^{BcuACpeace} = \frac{3}{8\beta}. \tag{27}$$

Consider next the second possible stage-1 outcome: war between countries A and B, in which country A prevails. It is straightforward to show that the Nash equilibrium tariffs, then, equal:

$$\tau_c^{BcuACwinsA} = \frac{3}{8\beta} \text{ and} \tag{28}$$

$$\tau_b^{CcuACwinsA} = \frac{3\left(1-\mu\right)\left(1-g^B\right) - K^B}{3\beta}. \tag{29}$$

If instead country B prevails in the war, the following tariffs emerge in Nash equilibrium:

$$\tau_c^{BcuACwinsB} = \frac{3}{8\beta} \text{ and} \tag{30}$$

$$\tau_b^{CcuACwinsB} = \frac{3\left(1-g^B\right) - K^B}{3\beta}. \tag{31}$$

Observe here that (i) $\tau_b^{AcuACpeace} = \tau_b^{CcuACpeace} > \tau_b^{AnregpeaceA} = \tau_b^{CnregpeaceA}$, reflecting the market-

power effect of CU establishment; and (ii) $\tau_a^{B^{cuACpeace}}$, $\tau_c^{B^{cuACpeace}}$, $\tau_c^{B^{cuACwinsA}}$, and $\tau_c^{B^{cuACwinsB}}$ are strictly lower than, respectively, $\tau_a^{B^{nregpeace}}$, $\tau_c^{B^{nregpeace}}$, $\tau_c^{B^{nregwinsA}}$, and $\tau_c^{B^{nregwinsB}}$, which stems from the tariff-complementarity effect of CU formation.

Last, let us turn to stage 1. The results from our numerical analysis are illustrated in Figure 3. As the figure demonstrates, country A is less likely to initiate war against country B as a result of its CU agreement with country C. The intuition underlying this finding is direct. Two conflicting forces are at work here. On the one hand, the CU between A and C raises A's welfare under peace via (i) totally eliminating the inefficient Nash trade barriers between A and C; and (ii) its market-power and tariff-complementarity effects, which act to improve A's terms of trade vis-à-vis country B. On the other hand, through the former channel, the CU in question also increases A's expected welfare under war. Clearly, the pro-peace force (that is, the former one) is relatively stronger and thereby, the CU between A and C decreases the likelihood of country A waging war against its enemy.

However, country B is more likely to start a war against country A as a result of the CU agreement between A and C, meaning that the overall effect of the CU on the likelihood that the enemy countries go to war is ambiguous. Intuitively, there are once again two offsetting forces at play. In particular, the CU between A and C lowers B's welfare under peace via its market-power and tariff-complementarity effects, which work to worsen B's terms of trade vis-à-vis both CU partners. At the same time, via inducing the deterioration of B's terms of trade vis-à-vis country C, the CU in question also has a negative impact on B's expected welfare under war, but clearly, the pro-war force (that is, the former one) dominates. In other words, a CU agreement between one of the adversaries and the third country produces a peace-diversion effect on the other adversary that is left out of the agreement.

6 Empirical Evidence

This section investigates empirically whether the peace-creation and peace-diversion effects of PTAs predicted by our theoretical model are in line with the historical data on interstate conflicts, international trade, and regionalism.

6.1 Data and Main Variables

The principal source of the data used in this paper is the COW project, which makes available a wide range of data sets related to armed conflicts and international relations over the last two centuries. Our dependent variable, MID_{ijt}, is the occurrence of an MID between two countries, and comes from the COW MID data set, version 3.02, that spans the period 1816–2001. Our analysis, however, uses only the years 1958–2000, primarily due to data restrictions regarding our main explanatory variables related to regionalism. To obtain robust estimates of war determinants, we follow the empirical literature on military conflicts and use a broad definition of war. In particular, we define MID_{ijt} to be equal to 1 (and 0 otherwise) when an MID occurs at date t between countries i and j involving the display of force, the use of force, or actual warfare, that is, when an MID of hostility level 3, 4, or 5, respectively, in the COW coding system takes place. In our robustness analysis, we experiment with a stricter definition of war by classifying as such only MIDs with a hostility level of (i) either 4 or 5; or (ii) solely 5.[6]

The key explanatory variables, capturing regionalism, are created using information available in de Sousa (2012). In particular, for each country pair at date t, an FTA as well as a CU dummy are constructed, FTA_{ijt} and CU_{ijt}, in order to investigate the impact of PTAs on the probability of conflict between member countries (that is, so as to assess their peace-creation effect). We also create two additional PTA-related variables, $PTFTA_{ijt}$ and $PTCU_{ijt}$, in order to explore the impact of PTAs on the probability of conflict between member and non-member countries (that is, so as to assess their peace-diversion effect). The variables $PTFTA_{ijt}$ and $PTCU_{ijt}$ reflect the percentage of trade of the country pair $(i,\ j)$ at date t with the rest of the world (ROW) that is covered by FTA and CU agreements, respectively. More specifically, $PTFTA_{ijt}$ is computed as follows:

$$PTFTA_{ijt} = \frac{\text{FTA trade of } i \text{ with ROW at } t + \text{FTA trade of } j \text{ with ROW at } t}{\text{Total trade of } i \text{ with ROW at } t + \text{Total trade of } j \text{ with ROW at } t}, \qquad (32)$$

where the ROW is all countries except i and j, and the trade data comes from the COW

[6] For more information on this data, see Jones et al. (1996), Faten et al. (2004), and the COW website (http://www.correlatesofwar.org/).

Bilateral Trade data set, version 2.01.[7] It is important to stress that the numerator does not include the bilateral trade of countries i and j with third countries that have simultaneously FTA agreements with both of the former. This is done so that our econometric analysis follows closely our theoretical model. Of course, we adjust the denominator of (32) accordingly. $PTCU_{ijt}$ is computed in an analogous way.

Moreover, to enhance comparability with the existing literature, we exploit the data set assembled by Martin et al. (2008), which includes a long list of potential common determinants of both regionalism and conflict.[8] These variables can be broadly divided into two sets: gravity (or trade) variables and political ones. The former set includes variables such as bilateral weighted distance, or dummies controlling for contiguity, colonial links, and the sharing of a common language between countries i and j. The latter set includes variables controlling for the size of the two countries, their political regime, and the diplomatic affinity between them.

Our sample contains 260,781 annual country-pair ("dyadic") observations over the period 1958–2000. Out of these, only 1,321 (that is, 0.51%) are engaged in military conflict according to our definition. Table 1 presents descriptive statistics for the main variables used in our regressions. As is evident from the table, when the sample is restricted in our preferred regression specification (column 4 of Table 2) due to data availability, the overall MID frequency as well as the descriptive statistics for the PTA-related variables all remain similar.

6.2 Empirical Strategy

The occurrence of an MID between two countries, i and j, at time t is a binary event, and its probability is estimated using a logit model. The empirical specification adopted follows largely the literature and is given by:

$$\Pr\{MID_{ijt}=1\} = \Lambda\left(\beta_0 + \beta_1 FTA_{ijt} + \beta_2 CU_{ijt} + \beta_3 PTFTA_{ijt} + \beta_4 PTCU_{ijt} + \boldsymbol{\gamma}\mathbf{Z}_{ijt}\right), \tag{33}$$

where the dependent variable—MID_{ijt}—and the PTA-related explanatory variables—FTA_{ijt}, CU_{ijt}, $PTFTA_{ijt}$, $PTCU_{ijt}$—are as defined above, $\mathbf{Z}_{ijt}$ is a vector of gravity and political

[7] For more information on the trade data, see Barbieri et al. (2008, 2009).

[8] The data is available on Mayer's webpage (http://econ.sciences-po.fr/thierry-mayer).

controls, and $\Lambda(\cdot)$ is the logistic cumulative distribution function. This empirical specification enables us to test the main predictions derived from our theoretical model, which can be stated in terms of equation (33) as follows:

Testable Prediction 1: The existence of an FTA or a CU between countries i and j decreases the probability of conflict between them (*peace creation*). We therefore expect that $\beta_1, \beta_2 < 0$.

Testable Prediction 2: The higher the percentage of trade of the country pair (i, j) with the ROW that is covered by FTA agreements, the higher the probability of conflict between the two countries (*peace diversion*). We then expect that $\beta_3 > 0$.

Sign of β_4: As the percentage of trade of the country pair (i, j) with the ROW that is covered by CU agreements rises, the probability of conflict between the two countries could potentially increase or decrease. Thus, our theory offers no prediction for the sign of β_4. However, a positive sign of β_4 will be regarded as evidence of a strong peace-diversion effect of CU formation.

An obvious econometric issue that emerges when estimating equation (33) is the likely endogeneity of the FTA and the CU dummies. A negative correlation between these two variables and the probability of interstate conflict could arise with causality running in both directions. In order to address this endogeneity issue, we estimate equation (33) in three different ways. First, we include a large number of potential common determinants of both regionalism and conflict. Second, we take advantage of the panel dimension of our data set and control for country-pair fixed effects. Thereby, we control for time-invariant historical, cultural, and/or other factors that could be affecting regionalism as well as the probability of interstate conflict, and for which we have no observable variables to account for in our regressions. Third, to control for unobserved, but time-varying common determinants of regionalism and conflict, we employ an IV strategy.

6.3 Results

Table 2 presents the pooled logit estimations in the first four columns and the fixed-effects estimations in columns 5 and 6. These estimations are along similar lines as those appearing in Table 3 in Martin et al. (2008). In all regressions, we control for the number of peaceful

years since the last MID between the country pair (i, j), which is standard in the political science literature. Moreover, all regressions, except those in which we control for country-pair fixed effects, include a contiguity dummy and the weighted distance between the two countries as these are natural determinants of interstate conflict as well as of regionalism.

In the first two regressions, the sample is substantially restricted to only contiguous pairs (model 1), and contiguous pairs with a bilateral weighted distance of less than 1,000 km (model 2). These are the country pairs which we expect to be the most prone to engaging in military conflict. In these regressions, in which we do not include any additional controls, the PTA-related explanatory variables are not statistically significant.

Regression 3 uses the full sample of country pairs and includes a dummy variable for zero trade between the country pair, accounting for the existence (or not) of an economic relationship between the two countries.[9] In this regression, we find evidence of both peace creation, as indicated by the negative sign of the coefficients on the FTA and the CU dummies, and peace diversion, as indicated by the positive sign of the coefficient on $PTCU_{ijt}$.

