International cooperation and conflicts on trade and foreign direct investment

Vincent Vicard

Université Paris I - Panthéon Sorbonne
U.F.R. de sciences économiques

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Vincent Vicard

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Directeur de thèse : Thierry Mayer

JURY :

James Anderson	Professeur au Boston College (rapporteur)
Paola Conconi	Chercheur FNRS, Université Libre de Bruxelles (rapporteur)
Philippe Martin	Professeur à l'Université Paris I Panthéon-Sorbonne
Thierry Mayer	Professeur à l'Université Paris I Panthéon-Sorbonne
Mathias Thoenig	Professeur à l'Université de Genève

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A Zaze, à Orlane,

à Benj

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Résumé

La mondialisation économique est sans conteste un élément essentiel de la seconde moitié du XXème siècle. Ce processus est illustré par la part croissante de la production mondiale échangée : le ratio du commerce par rapport au PIB mondial est passé de 24% en 1960 à 38% en 1990 et 54% de nos jours. De même, les investissements directs étrangers (IDE) ont plus que doublé par rapport au PIB sur les deux dernières décennies. Le monde aujourd'hui est sans aucun doute globalisé, mais il n'est pas pour autant plat. Les deux facteurs principaux à l'origine du processus de globalisation ont été la réduction des coûts de transport et de communication du coté du secteur privé, et la réduction, par les gouvernements, des barrières politiques aux flux internationaux de biens, de service et de capitaux (Frankel, 2000). Malgré la disparition des barrières douanières, les frontières politiques réduisent cependant toujours fortement les échanges commerciaux. Les portefeuilles d'investissement sont par ailleurs toujours biaisés en faveur des investissements domestiques alors que la migration internationale est fortement réglementée. Les coûts aux échanges internationaux ont dorénavant plus à voir avec les politiques nationales affectant les règlementations, les normes, les droits de propriété, les infrastructures ou la supervision des institutions financières, qu'avec les instruments de politiques économiques affectant directement les flux de biens ou d'investissement (Anderson and van Wincoop, 2004).

Des divergences dans les politiques économiques nationales créent en effet des obstacles aux échanges internationaux. Dans un monde fragmenté en entités politiques indépendantes, les frontières politiques entraînent une segmentation des marchés,

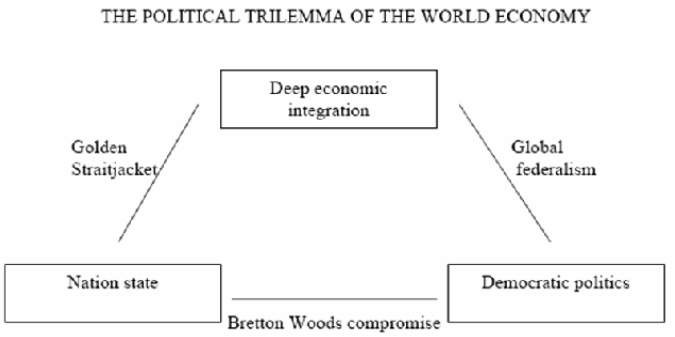
régulés par des juridictions légales séparées. En créant des discontinuités des systèmes politiques et juridictionnels, la souveraineté des Etats crée donc des coûts de transaction spécifiques au commerce international et aux flux d'investissements transfrontaliers. Par ailleurs, puisque les institutions permettant l'application des lois sont faibles au niveau supranational et que la coutume juridique internationale fournit au mieux une faible protection des droits de propriété, les frontières politiques rendent la mise en application des contrats par les tribunaux locaux plus incertaine.[1]

Dans ce cadre, l'intégration économique internationale entraîne la confrontation des souverainetés des Etats. Même si le concept de souveraineté n'est pas clairement défini, il est clair que la mondialisation contraint les souverainetés nationales. Jackson (2003) souligne ainsi que les caractéristiques historiquement associées à la souveraineté des Etats - le monopole de la force armée sur le territoire national, la capacité à règlementer les mouvements aux frontières, la liberté de choix de politique étrangère ou la reconnaissance, par les autres gouvernements, comme entité politique indépendante non soumise à des interventions extérieures -, sont aujourd'hui contestées. Rodrik (2000) illustre cette idée par un triangle d'incompatibilité de l'économie mondiale, dont seuls deux des trois cotés, intégration économique approfondie, degré de démocratie et Etat-Nation, peuvent être achevés simultanément (voir figure 1). Une intégration économique internationale approfondie nécessite en effet que la souveraineté des Etats n'impose pas de coûts spécifiques aux transactions internationales. Cela implique donc soit d'élargir les juridictions nationales en créant un Etat fédéral mondial de façon à faire disparaître les discontinuités juridictionnelles (c'est-à-dire de renoncer aux Etats-Nations), soit d'harmoniser les politiques économiques nationales de façon à ce qu'elles ne créent pas d'obstacles aux échanges internationaux, ce qui nécessite de renoncer au contrôle

[1] Anderson and Marcouiller (2002) et Berkowitz *et al.* (2006) montrent empiriquement que de mauvaises institutions dans le pays exportateurs ou importateurs réduisent le commerce.

démocratique de ces politiques.[2]

Figure 1: Le triangle d'incompatibilité de l'économie mondiale



Source: Rodrik (2000).

Dans la mesure où la souveraineté implique qu'il n'existe pas de pouvoir supérieur aux Etats-Nations, les fondements des lois et contraintes internationales ne sont valides que si les Etats y consentent. Jackson (2003) avance que la question de la souveraineté revient à celle de l'allocation du pouvoir de décision entre différents niveaux de gouvernance. Dans le cas de règles définies par des traités, il est plausible de considérer que chaque Etat a consenti à déléguer sa propre souveraineté à un niveau plus élevé.[3] Le fait que la souveraineté réside dans les Etats Nations a donc des conséquences importantes pour l'étude des politiques économiques internationales. D'une part, cela crée des coûts de transaction spécifiques aux flux internationaux, et en particulier des problèmes de hold-up et de d'inconsistance temporelle car les gouvernements souverains ne peuvent pas s'engager de manière crédible puisqu'il n'existe pas de pouvoir de coercition en dehors d'eux même. Le

[2] Comme le souligne Keohane (2001, p.7), "dans tous les cas, l'hétérogénéité de la population mondiale rend impossible d'imaginer une théorie unique fournissant la base d'un système de gouvernance mondial cohérent basé sur les valeurs." ("in any event, the heterogeneity of the world's population makes it impossible to imagine any single theory providing the basis for a coherent, value-based system of global governance")

[3] L'évolution de la jurisprudence peut cependant poser des problèmes dans ce cas. Cette question est plus ambiguë en ce qui concerne la coutume juridique internationale.

corolaire est que l'approfondissement de l'intégration économique internationale se heurte aux souverainetés nationales, puisqu'il nécessite de limiter les obstacles aux échanges. De plus, lorsque les politiques d'un gouvernement créent des externalités pour les autres, l'intégration économique renforce l'interdépendance des Etats. La mondialisation engendre donc un réseau complexe de relations de dépendance et d'interdépendance entre Etats, augmentant ainsi le coût de l'absence de coopération internationale. L'intégration économique internationale nécessite donc des mécanismes de coopération internationale.

Une caractéristique importante de la vague de mondialisation actuelle est ainsi la régulation croissante des échanges au niveau supranational, par le biais d'accords économiques internationaux[4] à portée multilatérale ou préférentielle. Ces accords ont crû de manière exponentielle ces deux dernières décennies, aussi bien par leur nombre que par leur dimension géographique. Cette vague de coopération internationale n'est pas la première dans l'histoire moderne. Elle diffère cependant sur deux dimensions importantes. Tout d'abord dans la complexité des accords et l'étendu de leur couverture puisque les vagues d'accords du XIXème siècle et de l'entre deux guerre concernaient essentiellement des accords restreints sur la navigation et le commerce. Dans leur nature largement non discriminatoire ensuite, dans la mesure où la libéralisation préférentielle des échanges commerciaux s'est accompagnée d'une libéralisation multilatérale (Estevadeordal and Suominen, 2008). Les accords commerciaux représentent indéniablement une part importante des accords internationaux de coopération.[5] D'autres domaines de coopération ont cependant récemment fait l'objet d'un nombre important d'accords ; depuis les années 1990, un nombre impressionnant de traités bilatéraux concerne les flux d'investissements.

[4] Dans cette thèse, nous utiliserons le terme d'accord économique international dans un sens large, entendu comme les accords économiques internationaux formels et les organisations internationales, de dimension bilatérale, régionale ou multilatérale. Cette définition englobe un ensemble restreint des institutions internationales, puisqu'elle exclue les institutions informelles comme les normes de comportement des Etats.

[5] Estevadeordal and Suominen (2008) et Schiff and Winters (2002) soulignent que les accords commerciaux régionaux sont susceptibles d'induire des coopérations dans d'autres domaines.

La relation entre mondialisation et souveraineté est essentielle à la compréhension des mécanismes formels de coopération internationale, puisqu'elle lie la source des obstacles aux flux transfrontaliers aux coûts de leur élimination. En signant un traité, les Etats choisissent de contraindre leurs actions et s'engagent à réduire leur éventail de choix politiques. De la même manière, la création d'accords économiques internationaux peut impliquer le transfert, par les Etats signataires, d'une part de leur souveraineté à des organisations supranationales et la fourniture en commun de biens publics au niveau régional ou multilatéral. Il est donc nécessaire de comprendre comment la souveraineté des Etats-Nations génère des coûts spécifiques aux flux transfrontaliers pour expliquer pourquoi des accords économiques internationaux sont créés et leurs effets. **Dans cette perspective, cette thèse s'attache à analyser deux mécanismes de coopération entre Etats concernant le commerce international et les investissements directs étrangers : les accords commerciaux régionaux et les traités bilatéraux d'investissement.** L'objectif des trois chapitres qui la compose est de clarifier pourquoi certains pays choisissent de créer certains types accords économiques internationaux. Ces travaux soulignent l'importance de la prise en compte des risques sécuritaires et politiques spécifiques aux transactions transfrontalières pour la compréhension des effets des accords internationaux sur les échanges. Avant d'aller plus avant dans la problématique et les contributions de cette thèse, il est nécessaire de présenter les spécificités du contexte international dans lequel les flux de biens et de capitaux prennent place et leur pertinence pour l'étude de la coopération entre Etats.

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L'étude des accords économiques internationaux est devenue récemment un domaine de recherche particulièrement dynamique, à l'intersection de plusieurs champs disciplinaires en économie et en science politique. Les Etats ont créé une multiplicité d'accords économiques internationaux, allant d'organisations multilatérales ou régionales à des traités bilatéraux, afin de faciliter la coopération au

niveau international. Comme le suggère le titre du livre de Mancur Olson (1965), *The Logic of Collective Action*, l'étude de l'action collective est au coeur de l'économie politique. Drazen (2000) souligne ainsi que l'existence d'une hétérogénéité d'intérêts est au cœur de l'économie politique, puisque c'est elle qui crée le besoin de mécanismes d'agrégation des préférences individuelles en choix collectifs et de résolution des conflits. L'étude des interactions entre économie et politique dans la sphère internationale est néanmoins spécifique car "les luttes de pouvoir ont produit un équilibre dans lequel coexistent une multiplicité de Nations"[6] (Collier, 2008, p.111).[7] Les flux économiques internationaux interviennent en effet dans un système politique international constitué d'un large nombre d'Etats indépendants, dans lequel il n'existe pas d'institutions supranationales ou de tiers ayant la capacité de faire respecter les droits de propriété. Ces spécificités empêchent l'application de la loi et affaiblissent tout système de gouvernance global. Collier (2008) identifie trois conséquences de cet état d'anarchie pour les transactions internationales: (i) les comportements opportunistes non réprimés des agents augmentent les coûts de transaction; (ii) les asymétries de pouvoir au niveau international ne sont pas restreintes; et (iii) le manque de pouvoir de taxation ou de régulation au niveau international empêche la fourniture de biens publiques mondiaux. Les deux premiers points apparaissent particulièrement importants pour l'étude des flux transfrontaliers et des accords économiques internationaux. Il est donc utile de les développer plus avant ici, avant de présenter la problématique et les contributions de la thèse.

La nouvelle économie institutionnelle souligne que "l'Etat détermine les performances économiques parce qu'il définit et applique les règles économiques"[8] (North, 1994, p.366). Douglas North définit les institutions comme "les règles du jeu dans une

[6] "The struggle of power has produced an equilibrium in which there is a multiplicity of nations" (Collier, 2008, p.111).

[7] Nous nous concentrons dans cette thèse sur la coopération entre Etats considérés comme des agents unifiés. Nous ne considérons donc pas les questions relatives aux intérêts de groupes spécifiques à l'intérieur des pays et de lobbying. Voir Lake (2006) pour une revue de la littérature sur ces questions.

[8] "Polities significantly shape economic performance because they dene and enforce economic rules" (North, 1994, p.366).

société, ou, de manière plus formelle, [...] les contraintes imposées par l'Homme qui déterminent les interactions humaines"[9] (North, 1990, p.3). Cette définition inclus donc à la fois les institutions formelles (les règles codifiées comme une Constitution) et informelles (liées à l'usage des institutions formelles, la distribution du pouvoir et les normes sociales). Dans ce cadre, les organisations sont des groupes d'individus opérant dans le cadre des règles et contraintes définies par les institutions. A la fois les institutions et les organisations ont pour objet de réduire les coûts de transaction dans les interactions entre individus (North, 1990). Dans sa revue de la littérature de la nouvelle économie institutionnelle, Williamson (2000) distingue lui aussi deux niveaux d'analyse sociale : l'environnement institutionnel (les règles formelles du jeu) et les institutions de gouvernance (le déroulement du jeu). Dans l'analyse du déroulement du jeu en lui-même, les règles du jeu doivent être prises en compte.

Une branche de la nouvelle économie institutionnelle étudie les situations dans lesquelles les institutions gouvernementales fixant les contraintes et définissant les incitations sont absentes (Dixit, 2004). Dans ce contexte, les transactions économiques créant de la valeur peuvent donner lieu à des comportements opportunistes des individus prenant part à la transaction afin d'augmenter leurs gains au détriment des autres. Un apport intéressant de cette littérature est de montrer que les agents économiques opérant dans un environnement anarchique, où les droits de propriété sont imparfaitement protégés, peuvent développer des dispositifs favorisant le respect des lois et l'engagement crédible. Par exemple, des mécanismes de gouvernance peuvent être mis en place sans tiers garantissant leur application au sein de groupes liés par des liens d'affaire (Greif, 1993) ou ethniques (Rauch, 2001), même en l'absence d'interactions répétées entre membres. Les gouvernements peuvent aussi adopter des comportements opportunistes : Greif *et al.* (1994) montrent que la création de guildes dans l'Europe médiévale était un moyen de surmonter des problèmes de hold-up entre cités commerciales et marchands. L'utilisation de la théorie des jeux permet de modéliser l'origine des comportements opportunistes et

[9] "The rules of the game in a society or, more formally, [...] the humanly devised constraints that shape human interaction" (North, 1990, p.3).

comment, dans ce cadre, peuvent émerger des comportements coopératifs (Dixit, 2004). Ces travaux soulignent les difficultés à négocier des accords qui lient toutes les parties lorsqu'il n'existe pas de tiers détenant le monopole de coercition à même de faire respecter la loi. Des institutions destinées à gérer les situations nécessitant des actions coopératives dans une situation d'anarchie peuvent néanmoins être conçues, mais leur dispositif institutionnel doit être conçu de manière à inciter les membres à s'y conformer.

Par ailleurs, lorsque la justice n'est pas appliquée, l'usage de la violence n'est pas restreint. La capacité des agents économiques à faire respecter leurs droits de propriété par d'autres moyens devient alors essentielle. L'économie des conflits souligne l'arbitrage existant entre activités d'appropriation et de production lorsque les agents interagissent dans un monde anarchique, où aucune institution externe n'est à même de réguler les transactions et de faire appliquer les contrats (Hirshleifer, 2001; Skaperdas, 1992). Lorsque la loi n'est pas ou imparfaitement appliquée, les agents ont une incitation à allouer du temps à des activités de prédation visant à s'approprier les revenus des activités de production. L'existence même de possibilités d'activités de prédation affecte ainsi l'allocation des ressources et l'efficacité. Il est alors nécessaire de prendre en compte que les transactions interviennent sous la menace du conflit. Par exemple, Anderson and Marcouiller (2005) montrent qu'introduire de manière endogène des activités de prédation par les individus dans un modèle de commerce en équilibre général dans un monde anarchique conduit à une situation d'équilibre autarcique pour un large éventail de paramètres.

Le système international est considéré comme essentiellement anarchique car les Etats sont incapables de définir des contrats de long terme qui éviteraient les dépenses d'armement et empêcherait l'usage de la force militaire (Skaperdas

and Syropoulos, 2001). [10] En effet, puisque le monopole de la violence légitime et de la coercition est concentré au niveau des Etats-Nations, il n'existe par d'autorité supérieure ayant le pouvoir de contraindre les actions des gouvernements et d'empêcher l'usage de la force armée. Les conflits entre Etats peuvent donc donner lieu à des interventions militaires ; toute résolution de conflits entre Etats intervient donc sous la menace de l'usage de la force militaire. Cela implique que même en l'absence de guerres, les coûts liés à l'insécurité internationale ne sont pas nuls.[11] De plus, puisque la résolution des conflits intervient sous la menace de la guerre, le pouvoir militaire des pays influence aussi le résultat d'une résolution négociée. Skaperdas (2006) souligne cependant qu'une situation d'anarchie peu aboutir à des résultats finaux différents selon les règles de division choisies ; les lois et institutions internationales, dans la mesure où elles influencent les normes de conduite des Etats, peuvent ainsi influencer le niveau d'armement à l'équilibre.

De plus, l'absence de mécanisme de gouvernance mondial empêche la fourniture de sécurité internationale et augmente l'incertitude dans les transactions internationales (Garfinkel *et al.*, 2008). Les politiques étrangères économiques et de sécurité sont donc liées. Ainsi, Anderton *et al.* (1999) développent un modèle de commerce ricardien dans un monde prédateur/proie où coexistent des activités de production, d'échange et d'appropriation. Ils montrent que la prédation empêche le commerce lorsque la technologie d'appropriation est productive et que les dotations factorielles sont inégales. Le fait d'introduire l'échange mutuellement bénéfique conduit néanmoins à augmenter le coût de la prédation et à empêcher les conflits pour un large éventail de paramètres du modèle. L'existence de possibilités d'appropriation

[10] Il est évident que "peu de personne croient que les relations internationales se caractérisent réellement par un état de nature anarchique, idéal-typique, régi par le pouvoir et la violence. De le même manière, personne ne croit que nous vivons dans un monde purement coopératif défini par la loi internationale et l'ordre" (Steinberg and Zasloff, 2006, p.86). "[...] Few believe that international relations are actually defined by an anarchic, ideal-typical state of nature ruled by raw power and violence. And no one believes that we live in a purely cooperative world characterized by international law and order".

[11] Une illustration en est le fait que les dépenses militaires restent importantes au niveau mondial, malgré la réduction des guerres de grande ampleur depuis la seconde guerre mondiale. Un rapport du SIPRI (2008, chap.5) estime ainsi les dépenses militaires mondiales en 2007 s'élévent à 1339 milliards de dollars, soit 2,5% du PIB mondial.

influence cependant les fondamentaux économiques lorsque qu'aucune activité de prédation n'est observée : échanger sous la menace de conflits aboutit à des niveaux de commerce, de termes de l'échange et de bien être différent de ceux obtenus dans un modèle de commerce ricardien sans possibilité d'appropriation. De même, Skaperdas and Syropoulos (2001) montrent, à partir d'un modèle de commerce simple entre deux petits pays et une ressource contestée, que les incitations à s'armer dépendent du régime commercial mais que l'ouverture au commerce peut avoir une externalité de sécurité négative et augmenter les dépenses d'armement.

Cette littérature économique s'est développée en parallèle d'un débat nourri entre politologues spécialistes des relations internationales sur le lien entre politiques économiques et sécurité nationale (Barbieri, 2002). L'école libérale en relations internationales affirme que le commerce favorise la paix entre Etats. Le raisonnement sous jacent est essentiellement basé sur une analyse en termes de coût d'opportunité de la guerre puisque le commerce apporte des gains mutuels et que la guerre interrompt le commerce entre opposants[12], le coût de la guerre augmente avec l'intégration commerciale, ce qui incite les pays à résoudre leurs conflits de manière pacifique (Polachek, 1980; Polachek *et al.*, 1999; Oneal and Russett, 1997, 1999). Un autre argument avancé par l'école libérale est que le commerce augmente les contacts entre individus et gouvernements de différents pays, et facilite ainsi la coopération internationale et la conclusion d'accord négociée. Les critiques de cette vision par l'école réaliste mettent l'accent sur l'importance des gains relatifs au commerce et sur le fait que les relations commerciales asymétriques sont susceptibles de créer des conflits à cause de la crainte des Etats de devenir économiquement dépendants de leur partenaires commerciaux (Waltz, 1979; Grieco, 1990). Mansfield and Pollins (2003) soulignent que la notion d"interdépendance regroupe deux aspects : être interdépendant peut signifier que les conditions économiques d'un pays ont un impact sur celles d'un autre ou qu'il est couteux d'interrompre les échanges

[12] Martin *et al.* (2008) et Glick and Taylor (2009) montrent de manière empirique que la guerre conduit à l'interruption de commerce bilatéral durant plusieurs années, et que cela représente une part significative des coûts de la guerre.

commerciaux avec un partenaire donné. De manière empirique, Martin *et al.* (2008) montrent que le commerce international a un effet ambigu sur la paix : le commerce bilatéral réduit les probabilités de guerre mais l'ouverture multilatérale au commerce atténue cet effet, puisqu'elle réduit la dépendance envers un partenaire spécifique. Tout facteur influençant la géographie du commerce a donc un impact sur la conflictualité internationale.

Emmanuel Kant, dont l'*Essai sur la paix perpétuelle* est un texte fondateur de l'école libérale, met l'accent sur un troisième élément, les organisations internationales, qui, ajouté à la démocratie et au libre échange, forment le trépied kantien pour la paix perpétuelle:

> Qu'un peuple dise : 'Il ne doit y avoir entre nous aucune guerre, car nous voulons ne former qu'un Etat, c'est-à-dire nous voulons instituer un pouvoir suprême législatif, exécutif et judicaire, qui règlera pacifiquement nos conflits' cela se comprend. Mais si cet Etat dit 'Il ne doit y avoir aucune guerre entre moi et d'autres Etats, bien que je ne reconnaisse aucun pouvoir législatif suprême qui m'assure mon droit et moi le sien', on ne comprend plus du tout sur quoi je peux baser la confiance en mon droit, sauf s'il y a un équivalent de l'alliance sociale civique, à savoir le libre fédéralisme que la raison doit lier d'une manière nécessaire au concept du droit des gens, si l'on veut d'une manière générale continuer à penser quelque chose sous ce terme. (Kant, 1795a, p.92)

Cette conception des Relations Internationales est à la base de la création de la Communauté Européenne du Charbon et de l'Acier après la seconde guerre mondiale, annonciatrice de la Communauté Economique Européenne. Robert Schuman, dans sa déclaration du 9 mai 1950, formule ainsi sa proposition : "par la mise en commun de productions de base et l'institution d'une Haute Autorité nouvelle, dont les décisions lieront la France, l'Allemagne et les pays qui y adhéreront, cette proposition réalisera les premières assises concrètes d'une

Fédération européenne indispensable à la préservation de la paix."[13] L'analyse de la coopération internationale en matière économique ne peut pas être envisagée de manière isolée, sans prendre en compte les autres domaines de politique étrangère, et en particulier les questions de sécurité. L'étude des liens entre organisations internationales et conflits internationaux a fait l'objet de plusieurs travaux par des spécialistes des Relations Internationales notamment. Schiff and Winters (1998) et Bearce (2003) expliquent ainsi comment les accords régionaux peuvent prévenir l'escalade des conflits en guerre d'un point de vue théorique. Mansfield and Pevehouse (2000), Bearce and Omori (2005) et Haftel (2007) montrent de manière empirique que les accords commerciaux régionaux réduisent la probabilité de guerre entre les pays membres.[14] Plus largement, Keohane (2001) attribue cinq fonctions majeures aux institutions internationales : (i) prévenir l'usage à grande échelle de la violence ; (ii) limiter les externalités négatives résultant des décisions des gouvernements nationaux (ou de niveaux de décisions plus décentralisés) dans un monde interdépendant ; (iii) fournir des points focaux pour les jeux de coordination ; (iv) prendre en charge les perturbations systémiques ; et (v) éviter les pires formes de mauvais traitements.

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Les accords économiques internationaux ne doivent donc pas seulement être analysés comme des accords sur la réduction des barrières politiques aux échanges. Ils doivent aussi être considérés comme des dispositifs institutionnels créés par des Etats souverains afin de promouvoir la mise en place de politiques de coopération au niveau international. Dans cette thèse, nous nous attachons à montrer comment les spécificités du système international présentées ci-dessus importent pour l'analyse de la création des accords économiques internationaux et de leur efficacité dans

[13] http://europa.eu/abc/symbols/9-may/decl_fr.htm

[14] Voir aussi l'article de Boehmer *et al.* (2004) concernant les organisations internationales et l'introduction au numéro spécial du *Journal of Conflict Resolution* consacré aux organisations internationales (Hafner-Burton *et al.*, 2008).

la promotion des échanges. Dans cette optique, il est particulièrement important d'étudier de manière détaillée les caractéristiques de chaque type d'accord. Dans les deux premiers chapitres de cette thèse, nous nous intéressons aux accords commerciaux régionaux et présentons la première analyse à la fois théorique et empirique de l'hétérogénéité dans la forme de ces accords. Le premier chapitre montre de manière empirique que la profondeur de l'intégration commerciale n'est pas liée à la forme des accords régionaux. Le chapitre deux propose alors une explication des différentes stratégies d'intégration régionale basée sur l'interaction entre politiques commerciale et sécuritaire. L'analyse empirique présentée dans ce chapitre confirme l'importance des questions de sécurité dans le choix, par les pays, de créer différents types d'accords régionaux. Enfin, le troisième chapitre souligne l'importance des risques politiques liés aux relations diplomatiques dans les choix de localisation des multinationales et leurs conséquences pour l'analyse des traités bilatéraux d'investissement. Les résultats empiriques montrent que les traités d'investissement bilatéraux permettent aux pays hôtes de s'engager de manière crédible à ne pas altérer la protection fournie aux investisseurs internationaux par les institutions domestiques en cas de futur conflit international.

Les flux de commerce internationaux sont régulés par un réseau important d'accords internationaux de dimensions variables. Au niveau multilatéral, l'Organisation Mondiale du Commerce (OMC) fournit, à ses 153 membres, un forum de négociation permettant de faire émerger des règles juridiques de base pour le commerce international et de promouvoir la mise en place de politiques commerciales coopératives (Bagwell and Staiger, 2002). Au sein de l'OMC, l'Organe de Règlement des Différents traite les conflits liés aux questions d'application des accords signés par les Etats membres et de désaccords sur leur interprétation (Bagwell and Staiger, 2002; Maggi and Staiger, 2008). Par ailleurs, Berkowitz *et al.* (2006) montrent que les traités internationaux, comme la Convention de New York, interagissent avec les institutions domestiques dans la détermination des avantages comparatifs des pays et de leur échanges commerciaux. Les accords commerciaux régionaux tiennent une

place importante dans l'ensemble des accords commerciaux internationaux. Tous les membres de l'OMC, à l'exception de la Mongolie, sont membres d'au moins un accord régional. Leur nombre a augmenté de manière exponentielle depuis 20 ans, sous l'impulsion notamment de la disparition du Conseil d'Assistance Economique Mutuelle et de l'éclatement de plusieurs ex pays communistes.[15] A l'échelle mondiale, 181 accords régionaux étaient en vigueur fin 2007, couvrant plus de 14% des paires de pays. Plus du tiers du commerce mondial est ainsi régulé par ces accords.

La littérature économique sur le régionalisme remonte aux années 1950. L'analyse par Viner (1951) des unions douanières en termes de création et de détournement de commerce a longtemps dominé la littérature théorique (voir Pomfret (1997) pour une revue de la littérature). Une riche littérature empirique s'est développée dans son sillage, analysant l'effet des accords régionaux sur le commerce *ex post*, en utilisant l'équation de gravité - le détenteur du prix Nobel Jan Tinbergen a été le premier à appliquer le modèle de gravité à l'étude de l'intégration régionale (Tinbergen (1962), voir aussi Frankel (1997)). Ces travaux ont amené des résultats largement contradictoires. Ghosh and Yamarik (2004a) montrent, en utilisant une analyse par les valeurs extrêmes (*extreme bound analysis*), que les estimations des effets de création de commerce des accords régionaux par des variables muettes sont fragiles. Une question importante susceptible d'expliquer ces résultats divergents est celle de l'endogénéité de l'appartenance à des accords régionaux. Les variables de politiques commerciales, et plus particulièrement ici l'existence ou non d'un accord commercial entre deux pays, ne sont en effet pas exogène par rapport aux flux de commerce. Si la décision des gouvernements nationaux de créer ou d'entrer dans un accord est corrélée à des obstacles au commerce inobservables par l'économètre, alors les effets estimés des accords régionaux sur le commerce sont susceptibles d'être biaisés par l'auto-sélection des paires de pays dans les accords.