In regression 4, we introduce a broad set of gravity and political controls that are potential common determinants of both interstate conflict and regionalism. Regarding the gravity controls, we include dummies indicating whether countries i and j share a common language, whether one of the countries has ever been a colony of the other, and whether the two countries have had a common colonizer after 1945. These variables have been shown empirically to affect trade flows between countries (for example, Rose, 2004), and hence, they might also affect a country pair's incentives to sign a PTA with each other. At the same time, two countries speaking the same language or having colonial links tend to share cultural, historical, and/or institutional traits that might affect the probability of them engaging in military conflict against each other. We further control for the number of General Agreement on Tariffs and Trade/World Trade Organization (GATT/WTO) members in the country pair. This variable is related to the economic ties between the two countries and might, therefore, affect both the probability of them waging war against each other and the likelihood of them establishing an FTA or a CU. In addition, regression 4 controls for time effects. More particularly, we

[9] Following Martin et al. (2008), the zero-trade dummy is lagged by 4 years to address the issue of contemporaneous reverse causality.

include year dummies to control for any global factors that might be affecting the probability of interstate conflict as well as the evolution of regionalism over time. Furthermore, we include 10 dyadic past-war dummies, indicating whether the country pair was at war at date $t-1$, $t-2$,..., $t-10$, so as to control for temporal autocorrelation of the dependent variable. This set of dyadic past-war dummies along with the year dummies are included in all the regressions henceforth.

The political variables included in regression 4 control for the size of the countries in the pair, their political regime, the diplomatic affinity between them, and the cross-sectional serial correlation of wars. More specifically, we control for the size of the two countries by including the sum of (the log of) their areas. We include this control because larger countries might be more susceptible to foreign attack as (i) they might be more difficult to defend; and (ii) they are more likely to include substantial minorities or to be rich in natural resources. Larger countries also tend to depend less on international trade, which might have an impact on their incentives to pursue PTAs. Moreover, we control for political regime by including the sum of the two countries' democracy indexes, where the democracy index ranges from -10 for a full autocracy to $+10$ for a full democracy. According to the "democratic peace hypothesis," democracies rarely fight one another (see, for instance, Oneal and Russett, 1997; Levy and Razin, 2004). At the same time, there is some evidence that democracy promotes trade cooperation among countries in the form of signing PTAs (Mansfield et al., 2002). We additionally control for diplomatic affinity between the country pair by introducing the following two variables: (i) a dummy variable for common membership of an international military alliance; and (ii) the correlation between the two countries' voting on resolutions in the General Assembly of the United Nations (UN) (lagged by 4 years). Finally, we include two controls for the cross-sectional serial correlation of wars: (i) the distance to the nearest ongoing war at time t not involving either country from the pair; and (ii) the total number of MIDs (excluding their potential bilateral MID) in which the countries of the pair are involved at date t. Even with the inclusion of this long list of gravity and political controls, regression 4 still provides evidence of peace creation with regard to FTA formation, as well as of peace diversion in relation to CU establishment.

In columns 5–6, we add country-pair fixed effects and replicate specification 4. Column

5 shows the results of the fixed-effects logit estimation, in which case we lose a substantial number of observations, since only those pairs of countries that engaged in an MID over the sample period can be retained. We then perform a standard fixed-effects linear probability estimation. In this case, the whole sample can be used, and the estimation results appear in column 6. The results of regression 5 are largely supportive of and consistent with our theoretical predictions, while in regression 6, only the FTA dummy is statistically significant (albeit at only the 10% level). At this point, it is important to note that since in our empirical analysis we pool together data on a very large number of country pairs over a long time period, the error process is likely to be serially correlated for a given country pair. To deal with this possibility, the robust standard errors are clustered at the dyad level in all regressions.

Last, we focus on regression 4, which is our preferred one, and carry out numerous robustness checks. We first control, in line with Martin et al. (2008), for bilateral and multilateral trade openness using, respectively, the simple arithmetic average of bilateral import flows over GDP, and the simple arithmetic average of total imports of countries i and j, excluding their bilateral imports, over their GDP (both lagged by 4 years). Our results still provide evidence of peace creation in relation to FTA establishment, and peace diversion with respect to CU formation.

In the rest of our robustness regressions, we primarily control for additional potential common determinants of regionalism and interstate conflict. For example, in one regression, we add a dummy controlling for the existence of a communist regime in the dyad, as communist countries have historically been relatively absent from the regionalism scene. We additionally include a dummy indicating whether one of the two countries is a "major power," where the major powers are defined as the five permanent members of the UN Security Council (that is, China, France, Russia, United Kingdom, and United States). We obtain qualitatively similar results to those in column 4. In a different regression, we add a dummy indicating whether one of the two countries is an oil-exporting country—according to the definition of the International Monetary Fund in its *Direction of Trade Statistics* database—as possessing substantial oil resources might affect both a country's incentives to pursue PTAs and its propensity of engaging in MIDs (since it might be frequently attacked over these resources). Following Martin et al. (2008), we also include interaction dummies between the oil-exporter

dummy and the different decades within our sample period so as to control for changes in the price of oil. The results are robust. In another regression, we control for the level of GDP per capita within the country pair and the difference in per capita GDP between the two countries; we include as well the square of this difference to capture a potential non-linearity in the relationship in question. Our results are again robust. Furthermore, controlling, in yet another regression, for the level of military expenditures within the dyad and the difference in military spending between the two countries does not affect qualitatively the results. We perform many additional robustness checks—for instance, we experiment with a stricter definition of war. Overall, our results remain supportive of our theoretical predictions of peace creation and peace diversion.[10] Nevertheless, unobserved, omitted variables could still bias the results. To deal with this issue, we implement next an IV strategy.

6.4 Instrumental Variables

Since there are two potentially endogenous variables, FTA_{ijt} and CU_{ijt}, the objective is to find two instruments that are strongly correlated with the PTA dummies, but which are not directly correlated with the probability of interstate conflict. To this end, the number of FTA and CU agreements in force at date $t-5$ between countries i and j and the ROW are used separately as IVs for the existence of, respectively, an FTA and a CU agreement between the country pair $(i,\ j)$ at date t. Our choice of instruments is driven by the domino theory of regionalism, which argues that the signing or the deepening of a PTA can induce excluded nations to apply for membership or if accession to the PTA in question is not feasible, to pursue PTAs among themselves (Baldwin, 1997). Egger and Larch (2008) as well as Baldwin and Jaimovich (2012) provide strong empirical support for this theory, which suggests that the number of FTA (CU) agreements already signed by countries i and j with third countries could serve as a strong instrument for the existence of an FTA (a CU) agreement between the two countries at time t. Given also the inclusion of $PTFTA_{ijt}$ and $PTCU_{ijt}$ in our regressions, there is no reason to believe that these instruments are directly correlated with the probability of interstate conflict. Our IV strategy clearly echoes Vicard (2012), who

[10] The variables used in our robustness analysis come from the data set of Martin et al. (2008). Moreover, the complete robustness results are available from the authors upon request.

instruments the existence of a deep or a shallow PTA between a country pair at time t with the number of, respectively, deep or shallow PTAs in effect in $t-5$ between the two countries and the ROW.

Using an IV methodology is not straightforward in the case of a binary-choice model along with binary endogenous variables as here. We therefore use instead a pooled linear probability model. Table 3 presents the second-stage results of our instrumented regressions. These regressions are performed on the same sample and use the same control variables as regression 4 in Table 2. Column 1 reports the results of our benchmark IV regression. The results provide evidence of both peace creation and peace diversion in relation to FTA as well as CU establishment. Moreover, all four of the PTA-related explanatory variables are statistically significant at either the 1% or the 5% level. In column 2, we experiment with a different lag with respect to our IVs. More specifically, we use as instruments: (i) the number of FTA agreements in force at date $t-4$ between countries i and j and the ROW; and (ii) the number of CU agreements in effect at time $t-4$ between the two countries and the ROW. The results remain very similar to those in column 1, with the exception of the CU dummy that is now significant at only the 10% level. In column 3, we "compact" the FTA and the CU dummy variables into one single PTA dummy, which is expected, according to our theoretical model, to have a negative impact on the probability of an MID between the country pair $(i,\ j)$.[11] The results are again supportive of our theoretical predictions. In fact, in this case, we can also perform a Sargan (1958) test for overidentification, since we now have two instruments for only one endogenous explanatory variable. The test statistic is 0.49 and the corresponding p-value is 0.48, indicating that the joint null hypothesis of instrument exogeneity cannot be rejected. At the same time, in all three cases, we confirm that our instruments are not weak as both the Cragg-Donald (1993) and the Kleibergen-Paap (2006) Wald F statistics well exceed the critical values tabulated by Stock and Yogo (2005).

Finally, we perform numerous robustness checks on our benchmark IV regression. We initially control for bilateral and multilateral trade openness. We still find evidence of peace creation as well as of peace diversion in relation to both FTA and CU formation. Furthermore, all four of the PTA-related variables continue to be significant at either the 1% or the 5%

[11] In regression 3, we use the same instruments as in our benchmark IV regression.

level. In the same manner as above, we then control—among other things—for major powers and communist regimes, for oil-exporting countries, for GDP per capita, and for military expenditures. In all cases, our results remain supportive of our theoretical predictions of peace creation and peace diversion. Remarkably, our $PTFTA_{ijt}$ variable is significant at the 1% level (and with the right sign) across our robustness regressions.[12]

7 Conclusions

In this paper, we have investigated the implications of FTA and CU agreements for interstate conflict. We have presented a two-stage game with three competing importers, in the first stage of which, two of the countries—the "enemies"—decide on whether to initiate war against each other. In the second stage of the game, all three countries select their import tariffs so as to maximize national welfare. We have solved this dynamic game under the scenario of no regionalism and under four different PTA scenarios, involving an FTA or a CU agreement either between the two enemies or between one of the enemies and the third country.

Our findings demonstrate that PTAs produce both a "peace-creation" and a "peace-diversion" effect. In particular, a PTA between the enemy countries, in the form of either an FTA or a CU agreement, decreases, in general, the likelihood that they wage war against each other. The reason is that such a PTA increases the enemies' welfare under peace (and thereby, the opportunity cost of war) via the elimination of the inefficient Nash trade barriers between them and the improvement of their terms of trade vis-à-vis the third country. In other words, PTAs exert a peace-creation effect on their member countries, which is in line with the vision of the EU's founding fathers and with the actual experience with the European integration process.

However, just as with the trade-creation and trade-diversion effects of PTAs, peace creation goes hand in hand with peace diversion. More specifically, in the case of a CU agreement between one of the adversaries and the third country, the other adversary that is not part of the CU is more likely to start a war in comparison with the no-regionalism scenario, as the CU in question lowers, via its terms-of-trade ramifications, the country's welfare under peace

[12] These robustness regressions are also available from the authors upon request.

relative to its expected welfare under war. Moreover, in the case of an FTA agreement between one of the enemy countries and the third country, both enemies are more likely to initiate war against each other relative to the benchmark scenario of no regionalism. Put differently, our results establish that CU agreements produce a peace-diversion effect on non-member countries, whereas FTA agreements exert such an effect on member as well as on non-member countries. Our empirical analysis validates these predictions, as it provides robust evidence of both peace creation and peace diversion in relation to FTA as well as CU formation. To our knowledge, this is the first paper to identify and explicitly model the peace-diversion effect of PTAs. In addition, this is the only paper in this literature to endogenize countries' terms of trade, proposing a novel mechanism through which regionalism can affect interstate conflict.

References

[1] Bagwell, Kyle, and Robert W. Staiger (1999). "Regionalism and Multilateral Tariff Cooperation." In *International Trade Policy and the Pacific Rim*, edited by John Piggott and Alan Woodland. Palgrave Macmillan.

[2] Baldwin, Richard E. (1997). "The Causes of Regionalism." *The World Economy*, 20, 865–888.

[3] Baldwin, Richard, and Dany Jaimovich (2012). "Are Free Trade Agreements Contagious?" *Journal of International Economics*, 88, 1–16.

[4] Barbieri, Katherine (1996). "Economic Interdependence: A Path to Peace or a Source of Interstate Conflict?" *Journal of Peace Research*, 33, 29–49.

[5] Barbieri, Katherine, Omar M.G. Keshk, and Brian M. Pollins (2008). "Correlates of War Project Trade Data Set Codebook, Version 2.01," available online at http://www.correlatesofwar.org/.

[6] Barbieri, Katherine, Omar M.G. Keshk, and Brian M. Pollins (2009). "Trading Data: Evaluating Our Assumptions and Coding Rules." *Conflict Management and Peace Science*, 26, 471–491.

[7] Cragg, John G., and Stephen G. Donald (1993). "Testing Identifiability and Specification in Instrumental Variable Models." *Econometric Theory*, 9, 222–240.

[8] de Sousa, José (2012). "The Currency Union Effect on Trade Is Decreasing over Time." *Economics Letters*, 117, 917–920.

[9] Egger, Peter, and Mario Larch (2008). "Interdependent Preferential Trade Agreement Memberships: An Empirical Analysis." *Journal of International Economics*, 76, 384–399.

[10] Faten, Ghosn, Glenn Palmer, and Stuart A. Bremer (2004). "The MID3 Data Set, 1993–2001: Procedures, Coding Rules, and Description." *Conflict Management and Peace Science,* 21, 133–154.

[11] Garfinkel, Michelle R., Stergios Skaperdas, and Constantinos Syropoulos (2009). "Globalization and Insecurity: Reviewing Some Basic Issues." In *Guns and Butter: The Economic Causes and Consequences of Conflict*, edited by Gregory D. Hess. MIT Press.

[12] Garfinkel, Michelle R., Stergios Skaperdas, and Constantinos Syropoulos (2012). "Trade in the Shadow of Power." In *The Oxford Handbook of the Economics of Peace and Conflict*, edited by Michelle R. Garfinkel and Stergios Skaperdas. Oxford University Press.

[13] Jones, Daniel M., Stuart A. Bremer, and J. David Singer (1996). "Militarized Interstate Disputes, 1816–1992: Rationale, Coding Rules, and Empirical Patterns." *Conflict Management and Peace Science*, 15, 163–212.

[14] Kim, Hyung Min, and David L. Rousseau (2005). "The Classical Liberals Were Half Right (or Half Wrong): New Tests of the 'Liberal Peace', 1960–88." *Journal of Peace Research*, 42, 523–543.

[15] Kleibergen, Frank, and Richard Paap (2006). "Generalized Reduced Rank Tests Using the Singular Value Decomposition." *Journal of Econometrics*, 133, 97–126.

[16] Levy, Gilat, and Ronny Razin (2004). "It Takes Two: An Explanation of the Democratic Peace." *Journal of the European Economic Association*, 2, 1–29.

[17] Mansfield, Edward D., Helen V. Milner, and B. Peter Rosendorff (2002). "Why Democracies Cooperate More: Electoral Control and International Trade Agreements." *International Organization*, 56, 477–513.

[18] Mansfield, Edward D., and Jon C. Pevehouse (2000). "Trade Blocs, Trade Flows, and International Conflict." *International Organization*, 54, 775–808.

[19] Mansfield, Edward D., Jon C. Pevehouse, and David H. Bearce (1999). "Preferential Trading Arrangements and Military Disputes." *Security Studies*, 9, 92–118.

[20] Martin, Philippe, Thierry Mayer, and Mathias Thoenig (2008). "Make Trade Not War?" *Review of Economic Studies*, 75, 865–900.

[21] Martin, Philippe, Thierry Mayer, and Mathias Thoenig (2012). "The Geography of Conflicts and Regional Trade Agreements." *American Economic Journal: Macroeconomics*, 4, 1–35.

[22] Oneal, John R., and Bruce M. Russett (1997). "The Classical Liberals Were Right: Democracy, Interdependence, and Conflict, 1950–1985." *International Studies Quarterly*, 41, 267–294.

[23] Oneal, John R., and Bruce Russett (1999). "Assessing the Liberal Peace with Alternative Specifications: Trade Still Reduces Conflict." *Journal of Peace Research*, 36, 423–442.

[24] Polachek, Solomon W. (1980). "Conflict and Trade." *Journal of Conflict Resolution*, 24, 55–78.

[25] Rose, Andrew K. (2004). "Do We Really Know That the WTO Increases Trade?" *American Economic Review*, 94, 98–114.

[26] Sargan, John D. (1958). "The Estimation of Economic Relationships Using Instrumental Variables." *Econometrica*, 26, 393–415.

[27] Schiff, Maurice, and L. Alan Winters (1998). "Regional Integration as Diplomacy." *The World Bank Economic Review*, 12, 271–295.

[28] Skaperdas, Stergios, and Constantinos Syropoulos (2001). "Guns, Butter, and Openness: On the Relationship between Security and Trade." *American Economic Review, Papers and Proceedings*, 91, 353–357.

[29] Stock, James H., and Motohiro Yogo (2005). "Testing for Weak Instruments in Linear IV Regression." In *Identification and Inference for Econometric Models: Essays in Honor of Thomas Rothenberg*, edited by Donald W.K. Andrews and James H. Stock. Cambridge University Press.

[30] Vicard, Vincent (2012). "Trade, Conflict, and Political Integration: Explaining the Heterogeneity of Regional Trade Agreements." *European Economic Review*, 56, 54–71.

[31] Viner, Jacob (1950). *The Customs Union Issue*. Carnegie Endowment for International Peace.

Table 1: Descriptive Statistics (1958–2000)

Variable	Full Sample		Restricted	
	Frequency	%	Frequency	%
MID	1,321	0.51	677	0.54
FTA	3,525	1.35	1,867	1.48
CU	4,422	1.70	2,270	2.15
	Mean	s.d.	Mean	s.d.
PTFTA	0.087	0.175	0.090	0.170
PTCU	0.089	0.191	0.110	0.210
Observations	260,781		126,295	

Notes: Descriptive statistics (frequency, percentage, mean, standard deviation) of the main variables for the full sample, and for the sample conditioning on the explanatory variables in column 4 of Table 2.

Table 2: Impact of PTAs on Military Conflict

	Dependent Variable: MID					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
FTA(d)	-0.721	-0.875	-2.255 ***	-1.738 **	-2.680 **	-0.040 *
	(0.4400)	(0.5940)	(0.6780)	(0.6880)	(1.2380)	(0.0213)
CU(d)	-0.371	-0.395	-0.462 *	-0.017	0.472	-0.024
	(0.2390)	(0.2630)	(0.2380)	(0.2250)	(0.3730)	(0.0203)
PTFTA	-1.272	-0.376	-0.050	-0.642	-0.030	0.001
	(1.1720)	(1.4220)	(0.4560)	(0.5650)	(0.8310)	(0.0175)
PTCU	0.528	-0.635	1.141 ***	0.771 **	1.640 *	-0.007
	(0.9170)	(1.1840)	(0.3280)	(0.3010)	(0.8610)	(0.0212)
# peaceful years	-0.065 ***	-0.057 ***	-0.075 ***	-0.020 ***	0.020 ***	0.006 ***
	(0.0121)	(0.0153)	(0.0076)	(0.0029)	(0.0031)	(0.0003)
ln distance	-0.083	0.218	-0.394 ***	-0.855 ***		
	(0.1240)	(0.2350)	(0.0942)	(0.1050)		
Contiguity(d)			1.124 ***	1.013 ***		
			(0.2310)	(0.2290)		
Zero trade(t-4)(d)			-0.503 ***	-0.482 **	0.096	-0.001
			(0.1740)	(0.1970)	(0.2280)	(0.0065)
UN vote correlation(t-4)				-0.882 ***	-0.585 *	-0.043 ***
				(0.2130)	(0.3340)	(0.0125)
Sum of democracy indexes				0.087	-0.146	0.008
				(0.1330)	(0.2540)	(0.0074)
# other wars in t				0.239 ***	0.256 ***	0.064 ***
				(0.0123)	(0.0161)	(0.0009)
ln distance to nearest war in t				0.053	-0.091	-0.008 *
				(0.0971)	(0.1330)	(0.0043)
Sum ln areas				0.153 ***		
				(0.0301)		
Alliance active in t(d)				0.139	0.287	0.002
				(0.1570)	(0.3350)	(0.0194)
Common language(d)				0.420 ***		
				(0.1610)		
Colonial relationship(d)				0.157		
				(0.2600)		
Common colonizer(d)				0.060		
				(0.2160)		
# GATT/WTO members in dyad				0.020 **	-0.279	0.002 *
				(0.1160)	(0.2610)	(0.0065)

Table 2 (continued): Impact of PTAs on Military Conflict

	Dependent Variable: MID					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
N	6,504	3,665	126,295	126,295	5,747	126,295
Pseudo R^2	0.163	0.172	0.325	0.560	0.368	
R^2						0.148
Sample	Contiguous pairs	Contiguous pairs and <1,000km	Full	Full	Full	Full
Time dummies	No	No	No	Yes	Yes	Yes
Dyadic war lags	No	No	No	Yes	Yes	Yes
Estimation	Logit	Logit	Logit	Logit	FE Logit	FE LPM

Notes: Standard errors clustered by country pair are reported in parentheses with ***, **, and *, respectively, denoting significance at the 1%, 5%, and 10% levels. Time dummies and lagged MIDs (10 years) are not reported. Column 1: contiguous country pairs only. Column 2: proximate countries only. Column 3: full sample with limited set of controls. Column 4: full sample with full set of controls. Column 5: full sample with country-pair fixed effects logit model. Column 6: full sample with country-pair fixed effects linear probability model (LPM). MID = militarized interstate dispute.