Deux articles récents prennent cette question au sérieux. Carrere (2006) estime l'effet de création et de diversion de commerce de sept accords régionaux en utilisant

[15] Voir Pomfret (2007) pour une présentation détaillée des principaux processus d'intégration sur chaque continent.

la méthode des variables instrumentales développée par Hausman and Taylor (1981). Elle montre que la mise en place d'un accord augmente de manière significative le commerce entre les pays membres, et ce généralement au détriment des pays tiers. Baier and Bergstrand (2007), de leur coté, s'appuient sur l'analyse économétrique des effets de traitement pour prendre en compte l'endogénéité due à l'auto-sélection des paires de pays dans les accords. En utilisant des données en panel et des effets fixes spécifiques aux paires de pays, ils montrent que les estimations traditionnelles des effets des accords régionaux sur le commerce bilatéral sont largement biaisées vers le bas. Lorsque ce biais est traité, ils montrent, qu'en moyenne, un accord régional augmente le commerce bilatéral de presque 100% après une période de 10 ans.[16]

Au début des années 1990, l'attention de la littérature théorique s'est tournée vers le lien entre régionalisme et multilatéralisme. Comme le formule Jagdish Bhagwati, est-ce que les accords régionaux "servent de blocs de fondation au libre échange à l'échelle du GATT ou lui font obstacle"[17] (Bhagwati, 1991, p.91)?[18] Baldwin (2008) distingue deux axes de recherche importants. Le premier s'intéresse à la question de l'impact de la libéralisation préférentielle sur le bien être mondial et le second s'attache à analyser si le régionalisme favorise ou au contraire entrave la libéralisation multilatérale. La question posée est alors de savoir si régionalisme et multilatéralisme sont des compléments ou des substituts. Ces travaux considèrent cependant la formation des accords régionaux comme exogène. L'étape suivante a alors consisté à endogénéiser la formation des droits de douane multilatéraux au sein des accords régionaux. Plusieurs articles récents étudient dans quelle mesure la formation d'accords régionaux a un effet sur le niveau des droits de douane vis-à-vis du reste du monde, et sur les incitations à poursuivre la libéralisation

[16] Egger *et al.* (2008) trouvent des résultats similaires sur le volume du commerce en utilisant des méthodes d'appariement et un estimateur en différence en différence.

[17] "(...) serve as building blocks of, rather than stumbling blocks to, GATT-wide free trade" (Bhagwati, 1991, p.91).

[18] Cette nouvelle orientation de la littérature a notamment été initiée par des contributions de Bhagwati (1991), Krugman (1991a,b) et Summers (1991).

commerciale sur une base multilatérale. Ces travaux théoriques se basent sur les externalités de termes de l'échange (Bagwell and Staiger, 1997b), le rôle des groupe de pression domestiques (Grossman and Helpman, 1995; Ornelas, 2005b,a, 2008), des problèmes d'inconsistance temporelle vis-à-vis du secteur privé (Maggi and Rodriguez-Clare, 1998; Mitra, 2002), ou sur l'effet de différentes stratégies de libéralisation multilatérale en présence de coûts fixes à l'exportation Freund (2000a).

D'un point de vue empirique, et comme souligné par Baldwin (2008, p.18), Limao (2006) et Karacaovali and Limão (2008) trouvent un effet de ralentissement de la création de zones de libre échange sur la libéralisation multilatérale. En effet, Limao (2006) montrent que les baisses de droits de douane américains durant le cycle de négociation de l'Uruguay ont été plus faibles pour les produits qui faisaient précédemment l'objet de préférences tarifaires dans le cadre de zones de libre échange. Karacaovali and Limão (2008) répliquent cette étude dans le cas de l'Union européenne et trouvent des résultats similaires concernant les accords préférentiels négociés par l'UE, exception faite des accords avec les pays candidats à l'adhésion. A l'inverse, Estevadeordal and Suominen (2008), à partir de données au niveau des industries pour les pays latino américains, montrent que les baisses des droits de douane de manière préférentielle et multilatérale vont de paire, sauf dans le cas des unions douanières. Les résultats de la littérature empirique sur le sujet restent donc controversés, et semblent dépendre de la forme des accords commerciaux régionaux.

Un axe de recherche séparé s'est attaché à expliquer la formation endogène des accords commerciaux régionaux, c'est-à-dire à poser la question de la diffusion du régionalisme autour du globe. La première contribution quant à cette question est la théorie des domino de Baldwin (1997), qui stipule que l'approfondissement ou l'élargissement d'un accord régional existant peut changer l'équilibre politique domestique local, entre partisans (le secteur exportateur) et opposants (le secteur concurrencé par les importations) à l'accession, dans les pays ayant initialement choisi de ne pas adhérer. Plusieurs travaux se sont ensuite inscrits dans cette veine. Freund (2000a) montre qu'en présence de coûts fixes à l'exportation, deux pays

peuvent avoir intérêt à créer un accord régional avant une libéralisation multilatérale. Dans un second article, Freund (2000b) souligne que le lien causal peut aller dans le sens inverse : une réduction des droits de douane au niveau multilatéral peut inciter les pays à créer des accords commerciaux. De même, Ethier (1998), en critiquant l'approche vinerienne des accords régionaux, en vient à soutenir que le régionalisme est une réponse endogène à la libéralisation multilatérale. Yi (1996) utilise la théorie des jeux coopérative pour modéliser la structure (taille et nombre de pays membres) endogène d'équilibre des unions douanières entre des pays similaires, et leur implication pour la libéralisation multilatérale sous différentes règles de formation des unions douanières. Il montre que les unions douanières peuvent mener au libre échange mondial lorsque les pays tiers sont libres d'adhérer, ce qu'il nomme "régionalisme ouvert", mais pas lorsque l'adhésion nécessite l'unanimité des membres ("régionalisme unanime").Dans un modèle de coalition similaire avec pays asymétriques (et une règle de formation des accords régionaux basée sur l'équilibre de Nash robuste aux coalitions), Das and Ghosh (2006) montrent que si le libre échange mondial n'est pas atteint, des zones de libre échange sont formées entre pays similaires. Lorsque la formation endogène des accords régionaux est modélisée comme un jeu de coalition, le choix de la règle de formation est donc particulièrement important. Dans la même veine, Melatos and Woodland (2007a) développent un modèle de détermination du tarif extérieur commun au sein d'une union douanière et étudient son influence sur la décision initiale de créer un accord régional. Leur modèle souligne qu'une union douanière n'est pas seulement un accord sur la baisse des droits de douane et un tarif extérieur commun, mais implique aussi un accord sur le processus de prise de décision au sein de la zone.

Ces modèles de formation d'accords régionaux ne sont cependant pas d'une grande aide pour comprendre la géographie du régionalisme, c'est-à-dire pour comprendre quels types de pays choisissent de créer ou d'adhérer à des accords régionaux. Les résultats empiriques sur le sujet sont par ailleurs particulièrement rares. Baier and Bergstrand (2004b) font exception. Ils étudient les déterminants

économiques de la formation d'accords régionaux sur une coupe de paires de pays, pour un échantillon de 54 pays, essentiellement développés. Leurs résultats suggèrent que les paires de pays membres d'accords régionaux partagent des caractéristiques économiques qui, théoriquement, augmentent les gains nets de bien être résultant d'une augmentation du commerce, pour les agents représentatifs. La probabilité d'existence d'un accord est plus élevée entre deux pays géographiquement proches et éloignés du reste du monde, et qui ont des tailles économiques similaires et des dotations factorielles différentes. Ces résultats soutiennent une vision des accords régionaux comme répondant à un *marché du régionalisme*[19], dans lequel les pays "choisissent bien" leur partenaire (Baier *et al.*, 2007).

De plus, tous ces articles n'étudient que les zones de libre échange ou que les unions douanières (Freund, 2000a; Das and Ghosh, 2006; Limao, 2007; Melatos and Woodland, 2007b), considèrent les deux séparément (Freund, 2000b; Bagwell and Staiger, 1997a), ou ne distinguent pas les accords régionaux selon leur forme (Baier and Bergstrand, 2004b; Baldwin, 1997).[20] Les différents types d'accords commerciaux régionaux diffèrent pourtant radicalement : ils impliquent la mise en place de dispositifs d'intégration différents et donc l'usage d'instruments de politiques économiques différents. La classification usuelle des accords régionaux, initialement développée par Balassa (1961), les classe du moins intégré au plus intégré, comme différentes étapes d'intégration conduisant à l'union économique, en passant par un accord préférentiel, une zone de libre échange, une union douanière puis un marché commun (voir le tableau 1). Un accord préférentiel assure aux pays membres des préférences tarifaires sur un nombre limité de produits. Une zone de libre échange élimine les droits de douane et autres barrières non tarifaires simples sur tout le commerce de biens entre pays membres. Une union douanière implique,

[19] Cette analogie fait suite à celle du "bol de spaghetti" de Jagdish Bhagwati.

[20] Melatos and Woodland (2007a) est la seule exception. Dans un modèle de commerce en équilibre général avec formation de coalitions entre 3 pays asymétriques en termes de préférences et de dotations, leurs simulations montrent que les zones de libre échange tendent à dominer au sens de Pareto les unions douanières lorsque les pays sont suffisamment différents. Lorsque les pays sont similaires, le libre échange mondial domine au sens de Pareto. Enfin, les unions douanières sont formées entre pays adjacents en termes de préférence et de dotation.

quant à elle, non seulement l'échange de préférences commerciales sur le commerce intra-régional, mais aussi la fixation d'un tarif extérieur commun vis-à-vis du reste du monde. Enfin, un marché commun est un accord prévoyant la libre circulation des facteurs de productions (biens, capital et travail). L'hypothèse sous-jacente à la taxinomie de Balassa (1961) est que l'intégration régionale est nécessairement un processus graduel, menant éventuellement à l'unification politique (Pomfret, 2007). Il n'existe pourtant pas de preuve empirique de cette progressivité. Ainsi, des 18 unions douanières créées depuis la seconde guerre mondiale, 14 ont été créées directement comme telles, sans quelconque étape intermédiaire d'intégration. De même, tous les autres accord préférentiels et zones de libre échange n'ont pas évolué vers des formes d'accords commerciaux régionaux plus "intégrées" (121 zones de libre échange et 23 accords préférentiels éraient en vigueur fin 2005).[21]

Table 1: Taxinomie des accords commerciaux régionaux

	Elimination des droits de douane	Tarif extérieur commun	Libre circulation des facteurs de production	Politiques économiques communes
Accord préférentiel	Partielle			
Zone de libre échange	X			
Union douanière	X	X		
Marché commun	X	X	X	
Union économique	X	X	X	X

Une seconde implication de cette vision du régionalisme comme un processus graduel est que les accords les plus intégrés devraient se traduire par une création de commerce entre pays membres plus importante. D'un point de vue théorique, la forme des accords régionaux n'est pourtant pas systématiquement liée au niveau de coûts au commerce au sein de la zone. Si un accord préférentiel peut clairement être considéré comme une zone de libre échange dont l'étendue et la couverture sont partielles, une union douanière ou un marché commun ne peuvent pas simplement être compris comme des étapes ultérieures d'intégration. Les instruments de

[21] Une exception est le réseau complexe de zone de libre échange bilatérales mises en place entre l'UE européenne et les candidats à l'adhésion durant les négociations.

politique commerciale mobilisés sont tout simplement différents selon la forme d'intégration choisie : alors que l'entrée dans une union douanière nécessite de renoncer à la souveraineté nationale sur la politique commerciale afin de mettre en place un tarif extérieur commun, une zone de libre échange permet aux pays membres de conserver cette souveraineté mais implique la mise en place de règles d'origine. Les deux types d'accords permettent néanmoins aux membres de mettre en place des régimes préférentiels étendus et approfondis.[22] Le degré d'intégration commerciale est donc susceptible de varier d'un accord à l'autre, mais pas nécessairement en relation avec la forme des accords.

Le premier chapitre de cette thèse étudie dans quelle mesure la forme des accords régionaux à une importance quant à leur effet sur le commerce intra régional. Le problème de sélection est particulièrement important dans ce cas, puisque différentes formes d'intégration sont susceptibles d'apporter des gains différents à des pays membres différents. Nous suivons Baier and Bergstrand (2007) et traitons ce biais en utilisant des données en panel avec des effets fixes spécifiques aux paires de pays. Nous estimons donc une équation de gravité fondée théoriquement, dans laquelle la définition des accords commerciaux régionaux est raffinée, en différentiant différents types d'accords selon leur forme. Trois conclusions importantes émergent de nos résultats. En premier lieu, l'hétérogénéité inobservable entre paires de pays influence de manière différente les estimations des effets moyens de traitement selon le type d'accord. Cela suggère que différents types de pays choisissent de créer différents types d'accords. Nous montrons ensuite que tous les accords commerciaux régionaux augmentent le commerce entre pays membres de manière significative. Cet effet moyen est cependant statistiquement similaire pour tous les types d'accords. Une fois que nous contrôlons du biais de sélection, nous trouvons que créer une zone de libre échange, une union douanière ou un marché commun a un effet similaire sur le commerce bilatéral.

[22] Par exemple, l'accord gouvernant les investissements étrangers au sein de l'ALENA permet une mobilité du capital très importante.

Ce chapitre contribue à la littérature empirique sur le régionalisme de deux manières principales. D'abord, les estimations des effets de création de commerce de différents types d'accord obtenus dans ce chapitre sont largement plus plausibles que ceux existants. Les résultats soulignent, par ailleurs, que ces effets ne varient pas selon la forme des accords. Enfin, ce premier chapitre montre que les pays choisissent non seulement leur partenaire au sein d'un accord mais aussi la forme de l'accord selon leurs caractéristiques propres, approfondissant en cela la notion de "marché du régionalisme" développée par Baier *et al.* (2007). Les effets d'un accord régional spécifiques devraient donc dépendre à la fois de ses caractéristiques et de celles de ses membres.

Les résultats empiriques de ce premier chapitre remettent en question la vision de l'intégration régionale comme un processus graduel. Ils suggèrent que l'explication de l'hétérogénéité des accords régionaux n'est pas nécessairement directement liée à des questions de commerce. Dans le second chapitre de cette thèse, nous proposons une explication basée sur l'interaction entre politiques commerciales et de sécurité et présentons des preuves empiriques que les déterminants de la formation des accords régionaux diffèrent selon leur forme. Les gains à l'intégration régionale ne sont pas confinés à la réduction des droits de douane et des autres barrières simples aux échanges. Whalley (1996) et Fernandez and Portes (1998) soulignent ainsi que les accords régionaux peuvent aider à résoudre des problèmes d'inconsistance temporelle, de signalement, d'assurance, de pouvoir de négociation ou de coordination dans la coopération entre Etats. Les dispositifs institutionnels ciblant ces questions ont tous pour objectif de réduire l'incertitude quant aux politiques nationales et internationales futures. Dans cette perspective, et comme souligner plus haut, les questions de sécurité nationale sont un domaine de coopération entre Etats particulièrement important et une source d'incertitude pour

les Etats.[23]

D'un point de vue théorique, l'intégration économique régionale est susceptible de promouvoir la paix par deux canaux principaux. D'un coté, en favorisant le commerce entre membres au détriment des pays tiers, l'intégration régionale augmente le coût d'opportunité de la guerre (Martin *et al.*, 2008). De l'autre, la création d'institutions supranationales promeut l'échange d'informations sur les capacités militaires des pays membres et leur détermination dans les conflits, et renforce la confiance entre dirigeants politiques, ce qui renforce la crédibilité des engagements des Etats et favorise la résolution pacifique des conflits (Bearce, 2003). Le dispositif institutionnel créé au niveau régional diffère cependant beaucoup selon la forme des accords. Seuls les plus intégrés, comme les unions douanières et les marchés communs, nécessitent des institutions communes significatives, à même d'empêcher les conflits de dégénérer en guerre. Dans ce chapitre, nous définissons donc la profondeur des accords régionaux selon leur niveau d'intégration institutionnelle ou politique, c'est-à-dire selon leur capacité à gérer les conflits et à prévenir leur escalade en guerre.[24]

Dans ce second chapitre, nous développons un modèle théorique de formation endogène des accords régionaux dans un monde risqué. Nous montrons que les incitations à créer un accord diffèrent selon sa profondeur : les paires de pays connaissant de nombreux conflits et naturellement plus intégrées au système commercial international ont tendance à créer des accords approfondis, comme des unions douanières ou des marchés communs. L'inverse est vrai pour les accords peu approfondis, tels que les accords préférentiels ou les zones de libre échange. Ces prédictions du modèle théorique trouvent une validation dans l'analyse empirique

[23] Blomberg and Hess (2006) estiment que le coût de la violence est équivalent à un droit de douane de 30% sur le commerce. Dans leur étude de l'évolution du commerce mondial sur les dernier millénaire, Findlay and O'Rourke (2007) soulignent eux aussi le rôle crucial de la paix et la guerre pour ce qui est du commerce international, et inversement.

[24] Nous ne considèrons pas ici la question de la profondeur de l'intégration commerciale dans les accords commerciaux. Voir Inter-American Development Bank (2006) concernant les différences dans les clauses d'accès au marché,au sein de 42 accords régionaux, selon 6 critères : les droits de douane, les mesures non tarifaires, les autres mesures, les régimes spéciaux, les règles d'origine et les procédures en douane.

présentée dans la seconde partie du chapitre 2.

Ce chapitre propose la première analyse du choix de la forme d'intégration régionale. Nous étendons le modèle d'intégration politique développé par Alesina *et al.* (2000) et Alesina and Spolaore (2005, 2006) au cas où la souveraineté sur les politiques commerciales peut être déléguée au niveau régional, c'est-à-dire au cas où les frontière politiques et économiques ne sont pas nécessairement similaires. Puisque la politique de sécurité reste une prérogative nationale, les conflits entre Etats peuvent dégénérer en guerre, et interrompre ainsi les échanges bilatéraux. Cela crée une incertitude, que les mécanismes institutionnels des accords régionaux peuvent aider à gérer. Ce modèle souligne l'importance de l'interaction des questions de commerce et de sécurité pour expliquer l'hétérogénéité observée des accords commerciaux régionaux. Par ailleurs, en analysant des questions qui ne peuvent pas être prises en charge au niveau multilatéral, ce chapitre offre une nouvelle perspective au débat sur le lien entre régionalisme et multilatéralisme.[25] La distinction entre différentes formes d'intégration est particulièrement instructive dans cette perspective, puisque la coexistence de différents types d'accords peut être expliquée par le fait que chacun fourni différents dispositifs de coopération. Le modèle développé dans ce chapitre suggère que régionalisme et multilatéralisme peuvent être complémentaires, dans la mesure où certains types d'accords régionaux réduisent l'incertitude liée aux questions de sécurité nationale, permettant ainsi aux gouvernements nationaux d'accepter une plus grande ouverture et donc dépendance à l'égard du commerce.

Dans un second temps, les hypothèses testables dérivées du modèle théorique sont validées empiriquement, ce qui représente une contribution importante du chapitre puisque les travaux existants n'ont produit que très peu de résultats quant à la géographie des accords régionaux. Cette analyse empirique nécessite, dans une étape

[25] La littérature sur le régionalisme s'intéresse en grande majorité à des questions de termes de l'échange, qui peuvent être réglées au niveau régional comme multilatéral. Limao (2007) fait ici exception, puisqu'il modélise la formation endogène d'accords régionaux ayant des objectifs non commerciaux. Il ne spécifie cependant pas ces objectifs non commerciaux et ne peut pas distinguer différentes formes d'accords d'intégration régionale.

préliminaire, de définir empiriquement quels types d'accords régionaux favorisent la résolution pacifique des conflits entre Etats membres. Les résultats confirment que seuls les accords nécessitant une infrastructure institutionnelle supranationale importante, c'est à dire les unions douanières et les marchés communs, réduisent, de manière significative, les probabilités qu'un conflit escalade en guerre. Etre membre d'un accord préférentiel ou d'une zone de libre échange n'a aucun effet sur les probabilités de guerre entre membres. Nous définissons donc ces derniers d'accords peu intégrés, alors qu'unions douanières et marchés communs sont considérés comme des accords intégrés au regard de notre critère de profondeur d'intégration. La partie principale de l'analyse empirique valide alors fortement les deux implications du modèle : les paires de pays subissant beaucoup de conflits et naturellement plus ouvertes au commerce créent des accords commerciaux intégrés, alors que l'inverse est vrai pour les accords peu intégrés. D'un point de vue empirique, ce chapitre complète donc l'article de Baier and Bergstrand (2004b) sur les déterminants économiques de la formation d'accord régionaux, en apportant des résultats non seulement sur le choix des partenaires mais aussi sur le choix de la forme d'intégration.

Le troisième chapitre s'intéresse à l'impact des traités bilatéraux d'investissement sur les investissements directs étrangers. Durant les vingt dernières années, les traités bilatéraux d'investissement se sont imposés comme le principal mécanisme de protection des droits de propriété des investisseurs étrangers au niveau international. A la fin 2005, 2495 traités avaient été signés, dont 1891 étaient entrés en vigueur. A l'inverse du commerce international, aucune norme légale concernant le traitement des investissements directs étrangers n'a émergé au niveau multilatéral. Puisqu'investir à l'étranger nécessite de payer un coût fixe, une fois que cet investissement est fait, les entreprises multinationales sont exposées à tout changement de politique ou tentative de renégociation des contrats par le gouvernement du pays hôte. Les traités bilatéraux d'investissement sont un moyen de se protéger contre ces risques politiques. Ils contiennent en particulier

des clauses d'expropriation définissant les actions devant être considérées comme des expropriations, et précisent les compensations et les mécanismes de règlement des différents, comme le recours à une cour d'arbitrage international. Lorsqu'il est couvert par un traité bilatéral d'investissement, un contrat engage l'investisseur aussi bien que le gouvernement, puisque toute rupture de contrat tombe sous le coup de la loi internationale (Guzman, 1998). Ces institutions internationales devraient donc interagir avec les institutions domestiques dans les choix de localisation des firmes multinationales.

La littérature existante s'est jusqu'à maintenant intéressée à l'effet moyen des traités d'investissement bilatéraux sur les IDE (Egger and Pfaffermayr, 2004), sans considérer les interactions avec d'autres moyens de protection des droits de propriété. Ces articles ne fournissent donc pas d'éclaircissement quant aux mécanismes par lesquels ces traités permettent d'augmenter les IDE. L'analyse empirique présentée dans le chapitre 3 souligne que les traités bilatéraux d'investissement doivent être considérés comme des mécanismes permettant aux gouvernements des pays hôte de s'engager de manière crédible auprès des investisseurs étrangers. Leur efficacité dépend alors du risque auquel les entreprises multinationales font face lorsqu'elles investissent dans un pays donné.

Les entreprises multinationales font face à deux types de risques lorsqu'elles investissent à l'étranger : un risque systémique, commun à tous les investisseurs, lié à la qualité des institutions domestiques, et un risque idiosyncratique, spécifique à chaque paire de pays hôte et d'origine, lié aux relations politiques entre Etats. Le rôle de ce dernier type de risque a été largement ignoré jusqu'à maintenant, parce que la littérature considère que les IDE prennent place dans un vide politique international. Nous utilisons une nouvelle base de données d'évènements reportant au jour le jour les interactions entre pays afin de mesurer la qualité des relations politiques entre Etats. La première contribution du chapitre 3 est de montrer que les entreprises multinationales prennent en compte les relations politiques entre pays hôte et d'origine dans leurs choix de localisation. Dans ce cadre, nous pouvons alors étudier

comment les traités bilatéraux d'investissement fonctionnent. Ils augmentent les IDE bilatéraux non seulement directement en réduisant les coûts d'investissement, mais aussi indirectement par deux canaux. L'entrée en vigueur d'un traité bilatéral d'investissement réduit les risques d'expropriation liés aux relations politiques entre Etats. Nous montrons que les traités augmentent plus les IDE entre pays ayant des tensions diplomatiques, et qu'ils n'ont aucun effet significatif entre pays amis. Par ailleurs, signer un traité bilatéral d'investissement est plus efficace lorsque la gouvernance économique domestique est bonne. Le chapitre 3 suggère donc que les institutions domestiques et internationales de protection des droits de propriété sont complémentaires pour attirer les investisseurs étrangers. En signant un traité bilatéral d'investissement, deux pays acceptent des contraintes sur leur souveraineté afin de marquer leur détermination à maintenir, sur le long terme, un climat d'affaire favorable aux entreprises étrangères.

General Introduction

Economic globalization has arguably been a crucial element of the post World War II era. Compelling evidence of that ongoing process are the growing share of world output that is traded - the world trade to GDP ratio has increased from 24% in 1960 to 38% in 1990 and 54% today -, and the increase in cross-border investments - foreign direct investments (FDI) flows have more than doubled relative to world GDP over the last two decades. The world is undoubtedly globalized, but is not flat notwithstanding. The two main factors driving economic globalization have been the reduction of transport and communication costs in the private sector, and the reduction of policy barriers to international flows of goods, services and capital by national governments (Frankel, 2000). Despite the removal of tariffs and simple non-tariff barriers to trade, national borders still significantly depress trade, and investment portfolios are largely biased towards domestic investments, while international labor mobility is strictly restricted. The remaining trade costs have more to do with domestic policies affecting behind the border barriers (regulation, norms, property rights, tax code, infrastructures, supervision of financial institutions...) than direct trade or investment policy instruments (Anderson and van Wincoop, 2004).

Divergences in national economic policies indeed create impediments to international exchanges. In a world fragmented into a number of independent political units, political borders induce a segmentation of markets regulated by separate legal jurisdictions. Because it creates discontinuities in political and jurisdictional

systems, the sovereignty of states implies transaction costs specific to cross-border trade as well as investment flows. In addition, since supranational law enforcement institutions are weak and international customary law at best provides weak protection of property rights, political borders create uncertainty on the enforcement of international contracts by local courts.[26]

In this respect, international economic integration leads to the confrontation of sovereignties of independent states. The concept of sovereignty is not clearly delineated but it is obvious that globalization harms it. Jackson (2003) notes that characteristics historically associated to state sovereignty - the monopoly over the legitimate use of force within its territory, the ability to regulate movements across borders, the freedom of foreign policy choice, or the recognition by other governments as an independent political entity not to be subjected to external intervention -, are being challenged nowadays. Rodrik (2000) illustrates this idea by a *political economy trilemma of the world economy*, whose three nodes are deep economic integration, democratic policies and nation state of which only two can be achieved simultaneously (see figure 1). Indeed, international economic integration requires that state sovereignty does not impose additional costs on international transactions. It involves either to enlarge jurisdictions in a global federal state so as to erase jurisdictional discontinuities (i.e. to give up nation state)[27], or to harmonize domestic regulations so that they do not impede international exchanges which means to give up democratic control on such economic policies.[28]

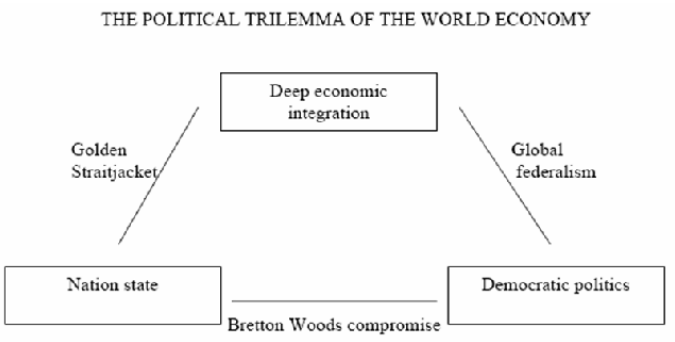
If sovereignty implies no higher power than nation-state, then international law foundations and constraints are valid only if nation-state consented to it. Jackson (2003) puts forward that issues regarding sovereignty are related to the allocation of decision-making power between different levels of governance. In

[26] See Anderson and Marcouiller (2002) and Berkowitz *et al.* (2006) for empirical evidence on this issue.

[27] As emphasized by Keohane (2001), *"in any event, the heterogeneity of the world's population makes it impossible to imagine any single theory providing the basis for a coherent, value-based system of global governance"* (Keohane, 2001, p.7).

[28] Frieden (2007) provides an interesting narratives of the collapse of the international system and the inability of governments to re-launch the globalization process in the interwar period under this line of reasoning.

Figure 2: The political economy trilemma of the world economy



Source: Rodrik (2000).

the case of treaty-based rules, it is plausible that each nation-state has consented to allocate its own sovereignty upward.[29] Therefore, the fact that sovereignty resides in nation-states has important consequences for the study of international economic policies. On the one hand, it imposes specific transaction costs to flows that cross a border (in particular hold-up and time consistency problems because a sovereign government cannot credibly commit itself). The corollary of this is that the deepening of economic integration clashes with state sovereignty, since it requires to level off those impediments to international flows. Furthermore, when policies of one state create externalities for others, economic integration deepens interstate dependence. Globalization creates a complex network of dependence and interdependence relations between states, which increases the cost of failing to cooperate. International economic integration therefore requires formal cooperation between states.

An important characteristic of the current wave of globalization is the increasing regulation of exchanges at the supra-national level, especially through the creation

[29] The evolution of jurisprudence over time may nevertheless pose problems in this respect. It is more ambiguous regarding customary international law.

of international economic agreements[30], either on a multilateral or a preferential basis. International economic agreements have expanded exponentially over the last two decades not only in their number but also in their coverage. While the current wave of interstate cooperation agreements is not the first in modern history, it differs from the preceding waves in two important dimensions: their complexity and the comprehensiveness of their coverage - previous waves of cooperation agreements in the late nineteenth century and during the interwar period carried mostly narrow agreements on navigation and commerce -, and their largely non-discriminatory nature - preferential trade liberalization generally goes hand in hand with multilateral liberalization (Estevadeordal and Suominen, 2008). Agreements on trade issues undoubtedly represent a prominent share of cooperative agreements between states.[31] Recently, however, other areas of cooperation have prompted a growing number of agreements; in particular, investment issues have been the focus of an impressive number of bilateral agreements since the 1990s.

The nexus between globalization and sovereignty is crucial to the understanding of formal mechanisms of international cooperation, since it links the source of impediments to cross-border flows to the cost of their elimination. By signing a treaty, states choose to constrain their actions and commit to narrow their range of policy choices. In the same manner, the creation of international economic agreements may require signatory states to transfer part of their sovereignty to supra-national organizations and to provide some public goods in common at the regional or global level. Understanding how states' sovereignty imposes costs on specific cross-border flows is therefore necessary to explain why international economic agreements are created and what are their effects. **From this perspective, this thesis proposes to analyze two main devices of interstate cooperation regarding**

[30] I use the term international economic agreement in a broad meaning encompassing all *formal* international economic agreements or organizations, be it bilateral, regional or multilateral in scope. This definition encompasses a restrictive set of international institutions since it excludes *informal* institutions related to norms of conduct of states.

[31] Estevadeordal and Suominen (2008) and Schiff and Winters (2002) underline that regional trade integration is likely to facilitate interstate cooperation in other areas.

trade and foreign direct investments: regional trade agreements (RTAs) and bilateral investment treaties (BITs). The aim of the following three chapters is to clarify why some countries choose to create some kinds of international economic agreements. The present work emphasizes that taking account of the security and political risks specific to cross-border transactions is necessary to fully understand the effects of international economic agreements on international exchanges. Before going any further regarding the objectives and contributions of this thesis, we need to detail the specificities of the international system in which flows of goods and capital take place and their relevance for the study of interstate cooperation.

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The study of international economic agreements has recently become a particularly dynamic field of research at the crossroad of several strands of the literature in Economics and Political Science. States have designed a multiplicity of international economic agreements, ranging from multilateral or regional organizations to bilateral treaties, in order to foster cooperative policies at the international level. As suggested by Mancur Olson (1965)'s seminal book *The Logic of Collective Action*, the study of collective action is the focus of Political Economy. Drazen (2000) underlines that the existence of heterogeneity of interests is at the core of the field of Political Economy because it creates the need for mechanisms to aggregate individual preferences into collective choices and to resolve conflicts. The study of the interplays between Economics and Politics in the international sphere is however specific since "the struggle of power has produced an equilibrium in which there is a multiplicity of nations" (Collier, 2008, p.111).[32] Indeed, international economics flows take place

[32] In this thesis, I focus on cooperation between states considered as unified agents and do not consider issues related to interests of specific groups within countries and lobbying. See Lake (2006) for an overview of the International Political Economy literature by both political scientists and economists along this line of research.

within an international political system made of a large number of independent states and in which no supranational institutions or third party can properly enforce property rights. These specificities prevent the provision of enforced justice and weaken any governance system at the global level. Collier (2008) identifies three important consequences of this state of lawlessness for transnational transactions: (i) unchecked opportunism by agents increases the cost of international transactions; (ii) international power asymmetries are unrestricted; and (iii) the lack of power to tax or regulate prevents the provision of global public goods and the curtailment of global public bads. The first two points have especially important implications for the study of cross-border exchanges and international economic agreements. We will now develop them in turn.

The New Institutional Economics (NIE) has put forward that "polities significantly shape economic performance because they define and enforce economic rules" (North, 1994, p.366). Douglas North defines institutions as "the rules of the game in a society or, more formally, [...] the humanly devised constraints that shape human interaction" (North, 1990, p.3). It thus encompasses both formal (codified rules such as constitution) and informal institutions (related to the use of formal institutions, the distribution of power or social norms). Organizations are groups of individuals operating under the rules and constraints set by institutions. Both institutions and organizations intend to reduce transaction costs on interactions between individuals (North, 1990). In his survey of the NIE literature, Williamson (2000) also distinguishes between two levels of social analysis: institutional environment (the formal rules of the game) and the institutions of governance (the play of the game). He argues that when analyzing the latter, the rules of the game have to be taken into account.

The literature on "Lawlessness and Economics" studies what happens when governmental institutions that set constraints and shape incentives are missing (Dixit, 2004). In this context, economic transactions creating value give rise to opportunistic behaviors by individuals involved in the transaction to increase their

own payoff at the expense of others. An interesting insight from this strand of the NIE is that when operating in a state of lawlessness or under weak enforcement of property rights, economic agents may develop substitutes for enforcement and credible commitment devices. For instance, self-enforcing governance mechanisms can be sustained in groups linked by business ties (Greif, 1993) or ethnicity (Rauch, 2001), even without repeated interactions. Opportunistic behavior by governments may also arise: Greif *et al.* (1994) argue that the creation of guilds in medieval Europe is a means to overcome hold-up problems in relations between trading cities and merchants. Using game theory allows to model what gives rise to opportunistic behavior and how cooperation can emerge in this context (Dixit, 2004). This literature highlights the difficulties to negotiate binding agreements when an enforcing party with a monopoly of coercion is missing. Some institutions may be designed to address issues requiring cooperative actions in a state of lawlessness, but institutional arrangements must be designed to shape credible incentives for compliance.

In addition, when justice is not enforced, violence is not restrained anymore. In this context, the ability of economic agents to enforce property rights by other means becomes essential. The literature in Conflict Economics emphasizes the trade-off between production and appropriation when agents interact under anarchy, i.e. when no ultimate authority is able to regulate transactions/enforce contracts externally (Hirshleifer, 2001; Skaperdas, 1992). Without proper justice enforcement, economic agents have incentives to devote time to predation to appropriate the production revenues. The existence of appropriation possibilities due to weak enforcement of property rights thus affects resource allocation and efficiency. Taking into account that transactions occur in the shadow of conflict is then necessary. For instance, Anderson and Marcouiller (2005) show that allowing endogenous predation by individuals in a general equilibrium model of trade under anarchic conditions leads to an autarkic equilibrium over most of the parameter space.

The interstate arena is considered to be an essentially anarchic system because

"states cannot engage in complete, long term contracting" that would eliminate arming and the possibility to use military force (Skaperdas and Syropoulos, 2001).[33] Since the monopoly of legitimate violence and coercion is concentrated in the governments of nation-states, no ultimate authority has the ability to constrain states' actions and to prevent the use of armed force. In this context, interstate disputes may be resolved through the use of military force so that their settlement occurs under the threat of war. It implies that even in absence of open warfare, international security costs are not necessarily low or null.[34] Since settlement of disputes occurs in the shadow of conflicts, the military power of each country will affect any negotiated outcome. Skaperdas (2006) nevertheless points out that anarchy may lead to different outcomes depending on the rule of division; international law or international institutions, to the extent that they shape norms of conduct of states, may thus affect the level of arming.

Furthermore, the lack of global governance mechanism prevents the provision of international security and harms predictability in transnational transactions (Garfinkel *et al.*, 2008). Foreign economic and security policies are thus interrelated. Anderton *et al.* (1999) develop a Ricardian trade model in a predator/prey framework, allowing for production, exchange and appropriation activities. Predation impedes trade when the appropriation technology is productive and resource endowments are unequal. Introducing mutually beneficial trade is nevertheless shown to increase the cost of predation and to preclude conflicts for a wide range of parameters of the model. The existence of appropriation possibilities also affects economic fundamentals when no predation actually occurs; exchange in the shadow of conflict leads to different levels of trade, terms-of-trade and welfare than in a pure Ricardian trade model. Using a simple model of trade between two small

[33] Of course, "few believe that international relations are actually defined by an anarchic, ideal-typical state of nature ruled by raw power and violence. And no one believes that we live in a purely cooperative world characterized by international law and order" (Steinberg and Zasloff, 2006, p.86).

[34] As an illustration, despite the reduction in the prevalence of large scale interstate wars since World War II, military spending remains sizeable: SIPRI (2008, chap.5) estimates world military expenditures in 2007 to $1339 billion or 2.5% of world GDP.

countries with a contested resource, Skaperdas and Syropoulos (2001) also show that incentives to arming depend on the trade regime but that openness to trade can have a negative security externality and lead to increased arming.

This literature parallels a long lasting debate in International Relations about the link between foreign economic and security policy (Barbieri, 2002). The Liberal school in International Relations argues that trade promotes peace in interstate relations. It is mostly based on an opportunity cost analysis: since trade is mutually beneficial and war disrupts bilateral trade[35], the prospect of higher war costs would impede the use of military force to resolve disputes between interdependent states (Polachek, 1980; Polachek *et al.*, 1999; Oneal and Russett, 1997, 1999). Another argument of the Liberal school is that trade increases contacts between individuals and governments and promotes political cooperation among nations and the ability to reach agreements. Critics by the Realist school stress that relative gains from trade matter and that asymmetrical trade relations may harms interstate cooperation because states fear to become economically dependent of a trade partner (Waltz, 1979; Grieco, 1990). Mansfield and Pollins (2003) emphasize that interdependence has two dimensions: it can mean that the economic conditions in one country affect the other country (sensibility interdependence) or that it is costly to disrupt bilateral exchanges (vulnerability interdependence). Empirically, Martin *et al.* (2008) find an ambiguous effect of trade on peace: bilateral trade does reduce the probability of war, but multilateral trade openness dampens this relationship since it reduces dependence on any specific trade partner. Factors affecting the geography of trade would thus impact international insecurity.

In addition, Immanuel Kant, whose *Perpetual Peace: A Philosophical Essay* is a funding piece of the Liberal school, emphasizes a third element, international organizations, which together with democracy and free trade form the three legs of the Kantian tripod for perpetual peace:

[35] See Martin *et al.* (2008) and Glick and Taylor (2009) for empirical evidence that war disrupts bilateral trade and that it represents a significant share of war costs.

> "We may readily conceive that a people should say, "There ought to be no war among us, for we want to make ourselves into a state; that is, we want to establish a supreme legislative, executive, and judiciary power which will reconcile our differences peaceably." But when this state says, "There ought to be no war between myself and other states, even though I acknowledge no supreme legislative power by which our rights are mutually guaranteed," it is not at all clear on what I can base my confidence in my own rights unless it is the free federation, the surrogate of the civil social order, which reason necessarily associates with the concept of the law of nations — assuming that something is really meant by the latter." Immanuel Kant (1795b, p.135).

This reasoning underlies the creation of the European Coal and Steel Community after World War II, which was soon to lead to the European Communities. As stated in the Robert Schuman's declaration on May 9, 1950: "by pooling basic production and by instituting a new High Authority, whose decisions will bind France, Germany and other member countries, this proposal will lead to the realization of the first concrete foundation of a European federation indispensable to the preservation of peace".[36] Accordingly, the issue of interstate economic cooperation cannot be investigated in complete isolation of other areas of international policies and in particular security. The question of the relationship between international organizations and militarized conflicts has attracted lots of attention from scholars in International Relations. In particular, Schiff and Winters (1998) and Bearce (2003) argue that RTAs provide a security externality and prevent war among members. Mansfield and Pevehouse (2000), Bearce and Omori (2005) and Haftel (2007) find empirical evidence that RTAs reduce the probability of wars among members.[37] More broadly, Keohane (2001) identifies five key functions for regional or global

[36] http://europa.eu/abc/symbols/9-may/decl_en.htm

[37] See also Boehmer *et al.* (2004) regarding international organizations in general, and the introduction to the special issue of the Journal of Conflict Resolution on International Organizations for a survey (Hafner-Burton *et al.*, 2008).

institutions: (i) to impede the use of large scale violence; (ii) to limit the negative externalities likely to be created by decisions of national governments (or more decentralized level of actions) in an interdependent world; (iii) to provide focal points in coordination games, (iv) to deal with system disruption; and (v) to prevent the worst forms of abuse.

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International economic agreements should therefore not be regarded only as agreements on the reduction of policy induced border barriers. They should also be regarded as institutional devices created by sovereign states in order to promote and support the implementation of cooperative policies at the international level. This thesis investigates how the specificities of the international system presented above matter for the understanding of what drives the creation of international economic agreements and their effectiveness in promoting exchanges. Analyzing in more details the characteristics of each kind of international economic agreements is essential in this respect. The first two chapters of this thesis focus on regional trade agreements and provide the first comprehensive analysis of the heterogeneity of RTAs regarding their form. Chapter 1 provides strong empirical evidence that the depth of trade integration is not related to the form of RTAs. Chapter 2 then proposes an explanation for the different strategies of regional integration based on the interplays between security and trade, and presents empirical evidence supporting the relevance of security issues in the choice of different forms of RTAs. Finally, the third chapter emphasizes the significance of political risks related to interstate relations for the understanding of multinational enterprise (MNE) location decisions and the effectiveness of BITs. The empirical analysis presented in chapter 3 supports a view of BITs as commitment devices allowing host countries' governments to credibly commit not to damage the good protection of property rights granted by their domestic institutions in case of interstate political disputes.

International trade flows are regulated by a network of international arrangements, at various level of interstate cooperation. At the multilateral level, the World Trade Organization (WTO) provides to its 153 members a forum of negotiation for governments in order to set legal ground-rules on international trade and foster cooperative trade policies (Bagwell and Staiger, 2002). It also provides a dispute settlement mechanism in cases of enforcement problems or disagreements of interpretation (Bagwell and Staiger, 2002; Maggi and Staiger, 2008). In addition, Berkowitz *et al.* (2006) show how domestic and international institutions (the New York Convention) interact in the determination of comparative advantage and trade. Among these international trade agreements, RTAs are a prominent feature of the international system. All WTO members except Mongolia are part of at least one RTA. Their number has dramatically increased over the last two decades, propelled in particular by the collapse of the Council of Mutual Economic Assistance and the break-up of several former communist countries.[38]. At end 2007, 181 RTAs were in force, covering more than 14% of worldwide country pairs. More than one third of world trade flows are actually governed by some kind of RTA.

The literature on regionalism goes back to the 1950s. Viner (1951)'s seminal analysis of customs unions in terms of trade creation and trade diversion has long dominated the theoretical literature (see Pomfret (1997) for a survey). It has sparked off a rich empirical literature investigating the *ex post* effect of RTAs on trade within a gravity type framework - Nobel laureate Tinbergen (1962) has been the first to apply the gravity equation to the study of RTAs (see also Frankel (1997)) -, yielding largely contradictory conclusions. Using extreme bound analysis, Ghosh and Yamarik (2004a) show that estimations of the trade creation effect of RTAs using dummy variables are fragile. An important issue likely to partly explain the diverging estimation results is the endogeneity of the RTA membership measure used. Trade policy variables, and in particular the existence or not of a RTA, are indeed not exogenous with respect to trade flows. If the decision of national

[38] See Pomfret (2007) for a narrative of regional integration processes on different continents.

governments to form a RTA is correlated with impediments to trade unobservable to the econometrician, then the estimated effect of RTAs on trade may be biased because of self-selection of country pairs into agreements.

Two recent papers take this issue seriously. Carrere (2006) estimates the trade creation and trade diversion effects of seven RTAs using the instrumental variables approach developed by Hausman and Taylor (1981) in order to take into account the endogeneity on intra-RTA trade. She finds that the implementation of a RTA increases significantly trade between members, generally at the expense of outsiders. On the other hand, Baier and Bergstrand (2007) draw on the econometric analysis of treatment effects to address the endogeneity bias arising from the self selection of country pairs into RTAs. Using panel data and country pair fixed effects, they show that traditional estimates of the effect of RTAs on bilateral trade are largely underestimated. When the self-selection bias is accounted for, they find that, on average, an RTA increases bilateral trade by almost 100% after 10 years.[39]

At the beginning of the 1990s, the focus of the theoretical literature on regionalism has shifted to investigating the link between regionalism and multilateralism. As Jagdish Bhagwati puts it, do RTAs "serve as building blocks of, rather than stumbling blocks to, GATT-wide free trade" (Bhagwati, 1991, p.77)?[40] Baldwin (2008) refers to this body of literature as *Big-Think Regionalism*, and distinguishes two related main lines of research: the first focuses on whether preferential liberalization harms world welfare and the second on whether regionalism fosters or hinders multilateralism. The basic question is then whether regionalism is a complement or a substitute to multilateralism. This bulk of work considers the formation of trading blocs as exogenous. An interesting line of research has been to endogenize the formation of multilateral tariffs under RTAs. A number of recent papers investigate whether the formation of RTAs affects the level of

[39] Egger *et al.* (2008) find similar results on the volume of trade using difference-in-difference matching techniques.

[40] Contributions by Jagdish Bhagwati, Paul Krugman and Larry Summers, in particular, have initiated this line of analysis. See Krugman (1991a,b), Bhagwati (1991) and Summers (1991).

multilateral tariffs set by member countries and the incentive for multilateral liberalization, focusing on terms-of-trade externalities (Bagwell and Staiger, 1997b), the role of domestic special interest groups (Grossman and Helpman, 1995; Ornelas, 2005a,b, 2008) and time-consistency problems vis-à-vis the private sector (Maggi and Rodriguez-Clare, 1998; Mitra, 2002), or the effect of different strategies of multilateral liberalization in presence of sunk cost (Freund, 2000a).

Empirically, as pointed out by Baldwin (2008, p.18), Limao (2006) and Karacaovali and Limão (2008) provide empirical evidence of a 'slowing block' effect of free trade agreements. Limao (2006) shows that the tariff cuts by the US during the Uruguay round have been lower for items for which it granted free trade area preferences before the negotiations. Karacaovali and Limão (2008) replicate the exercise for the EU and find the same result concerning EU preferential agreements except for those involving accession to the EU. Using industry-level data for 10 Latin American countries, Estevadeordal *et al.* (2008) find that preferential and multilateral tariff reductions go hand in hand at the sectoral level, except in the case of customs unions. In a nutshell, empirical evidence on the effect of regionalism on multilateral liberalization remains mixed, and appears to be contingent on the form of regional integration.

A separate line of research investigates the endogenous formation of RTAs, i.e. the cause of the worldwide spread of regionalism. An early contribution in this respect is the domino theory of regionalism developed by Baldwin (1997), which argues that the deepening or widening of a RTA changes the domestic political economy equilibrium between proponents (export sector) and opponents (import competing sector) to membership in countries that initially choose to stay outside the RTA. Freund (2000a) analyzes the incentives to create a RTA prior to global free trade in presence of sunk trade costs. On the other hand, Freund (2000b) shows that the causal mechanism can go in the opposite direction and that the level of multilateral tariffs also affects the incentive to form a RTA: a reduction in multilateral tariffs induces the formation of new RTAs. Ethier (1998)'s critic of the

Vinerian approach of regionalism leads him to put emphasis on the role of FDI and policy reform in developing or transition economies; he also argues that regionalism is an endogenous response to multilateral liberalization. Using cooperative game theory, Yi (1996) models the endogenous equilibrium structure (size and number) of customs unions and the implications for multilateral liberalization under different rules of formation of customs unions between similar countries. He finds that regional customs unions can lead to global free trade when outsiders are free to enter existing customs unions, i.e. open regionalism, but not when membership requires the unanimity of members, i.e. unanimous regionalism. In a similar model of coalition formation with asymmetric countries (and a coalition-proof-Nash-equilibrium rule of RTA formation), Das and Ghosh (2006) show that if global free trade does not prevail, free trade agreements are formed between similar countries. When the endogenous formation of RTAs is modeled as a coalition game, the choice of the rule of their formation is thus especially important. In the same vein, Melatos and Woodland (2007b) model the determination of the common external tariff within a customs union and its influence on the decision to form an agreement in the first place; they show that variations in member preferences affect the utility possibilities frontier. Their model emphasizes that a customs union is not only an agreement on a reduction of tariffs on intra-regional trade and on a common external tariff, but involves also an agreement on the decision-making process.

These models of RTA formation are nevertheless of little guidance to understand the geography of regionalism, i.e. which type of countries create or join RTAs. Moreover, empirical evidence on this issue is particularly scarce. A notable exception is Baier and Bergstrand (2004b), who investigates the economic determinants of the formation of RTAs. They find cross-sectional evidence that country pairs member of a RTA tend to share economic characteristics that, theoretically, would increase the net welfare gains of the pairs' representative agents from increased trade. The likelihood of RTA is higher between pairs of countries that are geographically closed and remote from the rest of the world, and that have large and similar economic

size, dissimilar factor endowments. Their paper suggests a *market for regionalism* view of RTAs[41], in which countries "choose well" their RTA partners (Baier *et al.*, 2007).

Moreover, all these papers either focus explicitly on free trade agreements or customs unions (Freund, 2000a; Das and Ghosh, 2006; Limao, 2007; Melatos and Woodland, 2007b), consider each type of agreement separately (Freund, 2000b; Bagwell and Staiger, 1997a), or do not distinguish RTAs according to their form (Baier and Bergstrand, 2004b; Baldwin, 1997).[42] However, these alternative kinds of regional agreements differ markedly; they involve different devices of trade integration and the use of different policy instruments. The usual classification of RTAs, derived from Balassa (1961), sorts RTAs from the least integrated to the most integrated, as a step by step approach towards economic union through preferential arrangement, free trade agreement, customs union and common market (see table 2). A preferential arrangement grants members reciprocal tariff preferences over a limited range of products. A free trade agreement eliminates tariff and simple non-tariff barriers on substantially all trade in goods between members. A customs union involves both the exchange of preferences over intra-regional trade and the establishment of a common external tariff vis-à-vis the rest of the world. Finally, a common market is defined as an agreement allowing the free movement of factors (goods, capital and labor). Balassa (1961)'s taxonomy of RTAs implicitly considers regional integration as a gradual process, eventually leading to the foundation of a state (Pomfret, 2007). Systematic evidence of gradualism in regional integration processes are nevertheless missing; out of the 18 customs unions created worldwide since 1948, 14 have been created directly as such "deep" agreement, while all other preferential arrangements and FTA did not evolve into any deeper RTAs - there

[41] This analogy ensues from the "spaghetti bowl" of RTAs initially phrased by Jagdish Bhagwati.

[42] Melatos and Woodland (2007a) is an exception. Within a general equilibrium trade model with coalition formation between three asymmetric countries in terms of preferences and endowments, their simulations show that free trade areas tend to Pareto dominate customs unions when countries differ sufficiently. When countries are similar, global free trade is found to Pareto dominate while customs unions are formed between adjacent countries in terms of preferences or endowments.

were 121 free trade areas and 23 preferential arrangements in force at end 2005.[43]

Table 2: Taxonomy of regional trade agreements

	Elimination of tariffs	Common external tariffs	Free movement of factors of production	Common economic policies
Preferential Arrangement	Partial			
Free Trade Agreement	X			
Customs Union	X	X		
Common Market	X	X	X	
Economic Union	X	X	X	X

A second implication of the gradual view of regionalism is that deeper trade agreements should translate in deeper trade integration. From a theoretical point of view, the "form/depth" of regional integration is not systematically related to the level of trade costs. If preferential arrangements can be considered as free trade areas whose scope and coverage are less complete, a customs union or a common market cannot be simply understood as further steps of economic integration. Devices of integration solely differ according to the form of trade integration: while entering a customs union involves to give up sovereignty on trade policy to implement a common external tariff, free trade agreements allow member countries to keep the ability to set their tariffs vis-à-vis other partners, thanks to the use of rules of origin. Both nevertheless allow for broad preferential regimes, using different instruments of trade policy.[44] The degree of trade integration is thus likely to vary according to RTAs, but not necessarily in relation with their form or the depth of political integration they entail.

The **first chapter** of this thesis analyzes whether the form of RTAs matters regarding their effect on intra-regional trade. Self-selection into RTAs is a particularly relevant issue here, since different forms of regional integration might

[43] An exception is the complex network of bilateral FTAs created between the European Union and countries candidate to accession.

[44] For instance, the arrangements governing foreign investments under the NAFTA allow for a great mobility of capital.

provide different gains to different country pairs. Following Baier and Bergstrand (2007), this source of endogeneity is dealt with using panel data with country pair fixed effects. I estimate a theoretically motivated gravity equation, in which the definition of RTAs is refined by introducing a distinction between different categories of RTAs according to their form/depth. Three important conclusions emerge from the results. First, unobservable heterogeneity affects differently the estimates of the treatment effect of different kinds of RTAs, i.e. different country pairs choose to create different kinds of RTAs. Second, the empirical analysis conducted in this chapter confirms that all RTAs providing trade preferences to their members have a significant positive effect on bilateral trade. Third, the average treatment effect of RTAs does not differ statistically according to the depth/form of integration. Once self selection into agreements is controlled for, creating a free trade area, a customs union or a common market has a similar effect on intra-regional trade.

This chapter contributes to the existing empirical literature on regionalism in two important ways. First, it provides more convincing estimates of trade creation under different RTAs, and provide empirical evidence that the depth of trade integration is not related to the form of regionalism. Second, it enriches the "market for regionalism" view of RTAs developed by Baier *et al.* (2007); the results suggest that country pairs choose not only whether or not to create a RTA but also its form, according to their shared characteristics. The effect of specific RTAs would thus depends on both RTAs' and member countries' characteristics.

The empirical results of the first chapter question the gradual view of regionalism, and suggest that the explanation for the heterogeneity in the form of RTAs is not necessarily directly related to trade issues. The **second chapter** of this thesis proposes an explanation based on the interplays between foreign trade and security policies, and provides empirical evidence that the determinants of RTA formation differ according to their form. Gains from regionalism are not strictly confined to reductions in tariffs and other simple border trade barriers. Whalley (1996) and Fernandez and Portes (1998) emphasize that RTAs can help with problems

of time inconsistency, signaling, insurance, bargaining power and coordination in interstate cooperation. Institutional devices dealing with these issues all have the aim of reducing uncertainty about future national and international policies. In this respect, as underlined above, an important area of international cooperation, and source of uncertainty, is the security issue.[45]

From a theoretical point of view, regional economic integration is likely to promote the peaceful resolution of disputes through two main channels. First, by favoring intra-regional trade over extra-regional trade (Martin *et al.*, 2008). Second, the creation of supranational institutions prompts the exchange of information on military capabilities and resolve in conflicts, and strengthens trust among political leaders, facilitating commitments and the peaceful resolution of interstate disputes (Bearce, 2003). Though, the regional institutional frameworks created along regional integration greatly differ according to the form of RTAs. Only the more integrated RTAs, such as customs unions and common markets, require a significant common institutional framework likely to promote negotiated settlement of disputes. In this chapter, we will define the depth of a regional agreement according to its level of political/institutional integration, i.e. its ability to manage interstate disputes and prevent their escalation to war.[46]

In this second chapter, I develop a theoretical model of endogenous formation of RTAs in an insecure world. It shows that the incentives to create a RTA differ according to its depth: pairs of countries undergoing lots of interstate disputes tend to create deep agreements, such as a customs union or a common market, whereas country pairs having to deal with few interstate disputes create shallow RTAs, i.e. preferential arrangement or free trade agreements. Moreover, countries more integrated into the world trading system, i.e. facing less natural transport

[45] Blomberg and Hess (2006) estimate that the cost of violence is equivalent to a 30% tariff on trade. In their account of the evolution of international trade in the last millennium, Findlay and O'Rourke (2007) also stress the crucial role of war and peace in determining international trade, and vice versa.

[46] I do not consider the issue of the depth of economic integration in RTAs here. See Inter-American Development Bank (2006) regarding variations in market access provisions of 42 RTAs along six criteria: tariffs, non-tariffs measures, other measures, special regimes, rules of origin, and customs procedures.

costs, are more likely to create deep than shallow RTAs. I find robust empirical evidence supporting these predictions of the model.

This chapter provides the first analysis of the choice of the form of regional integration. I extend the models of political (dis)integration developed by Alesina *et al.* (2000) and Alesina and Spolaore (2005, 2006) to the case in which the sovereignty over trade policies can be delegated at the regional level, i.e. economic and political boundaries are not inevitably similar. Since sovereignty over the defence policy remains at the national level, interstate disputes may spillover into war and disrupt bilateral trade. This creates uncertainty that the institutional device of deep RTAs can help dealing with. This model emphasizes the relevance of the interplay between security and trade to explain the observed heterogeneity of RTAs. In addition, by focusing on issues that cannot be dealt with at the multilateral level, this chapter offers a way to investigate the nexus between preferential and multilateral liberalization.[47] The emphasis on the form of RTAs is particularly interesting in this respect since the coexistence of different kinds of RTAs can be explained by the fact that different RTAs provide different devices of interstate cooperation. The model developed here suggests that regionalism and multilateralism may be complementarity because some kinds of RTAs allow to reduce the security related uncertainty which enables national governments to accept a greater dependence on trade.