Table 3: Instrumental-Variables Regressions: Pooled LPM

	Dependent Variable: MID		
	Model 1	**Model 2**	**Model 3**
FTA(d)	-0.152 ***	-0.146 ***	
	(0.0573)	(0.0503)	
CU(d)	-0.093 **	-0.077 *	
	(0.0454)	(0.0404)	
RTA(d)			-0.110 ***
			(0.0312)
PTFTA	0.038 ***	0.039 ***	0.035 ***
	(0.0104)	(0.0099)	(0.0095)
PTCU	0.026 **	0.027 **	0.022 **
	(0.0115)	(0.0108)	(0.0100)
# peaceful years	0.000	0.000	0.000
	(0.0001)	(0.0001)	(0.0001)
ln distance	-0.021 ***	-0.020 ***	-0.020 ***
	(0.0050)	(0.0047)	(0.0051)
Contiguity(d)	0.283 ***	0.283 ***	0.284 ***
	(0.0383)	(0.0384)	(0.0384)
Zero trade(t-4)(d)	0.006 *	0.006 *	0.005
	(0.0034)	(0.0034)	(0.0034)
UN vote correlation(t-4)	0.058 ***	0.057 ***	0.056 ***
	(0.0114)	(0.0113)	(0.0114)
Sum of democracy indexes	0.006	0.006	0.005
	(0.0057)	(0.0055)	(0.0057)
# other wars in t	0.049 ***	0.049 ***	0.049 ***
	(0.0046)	(0.0046)	(0.0046)
ln distance to nearest war in t	0.003	0.003	0.002
	(0.0030)	(0.0029)	(0.0029)
Sum ln areas	-0.005 ***	-0.005 ***	-0.005 ***
	(0.0010)	(0.0009)	(0.0010)
Alliance active in t(d)	-0.011	-0.012	-0.009
	(0.0111)	(0.0110)	(0.0105)
Common language(d)	0.019 **	0.020 ***	0.019 **
	(0.0077)	(0.0076)	(0.0077)
Colonial relationship(d)	-0.001	-0.001	-0.001
	(0.0304)	(0.0303)	(0.0302)
Common colonizer(d)	-0.015	-0.015	-0.014
	(0.0100)	(0.0100)	(0.0098)
# GATT/WTO members in dyad	0.010 **	0.009 **	0.010 **
	(0.0040)	(0.0040)	(0.0039)

Table 3 (continued): Instrumental-Variables Regressions: Pooled LPM

	Dependent Variable: MID		
	Model 1	**Model 2**	**Model 3**
N	126,295	126,295	126,295
R^2	0.287	0.287	0.287
Time dummies	Yes	Yes	Yes
Dyadic war lags	Yes	Yes	Yes
Estimation	IV Pooled LPM	IV Pooled LPM	IV Pooled LPM
Identification Tests			
WID (Kleibergen-Paap Wald F statistic)	49.11	57.32	184.94
WID (Cragg-Donald Wald F statistic)	2,426.35	3,162.77	7,891.73
OID (Sargan test)			0.490
p-value (OID)			0.4838

Notes: Standard errors clustered by country pair are reported in parentheses with ***, **, and *, respectively, denoting significance at the 1%, 5%, and 10% levels. All columns show second-stage IV estimates. All regressions include time dummies and lagged MIDs (10 years) which are not reported. The instruments used in model 1 are: (i) the number of FTA agreements in force at time t-5 between the two countries in the dyad and the ROW; and (ii) the number of CU agreements in effect at time t-5 between the two countries in the dyad and the ROW. In model 2, we use a four-year lag for the instruments employed in model 1. In model 3, we use the same instruments as in model 1. WID are weak identification tests. These tests confirm that the instruments used are not weak since both the Cragg-Donald and the Kleibergen-Paap Wald F statistics well exceed the critical values tabulated by Stock and Yogo (2005). The Sargan overidentification test, OID, indicates that the instruments used are valid.