I derive testable implications from the model, which is an important contribution of this chapter since the existing models of endogenous RTA formation have provided few empirical evidence on the geography of regionalism. A preliminary step of the empirical analysis is to determine empirically which kind of RTAs promote the peaceful resolution of interstate disputes. I show that only RTAs involving a significant supranational institutional framework, i.e. customs unions and common markets, do reduce significantly the conflict escalation to war probabilities. Being

[47] The existing literature on regionalism mostly focuses on terms-of-trade issues that can be dealt on a multilateral as well as on a preferential basis. Limao (2007)'s model of endogenous formation of RTAs with non-trade objectives is an exception. He nevertheless does not specify non-trade objectives and cannot distinguish between different forms of integration.

part of a preferential arrangement or a free trade agreement is found to have no effect on war probabilities. We can then define the latter agreements as shallow agreements while customs unions and common markets are deep agreements according to our criterion of depth of integration. The main part of the empirical analysis provide strong support for two implications of the model: pairs of countries more subject to interstate disputes and less remote from the rest of the world, i.e. naturally facing low transport costs, tend to create deep RTAs while the opposite is true regarding shallow agreements. Hence, from an empirical point of view, this chapter complements the path-breaking analysis of the economic determinants of RTA formation by Baier and Bergstrand (2004b) in several ways. It offers empirical evidence on the choice of RTA partners and form of regional integration as well as the timing of creation of agreements.

The **third chapter** analyzes the impact of bilateral investment treaties on foreign direct investments. Over the last two decades, BITs have emerged as the main device of protection of property rights for foreign investors at the international level. At the end of 2005, 2495 treaties had been signed, of which 1891 had entered into force. Contrary to international trade, no multinational legal standards for the treatment of FDI have emerged thus far. Since MNEs bear a sunk cost when investing abroad, once their investment is made they are subject to any policy change or attempt to renegotiate contracts by the host government. BITs are a means to protect against these political risks. They include, in particular, clauses of expropriation defining what is deemed to be expropriation actions and specify compensations and mechanisms of disputes settlement, such as the recourse to international arbitration courts. Under a BIT, a contract is binding for the foreign investor as well as the host government since any breach of contract falls under international law (Guzman, 1998). Both domestic and international institutions (BITs) should therefore interact in MNEs' location decisions.

The existing literature has focused on the average effect of BITs on FDI (Egger

and Pfaffermayr, 2004), without considering the interactions with other means of protection of property rights. These papers do not provide any evidence on the mechanisms through which BITs affect FDI. The empirical analysis conducted in chapter 3 puts forward that BITs should be understood as commitment mechanisms for host governments and that their effectiveness depends on the risk sustained by MNE when operating in a given host country.

MNEs face two kinds of political risks when investing abroad: a systemic domestic risk, common to all investors, related to the quality of domestic institutions, and an idiosyncratic risk specific to each pair of home and host countries, related to interstate political relations. Because the existing literature on FDI determinants has largely considered that FDI takes place within an international political vacuum, the role of the latter risk has been ignored. A new database of event data reporting interactions between countries on a daily basis allows us to measure the quality of interstate relations. The first contribution of chapter 3 is to provide robust empirical evidence that MNEs are sensitive to the quality of interstate political relations between their home and host countries. It yields the necessary framework to understand the effect of BITs on FDI. The second contribution of this chapter is then to analyze how BITs work. BITs affect the volume of bilateral FDI not only directly as a cost reducing mechanism, but also indirectly trough two channels. First, the entry into force of a BIT offsets political tensions between states and the related expropriation risks. BITs are found to have no effect between friendly countries while it increases significantly FDI between countries undergoing political tensions. Second, it is a complement to good domestic institutions for attracting FDI. Through the signature of a BIT, two partner countries reciprocally accept constraints on their sovereignty in order to mark their determination to offer a safe business climate for foreign investors on a long-term basis.

Chapter I

On Trade Creation and Regional Trade Agreements: Does Depth Matter?[1]

At end 2005, 158 regional trade agreements (RTAs) were in force worldwide, which makes preferential trade liberalization a prominent feature of the international trading system today. The scope and coverage of these agreements nevertheless greatly differ from one to the other, in terms of trade flows, membership as well as population involved. Table I.1 provides evidence of such diverging characteristics for important regional integration processes. The main characteristic used to classify RTAs is however their form: the World Trade Organization (WTO) differentiates between free trade agreements, customs unions and preferential agreements, to which common markets can be added (table I.2).

This canonical taxonomy of Regional Trade Agreements (RTAs), initially introduced by Balassa (1961), considers regionalism as a gradual process towards economic union, through free trade area, customs union and common market. The implicit assumption behind is that more integrated arrangements provide for deeper trade integration, because each additional step of regional integration would reduce

[1] This chapter is based on a paper forthcoming in the *Review of World Economics* (Vicard, 2009).

Table I.1: Characteristics of main RTAs (2004)

Name	Regional/total trade	Share of world trade	Form	Date of creation	Nbr of members	Population (million)
Andean Community	10%	0,0%	CU	1988	5	121
ASEAN free trade agreement	24%	1,4%	PA	1992	10	584
European Union (25)	67%	26,9%	CM	1958	25	460
MERCOSUR	15%	0,2%	CU	1991	4	238
NAFTA	44%	7,7%	FTA	1994	3	441

further intra-regional trade costs.[2] However, from a theoretical point of view, the "form/depth" of regional integration is not systematically related to the level of trade costs. If preferential arrangements can be considered as free trade areas whose scope and coverage are less complete, a customs union or a common market cannot be simply understood as further steps of economic integration. Devices of integration solely differ according to the form of trade integration: while entering a customs union involves to give up sovereignty on trade policy to implement a common external tariff, free trade agreements allow member countries to keep the ability to set their tariffs vis-à-vis other partners, thanks to the use of rules of origin. Both nevertheless allow for broad preferential regimes, using different instruments of trade policy.[3] The degree of trade integration is thus likely to vary according to RTAs, but not necessarily in relation with their form or the depth of political integration they entail. This chapter investigates empirically whether the form/depth of regional trade agreements determines the extent of trade creation among members.

Empirical evidence of any larger effect of deeper RTAs on the volume of regional trade is missing. Few papers even distinguish between different categories of RTAs. Two exceptions are Ghosh and Yamarik (2004b) and Kandogan (2008), who find puzzling results concerning the effect of economic integration on intra-regional trade: coefficients on customs union and common market membership dummies are found

[2] For instance, Krueger (1997) argues that a free trade area cannot be more trade creating than a customs union because the former entails the implementation of rules of origin.

[3] For instance, the arrangements governing foreign investments under the NAFTA allow for a great mobility of capital.

Table I.2: Taxonomy of regional trade agreements

	Elimination of tariffs	Common external tariffs	Free movement of factors of production	Common economic policies
Preferential Arrangement	Partial			
Free Trade Agreement	X			
Customs Union	X	X		
Common Market	X	X	X	
Economic Union	X	X	X	X

to be negative and significant in several specifications. However, it is worth noting that they do not control for multilateral resistance terms and, more importantly, for self selection into RTAs. Indeed, papers on the determinants of RTAs suggest a "market for regionalism" view of regional trade integration, where countries choose their partners (Baier and Bergstrand, 2004b) and the form of the RTA (see chapter II) according to economic and political determinants. *Ex post* estimations of the effect of RTAs on trade are thus likely to suffer from a selection bias, because pairs of countries which have more to gain from regional integration (or more to loose from no-agreement) are more likely to create a RTA and to choose the appropriate form of regional integration.

In this chapter, I estimate a theoretically motivated gravity equation, in which the definition of RTAs is refined by introducing a distinction between different categories of RTAs according to their form/depth. Self-selection is specifically accounted for by using panel data with country pair and country-and-time fixed effects or differenced panel with country-and-time fixed effects. Three important conclusions emerge from empirical results. First, unobservable heterogeneity affects differently the estimates of the treatment effect of different kinds of RTAs, i.e. different country pairs choose to create different kinds of RTAs. Second, the analysis conducted in this chapter confirms that all RTAs providing trade preferences to their members have a significant positive effect on bilateral trade. Third, this average treatment effect does nevertheless not differ statistically according to the depth/form of integration. Once self selection into agreements is controlled for, creating a free

trade area, a customs union or a common market has the same effect on intra-regional trade.

This chapter proceeds as follows. Section 2 presents the extent of preferential trade in the world. Section 3 specifies a theoretically grounded gravity equation with panel data. Results are presented in section 4 and some robustness analysis in section 5. Section 6 concludes.

1 Regional trade agreements in the world

Since World War II, the coverage and scope of preferential trade have greatly expanded, from Benelux - the first RTA created in 1947 as a customs union between three countries, Belgium, Luxembourg and Netherlands -, to the 158 preferential agreements in force at end 2005, of which 125 are bilateral agreements[4], so that only Mongolia among WTO members was not part of a RTA in 2005. These agreements range from the simple exchange of trade preferences on a limited range of products to the harmonization of policies well beyond tariffs, such as competition policies, infrastructure or standards. The creation of RTAs and their form are constrained by international rules agreed under the GATT, and now under the WTO. Indeed, RTAs are a deviation from the principle of equal treatment defined by the "most-favored-nation" clause. Two articles frame their creation. GATT's article XXIV allows the creation of free trade agreements (FTA) or customs unions (CU) which removes tariff barriers on substantially all trade in goods. On the other hand, the so-called "enabling clause" permits preferential arrangements (PA) among developing countries, which are partial scope agreements on trade in goods. WTO rules specifically forbid the creation of preferential arrangements including developed countries.

Out of the 158 RTAs in force at the end of 2005, 2 were common markets, 11

[4] The focus of this chapter is on reciprocal agreements on trade in goods, so these figures do not include non-reciprocal arrangements like Generalized System of Preferences, as well as service agreements notified under GATS article V.

customs unions, 122 free trade areas and 23 preferential arrangements. However, in terms of the number of country pairs covered, FTA are not overwhelming since they are mostly bilateral agreements. Figure I.1 depicts the evolution of country pair membership to RTAs according to their form over the 1948-2005 period. It shows that pairs of countries which are members of a RTA represent about 14% of country pairs worldwide in 2005, from only 1% in 1950 and around 4% in 1980s. Trade flows between RTA partners nevertheless represent one third of world trade today (World Bank, 2005), which underlines that trade agreements are signed between countries trading intensively with each others.

Preferential arrangements prevail thanks in particular to the Protocol relating to Trade Negotiations among developing countries signed in 1973 by 16 countries and the General System of Trade Preferences among developing countries signed in 1989 by 44 countries. Customs union was the second more prominent form of RTAs until 1990s, when the number and coverage of free trade areas exploded, in particular with bilateral agreements signed by the EU with Central and Eastern European countries. These agreements were nevertheless canceled in 2004 by the accession of the 10 new members to the EU, slowing down the growth path of FTA coverage in the 2000s. FTAs cover almost 4% of country pairs at end 2005. Common markets (CM) cover only two pairs of countries (under Benelux), from 1961 to the creation of the European Union in 1992. This form of RTA then expands rapidly with the enlargement of the EU and ranks third in term of global country pair coverage. Hence, the overwhelming prevalence of FTA in absolute number is dramatically reduced in terms of country pair coverage, since CMs cover almost half of the number of country pairs under a FTA.[5]

A quick look at the data seems to rule out the idea of a graduate process of regional integration suggested by the traditional classification of RTAs presented above. Deeply integrated RTAs seem to be created directly as such. Indeed, out of the 18 customs unions created worldwide since 1948, 14 have been created directly as

[5] Fiorentino *et al.* (2007) moreover underline that planed RTAs are mostly bilateral FTAs.

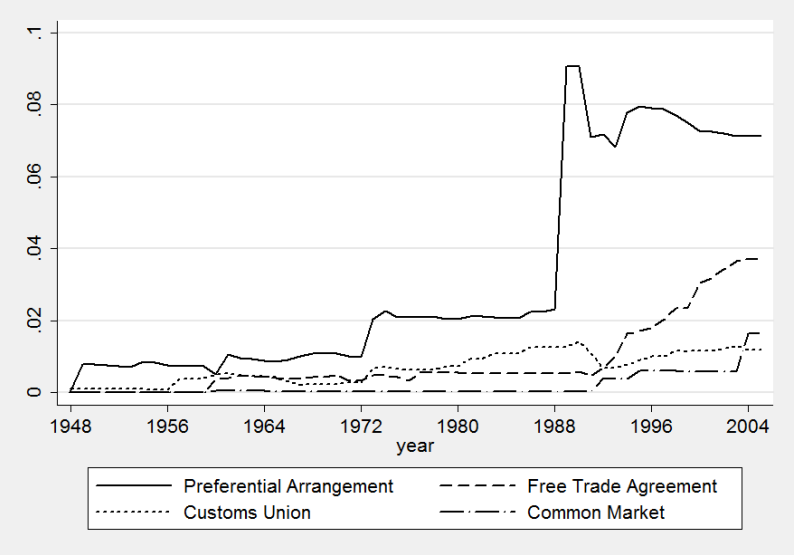

Figure I.1: Membership in RTAs (% of the total number of country pairs in the world)

such, without any intermediate step like a PA or a FTA. Out of the four remaining, two actually experienced a gradual integration, implying the creation of a PA or a FTA prior to customs union, but on a short period of time (7 years for the Andean Customs Union and 5 years concerning the CARICOM). Besides, the WAEMU and the GCC have been preceded during a significant period of time by a PA before adopting common external tariffs in 1998 and 2003, respectively. Two of these CU turned into a common market (Benelux and the EU). Another exception is the complex network of bilateral FTAs created prior to accession to the EU. All remaining FTAs and PAs did not evolve into any "deeper" form of RTA.

2 A proper specification of the gravity equation

The impact of RTAs on trade is mostly measured *ex post* using a gravity equation (Frankel, 1997; Carrere, 2006). This model relates bilateral trade flows to the economic size of partner countries and their distance. Additional variables are generally added to this basic specification to control for different kinds of barriers to trade. More recently, papers providing formal economic foundations for the initially

atheoretical gravity equation underlined the need to account for price levels to avoid any estimation bias due to the omission of exporting and importing countries' multilateral resistance terms (Anderson and van Wincoop, 2003, 2004; Feenstra, 2004). Anderson and van Wincoop (2003) derive these importer's and exporter's resistance terms from a full expenditure system on a cross-section of data, and show that including country specific fixed effects yields the same results. Baldwin and Taglioni (2006) show that, because multilateral resistance terms are likely to be time varying, such methodology do not simply translate in a panel setting. A proper specification of the gravity equation with panel data requires to include country-and-time fixed effects, which account for multilateral resistance terms varying over time.

Baier and Bergstrand (2007) suggest two econometric specifications of the gravity equation to properly estimate the average treatment effect of RTAs: panel data with bilateral fixed and country-and-time effects or differenced panel data with country-and-time effects. Including bilateral fixed effects or first-differencing data removes the bias arising from the omission of unobserved variables affecting both the explained (bilateral trade) and explaining variables (RTA membership dummies) and allows to take into account the endogeneity related to self-selection, since it is mainly a cross-sectional issue.[6] Indeed, Baier and Bergstrand (2004b) investigate the economic determinants of RTAs and find significant cross-section evidence that countries choose well their RTA partners, i.e. pairs of countries signing RTAs tend to share economic characteristics likely to enhance benefits from regional trade integration. They nevertheless identify only a subset of economic determinants of RTAs, which leaves a large unobserved heterogeneity. Baier and Bergstrand (2007) argue that the heterogeneity in determinants of trade, unobserved in estimations of gravity equations, is negatively associated to the decision to form a RTA. Not accounting for this heterogeneity would thus bias estimated coefficients on RTAs. For instance, suppose that two countries lack bilateral transport infrastructures

[6] Baier and Bergstrand (2007) review alternative methods to deal with this endogeneity bias. In particular, instrumental-variable estimation and Heckman's control function approach fail to solve the endogeneity issue.

or exhibit extensive domestic regulations reducing bilateral trade, and that these characteristics are unobservable to the econometrician - this creates a negative error term in the gravity equation. Expected gains from regional integration would be larger for these countries, and their government would be more likely to select into RTA, if creating a RTA not only reduces tariff barriers but also generates spillovers on regional infrastructures or leads to the harmonization of domestic regulations and standards. On the other hand, when unobserved cultural or historical characteristics shared by two countries increase at the same time trade flows and the likelihood of forming a RTA, by reducing costs related to regional integration for instance, then estimated coefficients would be biased upward. Anyway, the discussion above suggests that the decision to enter a RTA is mainly cross-sectional in nature, since it is related to the actual level of trade relative to its potential level. Recent changes in the level of trade are indeed not likely to lead to the creation of RTAs, but countries' structural characteristics are.

Yet, different kinds of RTAs are likely to be related differently to unobserved trade impediments or facilitation. As underlined by Anderson and van Wincoop (2004), in a politically fragmented world such as the international system today, international transaction costs have more to do with domestic policies (regulation, norms, property rights, infrastructures...) than traditional tariff barriers. The harmonization of these policies can be dealt with from several perspectives, using different instruments and producing different institutional frameworks. For instance, Anderson and Marcouiller (2002) and Blomberg and Hess (2006) respectively show that insecurity and violence are strong deterrent of trade. On the other hand, the chapter of this thesis underlines that the determinants of RTAs differ according to the form/depth of integration. In particular, in a system where no supranational institution or third party can enforce property rights at the international level, country pairs experiencing interstate conflicts need mechanisms securing the continuity of trade flows in the future. Hence, customs unions or common markets, which imply the creation of a strong regional institutional framework, are created between countries

experiencing lots of interstate disputes, whereas international insecurity deters the formation of preferential and free trade agreements. Consequently, omitted security variables are likely to bias the coefficients on RTAs depending on their depth. When creating a RTA, country pairs thus choose the suitable form according to their economic, political or cultural characteristics. Accordingly, the omitted variable bias would differ between categories of RTAs.

In a cross-section of data, the only way to address such endogeneity is through the use of instrumental variables. However, no exogenous instruments are available (Magee, 2003; Baier and Bergstrand, 2004a). On the contrary, using panel data this endogeneity issue can be dealt with using country-pair fixed effects or by first-differencing the data. Because choosing between these two methods is difficult, Wooldridge (2003) recommends to report results using both. In the case of a large number of periods, the latter is likely to be more efficient when error terms exhibit substantial positive serial correlation. Unobserved factors influencing both our explaining and explained variables are likely to be changing slowly, i.e. to be serially correlated. As a robustness check, both methods are reported below, but our preferred is first differencing the panel data.

Formally, the following theoretically motivated specification of the gravity equation is estimated:

$$\ln T_{ijt} = \beta_0 + \beta_1 \ln (GDP_{it}\, GDP_{jt}) + \beta_2 \ln DIST_{ij} + \beta_3\, Control_{ij} + \beta_3\, PoA_{ijt} + \beta_5\, PA_{ijt} + \beta_6\, FTA_{ijt} + \beta_7\, CU_{ijt} + \beta_8\, CM_{ijt} - \ln P_{it} - \ln P_{jt} + \epsilon_{ijt} \quad \text{(I.1)}$$

Controls added are common to the gravity literature, i.e. bilateral distance and dummies for common border, language and colonizer, countries ever in a colonial relationship, and landlocked countries. All these time invariant bilateral determinants of trade are dropped when bilateral fixed effects are introduced or data are first differenced. In the same manner, GDPs as well as multilateral resistance terms (P_{it} and P_{jt}) are explained by country-and-time effects.

The dependent variable T_{ijt} is the average of the log of two-way imports. Trade data originate from the IMF "Direction of Trade Statistics" (DoTS) database, and are assembled by Martin *et al.* (2008). Data on GDP are taken from the World Bank's World Development Indicators database, and geographic and historical data come from CEPII[7]. Annual observations every 5 years over the period 1960-2000 are used, which leaves us with a sample of potentially 188 countries over 9 periods, with gaps.

The average treatment effect of each kind of RTA on intra-regional trade is estimated separately, through the inclusion of four different categories of RTAs, according to their actual form (Preferential Trade Arrangement, Free Trade Area, Customs Union and Common market), to which Political Agreements (PoAs) are added.[8] All bilateral or regional trade agreements in force at least one year between 1960 and 2000 are considered.[9] Unless otherwise mentioned in the sources, an agreement is assumed to be in force at the date defined in the treaty and, if not available, once the agreement has been signed and ratified. It nevertheless does not mean that all provisions of the agreement have been fully implemented at this date, since a phase-in period is often planned in the treaties. Each dummy variable is set at 1 when both countries of the pair are members of the same agreement during the year considered, i.e. at each of the 9 years considered in our data set. The details of the official dates of RTAs and the dates actually used in our data set with 5-years intervals are provided in appendix A. A pair of countries can thereby be member of only one kind of agreement a given year. My data set reports 146 RTAs over the period 1960-2000, of which 24 are coded as PAs, 103 FTAs, 17 CUs and 2 CMs, and

[7] www.cepii.fr/anglaisgraph/bdd/distances.htm

[8] See table I.1. A political agreement is defined as an organization aiming at liberalizing trade among its members but falling short of providing for tariff preferences inherent in a CM, CU, FTA or PA. Arrangements, such as Generalized system of Preferences or the Everything but Arms regulation adopted by the European Union, which provide preferential or even duty free access to least developed or developing countries on a non reciprocal basis, are not considered in this chapter.

[9] Data are assembled from notifications to the WTO (http://www.wto.org/english/tratop_e/region_e/region_e.htm), Foroutan (1993, 1998), Langhammer and Hiemenz (1990), Frankel (1997), Machlup (1977) and other public sources.

7 political agreements (a complete list is provided in appendix).

As argued above, I control for self-selection into RTAs either through first-differencing the data or including country pair fixed effects. It means that only the time variation in RTA membership over the period covered by our data is accounted for, i.e. the effect of entering or leaving a RTA. In this specification, the coefficients on the membership dummies can be interpreted as the average treatment effect of entering in each kind of RTAs. For instance, the formation of the European Communities by the initial 6 members is not captured by the coefficient on the CU dummy since it occurs before the beginning of our time period, but the accession of new members and the exit of all members from the customs union agreement to create a common market from 1992 on are. Thus, for the country pairs member of a preexisting customs union, the coefficient on the common market dummy captures the effect of entering a common market, while not being member of a customs union agreement anymore (the CU dummy is set at 0 for EU countries from 1992 on).

3 Results

Results are reported in table I.3. The first two columns present estimates of the traditional gravity equation, when only time effects (column (1)) or country-and-time effects (column (2)) are included. Remaining columns report estimates using the proper specifications of the gravity equation controlling for endogeneity. Coefficients on control variables are found significant and all have the expected sign - geographical distance impedes bilateral trade, as well as the fact to be landlocked, whereas sharing a common border, language or colonial history increases trade.[10]

Concerning our variables of interest, results are surprisingly diverging and large when controlling only for time fixed effects. The trade creation effect of regional integration range from a $e^{0.09} - 1 = 9\%$ increase for preferential arrangements to a 232% for political agreements and a 282% for customs unions. When country-

[10] Results remain qualitatively similar when the coefficient on GDPs is constrained to 1, i.e. when the dependent variable is replaced by $\ln T_{ijt} = (\ln \frac{Imp_{ijt}}{GDP_{it}GDP_{jt}} + \ln \frac{Imp_{jit}}{GDP_{it}GDP_{jt}})/2$.

and-time effects are included (column (2)), coefficients on RTAs largely decrease, and the coefficient on common market becomes insignificant. In this specification, political agreements exhibit the largest coefficient, corresponding to a 101% increase in bilateral trade. The ranking as well as the size of coefficients cast doubts on the validity of these results.

First-differencing the data or introducing bilateral fixed effects to account for self selection into RTAs reduces the coefficients on political agreements and shallow RTAs but increases the coefficient on common markets, which turns significant. Hence, the endogeneity bias arising from unobserved variables affecting bilateral trade flows and RTA membership differs according to the kind of RTA considered. It suggests that different kinds of country pairs choose to form different kinds of RTAs, and that the unobservable factors affecting the likelihood of RTA formation also affect trade, but unevenly according to the depth of integration.

Results do show a robust significant average treatment effect of all kinds of RTAs on bilateral trade, except that of political agreements in the first-differenced specification. In the preferred specification (column (4)), a common market is associated with a current increase of 30% in bilateral trade, to be compared to 34% for a customs union or a free trade area, and 18% for a preferential arrangement. When RTAs are considered jointly (column (5)), regional integration is found to increase intra-zone trade by 26%. These results are in line with the 36% contemporaneous effect found by Baier and Bergstrand (2007), on a different sample of countries and a restricted sample of RTAs excluding PAs.

A third important result is that the average treatment effects of all kinds of RTAs providing trade preferences to their members are statistically similar. Indeed, the hypothesis of equality of coefficients on the different kinds of RTAs (except political agreements) cannot be rejected, jointly and separately, at traditional level of significance in first-differenced specification, and the equality of coefficients on FTA and CM cannot be rejected in the fixed effect specification (see table I.4). If any, only preferential arrangements could be understood as a first step of integration

Table I.3: Gravity Estimates with panel data

Model	(1)	(2)	(3)	(4)	(5)
Dependent variable	$\ln T_{ijt} = (\ln Imp_{ijt} + \ln Imp_{jit})/2$				
Political	1.20[a]	0.70[a]	0.19[a]	-0.08	
	(0.10)	(0.09)	(0.07)	(0.07)	
Preferential Arrangement	0.09[c]	0.32[a]	0.21[a]	0.17[a]	
	(0.05)	(0.06)	(0.06)	(0.06)	
Free Trade Area	0.84[a]	0.59[a]	0.42[a]	0.29[a]	
	(0.05)	(0.07)	(0.05)	(0.05)	
Custom Union	1.34[a]	0.64[a]	0.27[a]	0.29[a]	
	(0.09)	(0.11)	(0.06)	(0.07)	
Common Market	0.89[a]	-0.14	0.49[a]	0.25[a]	
	(0.06)	(0.13)	(0.08)	(0.08)	
Regional Trade Agreement					0.23[a]
					(0.04)
log (GDPi*GDPj)	0.86[a]				
	(0.01)				
Nbr of landlocked countries	-0.28[a]				
	(0.03)				
Log distance	-0.88[a]	-0.92[a]			
	(0.02)	(0.03)			
Contiguity	0.30[a]	0.52[a]			
	(0.08)	(0.09)			
Common language	0.38[a]	0.37[a]			
	(0.04)	(0.04)			
Colonial link	1.22[a]	1.28[a]			
	(0.10)	(0.09)			
Common colonizer	0.66[a]	0.75[a]			
	(0.07)	(0.06)			
Constant	-6.48[a]	14.4[a]	0.12	0.55	0.55
	(0.19)	(0.30)	(0.09)	(0.71)	(0.71)
Overall R^2	0.72	0.82	-	0.35	0.35
Within R^2	-	-	0.70	-	-
Nbr of observations	33684	34514	35698	25169	25169
Time f.e.	Yes	-	-	-	-
Country-and-time f.e.	-	Yes	Yes	Yes	Yes
Country pair f.e.	-	-	Yes	-	-
First-difference	-	-	-	Yes	Yes

Note: Heteroscedasticity- and autocorrelation-robust standard errors in parentheses. a, b and c respectively denote significance at the 1%, 5% and 10% levels. Coefficients for time, country-and-time and country pair fixed effects are not reported for clearness.

providing for less trade integration than other more "integrated" agreements. This suggests that the institutional design of regional agreements does not determine their ability to create trade among members. The effect on trade of forming a free trade area, a customs union or a common market is not statistically different, but different country pairs form different RTAs.

This rather counterintuitive result is not so surprising in the light of the lack of theory actually predicting that a free trade agreement would systematically reduce more transactions costs on intra-regional trade than a customs union. It suggests that the choice of countries to create different forms of RTAs is not only related to trade issues. Notwithstanding, the fact that if similar country pairs were to enter a customs union, a free trade agreement or a common market, the effect on bilateral trade would be similar does not preclude any trade related determinants of the choice of RTAs. The fact that unobserved heterogeneity affects differently country pairs entering different kinds of RTAs suggests that gains from regional integration could differ according to characteristics of both member countries and specific trade agreements. These results could have interesting implications to explain the diverging effects of RTAs found in the literature (Ghosh and Yamarik, 2004a). Overall, empirical evidence provided in this chapter points out that creating a free trade area, a customs union or a common market has a similar effect on bilateral trade, but that different country pairs tend to create different kind of RTAs.

4 Robustness analysis

In this section, I test for the sensitivity of the above results to several sources of bias and perturbations, namely lagged effects, alternative sample of years and definition of RTAs, and time varying missing variables.

Table I.4: Wald tests of equality of coefficients on PA, FTA, CU and CM

Specification		All coeff.	PA-FTA	FTA-CU	FTA-CM	CU-CM
Basic specification	(3)	4.77^a	8.75^a	4.10^b	**0.62**	8.27^a
	(4)	**1.09**	**2.61**	**0.00**	**0.15**	**0.25**
with lags (total	(6)	3.57^b	9.82^a	**2.06**	**0.05**	**1.63**
ATE)	(7)	2.75^b	5.56^b	**0.34**	2.98^c	**1.66**
Without bilateral	(8)	2.31^c	**2.55**	**1.69**	**0.30**	5.33^b
RTAs	(9)	**0.72**	**1.32**	**0.00**	**0.20**	**0.39**
1990-2000	(10)	**0.90**	**0.72**	**2.46**	**1.78**	**0.17**
	(11)	**1.62**	3.09^c	**0.16**	**0.01**	**0.41**

Note: a, b and c denote that the null hypothesis of equality of coefficients can be rejected at the 1%, 5% and 10% levels respectively.

4.1 Lagged effects

RTAs generally plan a phase-in period during which provisions of the treaty are implemented gradually. They are thus likely to have lagged effects on trade, as all provisions of the agreement are generally implemented over a 5 to 10 year period of time. For instance, the treaty of Rome creating the EEC in 1958 projected the full implementation of the customs union in 1968. The date of entry into force of a RTA does not correspond to its full implementation, so that our membership dummy variable, which is coded 1 from the date of entry into force of the agreement, cannot account for this phase-in period. One-period-lagged variables of each of the dummies measuring RTA membership are thus added to our specification. Since some kinds of RTAs, notably common markets, have largely been created in the 1990's, we cannot account for further lags because the time span of our data set is not large enough.

Results, presented in columns (6) and (7) of table I.5, clearly confirm previous findings. All categories of RTAs, except political agreements in the first-differenced specification, significantly increase bilateral trade from their date of entry into force. Moreover, FTAs and CUs in the fixed effect specification exhibit an additional effect after 5 years. The total average treatment effect after 5 years is 68% and 51% in the fixed effect and first-differenced specifications respectively for the former, and

48% and 46% for the latter. The coefficient on the lagged term of CM membership is however not statistically significant. The fact that CMs have been preceded by CUs or bilateral FTAs is likely to explain the lack of significance of the lagged variable. The contemporary average treatment effect of a CM is nevertheless slightly larger that in our basic specification, namely 72% and 34% in the fixed effect and first-differenced specifications respectively. Again, the hypothesis of equality of coefficients on FTA, CU and CM cannot be rejected at traditional level of significance (see table I.4).

4.2 Samples of RTAs and years

Another source of heterogeneity is related to the definition of RTAs. Indeed, bilateral agreements are likely to differ substantially from regional agreements (including three or more partners) in terms of determinants as well as the institutional framework they provide. Columns (8) and (9) of table I.5 test for the robustness of the results of the previous section to the exclusion of bilateral RTAs in our explaining variables. Results remain qualitatively similar: all kinds of RTAs are found to increase intra-zone trade, but this trade creation effect does not statistically differ according to the depth of integration.

Another source of heterogeneity within each category of RTAs may be related to country members. The specificities of the RTAs, and their effect on intra-regional trade, could indeed differ according to the level of wealth of member countries for each kind of agreement. In order to test the sensitivity of my results to this kind of heterogeneity, I include interaction terms between RTA membership dummies and a dummy equal to one when both countries are members of the OECD, as a proxy for pairs of rich countries. Since common markets have been created only among OECD members and preferential agreements are entitled only among developing countries, I add interactions with the FTA and CU dummies to the basic specification. Results are presented in columns (10) and (11) of table I.5. Interactions variables are not significant in the first-differenced specification,

Table I.5: Robustness analysis: lagged effects and samples

Model	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Lagged effects		Bil. RTAs excl.		OECD Vs RoW		1990-2000	
Dependent variable	$\ln T_{ijt} = (\ln Imp_{ijt} + \ln Imp_{jit})/2)$							
Political	0.17^b	-0.08	0.20^a	-0.07	0.18^a	-0.07	-0.01	-0.01
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.09)	(0.07)
Preferential Arrangement	0.16^a	0.16^a	0.22^a	0.18^a	0.20^a	0.16^a	0.30^a	0.12^c
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.11)	(0.07)
Free Trade Area	0.36^a	0.28^a	0.38^a	0.28^a	0.49^a	0.30^a	0.40^a	0.27^a
	(0.05)	(0.05)	(0.08)	(0.07)	(0.06)	(0.06)	(0.06)	(0.06)
Custom Union	0.18^a	0.29^a	0.25^a	0.28^a	0.18^c	0.23^c	0.23^b	0.31^a
	(0.07)	(0.07)	(0.06)	(0.07)	(0.10)	(0.12)	(0.10)	(0.08)
Common Market	0.51^a	0.27^a	0.43^a	0.23^a	0.53^a	0.29^a	0.26^a	0.26^a
	(0.08)	(0.07)	(0.08)	(0.08)	(0.08)	(0.08)	(0.09)	(0.09)
Political (t+1)	0.03	-0.05						
	(0.08)	(0.07)						
Preferential Arrangement (t+1)	0.07	0.06						
	(0.05)	(0.05)						
Free Trade Area (t+1)	0.16^a	0.17^a						
	(0.06)	(0.06)						
Custom Union (t+1)	0.19^a	0.09						
	(0.07)	(0.07)						
Common Market (t+1)	-0.01	-0.02						
	(0.06)	(0.06)						
OECD*Free Trade Area					-0.21^b	-0.06		
					(0.10)	(0.08)		
OECD*Custom Union					0.19^c	0.12		
					(0.11)	(0.13)		
OECD					0.23^a	0.16^a		
					(0.07)	(0.06)		
Constant	-0.01	1.31^a	0.28^a	0.55	0.14	-0.56	1.90^a	1.33^a
	(0.05)	(0.43)	(0.07)	(0.71)	(0.12)	(0.71)	(0.04)	(0.22)
Overall R^2	-	0.35	-	0.35	-	0.35	-	0.30
Within R^2	0.70	-	0.70	-	0.70	-	0.36	-
Nbr of observations	35697	25168	35698	25169	35698	25169	17890	12895
Country-and-time f.e.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country pair f.e.	Yes	-	Yes	-	Yes	-	Yes	-
First-difference	-	Yes	-	Yes	-	Yes	-	Yes

Note: Heteroscedasticity- and autocorrelation-robust standard errors in parentheses. a, b and c denote significance at the 1%, 5% and 10% levels respectively. Coefficients for country-and-time and country pair fixed effects are not reported for clearness.

but are in the fixed effect specification. The latter suggests that FTAs are less trade creating and that CUs are more trade creating among OECD countries; the coefficients on FTA among non-OECD members, CU among OECD members and CM are nevertheless not statistically different in the fixed effect specification. In the specification in first-difference, the results remain qualitatively similar.

In addition, both the explosion of the number and coverage of RTAs (see figure I.1) and the increased depth of agreements such as the European Union since the 1990's have led some scholars to qualify this wave of regionalism as *new regionalism*. In this respect, it could be argued that determinants and characteristics of new RTAs signed in the 1990's could differ from previous agreements. In order to test for any specificity of this period, equation (I.1) is estimated on a sample restricted to the 1990's. Results are presented in columns (12) and (13) of table I.5. The average treatment effect of each kind of RTAs is similar when estimated only over the 1990's and on the whole year sample. Results diverge only concerning preferential arrangements, for which the coefficient is slightly larger in the fixed effect specification and insignificant in the differenced specification. Anyway, Wald tests of equality of coefficients on all categories of RTAs providing for trade preferences are not rejected in both specifications (see table I.4), confirming that the treatment effect of RTAs on bilateral trade does not differ according to their form.

4.3 Time varying country pair specific determinants of trade

Country-and-time dummies included in all our specifications control for all country characteristics likely to affect trade, time invariant (landlocked countries, area, island,...) as well as time varying determinants (GDP, GDP per capita, economic governance, transport infrastructure, specialization, external tariffs as well as any determinant related to preferential market access such as the number of RTAs in which countries take part). On the other hand, country pair fixed effects (or first-

differencing the data) account for dyadic determinants of trade (distance, contiguity, cultural proximity, common language...) and country pair heterogeneity which is constant over time. Still, an endogeneity bias could arise because of omitted variables varying over time and affecting both the likelihood to enter one category of RTAs and bilateral trade flows. In this section, I control for two such potential endogeneity issues: interstate political affinities and the volatility of bilateral exchange rates.

Trade policy is considered by many countries as an instrument of foreign policy. For instance, Lederman and Ozden (2007) argue that the United States grant trade preferences, notably by signing bilateral FTAs, largely on a geopolitical basis. Maintaining good diplomatic relations is therefore likely to facilitate the negotiation and signing of an RTA. Besides, having good interstate political relations reduces the risk related to international trade and thus foster trade flows. Two variables are used as proxy for interstate affinity: the vote correlation in the United Nations General Assembly, taken from "The Affinity of Nations: Similarity of State Voting Positions in the UN General Assembly" developed by Erik Gartzke[11], and the number of peaceful years between two countries, computed from the Correlates of War Project[12]. Results presented in table I.6 are mixed: UN vote correlation exerts a positive and significant effect on bilateral trade only in the fixed effect specification, whereas entertaining peaceful relations has no significant effect on bilateral trade flows. Nevertheless, controlling for political affinity does not alter our results on the equality of coefficients. Coefficients on CU and CM are slightly larger and the coefficient on FTA is lower in the fixed effects specification, but only the coefficient on PA is affected in the differenced specification.

The volatility of nominal exchange rates create risks on international transaction and uncertainty at the firm level; it is thus likely that economic agents would be discouraged from trading with countries exhibiting a large exchange rate volatility with their home country. By reducing risks related to exchange rate variations, fixed

[11] http://www.columbia.edu/~eg589/
[12] http://cow2.la.psu.edu/

exchange rate systems would then increase the volume of bilateral trade. At the same time, common currencies or monetary systems limiting currency fluctuations are mostly established on a regional basis. The volatility of exchange rates could thus be correlated to trade flows and the decision to create a RTA. To control for this potential omitted variable bias, I include a variable of exchange rate variability between countries i and j in year t, denoted vol_{ijt} in (I.1). Following Tenreyro (2007), the exchange rate variability is measured as the standard deviation of the first difference of (the logarithm of) the monthly exchange rate between the two countries:

$$vol_{ijt} = \text{Std. Dev. } \left(\ln(e_{ijt,m}) - \ln(e_{ijt,m-1})\right), \ m = 1...12 \tag{I.2}$$

where $e_{ijt,m}$ is the monthly bilateral nominal exchange rate.

Data come from the IMF's International Financial Statistics and Reuters, provided by Ecowin Financial. The availability of data on monthly nominal exchange rates noticeably reduces the sample. Results are presented in column (14) and (15) of table I.6. The coefficient on exchange rate volatility is negative but not significant in both specifications, which is in line with the ambiguous effect put forward in the literature (Tenreyro, 2007). Turning to our variables of interest, results remain consistent with the benchmark estimates. It is worth noting that the fact that the coefficients on PA, FTA and CM are found slightly lower in the first-differenced specification, and the CM coefficient slightly larger in the fixed effect specification, is related to the restricted sample rather than the inclusion of the variable of exchange rate volatility.[13] Again, the results on the equality of coefficients basically hold when controlling for the volatility of bilateral exchange rates.

The results presented in this chapter are therefore robust to a number of robustness checks regarding lagged effects, the definition of RTAs, the period considered and the inclusion of time varying determinants of trade and RTA

[13] Estimating the baseline model on this restricted sample yields the same results.

formation.

Table I.6: Robustness analysis: time varying country pair specific variables

Model	(12)	(13)	(14)	(15)
	Interstate pol. affinity		Exchange rate volatility	
Dependent variable	$\ln T_{ijt} = (\ln Imp_{ijt} + \ln Imp_{jit})/2)$			
Political	0.19^b	-0.03	0.18^b	-0.05
	(0.09)	(0.08)	(0.09)	(0.08)
Preferential Arrangement	0.21^a	0.25^a	0.22^a	0.11
	(0.06)	(0.06)	(0.07)	(0.08)
Free Trade Area	0.31^a	0.27^a	0.29^a	0.20^a
	(0.08)	(0.07)	(0.06)	(0.05)
Custom Union	0.31^a	0.29^a	0.27^a	0.31^a
	(0.07)	(0.08)	(0.07)	(0.07)
Common Market	0.52^a	0.26^a	0.63^a	0.19^a
	(0.09)	(0.09)	(0.08)	(0.08)
UN vote correlation	0.27^a	0.06		
	(0.06)	(0.05)		
Nbr of peaceful years	-0.00	0.00		
	(0.00)	(0.00)		
Exchange rate volatility			-0.04	-0.02
			(0.04)	(0.06)
Constant	0.23^a	-0.77^b	0.82^a	0.82
	(0.09)	(0.31)	(0.05)	(3.21)
Overall R^2	-	0.38	-	0.36
Within R^2	0.72	-	0.76	-
Nbr of observations	25687	17297	21891	15187
Country-and-time f.e.	Yes	Yes	Yes	Yes
Country pair f.e.	Yes	-	Yes	-
First-difference	-	Yes	-	Yes

Note: Heteroscedasticity- and autocorrelation-robust standard errors in parentheses. a, b and c denote significance at the 1%, 5% and 10% levels respectively. Coefficients for country-and-time and country pair fixed effects are not reported.

5 Conclusion

This chapter investigated whether the form of RTAs matters concerning their effect on trade, in a gravity type framework differentiating 4 categories of agreements according to the usual taxonomy initiated by Balassa (1961): preferential arrangements, free trade areas, customs unions and common markets. It shows a significant

and positive average treatment effect of all kinds of RTAs providing trade preferences to their members on bilateral trade. However, once self selection into agreements is controlled for, their trade creation effect does not statistically differ according to the depth of the RTA: creating a free trade area, a customs union or a common market has a similar impact on trade among members. Different pairs of countries thus create different kinds of RTAs.

The latter result emphasizes that the different forms of regional integration do not reflect any larger potential trade creating effect. It suggests that the depth of RTAs should not only be defined on the criteria of their ability to foster trade. Instead, it should also be regarded as a question of political or institutional integration.

In addition, these results support a "market for regionalism" view of RTAs, where different country pairs choose to create different kinds of RTAs. Further work is nevertheless necessary to understand what drives gains from preferential trade integration and to highlight the determinants of successful integration processes according to both RTAs' and member countries' characteristics.

I.A Regional Trade Agreements (1960-2000)

Name	Official dates	Actual dates (5-years intervals)
Common markets		
Benelux	1961	(1965-2000)
European Union (EU)	1992	(1995-2000)
Customs Unions		
Eurasian Economic Community	1997	(2000-2000)
Equatorial Customs Union	1959-1965	(1960-1965)
Economic and Monetary Community of Central Africa	1994	(1995-2000)
Mano River Union	1973	(1975-2000)
Customs Union of West African States	1960-1966	(1960-1965)
West African Economic and Monetary Union	1998	(2000-2000)
East African Community	1967-1977	(1970-1975)
Benelux	1947-1960	(1960-1960)
European Communities (EC)	1958-1991	(1960-1990)
Customs Union EU-Malta	1971	(1975-2000)
Customs Union EU-Cyprus	1973	(1975-2000)
Customs Union EU-Turkey	1996	(2000-2000)
Customs Union Czech Republic-Slovakia	1993	(1995-2000)
Southern Common Market (MERCOSUR)	1991	(1995-2000)
Central American Common Market (CACM)	1993	(1995-2000)
Andean Customs Union*	1995	(1995-2000)
Caribbean Community and Common Market (CARICOM)	1973	(1975-2000)
Free Trade Agreements		
Closer Trade Relations Trade Agreement	1983	(1985-2000)
Commonwealth of Independent States	1995	(1995-2000)
Papua New Guinea and Australia Trade and Commercial Relation Agreement	1977	(1980-2000)
Baltic Free Trade Area	1994	(1995-2000)
Central European Free Trade Agreement	1993	(1995-2000)
European Free Trade Agreement (EFTA)	1960	(1960-2000)
European Economic Area	1994	(1995-2000)
Group of Three	1995	(1995-2000)
North American Free Trade Agreement (NAFTA)	1994	(1995-2000)
South African Development Community	2000	(2000-2000)
Central American Common Market	1961-1975	(1965-1975)
Andean Free Trade Area*	1993	(2000-2000)*
Caribbean Free Trade Area	1968-1972	(1970-1970)
Armenia-Moldova	1995	(1995-2000)
Armenia-Russia	1993	(1995-2000)
Armenia-Turkmenistan	1996	(1995-2000)
Armenia-Ukraine	1996	(2000-2000)
Bulgaria-Turkey	1999	(2000-2000)
Canada-Chile	1997	(2000-2000)
Canada-Israel	1997	(2000-2000)
CARICOM-Dominican Republic	1998	(2000-2000)
Czech Republic-Estonia	1998	(2000-2000)
Czech Republic-Israel	1997	(2000-2000)
Czech Republic-Latvia	1997	(2000-2000)
Czech Republic-Lithuania	1997	(2000-2000)
Czech Republic-Turkey	1998	(2000-2000)

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Name	**Official dates**	**Actual dates (5-years intervals)**
EU-Algeria	1998	(2000-2000)
EU-Bulgaria	1994	(1995-2000)
EU-Czech Republic	1992	(1995-2000)
EU-Egypt	1977	(1995-2000)
EU-Estonia	1995	(1995-2000)
EU-Hungary	1992	(1995-2000)
EU-Israel	2000	(2000-2000)
EU-Latvia	1995	(1995-2000)
EU-Lithuania	1995	(1995-2000)
EU-Morocco	2000	(2000-2000)
EU-Norway	1973-1993	(1975-1990)
EU-Poland	1992	(1995-2000)
EU-Romania	1993	(1995-2000)
EU-Slovakia	1992	(1995-2000)
EU-Slovenia	1997	(2000-2000)
EU-South Africa	2000	(2000-2000)
EU-Switzerland	1973	(1975-2000)
EU-Syria	1977	(1980-2000)
EU-Tunisia	1998	(2000-2000)
EFTA-Bulgaria	1993	(1995-2000)
EFTA-Czech Republic	1992	(1995-2000)
EFTA-Estonia	1996	(2000-2000)
EFTA-Hungary	1993	(1995-2000)
EFTA-Israel	1993	(1995-2000)
EFTA-Latvia	1996	(2000-2000)
EFTA-Lithuania	1996	(2000-2000)
EFTA-Morocco	1999	(2000-2000)
EFTA-Poland	1993	(1995-2000)
EFTA-Romania	1993	(1995-2000)
EFTA-Slovakia	1992	(1995-2000)
EFTA-Slovenia	1995	(1995-2000)
EFTA-Turkey	1992	(1995-2000)
Estonia-Turkey	1998	(2000-2000)
Estonia-Ukraine	1996	(2000-2000)
Georgia-Armenia	1998	(2000-2000)
Georgia-Azerbaijan	1996	(2000-2000)
Georgia-Kazakhstan	1999	(2000-2000)
Georgia-Russia	1994	(1995-2000)
Georgia-Turkmenistan	2000	(2000-2000)
Georgia-Ukraine	1996	(2000-2000)
Hungary-Israel	1998	(2000-2000)
Hungary-Latvia	2000	(2000-2000)
Hungary-Lithuania	2000	(2000-2000)
Hungary-Turkey	1998	(2000-2000)
Kyrgyzstan-Armenia	1995	(1995-2000)
Kyrgyzstan-Kazakhstan	1995	(1995-2000)
Kyrgyzstan-Moldova	1996	(2000-2000)
Kyrgyzstan-Russia	1993	(1995-2000)
Kyrgyzstan-Ukraine	1998	(2000-2000)
Kyrgyzstan-Uzbekistan	1998	(2000-2000)
Latvia-Turkey	2000	(2000-2000)
Lithuania-Turkey	1998	(2000-2000)
MERCOSUR-Chile	1996	(2000-2000)
MERCOSUR-Bolivia	1996	(2000-2000)
Mexico-Israel	2000	(2000-2000)
Mexico-Costa Rica	1995	(1995-2000)
Mexico-Bolivia	1995	(1995-2000)
Mexico-Nicaragua	1998	(2000-2000)
Poland-Israel	1998	(2000-2000)
Poland-Latvia	1999	(2000-2000)
Poland-Lithuania	1997	(2000-2000)

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Name	Official dates	Actual dates (5-years intervals)
Poland-Turkey	2000	(2000-2000)
Romania-Turkey	1998	(2000-2000)
Slovakia-Estonia	1998	(2000-2000)
Slovakia-Israel	1997	(2000-2000)
Slovakia-Latvia	1997	(2000-2000)
Slovakia-Lithuania	1997	(2000-2000)
Slovakia-Turkey	1998	(2000-2000)
Slovenia-Estonia	1997	(2000-2000)
Slovenia-Israel	1998	(2000-2000)
Slovenia-Latvia	1996	(2000-2000)
Slovenia-Lithuania	1997	(2000-2000)
United States of America-Israel	1985	(1985-2000)
United States of America-Canada	1989-1993	(1990-1990)
India-Bhutan	1995	(1995-2000)
India-Nepal	1996	(2000-2000)
India-Sri Lanka	1998	(2000-2000)
Preferential Arrangements		
Protocol relating to Trade Negotiations among Developing countries	1973	(1975-2000)
General System of Preferences among Developing countries	1989	(1990-2000)
Tripartite Agreement	1968	(1970-2000)
Economic Cooperation Organization	1992	(1995-2000)
Gulf Cooperation Council (GCC)	1984	(1985-2000)
South Pacific Regional Trade and Economic Cooperation Agreement	1981	(1985-2000)
Melanesian Spearhead Group	1993	(1995-2000)
Council for Mutual Economic Assistance	1949-1990	(1960-1990)
ASEAN Free Trade Agreement	1992	(1995-2000)
Bangkok Agreement	1976	(1980-2000)
South Asian Preferential Trade Agreement	1995	(1995-2000)
West African Economic Community	1973-1997	(1975-1995)
Common Market for Eastern and Southern Africa	1994	(1995-2000)
East African Cooperation	2000	(2000-2000)
Latin American Free Trade Association	1961-1980	(1965-1980)
Latin American Integration Association	1993	(1995-2000)
Andean Community*	1988-1997	(1990-1995)*
CARICOM-Colombia	1995	(1995-2000)
CARICOM-Venezuela	1993	(1995-2000)
Laos-Thailand	1991	(1995-2000)
Chile-Peru	1998	(2000-2000)
Chile-Bolivia	1993	(1995-2000)
Chile-Colombia	1994	(1995-2000)
Chile-Venezuela	1993	(1995-2000)
Political		
Regional Cooperation for Development	1965-1979	(1965-1975)
Arab Maghreb Union	1989	(1990-2000)
South African Development Coordination Conference (SADC)	1980-1999	(1980-1995)
Cross Border Initiative	1990	(1990-2000)
Association of South East Asian Nations	1967	(1970-2000)
South Asian Association for Regional Co-operation	1985	(1985-2000)
Asian Pacific Cooperation	1989	(1990-2000)

Source: WTO (http://www.wto.org/english/tratop_e/region_e/region_e.htm), Foroutan (1993, 1998), Langhammer and Hiemenz (1990), Frankel (1997), Machlup (1977) and other public sources.
* Peru entered the Andean Free Trade Area only in 1997, and did not join the Andean Customs Union until 2004.

I.B Alternative estimation methods

In order to test the sensitivity of my results to the specification of the gravity equation, I implement two alternative estimation methods. First, I average the data over 5-years periods instead of taking data at 5-years intervals. Since trade data are in current dollars, I deflate them using US CPI taken from www.FreeLunch.com. It is however worth noting that doing so probably creates a bias because every bilateral trade flow is divided by the same price index (Baldwin and Taglioni, 2006).[14] Second, I implement the method of tetrads developed by Head *et al.* (2007). It takes advantage of the multiplicative form of the gravity equation and uses ratio of ratio to eliminate the importers' and exporters' multilateral resistance terms. This methodology requires choosing a reference exporter l and a reference importer k. I thus estimate the following equation:

$$\ln R_{[il][jk],t} = \beta_0 + \beta_1(\ln \phi_{ijt} - \ln \phi_{ikt} - \ln \phi_{ljt} + \ln \phi_{lkt}) + (\epsilon_{ijt} - \epsilon_{ikt} - \epsilon_{ljt} + \epsilon_{lkt}) \quad \text{(I.3)}$$

where $R_{[il][jk],t} = \frac{x_{ijt}/x_{ikt}}{x_{ljt}/x_{lkt}}$, x_{ijt} stands for exports from country i to country j in year t, and ϕ_{ijt} is a vector of variables measuring bilateral trade costs. Since I estimate this equation with bilateral fixed effects or in first difference, all time invariant variables measuring bilateral trade costs are dropped (distance, common colonial history ...); the vector ϕ thus contains the set of time varying RTA membership dummies. For each kind of RTA, the sum of the ϕ dummies can equal 2, 1, 0, -1 or -2, depending on the RTA membership of the 4 pairs of countries within the tetrad. I include year dummies to take into account the repetition of ϵ_{lkt} in all observations a given year. It is however worth noting that the repetition of the error terms ϵ_{ikt} and ϵ_{ljt} across observations is likely to bias downward standards errors.

Results are reported in table (I.7). When estimating the gravity equation using data averaged on 5-years periods, results remain qualitatively similar (columns A3 and A4). The coefficients on RTA membership dummies are however slightly lower,

[14] This bias is taken into account by the time dummies in the main specification.

especially in the first-differenced specification, but the conclusion on equality of coefficients on the different kind of RTAs holds. Columns (A5) and (A6) report results from the methodology of tetrads, using Canada as reference importer and Japan as reference exporter. I choose to report results using this couple of reference because these are large countries and late members of RTAs. It is worth noting that the results differ slightly according to the choice of countries of reference. Moreover, because the estimation is now ran on yearly observations between 1957 and 2000, the number of period has expanded so that the results using first-differenced data and country pairs fixed effects are likely to differ more than in our main specification. The first-differenced specification is here again the preferred, since its efficiency increases with the number of periods when the error terms exhibit substantial positive serial correlation. The results globally confirm the previous findings. In the first-differenced specification, the coefficients on RTA membership dummies are slightly lower, which reflects the fact that we now measure the effect of RTA membership only on the year of its creation. The coefficient on preferential arrangements is found insignificant, and surprisingly significant and positive in the case of political agreements. The coefficients on FTA, CU and CM are still statistically similar.

Table I.7: Robustness analysis: alternative specifications

Model	(A1)	(A2)	(A3)	(A4)	(A5)	(A6)
Dependent variable	$\ln T_{ijt}$		$\ln T_{ijt}$		$\ln R_{[il][jk],t}$	
	Baseline spec.		5-years average		Tetrads	
Political	0.19^a	-0.08	0.12	0.02	-0.17^a	0.05^b
	(0.07)	(0.07)	(0.08)	(0.09)	(0.03)	(0.02)
Preferential Arrangement	0.21^a	0.17^a	0.24^a	0.23^a	0.32^a	0.18
	(0.06)	(0.06)	(0.06)	(0.06)	(0.04)	(0.03)
Free Trade Area	0.42^a	0.29^a	0.38^a	0.19^a	0.21^a	0.05^b
	(0.05)	(0.05)	(0.06)	(0.06)	(0.04)	(0.02)
Custom Union	0.27^a	0.29^a	0.17^b	0.12^c	0.67^a	0.12^c
	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)	(0.06)
Common Market	0.49^a	0.25^a	0.43^a	0.13^c	0.15^b	0.12^a
	(0.08)	(0.08)	(0.08)	(0.08)	(0.07)	(0.05)
Overall R^2	-	0.35	-	0.27	-	0.01
Within R^2	0.70	-	0.49	-	0.01	-
Nbr of observations	35698	25169	44674	32419	365597	314203
Time f.e.	-	-	-	-	Yes	Yes
Country-and-time f.e.	Yes	Yes	Yes	Yes	-	-
Country pair f.e.	Yes	-	Yes	-	Yes	-
First-difference	-	Yes	-	Yes	-	Yes
All coeff.	4.77^a	**1.09**	3.68^b	**0.59**	21.21^a	3.60^b
PA-FTA	8.75A	**2.61**	**2.45**	**0.32**	3.42^a	9.31^a
FTA-CU	4.10^b	**0.00**	4.93^b	**0.68**	29.78^a	**1.06**
FTA-CM	**0.62**	**0.15**	**0.34**	**0.43**	**0.66**	**2.18**
CU-CM	8.27^a	**0.25**	9.56^a	**0.03**	60.15^a	**0.01**

Note: Heteroscedasticity- and autocorrelation-robust standard errors in parentheses. a, b and c denote significance at the 1%, 5% and 10% levels respectively. Coefficients for country-and-time and country pair fixed effects are not reported for clearness.

Chapter II

Trade, Conflicts, and Political Integration: Explaining the Heterogeneity of Regional Trade Agreements

As underlined in chapter I, regional trade agreements (RTAs) are an increasingly important feature of the international trading system. Their form however greatly differs throughout the world. They range from the simple exchange of preferences on a limited number of products to the elimination of almost all tariff barriers and, beyond, the harmonization of standards and rules, intellectual property rights and competition policies.