Figure 1: No Regionalism

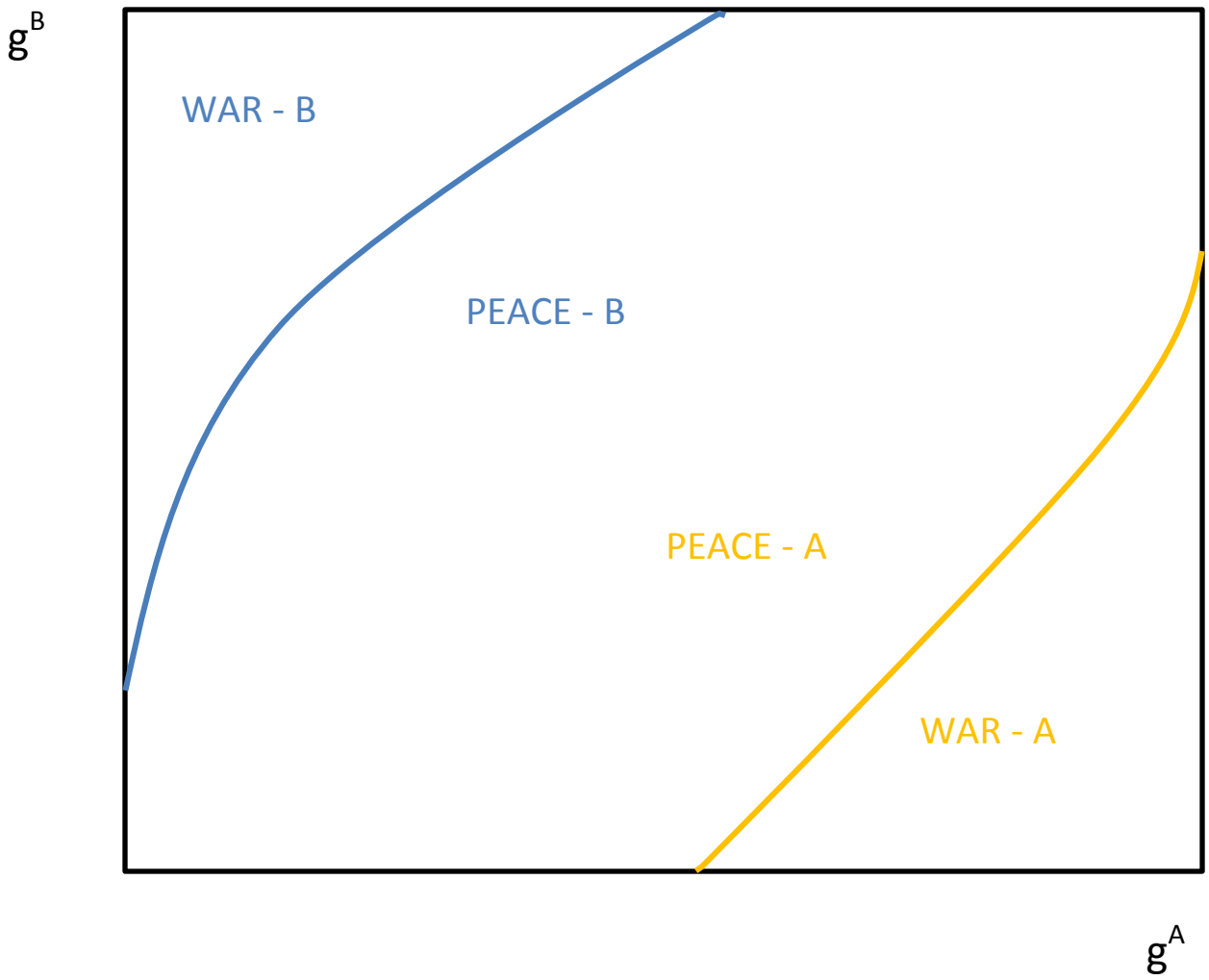


Figure 2: FTAs

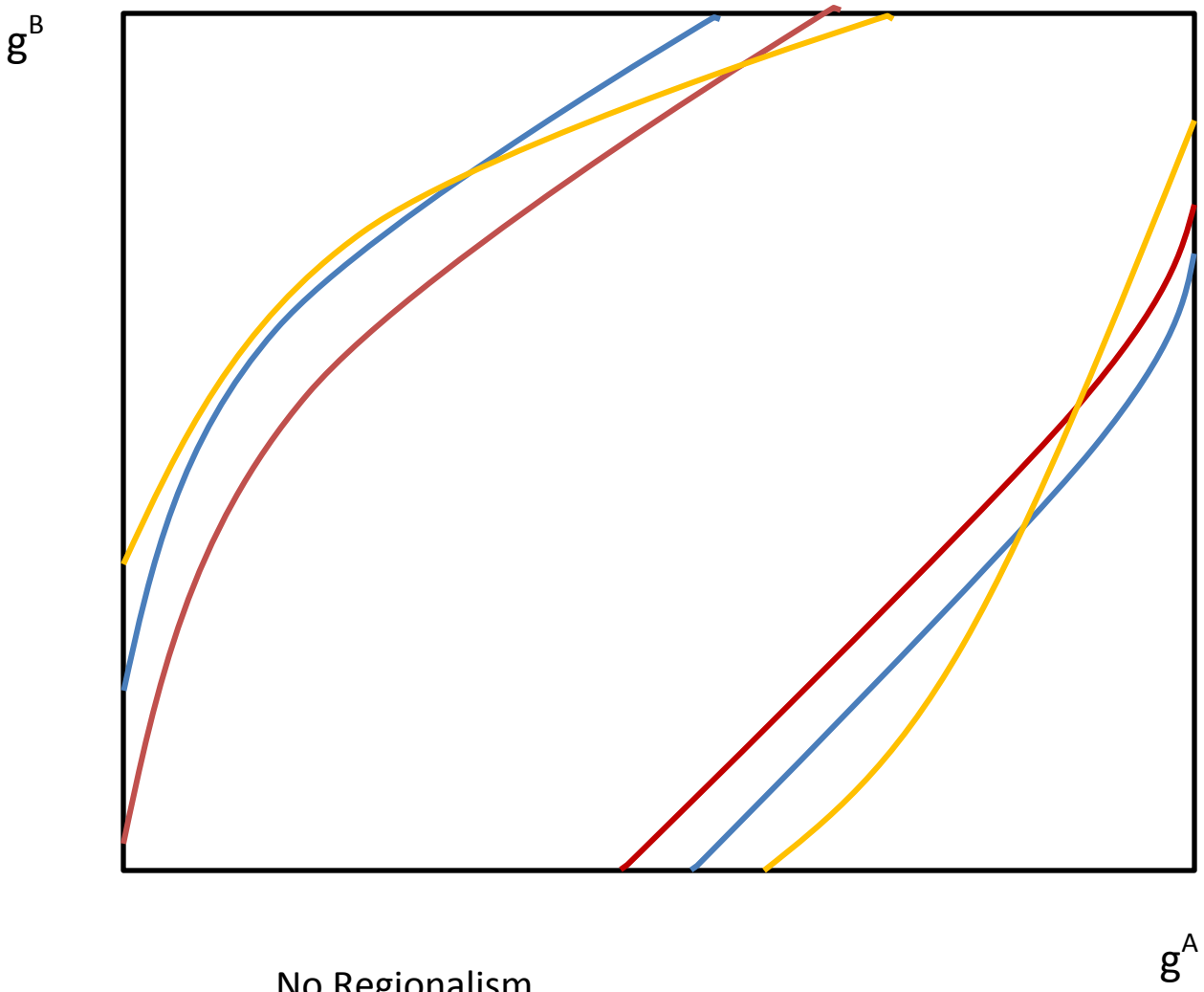
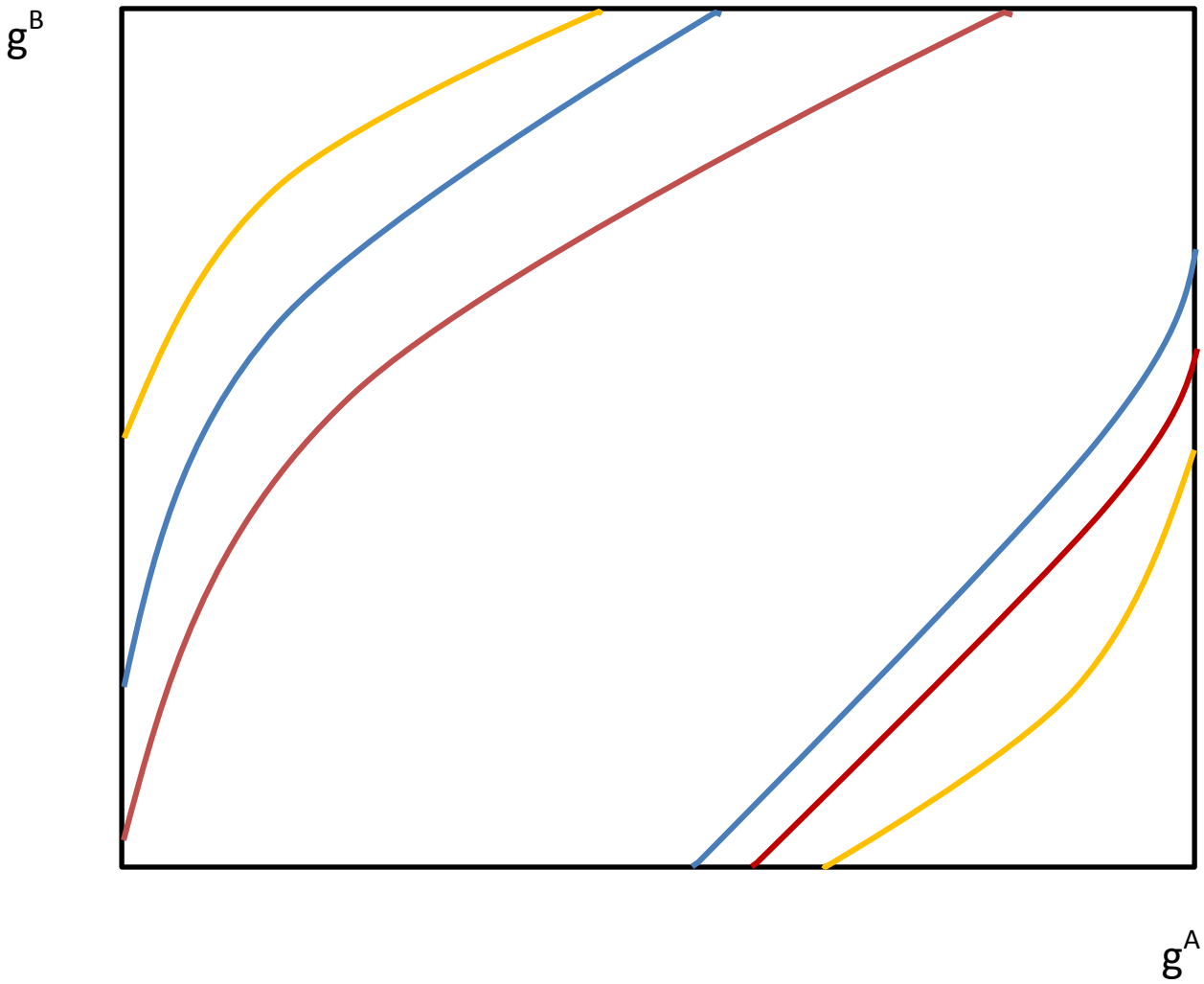


Figure 3: CUs



Working Paper Series

Category	*Serial #*	*Author*	*Title*
Working Paper	99-01	Se-Il Park	Labor Market Policy and The Social Safety Net in Korea: After 1997 Crisis
Working Paper	99-02	Sang-Woo Nam	Korea's Economic Crisis and Corporate Governance
Working Paper	99-03	Sangmoon Hahm	Monetary Bands and Monetary Neutrality
Working Paper	99-04	Jong-Il You Ju-Ho Lee	Economic and Social Consequences of globalization: The Case of South Korea
Working Paper	99-05	Sang-Woo Nam	Reform of the Financial Sector in East Asia
Working Paper	99-06	Hun-Joo Park	Dirigiste Modernization, Coalition Politics, and Financial Policy Towards Small Business: Korea, Japan, and Taiwan Compared
Working Paper	99-07	Kong-Kyun Ro	Mother's Education and Child's Health: Economic Anlaysis of Korean Data
Working Paper	99-08	Euysung Kim	Trade Liberalization and Productivity Growth in Korean Manufacturing Industries: Price Protection, Market Power, and Scale Efficiency
Working Paper	99-09	Gill-Chin Lim	Global Political-Economic System and Financial Crisis: Korea, Brazil and the IMF
Working Paper	99-10 (C99-01)	Seung-Joo Lee	LG Household & Health Care: Building a High-Performing Organization
Working Paper	00-01	Sangmoon Hahm Kyung-Soo Kim Ho-Mou Wu	Gains from Currency Convertibility: A Case of Incomplete Markets
Working Paper	00-02	Jong-Il You	The Bretton Woods Institutions: Evolution, Reform and Change
Working Paper	00-03	Dukgeun Ahn	Linkages between International Financial and Trade Institutions: IMF, World Bank and WTO
Working Paper	00-04	Woochan Kim	Does Capital Account Liberalization Discipline Budget Deficit?
Working Paper	00-05	Sunwoong Kim Shale Horowitz	Public Interest "blackballing" in South Korea's Elections: One-Trick Pony, or Wave of the Future?
Working Paper	00-06	Woochan Kim	Do Foreign Investors Perform Better than Locals? Information Asymmetry versus Investor Sophistication
Working Paper	00-07	Gill-Chin Lim Joon Han	North-South Cooperation for Food Supply: Demographic Analysis and Policy Directions
Working Paper	00-08 (C00-01)	Seung-Joo Lee	Strategic Newspaper Management: Case Study of Maeil Business
Working Paper	01-01	Seung-Joo Lee	Nokia: Strategic Transformation and Growth
Working Paper	01-02	Woochan Kim Shang-Jin Wei	Offshore Investment Funds: Monsters in Emerging Markets?
Working Paper	01-03	Dukgeun Ahn	Comparative Analysis of the SPS and the TBT Agreements
Working Paper	01-04	Sunwoong Kim Ju-Ho Lee	Demand for Education and Developmental State: Private Tutoring in South Korea
Working Paper	01-05	Ju-Ho Lee Young-Kyu Moh Dae-Il Kim	Do Unions Inhibit Labor Flexibility? Lessons from Korea
Working Paper	01-06	Woochan Kim Yangho Byeon	Restructuring Korean Bank's Short-Term Debts in 1998 - Detailed Accounts and Their Implications -
Working Paper	01-07	Yoon-Ha YOO	Private Tutoring as Rent Seeking Activity Under Tuition Control

*** The above papers are available at KDI School Website <http://www.kdischool.ac.kr/new/eng/faculty/working.jsp>. You may get additional copy of the documents by downloading it using the Acrobat Reader.**