The usual classification, derived from Balassa (1961), sorts RTAs from the least integrated to the more integrated, as a step by step approach to economic union, through free trade area, customs union and common market. The underlying assumption is that more integrated arrangements should provide a deeper trade integration.[1] Yet, we have seen in chapter I that the form of RTAs is not

[1] In his seminal paper, Balassa (1961) however also mentions social integration, but he dismisses this second criterion.

related to the depth of economic integration. Moreover, historical illustrations of gradual regional integration processes are lacking: out of the 18 customs unions created worldwide since 1948, 14 have been created directly as such, without any intermediate step such as a preferential arrangement or a free trade agreement. The existing literature on regionalism thus leaves us with two unresolved questions: why countries implement different strategies of regional integration and which countries choose to create which kinds of RTAs? This chapter addresses these issues and proposes an explanation based on the interplays between international security and trade in regional integration processes.

A recent strand of the literature on regionalism has investigated the cause of the worldwide spread of regionalism.[2] Trade agreements have been modeled along two lines: the traditional economic approach considers trade agreements as a means to escape from a terms-of-trade driven prisoners' dilemma (Yi, 1996; Bagwell and Staiger, 1997b; Ornelas, 2005a); the commitment approach to trade agreements identifies distinct problems that a trade agreement may solve (Maggi and Rodriguez-Clare, 1998; Mitra, 2002; Limao, 2007). Indeed, RTAs might provide non-traditional gains to their members and help solving problems of time inconsistency, signaling, insurance or cooperation (Fernandez and Portes, 1998). In this respect, Schiff and Winters (1998) and Mansfield and Pevehouse (2000) argue that RTAs provide a security externality and prevent war among members.[3] This area of cooperation is especially important since violence is a major trade impediment (Blomberg and Hess, 2006; Martin *et al.*, 2008; Glick and Taylor, 2009).

These papers nevertheless consider only the cases of free trade agreements or customs unions, or do not distinguish RTAs according to their form. The form of RTAs nevertheless reflects different institutional arrangements and should provide different non-traditional gains to their members. From a theoretical point of view,

[2] See Baldwin (2008) for a critical survey.

[3] The European Union and the MERCOSUR are prominent examples of regional integration processes that explicitly refer to security concerns (World Bank, 2000). An extensive literature investigates the peaceful effect of trade on war (see Martin *et al.* (2008), Polachek (1980) and Oneal and Russett (1999)).

an RTA promotes peace through two channels. First, by increasing intra-regional trade, it increases the opportunity cost of war (Martin *et al.*, 2008). Second, the supranational institutions created along regional integration facilitate the exchange of information on military capabilities and resolve in conflicts, and strengthens trust among political leaders, thus supporting commitment and the peaceful resolution of interstate disputes (Bearce, 2003; Bearce and Omori, 2005; Haftel, 2007). The regional institutional frameworks created along regional integration however greatly differ according to the kind of RTAs. In this chapter, we will define the depth of a regional agreement according to its level of institutional integration, i.e. its ability to manage interstate disputes and prevent their escalation to war. Only deep RTAs, such as customs unions and common markets, require a significant common institutional framework likely to promote negotiated settlement of disputes out of any trade effect.

This chapter provides the first theoretical and empirical analysis of the choice of the form of regional integration. I extend the models of political (dis)integration developed by Alesina *et al.* (2000) and Alesina and Spolaore (2005, 2006) to the case in which the sovereignty over trade policies can be delegated at the regional level, i.e. economic and political boundaries are not inevitably similar. Since sovereignty over the defence policy remains at the national level, interstate disputes may spillover into war and disrupt bilateral trade. This creates risks that the institutional device of deep RTAs can help dealing with. The theoretical model developed here generates interesting implications regarding the endogenous creation of different kinds of RTAs. Pairs of countries undergoing lots of interstate disputes tend to create deep agreements, such as a customs union or a common market, whereas country pairs having to deal with few interstate disputes create shallow RTAs, i.e. preferential arrangement or free trade agreements. Moreover, countries more integrated into the world trading system, i.e. facing less natural transport costs, are more likely to create deep than shallow RTAs.

This theoretical model provides us with a framework to conduct the empirical

analysis of the determinants of the creation of deep and shallow RTAs. The predictions of the model rest on the hypothesis that RTAs requiring a large institutional framework do significantly reduce the probability that a dispute spillover into war, whereas shallow RTAs do not. We therefore need first to confirm this hypothesis empirically. Results show that, out of any trade effect, only customs unions and common markets promote the peaceful resolution of interstate disputes. I then investigate the determinants of the formation of deep and shallow RTAs. Events data are used to assess the occurrence of interstate disputes, and endogeneity issues related to past membership in RTAs are addressed using instrumental variables. Results provide strong support for the contrasting effect of international insecurity and trade openness on the creation of deep and shallow RTAs. Besides their effect on tariffs, this paper explicitly emphasizes the role of RTAs as a regulating mechanism for interstate relations. By offering empirical evidence on the choice of RTA partners and form of regional integration as well as on the timing of creation of agreements, this chapter complements Baier and Bergstrand (2004b)'s analysis of the economic determinants of RTAs.

The remainder of the chapter is constructed as follows. The next section presents regional trade integration in light of the theory of war. In section 3, I develop the theoretical model of regional integration in an insecure international system and derive conditions under which regional integration will take place. Section 4 investigates empirically the effect of RTAs on war probabilities and section 5 present the empirical analysis of the determinants of each kind of RTA.

1 Regional trade integration and the theory of war

Based on historical examples, World Bank (2000) underlines that the form of integration matters regarding its effect on regional security. The European Union or

the MERCOSUR are prominent illustrations of security enhancing RTAs, whereas examples of regional integration processes triggering intra-regional conflicts include the CACM, with the outbreak of an armed conflict between Honduras and El Salvador in 1969, or the East African Common Market, which enhanced conflicts between Uganda, Tanzania and Kenya and led to give up the common market agenda, close borders and the seizure of Community assets in 1978. The reasoning explaining these alternative effects of trade integration on war probabilities rests on the fact that, while generating gains, trade also creates winners and losers. For instance, the agglomeration of industries in one country can be detrimental to another country or region, thus increasing interstate disputes. Any policy aiming at increasing international integration is nevertheless likely to raise dispute issues; the question is then to understand what drives the choice to settle disputes through negotiation rather than war and how international institutions could affect these mechanisms.

Bearce (2003) identifies three channels through which RTAs could facilitate the peaceful resolution of conflicts and prevent disputes to spillover into war. The first one is related to an opportunity cost analysis: because regional trade integration increases gains from trade and war disrupts bilateral trade, the opportunity cost of war between members is larger. It would thus encourages governments to consider peaceful bargains instead of war. Second, RTAs create supranational institutions aiming at managing conflicts, such as dispute settlement mechanisms. These institutions avoid the politization of disputes, thus limiting the opportunity to use armed force in the event of conflict. Disputes on economic issues are nevertheless generally not likely to spillover into war. Yet, international institutions are also an important mechanism of collection and diffusion of information. Institutions created along regional integration processes promote the exchange of information on and between member states on a wide range of issues, on trade but also on security and military issues. Indeed, some RTAs include formal security/military substructures and/or cooperation through joint military exercises and defence minister forums.

These are likely to reveal information on military capabilities as well as opponent's resolve and patience in disputes so as to reduce asymmetries of information and to favor the identification and the negotiation of mutually beneficial solutions. The exchange of information on military capabilities also reduces the opportunities for surprise attacks. Third, negotiation cannot prevails if any agreement reached cannot be credibly enforced, which is often the case in an international system where no third party or supranational institution is able to enforce property rights (Grossman, 2004a).[4] By creating rooms for discussion and negotiations, through regular meetings of head of states and high level officials or the existence of an executive secretariat, RTAs promote trust between political leaders and mitigate the problem of credible commitment in interstate negotiations.[5] By promoting the early settlement of disputes and the peaceful resolution of conflicts, institutions created along with regional trade integration are likely to provide a positive externality in terms of national security and to reduce the risk of war (Bearce and Omori, 2005; Haftel, 2007).

The institutional framework and its degree of supranationalism however greatly differ according to the kind of RTA. Creating a customs union requires to agree on a common external tariff and revenue distribution between state members. A common market requires more complete political institutions to agree on a broader set of issues (harmonization of regulation and standards, free movement of goods and factors...)[6], whereas a free trade agreement or a preferential arrangement involve a weak institutional framework and a limited political integration.[7] According to this institutional integration criterion, two categories of RTAs can be distinguished:

[4] Jackson and Massimo (2007) also show, in a setting where countries fight because of political biases of their leaders, that when state leaders lack the ability to credibly commit to a negotiated deal, the range for negotiated settlement of disputes is reduced.

[5] For instance, Manzetti (1993/94) reports that discussions of sensitive policy issues such as nuclear proliferation concerns at the regional level have taken place within the MERCOSUR institutions.

[6] See, for instance, Alesina and Wacziarg (1999) for a detailed mapping of policy areas carried out at the EU level, and Bouzas and Soltz (2000) concerning the institutional framework of MERCOSUR.

[7] The ASEAN free trade agreement provides an illustrative example, with weak regional institutions in order to limit any supranationalism (Best, 2005). Pomfret (1997) also emphasizes how the will to limit political integration has been incidental to the creation of NAFTA.

deep (customs unions and common markets) and shallow (preferential arrangements and free trade agreements) RTAs. The formers imply the creation of a significant institutional framework likely to provide a security externality and to significantly reduce the probability that a dispute escalate into war. The latter involve no or few political or institutional integration. In the theoretical model presented in the next section, we will distinguish RTAs according to this criterion and show how the determinants of their creation differ.

2 A model of regional integration in the shadow of conflict

The literature on political integration focuses on the question of country formation by citizens in regions. Instead, we are interested here in the formation of regional trade agreements by independent countries, i.e. how states can share common economic boundaries while retaining sovereignty over their defence policy. Indeed, the argument provided by Alesina *et al.* (2000) of a trade-off between gains from large market size and heterogeneity costs of political integration is also relevant when countries create an RTA, i.e. a regional market. A conflict game and a model of trade are thus embedded in a political integration framework in order to derive the effect of both trade and security issues on the endogenous formation of RTAs.

2.1 The basic setting

I build on the framework developed by Alesina and Spolaore (2005) in which I include trade to construct a model of endogenous regional integration in an insecure world. In order to keep the model tractable, the world is assumed to be divided into four countries distributed out of two continents, East E and West W (see figure II.1).

Following Alesina and Spolaore (2003, p.116), *"a country is defined as an independent political unit in which (1) defence is completely and credibly centralized, (2) a unified government takes decisions over bargaining and war strategies (...)".*

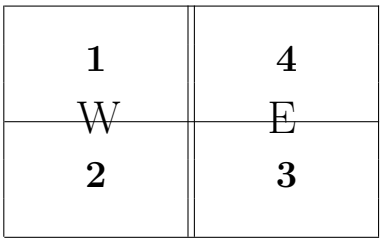


Figure II.1: A world with 4 countries on 2 continents

While retaining an independent security policy, countries can decide to create an RTA with a partner to benefit from a larger market free of political trade barriers. National governments choose their defence capabilities and whether or not to enter an RTA, given that:

- entering an RTA means the removal of political impediments to trade with other members and thus provides gains for the population, but entails heterogeneity costs;
- countries face interstate disputes over resources or production, which are resolved either peacefully or through war;
- war disrupts trade with the opponent.

As usual in the literature on political integration, entering an RTA entails heterogeneity costs k_s, $s = E, W$, "*due to the necessity of keeping together individuals with different interests, preferences, culture, and history*" (Alesina *et al.*, 1995). Indeed, economic integration implies common policies and the provision of some public goods at the regional level, which move away actual policies from individual ideal/preferences in each country. The cost of forming an RTA between Eastern and Western countries is assumed to be prohibitive, because of wide differences in national preferences. One RTA can thus be created on each continent.

Each country shares a border with two other countries and can undergo international disputes with each of them. Since no supranational institutions holds the monopoly of coercion and can properly enforce property rights, disputes over income distribution are resolved either peacefully or through war according to the

conflict game outcome. A dispute occurs worldwide with probability ρ and is located uniformly between any pair of neighboring countries, so that each of them undergoes a dispute with probability $\frac{\rho}{4}$. So, a country cannot engage in two wars. Countries face appropriation possibilities on a part R of their income, exogenous and common among countries.

The model is a 3-stages game: (1) countries decide whether or not to form RTAs, (2) they choose their defence spending, and (3) uncertainty about dispute location and escalation probabilities are revealed and conflicts are resolved. This timing appears relevant because forming an RTA takes time and is meant to be long-lasting; building defence capabilities is also a medium term process, but is less time consuming; and disputes occur and are resolved in the short term. The model has no time dimension. It is solved by backward induction.

The government of each country i chooses whether or not to form an RTA and the amount of resources devoted to defence spending d_i ($0 \leq d_i \leq Y_i$)[8] to maximize national utility, defined by:

$$U_i = Y_i - \phi_{ij}\ k_s + \sum_{j \neq i} E(G_{ij}) - d_i \tag{II.1}$$

where Y_i is the national income which depends on trade (see below), ϕ_{ij} is a dummy variable which equals 1 if countries i and j form an RTA, and $E(G_{ij})$ is the expected net cost from conflict with country j.

2.2 Trade, income, and regional integration

Alesina *et al.* (2000) show that per capita income and growth rate are positively related to country size and openness to trade, and negatively related to country size multiplied by openness, i.e. smaller countries benefit more from trade openness than larger countries. They argue that larger countries enjoy a larger market size free of barriers to trade, which is more beneficial when trading with the rest of the

[8] For simplicity, the constraint $d_i \leq Y_i$ is assumed to be never binding in equilibrium.

world is difficult. The argument is just as much relevant concerning regional trade integration: creating an RTA indeed enlarges the domestic market to the aggregate size of all member countries.

National income is modeled in a pure exchange economy. It is positively related to the ability of a country to trade, either inside its domestic or regional market or with the rest of the world. Trade entails costs related to geographical, technological or political obstacles. Trade freeness is noted $(1-\tau)(1-\varphi)$, where $0 \leq \tau < 1$ represents transport costs (related to geography and technology) and $0 \leq \varphi < 1$ political trade barriers (tariffs, harmonization of rules and standards...). The level of trade freeness is exogenous; a higher index means a freer world. When an RTA is created, trade inside the regional market does not bear the latter costs ($\varphi_{\text{RTA}} = 0$). Countries are assumed to trade with themselves. Hence, national income is defined by:

$$Y_i = \varphi(1-\tau)S_i + (1-\tau)(1-\varphi)S_W \tag{II.2}$$

where S_W is the aggregate size of country i's trading partners, including itself, and S_i is the size of its domestic market. The size of countries is normalized to 1, so that $S_W = 4$ when peace prevails, and $S_i = 1 + \phi_{ij}$. In this setting, trade is mutually beneficial. Since globalization reduces transport costs or tariffs, national income increases with globalization (lower τ or φ).[9]

In line with empirical evidence of a large and persistent effect of war on bilateral trade (Martin *et al.*, 2008; Glick and Taylor, 2009), war is assumed to disrupt trade with opponent.[10] War thus reduces national income Y_i because the country loses

[9] Ruta (2005) shows that such a simple model of trade yields similar results than the model of trade in intermediate goods developed by Alesina *et al.* (2000).

[10] Without loss of generality, direct war costs, which are assumed to be symmetric, are ignored.

one trading partner. From equation (II.2), we have:

$$C_{ij} = \begin{cases} (1-\tau) & \text{if countries } i \text{ and } j \text{ belong to the same RTA} \\ (1-\tau)(1-\varphi) & \text{otherwise} \end{cases} \tag{II.3}$$

where C_{ij} is the opportunity cost of war between country i and j. Since countries are symmetric, $C_{ij} = C_{ji}$.

The opportunity costs of war are thus larger inside an RTA than between countries that are not members of the same agreement: $C_{\text{ind}} < C_{\text{RTA}}$. Following empirical evidence provided in chapter I, the effect of different kinds of RTAs on trade is assumed to be similar. The opportunity cost of war is therefore the same for all kinds of RTAs.

2.3 War and peace: the conflict game

The conflict game is based on a rationalist explanation of war, i.e. war occurs because some factors make state leaders unable to reach *ex ante* a mutually advantageous arrangement on conflict issues. Indeed, as far as destructions are involved, the use of armed force to resolve disputes is a second best outcome and is always Pareto dominated by a negotiated settlement. The question is then to understand what prevents leaders to find and/or implement a bargaining solution. Fearon (1995) argues that only three arguments fit a rationalist definition of war: asymmetries of information on resolve or military capabilities with incentives to misrepresent them, commitment problems, and issue indivisibility.[11] The model of conflict below, adapted from Alesina and Spolaore (2005), relies on the second argument: wars occur because state leaders are unable to credibly commit to hold their position.

[11] The rationalist view of war is widely developed by political scientist as well as economists. Two alternative theories of war exist. One explains war occurrence by the irrationality of state leaders; the second assumes that leaders may benefit from war without suffering the costs whose load rests on soldiers or citizens. See Jackson and Massimo (2007) for a model explaining war occurrence as an agency problem in a principal-agent framework, despite the existence of complete information about winning probabilities and the availability of bargaining possibilities through transfer paiement.

Consider two countries i and j evolving in an anarchic world, i.e. where no supranational institution or third party can enforce law. A dispute over the part R $(0 < R < Y_i)$ of their national income that is appropriable may be settled through bargaining or through war. If both countries choose to fight, the distribution of payoffs depends on the relative military strength of opponents and each country undergoes war costs. A traditional ratio contest success function defines how the valuable pie $2R$ is distributed in case of military conflict (Hirschleifer, 1988). When both countries i and j choose the fighting strategy, payoffs are the followings[12]:

$$\begin{aligned} G_i^{ff} &= 2R\frac{d_i}{d_i+d_j} - C_{ij} \\ G_j^{ff} &= 2R\frac{d_j}{d_i+d_j} - C_{ji}. \end{aligned} \tag{II.4}$$

When both countries choose to bargain, the pie subject to appropriation $2R$ is distributed according to the Nash bargaining solution. As in Alesina and Spolaore (2005), the war outcome is chosen as disagreement point, i.e. country i receives a fraction $b_{ij} = \frac{d_i}{d_i+d_j}$ of the valuable pie $2R$ when the dispute is settled peacefully.[13]

As far as war is costly, the war outcome is always Pareto dominated by the bargaining outcome. In absence of any other specification, the dominant strategy is (bargain, bargain). But as Grossman (2004a) outlines, a peaceful negotiated settlement is credible only if none has incentives to deviate, i.e. each opponent is left better off with the status quo than if he starts a war. In this respect, if a military advantage of attacking exists, and if that advantage exceeds the cost of war, none can credibly commit not to deviate. This first striker advantage, denoted E_{ij}, could materialize through a higher probability of winning or smaller war damages. It is assumed that E_{ij} is the same for the two opponents and that the country choosing to bargain when its opponent attacks undergoes a mirroring cost E_{ji} of equal magnitude

[12] When states are risk neutral (which is assumed here), $\frac{d_i}{d_i+d_j}$ can be understood either as the probability of victory or as the proportion of the pie country i won in the event of war. The former interpretation is privileged here.

[13] We have: $b_{ij} = max\left(2R\ b_{ij} - 2R\frac{d_i}{d_i+d_j} + C_{ij}\right)\left(2R\ (1-b_{ij}) - 2R\frac{d_j}{d_i+d_j} + C_{ji}\right)$ s.t. $2R\ b_{ij} \geq 2R\frac{d_i}{d_i+d_j} - C_{ij}$, $2R\ (1-b_{ij}) \geq 2R\frac{d_j}{d_i+d_j} - C_{ji}$.

($E_{ji} = E_{ij}$). Strategy sets and outcomes are summarized in table II.1.

Table II.1: Conflict game outcomes

		Ctry j: Bargain	Ctry j: Fight
Ctry i	Bargain	$(2R\frac{d_i}{d_i+d_j}\ ;\ 2R\frac{d_j}{d_i+d_j})$	$\Big(2R\frac{d_i}{d_i+d_j} - C_{ij} - E_{ji}\ ;\ 2R\frac{d_j}{d_i+d_j} - C_{ji} + E_{ij}\Big)$
	Fight	$\Big(2R\frac{d_i}{d_i+d_j} - C_{ij} + E_{ij}\ ;\ 2R\frac{d_j}{d_i+d_j} - C_{ji} - E_{ji}\Big)$	$\Big(2R\frac{d_i}{d_i+d_j} - C_{ij}\ ;\ 2R\frac{d_j}{d_i+d_j} - C_{ji}\Big)$

So in a situation where the first striker advantage is sufficiently large, i.e. if $E_{ij} > C_{ij}$, the Pareto-optimal strategy, where both countries choose to bargain, is not a Nash-equilibrium. Given the opponent strategy, a country has incentives to deviate and strike first. In this case, it is straightforward to show that the only Nash equilibrium is (fight, fight). Otherwise ($E_{ij} \leq C_{ij}$), both (bargain, bargain) and (fight, fight) are Nash equilibriums.

Using refinements introduced by Bernheim *et al.* (1987) on coalition of players[14], a unique coalition-proof Nash equilibrium emerges in each situation: depending on the level of the first striker advantage E_{ij} relative to the cost of war C_{ij}, a unique coalition-proof Nash-equilibrium exists; the strategy outcome is (bargain, bargain) if $E_{ij} \leq C_{ij}$, and (fight, fight) if $E_{ij} > C_{ij}$.

When choosing their defence capabilities, countries do not know the location of disputes and the incentives to unilaterally deviate from the bargaining solution in specific conflicts. Once military defences have been built, the location and first striker advantage are revealed to all agents, which seems plausible since building

[14] If a coalition of players can reach higher payoffs in a given Nash equilibrium compared to others, this equilibrium will prevail. Separately, each player still must not have incentives to deviate.

military capabilities requires time, so that decisions on military spending take place without full information on future conflicts. Accordingly, E_{ij} is assumed to be a random variable fully revealed after decisions on defence spending have been made. We can then derive a probability of dispute escalation to war, noted $\pi_{ij} = \Pr(E_{ij} > C_{ij})$. A dispute ends up in war with probability π_{ij} and is settled peacefully with probability $1 - \pi_{ij}$.

Differentiating RTAs

We have seen in chapter I that the effect on bilateral trade of different RTAs is statistically similar. φ_{RTA} is therefore similar for all RTAs. The probability that a dispute ends up in war is therefore smaller inside an RTA than outside. Noting $\pi_{\text{ind}} = \Pr(E_{ij} > C_{\text{ind}})$ and $\pi_{\text{RTA}} = \Pr(E_{ij} > C_{\text{RTA}})$, we get $\pi^{\text{ind}} > \pi^{\text{RTA}}$. A peaceful resolution of disputes is thus more likely when the opponents belong to an RTA.

In addition, the width of the first striker advantage is determined by factors such as military technology and capabilities, geography, economic and political situations, or the availability of information on opponent's strength. As underlined in section 1, RTAs entailing the creation of a significant institutional framework, such as customs unions and common markets, are likely to promote the peaceful resolution of interstate conflicts and to reduce the likelihood of dispute escalation to war out of any trade effect (Bearce, 2003). Supranational institutions and regular meetings of high level officials indeed limit the opportunity for a surprise attack or increase the effectiveness of counter-attacks (Grossman, 2004b). In the conflict game developed here, this pacifying effect goes through a reduction of the first-striker advantage. So the institutional features of RTAs matter for the distribution of E_{ij}, and $E_{deep} < E_{shal}$. We will first derive conditions under which RTAs are created and then see the implications of this distinction on the gains from regionalism.

2.4 Equilibria

The expected net cost from conflict between two countries i and j depends on the probability of dispute occurrence ρ, the probability of dispute escalation to war π_{ij} and the revenue subject to appropriation R as follows:

$$E(G_{ij}) = \frac{\rho}{4}\left[\left(2R\frac{d_i}{d_i+d_j} - \pi_{ij}C_{ij}\right) - R\right] \tag{II.5}$$

Equilibrium defence spending and gains from appropriative activities can now be derived for each configuration of RTAs. Country i's government chooses its level of defence spending to maximize its expected gains from conflict. We obtain:

$$d_i = \frac{R\rho}{4} \tag{II.6}$$

Proof in appendix II.A.

The net expected cost from conflict is defined as the net gains from appropriative activities when a dispute occurs minus the appropriable income R. From equation (II.5), (II.3) and (II.6), it equals for all countries j bordering country i:

$$\sum_{j\neq i} E(G_{ij}) = \begin{cases} \frac{-\rho}{4}(1-\tau)\left[(1-\varphi)\pi_{\text{ind}} + \pi_{\text{RTA}}\right] & \text{if country } i \text{ belongs to an RTA} \\ \frac{-\rho}{2}\pi_{\text{ind}}(1-\tau)(1-\varphi) & \text{otherwise} \end{cases} \tag{II.7}$$

Regional integration thus affects income through two channels: trade and appropriative activities. These gains should exceed the heterogeneity costs of integration. Conditions under which regional integration will take place can now be derived. An RTA will be created between country i and j ($\phi_{ij} = 1$) if they both strictly prefer regional integration to independence, i.e. $U_i^{\text{RTA}} > U_i^{ind}$ and $U_j^{\text{RTA}} > U_j^{ind}$.

Proposition 1. *For all $k_W < k_E$, we have in equilibrium:*

- *no RTA if and only if $EGRI \leq k_W$,*

- *one RTA on the Western continent if and only if* $k_W < EGRI \leq k_E$,
- *one RTA on each continent if and only if* $EGRI > k_E$,

where EGRI is the "expected gains from regional integration" and

$$EGRI = \frac{\rho}{4}(1-\tau)\left[(\pi_{ind} - \pi_{RTA})(1-\varphi) - \varphi\pi_{RTA}\right] + (1-\tau)\varphi. \tag{II.8}$$

See appendix II.A for details.

This proposition puts forward the intuitive result that the equilibrium strategies of countries on each continent are to create RTAs when trade and conflict related gains from regional integration outweigh the heterogeneity costs. Because heterogeneity costs of integration are larger on the Eastern continent, when $k_W < EGRI \leq k_E$ regional integration takes place only among Western countries. When $EGRI > k_E$, a RTA is formed on each continent.

2.5 Expected gains from regional integration

The effect of the level of heterogeneity costs on incentives to create an RTA is clear-cut. How international insecurity, ρ, and global trade openness, τ and φ, impact $EGRI$ is less straightforward. Interestingly, the effect of an increase in international insecurity (higher ρ) will be contingent upon the pacifying effect of regional integration. When the gains from reduced escalation to war probability under RTAs ($(\pi_{\text{ind}} - \pi_{\text{RTA}})(1-\varphi)$) outweigh the potential losses due to the larger opportunity cost of war ($\varphi\pi_{\text{RTA}}$), an increase in international insecurity will increase gains from integration and thus, everything else equal, incentives to create an RTA. Otherwise, a more insecure world will decrease incentives to create an RTA.

Testable implication 1. *The "expected gains from regional integration" increase in international insecurity* ($\frac{\partial EGRI}{\partial \rho} > 0$) *if and only if* $(\pi_{ind} - \pi_{RTA})(1-\varphi) > \varphi\pi_{RTA}$. *Otherwise,* $\frac{\partial EGRI}{\partial \rho} < 0$.

The intuition behind this result is that in a more insecure world, a country will accept to be more dependent on a partner only if the trade related gains from regional integration are not offset by the larger potential cost of war. Countries would create an RTA only if it promotes the peaceful resolution of conflicts and offers a significant guarantee against the risk of trade disruption related to war. As underlined above, customs unions and common markets are deep RTAs in terms of political or institutional integration. They should reduce escalation to war probabilities through their effect on both the opportunity cost of war and the first striker advantage. Noting $\pi_{\text{dRTA}} = \Pr(E_{deep} > C_{\text{RTA}})$ and $\pi_{\text{sRTA}} = \Pr(E_{shal} > C_{\text{RTA}})$, we know that $\pi_{\text{dRTA}} < \pi_{\text{sRTA}}$. Deep RTAs are therefore those likely to significantly prevent disputes to escalate into war. According to implication 1, dispute occurrence will affect differently incentives to create deep or shallow RTAs: a higher level of insecurity would increase gains from deep regionalism but reduce them for shallow RTAs.

Globalization also has an ambiguous effect on incentives to regional integration. On the one hand, a decrease in political barriers to trade at the multilateral level (i.e. a lower φ), such as tariffs cut under WTO, unambiguously reduces "expected gains from regional integration". It is worth noting that such channel of globalization, by preventing the creation of RTAs, could increase the actual number of wars. Indeed, the probability Ω that a war actually occurs is endogenous to the model and is given by:

$$\Omega = \frac{\rho}{4}\left[(\phi_W + \phi_E)\pi_{\text{RTA}} + (4 - \phi_W - \phi_E)\pi_{\text{ind}}\right] \tag{II.9}$$

In fact, a reduced level of global political barriers to trade $\varphi' < \varphi$, by preventing the formation of RTAs ($\phi'_E = 0$ and/or $\phi'_W = 0$) could lead to a higher probability of observing a war, $\Omega' > \Omega$.[15]

[15] Although the mechanism is different here, the result that global trade liberalization can lead to increased warfare is consistent with Martin *et al.* (2008), who provide empirical evidence on this issue.

On the other hand, globalization through a decrease in transport costs affects differently gains from regional integration. Again, if regional integration reduces significantly the probability of dispute escalation to war ($(\pi_{\text{ind}}-\pi_{\text{RTA}})(1-\varphi) > \varphi\pi_{\text{RTA}}$), a decrease in the level of transport costs unambiguously promotes regionalism, because it increases gains from integration arising both from trade and conflicts. Otherwise, the effect is lower and ambiguous, because conflict related gains from integration decrease in τ.

Testable implication 2. *A decrease in transport costs (lower τ) increases more the "expected gains from regional integration" if* $(\pi_{ind} - \pi_{RTA})(1 - \varphi) > \varphi\pi_{RTA}$.

The theoretical model shows that the effect of both trade openness and international insecurity on gains from creating an RTA are contingent on the ability of RTAs to prevent disputes to escalate into war, i.e. the relative level of π_{ind} and π_{RTA}. This in turn depends on the distribution of E_{ij} and the value of political barriers to trade φ. The definition of the "depth" of regional trade integration put forward in section 1 links the form of economic integration to the design of the institutional framework created and allows to explain why different country pairs create different kinds of RTAs. Customs unions and common markets require a significant regional institutional framework, only able to promote the peaceful resolution of disputes by limiting the first-striker advantage. Besides their impact on trade and the opportunity cost of war, they therefore reduce further the probability of dispute escalation to war under RTA, $\pi_{\text{dRTA}} < \pi_{\text{sRTA}}$. This theoretical framework generates different predictions regarding the determinants of the creation of deep or shallow RTAs. Testable implications 1 and 2 state that the likelihood of RTA creation by a pair of countries is: (i) positively related to the propensity to interstate disputes concerning deep RTAs, (ii) negatively related to the propensity to interstate disputes concerning shallow RTAs, and (iii) negatively related to the level of transport costs concerning deep RTAs, but less so or even positively for shallow RTAs. However, we need first to assess empirically which kinds of RTAs actually

reduce the likelihood of war occurrence, i.e. to distinguish between deep and shallow RTAs. Then, we will be able to test the main predictions of the theoretical model.

3 Econometrics I: the effect of regionalism on war

3.1 Econometric model

The preliminary step of this empirical analysis is to investigate the effect of the different kinds of RTAs on dispute resolution. As explicitly modeled in the theoretical section, the outbreak of a war results from a two-stage process, the initiation of a dispute and its escalation to war. A war cannot occur unless a dispute arises beforehand. The final observed outcome, i.e. the occurrence of a war between two countries i and j, actually has two components:

$$\Pr(war_{ij}) = \Pr(dispute_{ij}) \times \Pr(escalation_{ij} \mid dispute_{ij}). \tag{II.10}$$

The value of interest in this paper is the second component of the right-hand side equation, i.e. the probability of escalation to war when a dispute has arisen (π in the theoretical model). Using a simple probit or logit model to estimate the conditional probability of war would thus yield results subject to a selection bias, because it cannot account for dispute initiation. The probability of occurrence of a dispute between two countries (ρ in the theoretical model) has to be taken into account. Once a conflict emerges, it is likely that the process driving its evolution greatly differs from the one explaining its initiation. Different factors could therefore have different impacts depending on the stage of the conflict process. For instance, neighboring countries are likely to face more disputes and also to be more prone to escalate them to war, because sharing a common border makes the use of armed force easier. Using a wide definition of conflicts, including diplomatic and economic disputes, Kinsella and Russett (2002) show that determinants of conflict onset and

escalation differ and that the effect of some of them are nonmonotonic on the whole range of the conflict process.

Moreover selection effects have to be modeled because the escalation process is observed only if a dispute has occurred. Unobserved variables, such as commitment, resolve or willingness to take risks, could therefore affect differently the processes of escalation and initiation, or could be disclosed at different stages of the conflict process. As Fearon (1995) emphasizes, asymmetries of information are particularly relevant for explaining war occurrence. State leaders enter disputes with few information on opponent's commitment or resolve. But this information is disclosed along the conflict process and could therefore influence the later stages. The degree of asymmetric information therefore differs according to the stage of the conflict process. And information disclosed when a dispute is initiated is likely to influence its escalation process.

Using a bivariate probit with censoring is thus a natural econometric model to estimate the probability of war for each dyad-year. It allows to jointly model the dispute initiation and its escalation to war and to account for the impact of each factor on different stages of the conflict process and of the censoring of the dependent variable. The log-likelihood function is based on the unconditional probabilities associated with the three possible outcomes (Greene, 2003, p.713): no dispute ($dispute = 0$), a dispute emerges but does not escalate to war ($dispute = 1$ and $war = 0$), and the dispute escalates into war ($dispute = 1$ and $war = 1$). Two equations are jointly estimated, one explaining the dispute initiation and the second the dispute escalation to war. Consider y_1 and y_2, two latent (unobserved) variables, representing the difference in utility levels from dispute initiation and dispute escalation to war respectively. The model estimated is derived from a

standard bivariate probit model:

$$\begin{aligned} y_1 &= \beta_1 X_1 + \epsilon_1 \quad \text{and } dispute = \begin{cases} 1 \text{ if } y_1 > 0 \\ 0 \text{ if } y_1 \leq 0 \end{cases} \\ y_2 &= \beta_2 X_2 + \epsilon_2 \quad \text{and } war = \begin{cases} 1 \text{ if } y_2 > 0 \\ 0 \text{ if } y_2 \leq 0 \end{cases} \end{aligned} \tag{II.11}$$

where $X_{1,2}$ are vectors of explanatory variables, $\beta_{1,2}$ vectors of parameters, and errors terms ϵ_1 and ϵ_2 are assumed to be independent from $X_{1,2}$ and to follow $E(\epsilon_1) = E(\epsilon_2) = 0,\ Var(\epsilon_1) = Var(\epsilon_2) = 1$, and $Cov[\epsilon_1,\ \epsilon_2] = \varrho$.

Wooldridge (2002, p.564) emphasizes that, technically, the coefficients can be identified due only to the nonlinearity of the two equations in the bivariate probit. Hence, it is not necessary for X_2 to be a strict subset of X_1 for the outcome equation to be identified. However, the identification of the parameters of the model is better handled when X_1 contains at least one variable that is not in X_2, so that we have an exclusion restriction, i.e. a variable that influences the selection equation but not the outcome equation. The number of landlocked countries in a dyad is a good candidate as an identification variable, because it reduces the likelihood for two countries to experience any interaction, and in particular disputes, but there is no reason to believe that being landlocked affect the way conflicts are settled, peacefully or through war.[16]

All specifications control for autocorrelation by clustering the bivariate censored probit at the dyadic level.

3.2 Data

The main dependent variable is the occurrence of a Militarized Interstate Disputes (MID) between two countries i and j in year t. This variable is coded from the COW database (Faten *et al.*, 2004) which computes all military conflicts on the 1815-2001

[16] When introduced in a probit model of the second stage equation, the number of landlocked countries is not statistically significant.

period. In this database, war is restrictively defined as a MID involving at least 1000 deaths of military personnel. This restrictive definition dramatically reduces the number of events considered as war, and prevents any robust empirical analysis. I follow the literature and use a broader definition of war including armed conflicts involving the display or the use of armed force, i.e. a MID of hostility level 3 (display of force), 4 (use of force) or 5 (war) in the COW database.[17] Appendix II.B displays results for a narrower definition of MID_{ijt} including only MID of hostility level 4 and 5. Results remain qualitatively similar.

Qualitative data provided by databases on armed conflicts, such as MID used as our explained variable, imply that actors, duration, geographical location and intensity of each conflict have been defined by researchers. Thus, only rare events such as wars can be considered. But to assess the dispute initiation process, we need to measure conflicts of lower intensity, not reported in such data sets. An alternative type of data is available: event data which account for a broader range of interstate relations. Event data are reported, by trained students or automatically by computers, on a day by day basis from newspapers or wire services and coded by actor, target, as well as action form and date. Data on daily events have the great advantage of providing information whatever the intensity of the underlying event. In comparison with armed conflict databases, if assessing the evolution of a given conflict is hardly feasible, such data enable to measure the occurrence of a dispute a given year, which is what we are interested in the present analysis. Indeed, we want to assess, when a dispute occurs, whether it is settled peacefully or ends up in war. Events data compiled by Kinsella and Russett (2002) and available on their website[18] are used to measure the occurrence of a dispute exceeding a certain threshold defined as *strong verbal hostility*.[19] They overlap data from three event databases, the

[17] The MID level 2 (threat to use force) is thus not considered as a military conflict. See the COW website (http://www.correlatesofwar.org/) for more information and records of MID.

[18] http://www.yale.edu/unsy/democ/democ1.htm

[19] See Kinsella and Russett (2002, p.1054-1055) for more details on databases used and the operationalizing of the minimum conflict intensity threshold. Schrodt and Gerner (2000) present limitations related to the use of event data. Thanks to the use of events exceeding a certain intensity in our analysis, much of the biases they identify are limited.

Conflict and Peace Data Bank (COPDAB), the World Event/Interaction Survey (WEIS) and the Protocol for the Assessment of Nonviolent Direct Action (PANDA), to construct a dummy variable coded 1 if a dispute occurs for any dyad-year over the 1950-1992 period.[20] Table II.2 provides event categories coded as disputes and their equivalent on the widely used Goldstein (1992) scale, which rates events between -10 and +10 according to the level of conflict or cooperation they embed. Only events classified at least as conflictual as categories "Cancel or postpone planned events" and "Charge; criticize; blame; disapprove" are coded as a dispute. Table II.3 shows that the proportion of MID and RTA members remains similar when the sample is restricted due to the availability of event data.[21] Out of the 127259 dyad-years of our sample, 7884 experience a dispute, of which 584 spillover into MID.

Data on RTAs have been assembled from notifications to the WTO under article XXIV of GATT or the Enabling Clause for developing countries[22], Frankel (1997), Foroutan (1993, 1998), Langhammer and Hiemenz (1990), Machlup (1977) and other public sources. I consider all regional (i.e. three or more parties) trade agreements which take the form of Preferential Trade Arrangements (PA), Free Trade Areas (FTA), Customs Unions (CU), or Common markets (CM)[23], in force at least one year between 1950 and 2000. Non reciprocal agreements are thus excluded. Bilateral agreements are also considered separately because their institutional framework is limited and likely to differ from regional agreements.[24] Unless otherwise mentioned in our sources, an agreement is assumed to be in force at the date defined in the

[20] 189 cases exhibit a MID but no dispute in the restricted sample. I follow Kinsella and Russett (2002) who treat them as measurement errors, and recode the dummy variable as if a dispute occurred. It is worth noting that in all cases but 21, a dispute is recorded the preceding year.

[21] Missing data for control variables nevertheless slightly bias the sample towards country pairs member of preferential arrangements, free trade agreements and customs unions, because data are reported more completely for important and proximate partner countries.

[22] http://www.wto.org/english/tratop_e/region_e/region_e.htm

[23] Based on WTO, a PA is defined as an agreement among three or more parties in which reciprocal preferences are exchanged to cover a limited range of the parties' trade in goods (partial in scope); a FTA is defined as an agreement among three or more parties in which reciprocal preferences are exchanged to cover a large spectrum of the parties' trade in goods; a CU is defined as an RTA with a common external tariff in addition to the exchange of trade preferences; and a CM is defined as an RTA allowing free movements of factors (goods, capital and workers).

[24] The Closer Economic Relations agreement between Australia and New-Zealand is an exception and is included in a regional trade agreements.

Table II.2: Events and Goldstein scale

Event category	**Goldstein**
Request action; call for	-0,1
Explicit decline to comment	-0,1
Urge or suggest action or policy	-0,1
Comment on situation	-0,2
Deny an accusation	-0,9
Deny an attributed policy, action, role or position	-1,1
Grant asylum	-1,1
Make complaint (not formal)	-1,9
Cancel or postpone planned events	-2,2
Charge; criticize; blame; disapprove	-2,2
Issue formal complaint or protest	-2,4
Give warning	-3
Denounce; denigrate; abuse	-3,4
Halt negotiation	-3,8
Turn down proposal; reject protest, demand, threat	-4
Refuse; oppose; refuse to allow	-4
Reduce routine international activity; recall officials	-4,1
Detain or arrest person(s)	-4,4
Threat without specific negative sanction stated	-4,4
Issue order or command, insist, demand compliance	-4,9
Expel organization or group	-4,9
Order person or personnel out of country	-5
Nonmilitary demonstration, walk out on	-5,2
Reduce or cut off aid or assistance; act to punish/deprive	-5,6
Threat with specific negative nonmilitary sanction	-5,8
Ultimatum; threat with negative sanction and time limit	-6,9
Threat with force specified	-7
Break diplomatic relations	-7
Armed force mobilization, exercise, display; military buildup	-7,6
Noninjury destructive action	-8,3
Nonmilitary destruction/injury	-8,7
Seize position or possessions	-9,2
Military attack; clash; assault	-10

Source: Goldstein (1992)

Table II.3: Descriptive statistics by sample

	Full	Events data	Restricted
		Number	
Observations	391828	205421	127259
Disputes	-	12134	7884
MID	2064	1024	584
MID (level 4 & 5)	1772	847	471
		Mean	
Political agreement	0.0034	0.0035	0.0036
Preferential agreement	0.0250	0.0259	0.0337
Free trade agreement	0.0019	0.0035	0.0036
Customs union	0.0064	0.0066	0.0081
Common market	0.0002	0.0002	0.0002

treaty and, if not available, once the agreement has been signed and ratified. It should, however, be noted that this does not necessarily mean that all provisions of the agreement have been fully implemented. Membership in RTAs is defined by dummy variables coded 1 when both countries in the dyad are members of the same RTA during the year considered. Deep RTAs aggregates CM and CU; they are those involving a more complete political integration and the provision of public goods in common. The 1950-1992 restricted sample used below includes 29 RTAs, of which 12 are coded as PA, 5 FTA, 10 CU and 2 CM (see Appendix II.C for a detailed list).

Trade data come from the database assembled by Katherine Barbieri[25], who uses mostly information from the IMF and the League of Nations international trade statistics, and completed by Martin *et al.* (2008) using the IMF DOTS database. Income data also comes from Martin *et al.* (2008), and are assembled from the Penn World Table (version 6.2), Katherine Barbieri's database and the World Bank WDI database. Geographic and colonial data are from the CEPII[26]. Data on formal defence alliances are taken from the COW project[27]. The composite democracy indicator is taken from Polity IV[28]. It measures openness/closedness of political institutions on a -10 / +10 scale (10 means high democracy). Finally, UN vote correlation is taken from "The Affinity of Nations: Similarity of State Voting Positions in the UN General Assembly" computed by Erik Gartzke.

3.3 Econometric results

Results are presented in table II.4. All specifications include controls for trade openness, contiguity, distance and the number of peaceful years in the dyad. Geography is indeed a major determinant of conflict occurrence, both onset or escalation, as well as of the choice of RTA partners (Baier and Bergstrand, 2004b). The dyadic history of war has been found to be an important determinant of current

[25] See http://sitemason.vanderbilt.edu/site/k5vj7G/new_page_builder_4
[26] http://www.cepii.fr/anglaisgraph/bdd/distances.htm
[27] http://www.correlatesofwar.org/
[28] http://www.cidcm.umd.edu/polity/

interstate relations (Beck *et al.*, 1998); I therefore follow the literature and include the number of peaceful years within the dyad. Three controls for trade relations are included: a proxy for bilateral trade interdependence (the log of the mean of bilateral imports in percentage of GDP), and another for multilateral trade dependence (the log of the mean of multilateral (excluding bilateral) imports in percentage of GDP), as well as a dummy for dyad experiencing zero trade flows (both exports and imports)[29], as a control for fixed trade costs. It allows to account for any impact of RTAs on the geography of trade, as bilateral trade is found to reduce the likelihood of war whereas multilateral trade dampens this relation (Martin *et al.*, 2008). In order to remove the potential contemporaneous effect of war on bilateral and multilateral trade, trade variables are lagged 4 years. Martin *et al.* (2008) indeed show that a 4-years lag is enough to remove any contemporaneous reverse effect of war on trade.[30]

Columns (1) and (2) present results obtained using a simple probit estimator. They show that RTA membership has no significant effect on war probabilities on the full sample, but belonging to a deep RTA does reduce war probabilities when only countries separated by less than 1000 km are considered (column (2)). These crude results emphasize the need to account for dispute propensity within dyads. So in specifications (3), a maximum-likelihood probit model with sample selection is implemented. When RTAs are differentiated according to their form (specification (3)), common membership in a deep RTA is found to significantly reduce the probability of dispute escalation to war between two countries, while membership in other kinds of RTAs has no significant effect on the conflict escalation stage. Hence, these results support the argument of a commercial institutional peace working through the creation of institutions at the regional level; only RTAs providing a

[29] These are not missing values but country pairs for which no trade is reported.

[30] RTA membership is obviously not affected by any contemporaneous effect of military conflict, because it takes time to negotiate and implement an agreement. Using panel fixed effect or instrumental variable econometric models to control for endogeneity potentially arising from omitted variables likely to affect simultaneously a war and an RTA membership is not possible here because too few dyads enter both war and RTA over our time period and exogenous determinants of RTA membership are not available.

significant institutional framework, i.e. customs unions and common markets, do prevent the use of armed force to settle conflicts and favor the negotiated resolution of interstate disputes.

Control variables exhibit the expected signs. A long period of peace within the dyad fosters peace at all stage of the conflict process whereas contiguity increases the likelihood of disputes as well as war. Distance reduces dispute occurrence. Concerning trade relations, results confirm their ambivalent effect on peace: bilateral trade interdependence does deter the escalation of disputes to war but multilateral trade openness dampens this link; the opposite is true at the initiation stage. In the same manner, country pairs with zero trade flows have less disputes but are more likely to escalate them to war. Finally, landlocked countries do experience less disputes.

In specification (4), a number of other controls are added, in order to account for omitted variables likely to affect at the same time RTA membership and war occurrence. First, controls for cultural, historical and diplomatic affinities between countries are included. These are dummies for pairs of countries sharing a common language, ever in a colonial relationship or with a common colonizer, and the UN general assembly vote correlation (lagged 4 years). Countries sharing affinities are more likely to be part of the same RTA, to trade more and to be less warlike, whereas countries sharing common colonial history would exhibit more unresolved conflict issues. The sum of democracy indexes is also included in our specification because it has been shown that democracies are less likely to wage wars (see Levy and Razin (2004) and Jackson and Massimo (2007) for a theoretical treatment, and Oneal and Russett (1997) among others for empirical evidence), but it has also been argued that democracy affects the choice to create an RTA (Mansfield *et al.*, 2002), so that its omission could bias our results. Moreover, a proxy for country size - a bigger territory is more difficult to defend and is exposed to more opponents, but a big country is also less open to trade and is particular with respect to regional integration, as it often implies asymmetric integration -, and a dummy for countries sharing a common

Table II.4: Impact of RTAs on war: bivariate censored probit model

	(1)	(2)	(3)		(4)	
Dependent variable:	MID	MID	MID	Dispute	MID	Dispute
Deep RTA membership	-0.34	-0.50^{c}	-0.64^{b}	0.00	-0.57^{b}	0.10
	(0.29)	(0.29)	(0.27)	(0.12)	(0.28)	(0.10)
FTA membership	-0.15	-0.08	0.19	-0.47^{a}	0.25	-0.24
	(0.19)	(0.25)	(0.27)	(0.14)	(0.28)	(0.15)
PA membership	-0.05	0.04	-0.06	-0.09	-0.01	-0.00
	(0.12)	(0.17)	(0.11)	(0.06)	(0.14)	(0.07)
Nbr. of peaceful years	-0.02^{a}	-0.03^{a}	-0.01^{a}	-0.00^{a}	-0.01^{a}	-0.00^{a}
	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Log distance	-0.19^{a}	-0.03	-0.00	-0.24^{a}	-0.06	-0.32^{a}
	(0.04)	(0.08)	(0.05)	(0.02)	(0.11)	(0.02)
Contiguity dum.	0.59^{a}	0.67^{a}	0.36^{a}	0.33^{a}	0.56^{a}	0.30^{a}
	(0.10)	(0.18)	(0.13)	(0.07)	(0.18)	(0.07)
Bil. trade dependence (t-4)	0.86^{a}	-0.31	-1.66^{a}	3.00^{a}	0.38	1.68^{a}
	(0.27)	(0.70)	(0.41)	(0.22)	(0.57)	(0.23)
Multil. trade dependence (t-4)	-0.64^{a}	0.07	0.23	-0.99^{a}	0.21^{c}	-0.30^{a}
	(0.12)	(0.23)	(0.17)	(0.05)	(0.12)	(0.05)
Zero trade dum. (t-4)	-0.18^{c}	0.55^{b}	0.42^{a}	-0.40^{a}	0.09	-0.21^{a}
	(0.09)	(0.26)	(0.11)	(0.03)	(0.18)	(0.03)
Nbr. Of landlocked dum.				-0.30^{a}		-0.22^{a}
				(0.03)		(0.03)
Common language dum.					-0.29^{a}	0.16^{a}
					(0.10)	(0.04)
Colonial relationship dum.					-0.19	0.54^{a}
					(0.23)	(0.09)
Common colonizer dum.					0.07	0.10^{c}
					(0.13)	(0.06)
Sum of democracy indexes					-0.41^{a}	0.23^{a}
					(0.08)	(0.03)
Common defense alliance dum.					-0.31	0.47^{a}
					(0.19)	(0.06)
Log area					-0.01	0.12^{a}
					(0.05)	(0.01)
UN vote correlation (t-4)					0.30	-0.99^{a}
					(0.35)	(0.05)
Constant	0.65	-1.94	-3.43^{a}	6.03^{a}	1.92^{b}	1.32^{b}
	(0.74)	(1.91)	(0.86)	(0.50)	(0.86)	(0.56)
Estimator	Probit	Probit	heckprob		heckprob	
Sample	Full	<1000 km	Full		Full	
Observations	153095	5555	148405	148405	127259	127259
Uncensored Obs.	-	-	9999		7884	
Log likelihood	-3564.5	-705.7	-31501.7		-23308.5	
Rho (Wald test of independent eqn.)	-	-	-0.54^{a}		-0.26	

Note: Robust standard errors adjusted for intragroup correlation in parentheses. a, b and c respectively denote significance at the 1%, 5% and 10% levels. Intercept and time dummies not reported.

defense alliance are included. Finally, year dummies are added to control for any chock affecting all dyads in the same year. It is worth noting that when all these controls are added, the Wald test of independent equations is no longer significant, meaning that the two equation simultaneously estimated are then independent. As expected, countries sharing a common language and more democratic countries are found to experience more disputes but to be less likely to escalate them to war. Bigger countries, sharing a common colonial history and members of a common defence alliance experience more disputes, whereas the opposite is true concerning UN vote correlation; these variables do not affect the stage of conflict escalation. Interestingly, in this specification, bilateral trade interdependence has no statistically significant effect on the way conflict are handled. It suggests that institutional peace mechanisms under RTAs dominate. Overall, the results on RTA membership hold: being part of a customs union or a common market promotes the peaceful settlement of conflicts whereas membership to other RTAs does not affect the dispute escalation to war process *per se*.

This section provides strong support for the argument that institutional variation among RTAs matters for peace. Only the more integrated RTAs, such as customs union or common markets, promote the peaceful settlement of disputes thanks to the creation of a significant regional institutional framework. Table II.9 in appendix shows that results remain qualitatively similar when the definition of militarized interstate disputes is restricted to conflicts of hostility level 4 and 5, i.e. implying the actual use of military force and war resulting in the death of at least 1000 military personnel.

3.4 Quantification

This section aims at quantifying the effect of RTA membership on war probabilities. Since the estimator used is nonlinear, coefficients cannot be interpreted immediately. I compute two types of marginal effects (or discrete change for dummy variables): on the conditional (on dispute occurrence) predicted probability $\left(\frac{\partial \Pr(war=1|dispute=1)}{\partial X}\right)$

and on the bivariate predicted probability $\left(\frac{\partial \Pr(war=1,dispute=1)}{\partial X}\right)$. The former is the quantity of main interest here: it measures the effect on dispute escalation to war, i.e. on the way disputes are settled once they occur. The latter measures the effect on the complete conflict process. Table II.5 presents marginal effects for different values of some key determinants of war, using the preferred specification (specification (4) in table II.4). The marginal effects are computed at two different levels: at the mean value of all variables and for contiguous countries separated by 1000 km and exhibiting positive trade flows (the zero trade dummy is set to zero). In order to compare the impact of deep RTA membership on peace, table II.5 reports marginal effects (or discrete change for dummy variables) for some explanatory variables.

Deep RTA membership is found to foster the peaceful resolution of conflicts as well as to reduce war probabilities as a whole. As expected, the absolute effect is larger for contiguous countries separated by 1000 km. For the latter, entering a custom union or a common market reduces the probability that disputes escalate into war by 8.8 percentage points. This effects is sizeable since the mean predicted conditional probability is 13.6% for contiguous and trading countries separated by 1000 km. The effect of deep RTAs is comparatively similar when all variables are held at their mean: membership in a deep RTA reduces the probability of dispute escalation to war by 1.9 percentage points, while the predicted conditional probability is 2.5%.

In comparison with other determinants of war, this effect is also sizeable. In the case of contiguous and trading countries separated by 1000 km, it is equivalent to increasing the number of peaceful years between two countries by 28 years from its mean value. Moreover, the peaceful effect of sharing a common language or a common defence alliance is twice smaller. Finally, when compared to the democratic peace channel, the effect of deep RTA membership is shown to be of the same order of magnitude than an increase from the mean to the top level of democracy indexes of the two countries.

When the bivariate predicted probability is considered, membership to a deep

RTA reduces the probability of war occurrence by 1.2% in the case of contiguous and trading countries separated by 1000 km. The predicted probability of war between two countries is 2% in this case, so that, as in the above case, deep RTA membership reduces the likelihood of war by almost two-thirds.

Table II.5: Marginal effects after maximum-likelihood probit model with sample selection

	Mean country pair		Contiguous and trading country pairs separated by 1000km		Mean
	conditional pred prob	bivariate pred prob	conditional pred prob	bivariate pred prob	
Predicted probability	0.025	0.000	0.136	0.020	
Deep RTA membership dum.	-0.019^a	-0.000^b	-0.088^b	-0.012^c	0
	(0.006)	(0.000)	(0.035)	(0.007)	
Nbr of peaceful years	-0.001^a	-0.000^a	-0.003^a	-0.000^a	61.82
	(0.000)	(0.000)	(0.000)	(0.000)	
Contiguity dum.	0.069^a	0.004^a			0.03
	(0.022)	(0.001)			
Common langage	-0.013^a	-0.000	-0.052^a	-0.004	0.20
	(0.005)	(0.000)	(0.019)	(0.003)	
Sum of democracy indexes	-0.021^a	-0.000	-0.080^a	-0.005^c	1.00
	(0.006)	(0.000)	(0.016)	(0.003)	
Common defence alliance dum.	-0.010^b	0.000	-0.043^b	0.007	0.10
	(0.005)	(0.000)	(0.022)	(0.005)	

Note: a, b and c respectively denote significance at the 1%, 5% and 10% levels. Results are computed from specification (4) in table II.4. RTA membership dummies are set to zero. All other variables are held at their mean.

These results confirm that only the institutional framework provided by deep RTAs significantly reduces the likelihood that a dispute escalate into war. Two categories of agreements can thus be distinguished according to their ability to prevent dispute escalation to war: deep RTAs (customs unions and common markets) provide significant security externality whereas shallow agreements (preferential agreements and free trade agreements) do not.

4 Econometrics II: the formation of Regional Trade Agreements

In this section, we investigate the main implications of the theoretical model regarding the creation of deep and shallow RTAs.

4.1 Model and data

Proposition 1 relates the formation of RTAs to international insecurity, barriers to trade, and the heterogeneity costs of integration, i.e. geographical as well as cultural proximity of countries. I estimate the probability of RTA creation between two countries i and j using a probit model:

$$Pr(RTA_{ij} = 1) = \beta_0 + \beta_1 \ \rho_{ij} + \beta_2 \ \tau_{ij} + \beta_3 \ Controls_{ij} + \epsilon_{ijt} \qquad \text{(II.12)}$$

where $Controls_{ij}$ includes a number of variables, defined below, controlling for the heterogeneity cost of integration in particular. Equation II.12 is estimated separately for deep and shallow RTAs. From, implications (1) and (2), we expect $\beta_1 > 0$ for deep RTAs and $\beta_1 < 0$ for shallow RTAs, and $\beta_2 > 0$ for deep RTAs and $\beta_2^{shallow} < \beta_2^{deep}$.

The events data described above are used to compute a proxy for the interstate dispute propensity (ρ_{ij}). It is constructed as the propensity to dispute, defined as conflicting events exceeding the threshold of "strong verbal hostility", between countries i and j over a 10 years period. Natural barriers to trade are approximated by an index of economic remoteness of countries, measured by geographical distance from partner countries weighted by their economic size. Baier and Bergstrand (2004b) use a similar index, which has the great advantage of not being directly related to national trade policies. It approximates the natural trade openness of a country, related to its geographical location relative to other markets. The

remoteness index is defined as follows:

$$\tau_{ij} = \log\left(\sum_{k\neq i,j}\frac{GDP_k}{d_{ik}} + \sum_{k\neq i,j}\frac{GDP_k}{d_{jk}}\right). \tag{II.13}$$

A larger τ_{ij} means that countries i and j are closer to their potential trading partners, i.e. less remote from the rest of the world, which means that they face less natural transport costs.