Working Paper Series

Category	*Serial #*	*Author*	*Title*
Working Paper	01-08	Kong-Kyun Ro	경제활동인구 변동의 요인분석: 선진국과의 비교분석
Working Paper	02-01	Sangmoon Hahm	Restructuring of the Public Enterprise after the Crisis : The Case of Deposit Insurance Fund
Working Paper	02-02	Kyong-Dong KIM	The Culture of Industrial Relations in Korea : An alternative Sociological Approach
Working Paper	02-03	Dukgeun Ahn	Korean Experience of the Dispute Settlement in the world Trading System
Working Paper	02-04	BERNARD S. BLACK Hasung Jang Woochan Kim	Does Corporate Governance Matter? (Evidence from the Korean Market)
Working Paper	02-05	Sunwoong Kim Ju-Ho Lee	Secondary School Equalization Policies in South Korea
Working Paper	02-06	Yoon-Ha YOO	Penalty for Mismatch Between Ability and Quality, and School Choice
Working Paper	02-07	Dukgeun Ahn Han-Young Lie	Legal Issues of Privatization in Government Procurement Agreements: Experience of Korea from Bilateral and WTO Agreements
Working Paper	02-08	David J. Behling Kyong Shik Eom	U.S. Mortgage Markets and Institutions and Their Relevance for Korea
Working Paper	03-01	Sang-Moon Hahm	Transmission of Stock Returns and Volatility: the Case of Korea
Working Paper	03-02	Yoon Ha Yoo	Does Evidentiary Uncertainty Induce Excessive Injurer Care?
Working Paper	03-03	Yoon Ha Yoo	Competition to Enter a Better School and Private Tutoring
Working Paper	03-04	Sunwoong Kim Ju-Ho Lee	Hierarchy and Market Competition in South Korea's Higher Education Sector
Working Paper	03-05	Chul Chung	Factor Content of Trade: Nonhomothetic Preferences and "Missing Trade"
Working Paper	03-06	Hun Joo Park	RECASTING KOREAN *DIRIGISME*
Working Paper	03-07	Taejong Kim Ju-Ho Lee Young Lee	Mixing *versus* Sorting in Schooling: Evidence from the Equalization Policy in South Korea
Working Paper	03-08	Naohito Abe	Managerial Incentive Mechanisms and Turnover of Company Presidents and Directors in Japan
Working Paper	03-09	Naohito Abe Noel Gaston Katsuyuki Kubo	EXECUTIVE PAY IN JAPAN: THE ROLE OF BANK-APPOINTED MONITORS AND THE MAIN BANK RELATIONSHIP
Working Paper	03-10	Chai-On Lee	Foreign Exchange Rates Determination in the light of Marx's Labor-Value Theory
Working Paper	03-11	Taejong Kim	Political Economy and Population Growth in Early Modern Japan
Working Paper	03-12	Il-Horn Hann Kai-Lung Hui Tom S. Lee I.P.L. Png	Direct Marketing: Privacy and Competition
Working Paper	03-13	Marcus Noland	RELIGION, CULTURE, AND ECONOMIC PERFORMANCE
Working Paper	04-01	Takao Kato Woochan Kim Ju Ho Lee	EXECUTIVE COMPENSATION AND FIRM PERFORMANCE IN KOREA

*** The above papers are available at KDI School Website <http://www.kdischool.ac.kr/new/eng/faculty/working.jsp>.**
You may get additional copy of the documents by downloading it using the Acrobat Reader.

Working Paper Series

Category	*Serial #*	*Author*	*Title*
Working Paper	04-02	Kyoung-Dong Kim	Korean Modernization Revisited: An Alternative View from the Other Side of History

Working Paper Series

Category	*Serial #*	*Author*	*Title*
Working Paper	04-03	Lee Seok Hwang	Ultimate Ownership, Income Management, and Legal and Extra-Legal Institutions
Working Paper	04-04	Dongsoo Kang	Key Success Factors in the Revitalization of Distressed Firms : A Case of the Korean Corporate Workouts
Working Paper	04-05	Il Chong Nam Woochan Kim	Corporate Governance of Newly Privatized Firms: The Remaining Issues in Korea
Working Paper	04-06	Hee Soo Chung Jeong Ho Kim Hyuk Il Kwon	Housing Speculation and Housing Price Bubble in Korea
Working Paper	04-07	Yoon-Ha Yoo	Uncertainty and Negligence Rules
Working Paper	04-08	Young Ki Lee	Pension and Retirement Fund Management
Working Paper	04-09	Wooheon Rhee Tack Yun	Implications of Quasi-Geometric Discountingon the Observable Sharp e Ratio
Working Paper	04-10	Seung-Joo Lee	Growth Strategy: A Conceptual Framework
Working Paper	04-11	Boon-Young Lee Seung-Joo Lee	Case Study of Samsung’s Mobile Phone Business
Working Paper	04-12	Sung Yeung Kwack Young Sun Lee	What Determines Saving Rate in Korea?: the Role of Demography
Working Paper	04-13	Ki-Eun Rhee	Collusion in Repeated Auctions with Externalities
Working Paper	04-14	Jaeun Shin Sangho Moon	IMPACT OF DUAL ELIGIBILITY ON HEALTHCARE USE BY MEDICARE BENEFICIARIES
Working Paper	04-15	Hun Joo Park Yeun-Sook Park	Riding into the Sunset: The Political Economy of Bicycles as a Declining Industry in Korea
Working Paper	04-16	Woochan Kim Hasung Jang Bernard S. Black	Predicting Firm's Corporate Governance Choices: Evidence from Korea
Working Paper	04-17	Tae Hee Choi	Characteristics of Firms that Persistently Meet or Beat Analysts' Forecasts
Working Paper	04-18	Taejong Kim Yoichi Okita	Is There a Premium for Elite College Education: Evidence from a Natural Experiment in Japan
Working Paper	04-19	Leonard K. Cheng Jae Nahm	Product Boundary, Vertical Competition, and the Double Mark-up Problem
Working Paper	04-20	Woochan Kim Young-Jae Lim Taeyoon Sung	What Determines the Ownership Structure of Business Conglomerates? : On the Cash Flow Rights of Korea’s Chaebol
Working Paper	04-21	Taejong Kim	Shadow Education: School Quality and Demand for Private Tutoring in Korea
Working Paper	04-22	Ki-Eun Rhee Raphael Thomadsen	Costly Collusion in Differentiated Industries
Working Paper	04-23	Jaeun Shin Sangho Moon	HMO plans, Self-selection, and Utilization of Health Care Services
Working Paper	04-24	Yoon-Ha Yoo	Risk Aversion and Incentive to Abide By Legal Rules
Working Paper	04-25	Ji Hong Kim	Speculative Attack and Korean Exchange Rate Regime
Working Paper	05-01	Woochan Kim Taeyoon Sung	What Makes Firms Manage FX Risk? : Evidence from an Emerging Market
Working Paper	05-02	Janghyuk Lee Laoucine Kerbache	Internet Media Planning: An Optimization Model

*** The above papers are available at KDI School Website <http://www.kdischool.ac.kr/new/eng/faculty/working.jsp>.**
You may get additional copy of the documents by downloading it using the Acrobat Reader.

Working Paper Series

Category	*Serial #*	*Author*	*Title*
Working Paper	05-03	Kun-Ho Lee	Risk in the Credit Card Industry When Consumer Types are Not Observable
Working Paper	05-04	Kyong-Dong KIM	Why Korea Is So Prone To Conflict: An Alternative Sociological Analysis
Working Paper	05-05	Dukgeun AHN	Why Should Non-actionable Subsidy Be Non-actionable?
Working Paper	05-06	Seung-Joo LEE	Case Study of L'Oréal: Innovation and Growth Strategy
Working Paper	05-07	Seung-Joo LEE	Case Study of BMW: The Ultimate Driving Machine
Working Paper	05-08	Taejong KIM	Do School Ties Matter? Evidence from the Promotion of Public Prosecutors in Korea
Working Paper	05-09	Hun Joo PARK	Paradigms and Fallacies: Rethinking Northeast Asian Security
Working Paper	05-10	WOOCHAN KIM TAEYOON SUNG	What Makes Group-Affiliated Firms Go Public?
Working Paper	05-11	BERNARD S. BLACK WOOCHAN KIM HASUNG JANG KYUNG-SUH PARK	Does Corporate Governance Predict Firms' Market Values? Time Series Evidence from Korea
Working Paper	05-12	Kun-Ho Lee	Estimating Probability of Default For the Foundation IRB Approach In Countries That Had Experienced Extreme Credit Crises
Working Paper	05-13	Ji-Hong KIM	Optimal Policy Response To Speculative Attack
Working Paper	05-14	Kwon Jung Boon Young Lee	Coupon Redemption Behaviors among Korean Consumers: Effects of Distribution Method, Face Value, and Benefits on Coupon Redemption Rates in Service Sector
Working Paper	06-01	Kee-Hong Bae Seung-Bo Kim Woochan Kim	Family Control and Expropriation of Not-for-Profit Organizations: Evidence from Korean Private Universities
Working Paper	06-02	Jaeun Shin	How Good is Korean Health Care? An International Comparison of Health Care Systems
Working Paper	06-03	Tae Hee Choi	Timeliness of Asset Write-offs
Working Paper	06-04	Jin PARK	Conflict Resolution Case Study: The National Education Information System (NEIS)
Working Paper	06-05	YuSang CHANG	DYNAMIC COMPETITIVE PARADIGM OF MANAGING MOVING TARGETS; IMPLICATIONS FOR KOREAN INDUSTY
Working Paper	06-06	Jin PARK	A Tale of Two Government Reforms in Korea
Working Paper	06-07	Ilho YOO	Fiscal Balance Forecast of Cambodia 2007-2011
Working Paper	06-08	Ilho YOO	PAYG pension in a small open economy
Working Paper	06-09	Kwon JUNG Clement LIM	IMPULSE BUYING BEHAVIORS ON THE INTERNET
Working Paper	06-10	Joong H. HAN	Liquidation Value and Debt Availability: An Empirical Investigation
Working Paper	06-11	Brandon Julio, Woojin Kim Michael S. Weisbach	Uses of Funds and the Sources of Financing: Corporate Investment and Debt Contract Design
Working Paper	06-12	Hun Joo Park	Toward People-centered Development: A Reflection on the Korean Experience

*** The above papers are available at KDI School Website <http://www.kdischool.ac.kr/new/eng/faculty/working.jsp>.**
You may get additional copy of the documents by downloading it using the Acrobat Reader.

Working Paper Series

Category	*Serial #*	*Author*	*Title*
Working Paper	06-13	Hun Joo Park	The Perspective of Small Business in South Korea
Working Paper	06-14	Younguck KANG	Collective Experience and Civil Society in Governance
Working Paper	06-15	Dong-Young KIM	The Roles of Government Officials as Policy Entrepreneurs in Consensus Building Process
Working Paper	06-16	Ji Hong KIM	Military Service : draft or recruit
Working Paper	06-17	Ji Hong KIM	Korea-US FTA
Working Paper	06-18	Ki-Eun RHEE	Reevaluating Merger Guidelines for the New Economy
Working Paper	06-19	Taejong KIM Ji-Hong KIM Insook LEE	Economic Assimilation of North Korean Refugees in South Korea: Survey Evidence
Working Paper	06-20	Seong Ho CHO	ON THE STOCK RETURN METHOD TO DETERMINING INDUSTRY SUBSTRUCTURE: AIRLINE, BANKING, AND OIL INDUSTRIES
Working Paper	06-21	Seong Ho CHO	DETECTING INDUSTRY SUBSTRUCTURE: - Case of Banking, Steel and Pharmaceutical Industries-
Working Paper	06-22	Tae Hee Choi	Ethical Commitment, Corporate Financial Factors: A Survey Study of Korean Companies
Working Paper	06-23	Tae Hee Choi	Aggregation, Uncertainty, and Discriminant Analysis
Working Paper	07-01	Jin PARK Seung-Ho JUNG	Ten Years of Economic Knowledge Cooperation with North Korea: Trends and Strategies
Working Paper	07-02	BERNARD S. BLACK WOOCHAN KIM	The Effect of Board Structure on Firm Value in an Emerging Market: IV, DiD, and Time Series Evidence from Korea
Working Paper	07-03	Jong Bum KIM	FTA Trade in Goods Agreements: 'Entrenching' the benefits of reciprocal tariff concessions
Working Paper	07-04	Ki-Eun Rhee	Price Effects of Entries
Working Paper	07-05	Tae H. Choi	Economic Crises and the Evolution of Business Ethics in Japan and Korea
Working Paper	07-06	Kwon JUNG Leslie TEY	Extending the Fit Hypothesis in Brand Extensions: Effects of Situational Involvement, Consumer Innovativeness and Extension Incongruity on Evaluation of Brand Extensions
Working Paper	07-07	Younguck KANG	Identifying the Potential Influences on Income Inequality Changes in Korea – Income Factor Source Analysis
Working Paper	07-08	WOOCHAN KIM TAEYOON SUNG SHANG-JIN WEI	Home-country Ownership Structure of Foreign Institutional Investors and Control-Ownership Disparity in Emerging Markets
Working Paper	07-09	Ilho YOO	The Marginal Effective Tax Rates in Korea for 45 Years : 1960-2004
Working Paper	07-10	Jin PARK	Crisis Management for Emergency in North Korea
Working Paper	07-11	Ji Hong KIM	Three Cases of Foreign Investment in Korean Banks
Working Paper	07-12	Jong Bum Kim	Territoriality Principle under Preferential Rules of Origin
Working Paper	07-13	Seong Ho CHO	THE EFFECT OF TARGET OWNERSHIP STRUCTURE ON THE TAKEOVER PREMIUM IN OWNER-MANAGER DOMINANT ACQUISITIONS: EVIDENCE FROM KOREAN CASES

*** The above papers are available at KDI School Website <http://www.kdischool.ac.kr/new/eng/faculty/working.jsp>. You may get additional copy of the documents by downloading it using the Acrobat Reader.**

Working Paper Series

Category	*Serial #*	*Author*	*Title*
Working Paper	07-14	Seong Ho CHO Bill McKelvey	Determining Industry Substructure: A Stock Return Approach
Working Paper	07-15	Dong-Young KIM	Enhancing BATNA Analysis in Korean Public Disputes
Working Paper	07-16	Dong-Young KIM	The Use of Integrated Assessment to Support Multi-Stakeholder negotiations for Complex Environmental Decision-Making
Working Paper	07-17	Yuri Mansury	Measuring the Impact of a Catastrophic Event: Integrating Geographic Information System with Social Accounting Matrix
Working Paper	07-18	Yuri Mansury	Promoting Inter-Regional Cooperation between Israel and Palestine: A Structural Path Analysis Approach
Working Paper	07-19	Ilho YOO	Public Finance in Korea since Economic Crisis
Working Paper	07-20	Li GAN Jaeun SHIN Qi LI	Initial Wage, Human Capital and Post Wage Differentials
Working Paper	07-21	Jin PARK	Public Entity Reform during the Roh Administration: Analysis through Best Practices
Working Paper	07-22	Tae Hee Choi	The Equity Premium Puzzle: An Empirical Investigation of Korean Stock Market
Working Paper	07-23	Joong H. HAN	The Dynamic Structure of CEO Compensation: An Empirical Study
Working Paper	07-24	Ki-Eun RHEE	Endogenous Switching Costs in the Face of Poaching
Working Paper	08-01	Sun LEE Kwon JUNG	Effects of Price Comparison Site on Price and Value Perceptions in Online Purchase
Working Paper	08-02	Ilho YOO	Is Korea Moving Toward the Welfare State?: An IECI Approach
Working Paper	08-03	Ilho YOO Inhyouk KOO	DO CHILDREN SUPPORT THEIR PARENTS' APPLICATION FOR THE REVERSE MORTGAGE?: A KOREAN CASE
Working Paper	08-04	Seong-Ho CHO	Raising Seoul’s Global Competitiveness: Developing Key Performance Indicators
Working Paper	08-05	Jin PARK	A Critical Review for Best Practices of Public Entities in Korea
Working Paper	08-06	Seong-Ho CHO	How to Value a Private Company? -Case of Miele Korea-
Working Paper	08-07	Yoon Ha Yoo	The East Asian Miracle: Export-led or Investment-led?
Working Paper	08-08	Man Cho	Subprime Mortgage Market: Rise, Fall, and Lessons for Korea
Working Paper	08-09	Woochang KIM Woojin KIM Kap-sok KWON	Value of shareholder activism: evidence from the switchers
Working Paper	08-10	Kun-Ho Lee	Risk Management in Korean Financial Institutions: Ten Years after the Financial Crisis
Working Paper	08-11	Jong Bum KIM	Korea’s Institutional Framework for FTA Negotiations and Administration: Tariffs and Rules of Origin
Working Paper	08-12	Yu Sang CHANG	Strategy, Structure, and Channel of Industrial Service Leaders: A Flow Chart Analysis of the Expanded Value Chain
Working Paper	08-13	Younguck KANG	Sensitivity Analysis of Equivalency Scale in Income Inequality Studies
Working Paper	08-14	Younguck KANG	Case Study: Adaptive Implementation of the Five-Year Economic Development Plans

*** The above papers are available at KDI School Website <http://www.kdischool.ac.kr/new/eng/faculty/working.jsp>.**
You may get additional copy of the documents by downloading it using the Acrobat Reader.

Working Paper Series

Category	*Serial #*	*Author*	*Title*
Working Paper	08-15	Joong H. HAN	Is Lending by Banks and Non-banks Different? Evidence from Small Business Financing
Working Paper	08-16	Joong H. HAN	Checking Accounts and Bank Lending
Working Paper	08-17	Seongwuk MOON	How Does the Management of Research Impact the Disclosure of Knowledge? Evidence from Scientific Publications and Patenting Behavior
Working Paper	08-18	Jungho YOO	How Korea's Rapid Export Expansion Began in the 1960s: The Role of Foreign Exchange Rate
Working Paper	08-19	BERNARD S. BLACK WOOCHAN KIM HASUNG JANG KYUNG SUH PARK	How Corporate Governance Affects Firm Value: Evidence on Channels from Korea
Working Paper	08-20	Tae Hee CHOI	Meeting or Beating Analysts' Forecasts: Empirical Evidence of Firms' Characteristics, Persistence Patterns and Post-scandal Changes
Working Paper	08-21	Jaeun SHIN	Understanding the Role of Private Health Insurance in the Universal Coverage System: Macro and Micro Evidence
Working Paper	08-22	Jin PARK	Indonesian Bureaucracy Reform: Lessons from Korea
Working Paper	08-23	Joon-Kyung KIM	Recent Changes in Korean Households' Indebtedness and Debt Service Capacity
Working Paper	08-24	Yuri Mansury	What Do We Know about the Geographic Pattern of Growth across Cities and Regions in South Korea?
Working Paper	08-25	Yuri Mansury & Jae Kyun Shin	Why Do Megacities Coexist with Small Towns? Historical Dependence in the Evolution of Urban Systems
Working Paper	08-26	Jinsoo LEE	When Business Groups Employ Analysts: Are They Biased?
Working Paper	08-27	Cheol S. EUN Jinsoo LEE	Mean-Variance Convergence Around the World
Working Paper	08-28	Seongwuk MOON	How Does Job Design Affect Productivity and Earnings? Implications of the Organization of Production
Working Paper	08-29	Jaeun SHIN	Smoking, Time Preference and Educational Outcomes
Working Paper	08-30	Dong Young KIM	Reap the Benefits of the Latecomer: From the story of a political, cultural, and social movement of ADR in US
Working Paper	08-31	Ji Hong KIM	Economic Crisis Management in Korea: 1998 & 2008
Working Paper	08-32	Dong-Young KIM	Civility or Creativity?: Application of Dispute Systems Design (DSD) to Korean Public Controversies on Waste Incinerators
Working Paper	08-33	Ki-Eun RHEE	Welfare Effects of Behavior-Based Price Discrimination
Working Paper	08-34	Ji Hong KIM	State Owned Enterprise Reform
Working Paper	09-01	Yu Sang CHANG	Making Strategic Short-term Cost Estimation by Annualized Experience Curve
Working Paper	09-02	Dong Young KIM	When Conflict Management is Institutionalized: A Review of the Executive Order 19886 and government practice
Working Paper	09-03	Man Cho	Managing Mortgage Credit Risk: What went wrong with the subprime and Alt-A markets?
Working Paper	09-04	Tae H. Choi	Business Ethics, Cost of Capital, and Valuation

*** The above papers are available at KDI School Website <http://www.kdischool.ac.kr/new/eng/faculty/working.jsp>. You may get additional copy of the documents by downloading it using the Acrobat Reader.**

Working Paper Series

Category	*Serial #*	*Author*	*Title*
Working Paper	09-05	Woochan KIM Woojin KIM Hyung-Seok KIM	What makes firms issue death spirals? A control enhancing story
Working Paper	09-06	Yu Sang CHANG Seung Jin BAEK	Limit to Improvement: Myth or Reality? Empirical Analysis of Historical Improvement on Three Technologies Influential in the Evolution of Civilization
Working Paper	09-07	Ji Hong KIM	G20: Global Imbalance and Financial Crisis
Working Paper	09-08	Ji Hong KIM	National Competitiveness in the Globalized Era
Working Paper	09-09	Hao Jiang , Woochan Kim , Ramesh K. S. Rao	Contract Heterogeneity, Operating Shortfalls, and Corporate Cash Holdings
Working Paper	09-10	Man CHO	Home Price Cycles: A Tale of Two Countries
Working Paper	09-11	Dongcul CHO	The Republic of Korea's Economy in the Swirl of Global Crisis
Working Paper	09-12	Dongcul CHO	House Prices in ASEAN+3: Recent Trends and Inter-Dependence
Working Paper	09-13	Seung-Joo LEE Eun-Hyung LEE	Case Study of POSCO - Analysis of its Growth Strategy and Key Success Factors
Working Paper	09-14	Woochan KIM Taeyoon SUNG Shang-Jin WEI	The Value of Foreign Blockholder Activism: Which Home Country Governance Characteristics Matter?
Working Paper	09-15	Joon-Kyung KIM	Post-Crisis Corporate Reform and Internal Capital Markets in Chaebols
Working Paper	09-16	Jin PARK	Lessons from SOE Management and Privatization in Korea
Working Paper	09-17	Tae Hee CHOI	Implied Cost of Equity Capital, Firm Valuation, and Firm Characteristics
Working Paper	09-18	Kwon JUNG	Are Entrepreneurs and Managers Different? Values and Ethical Perceptions of Entrepreneurs and Managers
Working Paper	09-19	Seongwuk MOON	When Does a Firm Seek External Knowledge? Limitations of External Knowledge
Working Paper	09-20	Seongwuk MOON	Earnings Inequality within a Firm: Evidence from a Korean Insurance Company
Working Paper	09-21	Jaeun SHIN	Health Care Reforms in South Korea: What Consequences in Financing?
Working Paper	09-22	Younguck KANG	Demand Analysis of Public Education: A Quest for New Public Education System for Next Generation
Working Paper	09-23	Seong-Ho CHO Jinsoo LEE	Valuation and Underpricing of IPOs in Korea
Working Paper	09-24	Seong-Ho CHO	Kumho Asiana's LBO Takeover on Korea Express
Working Paper	10-01	Yun-Yeong KIM Jinsoo LEE	Identification of Momentum and Disposition Effects Through Asset Return Volatility
Working Paper	10-02	Kwon JUNG	Four Faces of Silver Consumers: A Typology, Their Aspirations, and Life Satisfaction of Older Korean Consumers
Working Paper	10-03	Jinsoo LEE Seongwuk MOON	Corporate Governance and International Portfolio Investment in Equities
Working Paper	10-04	Jinsoo LEE	Global Convergence in Tobin's Q Ratios
Working Paper	10-05	Seongwuk MOON	Competition, Capability Buildup and Innovation: The Role of Exogenous Intra-firm Revenue Sharing

*** The above papers are available at KDI School Website <http://www.kdischool.ac.kr/new/eng/faculty/working.jsp>.**
You may get additional copy of the documents by downloading it using the Acrobat Reader.

Working Paper Series

Category	*Serial #*	*Author*	*Title*
Working Paper	10-06	Kwon JUNG	Credit Card Usage Behaviors among Elderly Korean Consumers
Working Paper	10-07	Yu-Sang CHANG Jinsoo LEE	Forecasting Road Fatalities by the Use of Kinked Experience Curve
Working Paper	10-08	Man CHO	Securitization and Asset Price Cycle: Causality and Post-Crisis Policy Reform
Working Paper	10-09	Man CHO Insik MIN	Asset Market Correlation and Stress Testing: Cases for Housing and Stock Markets
Working Paper	10-10	Yu-Sang CHANG Jinsoo LEE	Is Forecasting Future Suicide Rates Possible? - Application of the Experience Curve -
Working Paper	10-11	Seongwuk MOON	What Determines the Openness of Korean Manufacturing Firms to External Knowledge?
Working Paper	10-12	Joong Ho HAN Kwangwoo PARK George PENNACCHI	Corporate Taxes and Securitization
Working Paper	10-13	Younguck KANG	Housing Policy of Korea: Old Paradigm, New Approach
Working Paper	10-14	Il Chong NAM	A Proposal to Reform the Korean CBP Market
Working Paper	10-15	Younguck KANG	Balanced Regional Growth Strategy based on the Economies of Agglomeration: the Other Side of Story
Working Paper	10-16	Joong Ho HAN	CEO Equity versus Inside Debt Holdings and Private Debt Contracting
Working Paper	11-01	Yeon-Koo CHE Rajiv SETHI	Economic Consequences of Speculative Side Bets: The Case of Naked Credit Default Swaps
Working Paper	11-02	Tae Hee CHOI Martina SIPKOVA	Business Ethics in the Czech Republic
Working Paper	11-03	Sunwoo HWANG Woochan KIM	Anti-Takeover Charter Amendments and Managerial Entrenchment: Evidence from Korea
Working Paper	11-04	Yu Sang CHANG Jinsoo LEE Yun Seok JUNG	The Speed and Impact of a New Technology Diffusion in Organ Transplantation: A Case Study Approach
Working Paper	11-05	Jin PARK Jiwon LEE	The Direction of Inter-Korean Cooperation Fund Based on ODA Standard
Working Paper	11-06	Woochan KIM	Korea Investment Corporation: Its Origin and Evolution
Working Paper	11-07	Seung-Joo LEE	Dynamic Capabilities at Samsung Electronics: Analysis of its Growth Strategy in Semiconductors
Working Paper	11-08	Joong Ho HAN	Deposit Insurance and Industrial Volatility
Working Paper	11-09	Dong-Young KIM	Transformation from Conflict to Collaboration through Multistakeholder Process: Shihwa Sustainable Development Committee in Korea
Working Paper	11-10	Seongwuk MOON	How will Openness to External Knowledge Impact Service Innovation? Evidence from Korean Service Sector
Working Paper	11-11	Jin PARK	Korea's Technical Assistance for Better Governance: A Case Study in Indonesia
Working Paper	12-01	Seongwuk MOON	How Did Korea Catch Up with Developed Countries in DRAM Industry? The Role of Public Sector in Demand Creation: PART 1
Working Paper	12-02	Yong S. Lee Young U. Kang Hun J Park	The Workplace Ethics of Public Servants in Developing Countries
Working Paper	12-03	Ji-Hong KIM	Deposit Insurance System in Korea and Reform

*** The above papers are available at KDI School Website <http://www.kdischool.ac.kr/new/eng/faculty/working.jsp>.**
You may get additional copy of the documents by downloading it using the Acrobat Reader.

Working Paper Series

Category	*Serial #*	*Author*	*Title*
Working Paper	12-04	Yu Sang Chang Jinsoo Lee Yun Seok Jung	Technology Improvement Rates of Knowledge Industries following Moore's Law? -An Empirical Study of Microprocessor, Mobile Cellular, and Genome Sequencing Technologies-
Working Paper	12-05	Man Cho	Contagious Real Estate Cycles: Causes, Consequences, and Policy Implications
Working Paper	12-06	Younguck KANG Dhani Setvawan	INTERGOVERNMENTAL TRANSFER AND THE FLYPAPER EFFECT – Evidence from Municipalities/Regencies in Indonesia –
Working Paper	12-07	Younguck KANG	Civil Petitions and Appeals in Korea : Investigating Rhetoric and Institutional settings
Working Paper	12-08	Yu Sang Chang Jinsoo Lee	Alternative Projection of the World Energy Consumption -in Comparison with the 2010 International Energy Outlook
Working Paper	12-09	Hyeok Jeong	The Price of Experience
Working Paper	12-10	Hyeok Jeong	Complementarity and Transition to Modern Economic Growth
Working Paper	13-01	Yu Sang CHANG Jinsoo LEE Hyuk Ju KWON	When Will the Millennium Development Goal on Infant Mortality Rate Be Realized? - Projections for 21 OECD Countries through 2050-
Working Paper	13-02	Yoon-Ha Yoo	Stronger Property Rights Enforcement Does Not Hurt Social Welfare -A Comment on Gonzalez' "Effective Property Rights, Conflict and Growth (JET, 2007)"-
Working Paper	13-03	Yu Sang CHANG Changyong CHOI	Will the Stop TB Partnership Targets on TB Control be Realized on Schedule? - Projection of Future Incidence, Prevalence and Death Rates -
Working Paper	13-04	Yu Sang CHANG Changyong CHOI	Can We Predict Long-Term Future Crime Rates? – Projection of Crime Rates through 2030 for Individual States in the U.S. –
Working Paper	13-05	Chrysostomos Tabakis	Free-Trade Areas and Special Protection
Working Paper	13-06	Hyeok Jeong	Dynamics of Firms and Trade in General Equilibrium
Working Paper	13-07	Hyeok Jeong	Testing Solow's Implications on the Effective Development Policy
Working Paper	13-08	Jaeun SHIN	Long-Term Care Insurance and Health Care Financing in South Korea
Working Paper	13-09	Ilchong Nam	Investment Incentives for Nuclear Generators and Competition in the Electricity Market of Korea
Working Paper	13-10	Ilchong Nam	Market Structure of the Nuclear Power Industry in Korea and Incentives of Major Firms
Working Paper	13-11	Ji Hong KIM	Global Imbalances
Working Paper	14-01	Woochan KIM	When Heirs Become Major Shareholders
Working Paper	14-02	Chrysostomos Tabakis	Antidumping Echoing
Working Paper	14-03	Ju Ho Lee	Is Korea Number One in Human Capital Accumulation?: Education Bubble Formation and its Labor Market Evidence
Working Paper	14-04	Chrysostomos Tabakis	Regionalism and Conict: Peace Creation and Peace Diversion

*** The above papers are available at KDI School Website <http://www.kdischool.ac.kr/new/eng/faculty/working.jsp>.**
You may get additional copy of the documents by downloading it using the Acrobat Reader.