The probability of RTA between two countries is estimated in 2000 using a probit model. As Baier and Bergstrand (2004b) underline, an important issue regarding this specification is the endogeneity related to past RTA membership. Indeed, being part of an RTA over a long period of time is likely to affect the current economic fundamentals of member countries. To deal with this endogeneity issue, I implement two strategies. First, regarding the proxy for dispute propensity, I estimate an instrumental variable (IV) probit model, where dispute propensity is determined endogenously thanks to the use of exogenous instrumental variables.[31] Theory in international relations provides valid exogenous instrumental variables. First, major power are countries able to operate abroad in large portions of the world. As such, they interact more with any country in the world, and are thus likely to experience more interstate disputes with countries around the globe. The first instrument of conflict propensity is a variable indicating the number of countries endowed with a permanent seat at the United Nations' Security Council. It is likely to be correlated to dispute occurrence but not directly related to RTA membership since it is not solely related to national economic power. Second, I use an index of religious proximity; pairs of countries sharing similar religious beliefs are indeed expected to experience less disputes. The variable of religious proximity is based

[31] Another advantage of using an IV econometric model is that it also deals with measurement error of the endogenous explanatory variable, which is, as explained above, also valuable in our case. For instance, institutions under deep RTAs are likely to publicize disputes, creating a downward bias on the coefficient of dispute propensity in the deep regionalism case.

on data on religious fractionalization taken from Alesina *et al.* (2003).[32] The tests of overidentifying restrictions confirm (in all specifications) the validity of our instruments, i.e. that they are uncorrelated with the error term of the estimated equation. Moreover, the partial R^2 of IVs in the first stage equation confirms their relevance, and the F-test of weak identification of IVs exceeds the threshold of ten recommended by Staiger and Stock (1997) in all specifications.

On the other hand, the remoteness index, because it includes the GDPs of partner countries, and especially neighboring countries, is also likely to be affected by past RTA membership. However, no appropriate instrumental variables are available, because standard geographical determinants of trade openness also affect RTA formation. So the variable measuring the natural openness of countries is lagged in 1960 to remote any effect of past RTA membership on current openness. Likewise, all variables including the GDPs (similarity and levels of income per capita, sum and difference of GDPs) are also lagged in 1960. This reduces the sample of countries, because several countries were not independent in 1960.[33]

4.2 Results

Results are reported in table II.6. It first presents results including only controls directly derived from proposition 1 of the theoretical model. Heterogeneity costs are related to geographical, cultural and historical proximity; they are approximated first by the distance between the most populated cities of the two countries and

[32] They compute data on 294 different religions from Encyclopedia Britannica (2000). A religion similarity index is defined for each religion using its family and sub-family. It equals 1 if both countries share the same religion, 0.5 if the two religions belong to the same sub-family, 0.25 if they belong to the same family but not the same sub-family, and 0 if they belong to different families. The index of religious proximity is then computed as the sum of the products of the share of each religion weighted by the religion similarity index, for all religions practiced by at least 3% of the population in each country.

[33] The data set includes 57 countries: Australia, Austria, Bolivia, Brazil, Bulgaria, Burkina Faso, Cameroon, Canada, Central African Republic, Chile, China, Colombia, Costa Rica, Denmark, Dominican Republic, Ecuador, Egypt, Finland, France, Greece, Honduras, Hungary, India, Indonesia, Iran, Ireland, Israel, Italy, Ivory Coast, Japan, Madagascar, Malaysia, Mauritania, Mexico, Morocco, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Panama, Paraguay, Poland, Senegal, South Africa, South Korea, Spain, Sri Lanka, Sweden, Switzerland, Tunisia, Turkey, United Kingdom, United States of America, Uruguay and Venezuela.

common border for its geographic part, and income level similarity (the log of the difference of income per capita) and dummies for common language and common colonizer for its cultural and historical part.

For the sake of completeness, specifications (1) and (2) report the results of simple probit estimations for, respectively, pooled RTAs and when deep and shallow RTAs are differentiated. Specification (3) presents estimation results when dispute propensity is instrumented in order to account for endogeneity. Dispute propensity is then found to be significantly and strongly negatively associated to shallow RTAs and positively to deep RTAs, in accordance with our theoretical model. Countries undergoing lots of interstate disputes will agree to enter an RTA, and thus accept greater dependence on a given trading partner, only if it also creates institutions reducing the risks of trade disruption and securing the gains from trade. On the other hand, shallow agreements are created between countries whose trade relationships are not threatened by interstate conflicts. Comparison with specification (2), in which the dispute propensity variable is not instrumented, points out that endogeneity biases the estimated coefficient downward for both shallow and deep RTAs. The coefficients nevertheless exhibit the expected sign in this specification. The Smith-Blundell test and the Wald test of exogeneity strongly confirm the relevance of our two stages IV probit econometric specification (the first stage estimates are provided in appendix II.D). Moreover, the test of overidentifying restrictions and the weak identification test - the F-stats on the joint null effect of IVs largely exceeds the threshold of 10 recommended by Stock *et al.* (2002) -, confirm the exogeneity and relevance of the instruments.

The remoteness index also has a different effect according to the kind of RTA created. Countries naturally more open to trade (having a high remoteness index) are more likely to create deep RTAs, whereas the opposite is true concerning shallow RTAs. Pairs of countries more integrated to the world trading system, i.e. facing less physical impediments to trade, have the incentive to create RTAs involving a large institutional framework. This result is a continuation, at the international level, of

Table II.6: Probability of an RTA between two countries

	Probit			IV probit		IV probit	
	(1)	(2)		(3)		(4)	
	All RTAs	Shallow RTAs	Deep RTAs	Shallow RTAs	Deep RTAs	Shallow RTAs	Deep RTAs
Propensity to dispute	-0.16	-0.40^{c}	0.48	-3.08^{a}	1.61^{a}	-5.46^{a}	3.78^{a}
	(0.19)	(0.22)	(0.31)	(0.52)	(0.56)	(0.32)	(0.84)
Remoteness (1960)	-0.01	-0.30^{a}	0.70^{a}	-0.35^{a}	0.64^{a}	-0.26^{a}	0.83^{a}
	(0.08)	(0.09)	(0.19)	(0.08)	(0.18)	(0.09)	(0.20)
log distance	-0.34^{a}	0.00	-1.02^{a}	-0.10	-0.97^{a}	-0.02	-0.66^{a}
	(0.06)	(0.07)	(0.09)	(0.06)	(0.10)	(0.08)	(0.15)
Contiguity dum.	0.88^{a}	0.94^{a}	-0.17	1.56^{a}	-0.48	1.84^{a}	-0.81^{c}
	(0.26)	(0.25)	(0.37)	(0.29)	(0.38)	(0.34)	(0.42)
Common language dum.	-0.11	0.04	-0.09	0.13	-0.19	0.16	-0.28
	(0.12)	(0.13)	(0.23)	(0.12)	(0.23)	(0.12)	(0.21)
Common colonizer dum.	-0.13	-0.13	0.38	-0.23	0.43	0.16	1.15^{a}
	(0.23)	(0.24)	(0.35)	(0.24)	(0.35)	(0.21)	(0.41)
log diff. GDP per capita (1960)	-0.26^{a}	-0.27^{a}	-0.01	-0.17^{a}	-0.04	-0.06^{c}	0.08
	(0.03)	(0.03)	(0.05)	(0.03)	(0.05)	(0.03)	(0.07)
log sum GDP per capita (1960)						-0.11	-0.64^{a}
						(0.08)	(0.17)
log sum GDP (1960)						0.56^{a}	-0.38^{a}
						(0.05)	(0.12)
log diff. GDP (1960)						-0.18^{a}	0.11^{c}
						(0.03)	(0.06)
Nbr. of landlocked countries						-0.29^{a}	-0.22
						(0.07)	(0.17)
Sum of democracy indexes						-0.16	2.63^{a}
						(0.13)	(0.57)
Common defence alliance dum.						0.70^{a}	0.11
						(0.16)	(0.19)
Constant	1.85^{b}	0.34	2.25	1.93^{b}	2;05	-2.11^{c}	-3.37^{c}
	(0.83)	(0.92)	(1.63)	(0.93)	(1.59)	(1.08)	(1.94)
Observations	1648	1648	1648	1648	1648	1534	1534
Wald test of exogeneity	-	-	-	22.59^{a}	4.69^{b}	46.46^{a}	12.21^{a}
Smith-Blundell test of exogeneity	-	-	-	476.88^{a}	125.94^{a}	660.07^{a}	82.19^{a}
Partial R^2 *				0.23	0.23	0.07	0.07
Weak identification F-test*	-	-	-	80.23	80.23	32.12	32.12
Test of overidentifying restrictions**	-	-	-	2.41	1.50	1.27	0.69

Note: Robust standard errors in parentheses. a, b and c respectively denote significance at the 1%, 5% and 10% levels. * The partial R^2 and the weak identification test are computed using an IV linear probability model. ** Amemiya-Lee-Newey minimum chi-sq statistic (computed using the Newey's minimum chi-squared estimator).

what North (1990, p.34) puts forward regarding domestic institutions and exchange: "the greater the specialization and the number and variability of valuable attributes, the more weight must be put on reliable institutions that allow individuals to engage in complex contracting with a minimum of uncertainty about whether the terms of the contract can be realized". By providing a broad supranational institutional framework, deep regionalism allows member countries to be more dependent on international trade. On the other hand, remote countries, which face more barriers to trade and are naturally less integrated to the world trading system, tend to form shallow RTAs.

In specification (4) of table II.6, I add a number of control variables, likely to affect at the same time RTA membership, dispute propensity and national trade openness. I first control for the economic size of partner countries, by including (the log of) the sum of GDPs of countries in the dyad and (the log of) the absolute difference in GDPs. While gains from economic integration are likely to be driven by the size of the partner's market, extensive empirical evidence suggest that size determines national openness to trade. I also include (the log of) the sum of GDP per capita as a proxy of the level of national income. Finally, a proxy for the level of democracy, a dummy variable for countries sharing a common defence alliance and the number of landlocked countries in the dyad are added. Some empirical evidences show that more democratic countries are more likely to create RTAs (Mansfield *et al.*, 2002). On the other hand, democratic status is also likely to affect dispute occurrence. Its omission could thus bias results. In addition, it is likely that citizens from democratic countries share common preferences, which reduces heterogeneity costs of political integration.

Control variables globally exhibit the expected sign, but their significance depend on the kind of RTA considered. Geography affects unevenly the probability of RTA formation: geographic proximity strongly promotes deep RTAs but has no significant effect on shallow RTAs. On the other hand, sharing a common border is found to increase the probability to form a shallow RTA but it is surprisingly negatively

related to deep regionalism. Geographical proximity, and beyond heterogeneity among countries, is thus an important determinant of deep regionalism. On the other hand, neighboring countries apart, the distance between partner countries does not affect shallow regionalism. Interestingly, the size distribution of partner countries seems to drive differently shallow and deep RTAs. The larger and the more similar countries are, the larger the likelihood to create a shallow RTA, which suggest that their formation is driven by market access. On the contrary, deep RTAs are more likely to be created between small and dissimilar countries. It suggests again that deep regionalism is not primarily driven by market access but also motivated by the regulation of interstate relations. Sharing a common colonizer promotes deep regional integration, while sharing a common defence alliance solely increases the likelihood of shallow RTA formation. Regarding the democratic status, dyads exhibiting on average more democratic institutions have a higher probability to form a deep RTA, whereas the democratic status has no effect on shallow RTAs. Disentangling different forms of regionalism is thus particularly important to understand how domestic institutions affect the formation of such international agreements. This result seems logical in the sense that entering a deep RTA involves to share some common supranational institutions or public goods. To give up such a part of the national sovereignty is possible only between similar countries in terms of political system, type of government and origin of the legitimacy. This constraint is less binding concerning shallow RTAs, in which more autocratic regimes can retain more independent power while benefiting from gains from trade.

Controlling for these additional determinants of the formation of RTAs does not alter the main results. In this complete (and preferred) specification, the results strongly, and significantly at the 1% level, confirm the theoretical predictions: country pairs more subject to interstate disputes and naturally more opened to trade create deep RTAs, whereas the opposite is true concerning shallow RTAs.

4.3 Robustness analysis

In this section, I perform a number of robustness checks in order to test the sensitivity of the above results to several econometric issues.

Sample bias: First, to test for any sample bias due to the presence of the EU member countries, which belong to Western Europe, an historically particularly integrated region, the preferred specification (4) in table II.6 is re-estimated on a restricted sample, excluding pairs of countries including at least one Western European country. Results are presented in the first columns of table II.7. The main results remain qualitatively unchanged. In the deep RTA case, the significance of the coefficient on dispute propensity is however reduced, which arises because excluding Western European country pairs largely reduces the number of dyads member of a deep RTAs. Hence, our results are robust to the exclusion of Western Europe, the historically and geographically most integrated region of the world.

Second, the definition of RTAs used so far could induce a selection bias, because it restricts the sample of agreements included in the dependent variable. Specification (4) of table II.6 is re-estimated using a wider definition of trade agreements, including all bilateral trade agreements (see appendix B for a list of bilateral agreements included). Results are presented in specification (2) of table II.7. They confirm previous findings regarding the the contrasting effect of international insecurity and trade openness on the likelihood of deep and shallow RTAs. The coefficient on the remoteness index is however insignificant and close to zero in this specification. Globally, results are thus robust to alternative definition of the dependent variable, such as a wider definition of trade agreements adopted in specification (2).

Finally, estimating the model in cross-section for various years does not alter qualitatively the results either. For the sake of clarity, I do not report these series of results.

Table II.7: Probability of an RTA between two countries: sensitivity analysis

	(1) without Western European countries		(2) Bilateral RTAs		(3) Partner's GDP		(4) Additional controls		(5) Multinomial probit	
	Shallow	Deep	Shallow	Deep	Shallow	Deep	Shallow	Deep	Shallow	Deep
Propensity to dispute	-5.38^a	6.18^a	-4.45^a	3.78^a	-5.05^a	4.86^a	-5.56^a	5.36^a	-14.53^a	4.90^b
	(0.39)	(0.31)	(0.41)	(0.84)	(0.62)	(0.63)	(0.54)	(0.56)	(2.91)	(2.35)
Remoteness (1960)	-0.16	0.16	-0.00	0.83^a	-1.31^a	1.07^a	-1.17^a	1.01^a	-0.57^b	1.41^a
	(0.12)	(0.14)	(0.09)	(0.20)	(0.34)	(0.28)	(0.29)	(0.26)	(0.23)	(0.32)
log distance	-0.23^c	0.33^b	-0.36^a	-0.66^a	0.33^c	-0.52^a	0.26	-0.45^a	-0.16	-1.11^a
	(0.12)	(0.16)	(0.05)	(0.15)	(0.20)	(0.20)	(0.18)	(0.19)	(0.15)	(0.14)
Contiguity dum.	1.75^a	-1.29^a	1.30^a	-0.81^c	1.05^b	-1.20^a	1.32^a	-1.47^a	5.16^a	-0.43
	(0.41)	(0.38)	(0.23)	(0.42)	(0.42)	(0.41)	(0.44)	(0.42)	(0.89)	(0.76)
Common language dum.	0.13	0.02	0.17	-0.28	-0.23	0.13	-0.06	0.07	0.27	-0.28
	(0.16)	(0.19)	(0.11)	(0.21)	(0.32)	(0.28)	(0.28)	(0.27)	(0.24)	(0.21)
Common colonizer dum.	0.04	-0.06	-0.16	1.15^a	0.23	0.55	-0.13	0.64	0.51	1.83^a
	(0.22)	(0.24)	(0.20)	(0.41)	(0.39)	(0.41)	(0.39)	(0.40)	(0.38)	(0.54)
log Diff. GDP per capita (1960)	-0.02	0.01	-0.10^a	0.08	-0.25^a	0.27^a	-0.30^a	0.30^a	-0.20^a	0.14
	(0.03)	(0.03)	(0.03)	(0.07)	(0.08)	(0.09)	(0.08)	(0.08)	(0.06)	(0.13)
log sum GDP per capita (1960)	-0.06	-0.31^c	-0.04	-0.64^a	0.78^a	-0.87^a	0.64^a	-0.79^a	-0.36^b	1.31^a
	(0.09)	(0.16)	(0.07)	(0.17)	(0.24)	(0.23)	(0.20)	(0.22)	(0.14)	(0.28)
log sum GDP (1960)	0.60^a	-0.53^a	0.61^a	-0.38^a	0.45^a	-0.53^a	0.58^a	-0.62^a	1.54^a	-0.36
	(0.06)	(0.07)	(0.05)	(0.12)	(0.13)	(0.14)	(0.13)	(0.14)	(0.24)	(0.27)
log diff. GDP (1960)	-0.22^a	0.11^a	-0.22^a	0.11^c	-0.16^b	0.14^c	-0.19^a	0.18^b	-0.52^a	0.07
	(0.04)	(0.04)	(0.03)	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.12)
Nbr. of landlocked countries	-0.30^a	0.13	-0.24^a	-0.22	-0.11	0.17	-0.17	0.20	-0.89^a	-0.43
	(0.09)	(0.08)	(0.07)	(0.17)	(0.19)	(0.17)	(0.20)	(0.18)	(0.17)	(0.28)
Sum of democracy indexes	-0.05	0.09	-0.22^c	2.63^a	-1.60^a	1.73^a	-1.54^a	1.65^a	-0.37^c	4.18^a
	(0.15)	(0.26)	(0.12)	(0.57)	(0.55)	(0.54)	(0.37)	(0.46)	(0.22)	(0.74)
Common defence alliance dum.	0.30	0.27	0.31^a	0.11	0.35^a	-0.18	0.51^b	-0.36	2.04^a	0.51
	(0.21)	(0.29)	(0.11)	(0.19)	(0.23)	(0.22)	(0.22)	(0.22)	(0.28)	(0.31)
Partner's GDP					0.31^a	0.16^a	0.28^a	0.14^a		
					(0.09)	(0.03)	(0.07)	(0.03)		
UN vote correlation							-1.68^a	1.80^a		
							(0.50)	(0.59)		
Observations	940	940	1534	1534	1534	1534	1426	1426	1534	1534
Wald test of exogeneity	61.58^a	10.77^a	48.32^a	12.21^a	18.03^a	21.56^a	25.54^c	27.57^a	-	-
Smith-Blundell test of exogeneity	660.07^a	6.35^b	42.47^a	82.19^a	98.12^a	77.59^a	9.89^a	9.05^a	-	-
Weak identification F-test*	24.33	24.33	32.12	32.12	31.83	31.83	24.37	24.37	-	-
Partial R^2 *	0.11	0.11	0.07	0.07	0.07	0.07	0.06	0.06	-	-
Test of overidentifying restrictions**	0.10	***	0.04	0.69	0.15	0.56	0.04	0.07	-	-

Note: Robust standard errors in parentheses. a, b and c respectively denote significance at the 1%, 5% and 10% levels. * The partial R^2 and the weak identification test are computed using an IV linear probability model. ** Amemiya-Lee-Newey minimum chi-sq statistic (computed using the Newey's minimum chi-squared estimator). *** The major power variable is dropped since it perfectly predicts no deep RTA membership.

Diplomatic relations and bloc size: The fact that RTAs often involve more than two partners is also likely to bias coefficient estimates. A country could enter an agreement because it expects gains with some members but not with all of them. Not controlling for the economic characteristics of the whole trading bloc could bias the results. I re-estimate the model including a variable representing the economic size of the country pair's RTA partners if one or both countries are in an RTA: (the log of) the sum of the GDPs of each country's RTA partners. The results presented in specification (3) in table II.7 are qualitatively similar to those of specification (4) in table II.6 and the coefficients of main interest remain statistically significant at the 1% level. The coefficient on the economic size of RTA partners is positive and significant in both cases, suggesting that RTAs' characteristics matter. The fact that the sum of the two countries GDPs is still significant at the 1% level nevertheless confirm that country pairs' characteristics matter as well.

Another potential omitted variable bias is related to diplomatic relations between countries. To deal with this issue, I include a proxy for the diplomatic proximity of country pairs: the United Nations' General Assembly vote correlation. Having good diplomatic relations is found to foster the creation of deep RTAs, but, quite surprisingly, impacts negatively the decision to form a shallow agreements (specification (4) in table II.7). In both cases, the inclusion of these additional determinants does not alter the main results.

Modeling strategy: A concern regarding the modeling strategy used so far is that decisions by pairs of countries to create a deep or shallow agreement are considered as exclusive. Yet, countries cannot create both kinds of agreements at the same time so that the decisions may be correlated. Estimating separately the probability of creation of each kind of RTA could thus bias the estimated coefficients. I re-estimate the model using a multinomial probit model, in order to estimate jointly the decision to create each kind of RTA. The problem with this procedure is that there are no standard estimation technique to instrument endogenous variables. In a first stage, I thus regress the dispute propensity variable on all the covariates and

the two exogenous instruments, and compute its predicted value. In a second stage, I implement the multinomial probit including the predicted dispute propensity in the RHS variables. Specification (5) in table II.7 reports the results, using the no RTA situation as base outcome. Again, results remain qualitatively similar.

4.4 Time varying membership

The econometric analysis has been conducted on a cross-section of data on RTA membership so far. The timing of creation of RTAs nevertheless greatly differs among agreements and members. In this section, I use the time variation in RTA membership since 1970 to investigate further the sensitivity of my results.

The first issue worth investigating using panel data is the evolution of natural and political barriers to trade. In the cross-sectional analysis, the natural level of openness to trade, measured by a remoteness index, could not be distinguished from the level of political freeness of trade. Tariffs and other political barriers to trade have nevertheless fallen sharply over the past decades. Using panel data, the inclusion of year dummies allows to account for any variation of global political impediments to trade, such as tariffs cuts under GATT's or WTO's rounds of negotiation. This controls for any overall co-evolution over time of RTA membership, national trade openness and interstate disputes. I thus estimate the probability of RTA formation at the country pair level at 5 years intervals between 1970 and 2000 using an IV probit:

$$Pr(RTA_{ijt} = 1) = \beta_0 + \beta_1 \, \rho_{ijt} + \beta_2 \, \tau_{ij} + \beta_3 \, Controls_{ijt} + T_t + \epsilon_{ijt} \qquad \text{(II.14)}$$

where $Controls_{ijt}$ includes the control variables included in specification (4) of table II.6 and T_t are year fixed effects. The dispute propensity variable is lagged nine years to take into account the time needed to negotiate an agreement.

Estimation results are presented in table II.8. Using pooled data at 5 years

intervals between 1970 and 2000 confirms implications 1 and 2 of the theoretical model.

Table II.8: Probability of an RTA between two countries: panel data

	pooled IV probit (1)		f.e. conditional logit (2)		(3)	
	Shallow RTAs	Deep RTAs	Shallow RTAs	Deep RTAs	Shallow RTAs	Deep RTAs
Propensity to dispute	-5.45^a	2.76^a	-3.10^a	4.54^a	-2.94^a	6.33^a
	(0.30)	(0.81)	(0.56)	(0.83)	(0.59)	(1.22)
Remoteness (1960)	-0.23^a	0.83^a				
	(0.06)	(0.18)				
Log distance	-0.14^a	-0.86^a				
	(0.06)	(0.12)				
Contiguity dum.	1.33^a	-0.23				
	(0.19)	(0.26)				
Common language dum.	0.15^c	-0.32^c				
	(0.08)	(0.19)				
Common colonizer dum.	0.28^b	1.11^a				
	(0.13)	(0.34)				
log Diff. GDP per capita (1960)	-0.03	-0.03				
	(0.02)	(0.06)				
log sum GDP per capita (1960)	-0.13^b	-0.55^a				
	(0.05)	(0.16)				
log sum GDP (1960)	0.48^a	-0.14				
	(0.04)	(0.12)				
log diff. GDP (1960)	-0.17^a	0.08				
	(0.02)	(0.06)				
Nbr. of landlocked countries	-0.16^a	-0.61^a				
	(0.05)	(0.16)				
Sum of democracy indexes	-0.26^a	2.94^a	-0.97^a	5.48^a	-0.96^a	3.92^a
	(0.05)	(0.45)	(0.13)	(0.52)	(0.14)	(0.68)
Common defence alliance dum.	0.76^a	0.41^a	-0.48	17.06	-0.48	15.29
	(0.10)	(0.17)	(0.35)	(1,492.64)	(0.35)	(752.23)
Number of peaceful years					0.07^a	0.09^a
					(0.01)	(0.03)
Squarred number of peaceful years					-0.00^a	0.00^a
					(0.00)	(0.00)
Observations	13380	13380	13808	3038	13808	3038
Nbr of groups	3516	3516	731	135	731	135
Wald test of exogeneity	111.19^a	10.10^a	-	-	-	-
Smith-Blundell test of exogeneity			-	-	-	-
Weak identification F-test*	114.93	114.93	-	-	-	-
Partial R^2 *	0.12	0.12	-	-	-	-
Test of overidentifying restrictions**	0.303	7.49^a	-	-	-	-

Note: Robust standard errors in parentheses. a, b and c respectively denote significance at the 1%, 5% and 10% levels. * The partial R^2 and the weak identification test are computed using an IV linear probability model. ** Amemiya-Lee-Newey minimum chi-sq statistic (computed using the Newey's minimum chi-squared estimator).

More importantly, the use of the time dimension of the data allows to fully account for time invariant country pairs' characteristics by including country pair fixed effects. Equation (II.14) is re-estimated using a conditional logit which enables to include country pair fixed effects. This estimation procedure is demanding since it retains only observations for country pairs entering an RTA over our time period, which reduces the sample to 731 country pairs (13808 observations) in the case of shallow RTAs and 135 (3038 observations) in the case of deep RTAs. In this specification, the coefficient are identified using solely the time variation in RTA membership within country pairs. Because we focus here on the decision of creation of a RTA, the dispute propensity variable does not need to be instrumented; lagging the variable prevents any simultaneity bias in the estimations. All time invariant control variables are dropped due to the inclusion of country pair fixed effects.

The results are presented in columns (2) of table II.7. In this specification, the coefficients on dispute propensity remain significant at the 1% level for both deep and shallow agreements, and are found positive for the former and negative for the latter. These results strongly confirm that dispute propensity is a strong determinant of the choice of RTA partner as well as the timing of RTA formation. The effect is contrasted according to the kind of RTA considered: having lots of interstate dispute to manage fosters the formation of deep RTAs but deters the formation of shallow RTAs.

Finally, the pairs of countries having undergone severe interstate militarized disputes may be deterred from negotiating any cooperative economic agreement for some time. On the other hand, recent war history is also likely to impact the propensity to dispute between countries. The omission of such variables may thus bias our coefficient estimates. Controls for the number of peaceful years within the dyad and its squared value are included in the preceding specification to account for this issue. Results presented in specification (3) of table II.7 confirm that pairs of countries having peaceful relations for a long period of time are more likely to create any kind of RTA. This effect is nevertheless decreasing in the case of shallow RTA

but increasing for deep RTAs. The coefficients on the dispute propensity variable are not qualitatively affected by the inclusion of these two additional variables.

5 Conclusion

This chapter is the first to investigate, both theoretically and empirically, the decision to create RTAs and the choice of the form of integration. By introducing simultaneously security and trade issues in a model of political integration, this chapter models the interplays between political and economic forces in the endogenous formation of RTAs. I put forward that defining the depth of a RTA by its level of institutional integration is necessary to understand the determinants of the form of regionalism. The empirical analysis provides strong support for the prediction of the model that different kinds of RTAs have different determinants. Countries more subject to interstate disputes and naturally more open to trade are more likely to create politically integrated regional agreements, such as common markets or customs unions. On the contrary, international insecurity deters the formation of less integrated agreements requiring a weak institutional framework, such as preferential or free trade agreements.

Besides their potential effect on trade, analyzing RTAs as regulating institutions in a world where no supranational institution enforces property rights is therefore particularly relevant. In order to remain sustainable, a greater national openness to trade, and thus a greater dependence on trading partners, requires guarantees on the continuity of access to world markets, i.e. that interstate conflicts would not lead to the disruption of economic flows. Such regulation is typically the purpose of institutions such as those created under the more integrated RTAs.

These results have important implications concerning the nexus between multilateralism and regionalism. The positive security externality of deep RTAs highlighted in this paper suggests that institutions created along with regional integration are a prerequisite to market integration, which could doubtfully be

provided at the multilateral level. Regionalism and multilateralism would therefore be complementary as far as the former encourages countries to put less emphasis on matters of security and to be more dependent on international trade. Here, we focus on war, but the argument developed in this chapter could be applied as well to less extreme forms of interstate conflicts likely to harm trade relationships. The distinction between different forms of regional economic integration could thus prove useful to understand the choice of different modes of regulation regarding specific deep trade integration issues under RTAs.

II.A Proofs

II.A.1 Defence spending

Each country chooses its level of defence spending while taking into account defence spending of its potential opponents, its neighbors. Thus, without RTAs, the Nash equilibrium defence spending are:

$$d_1^* = \max_{d_1} \left\{ \frac{\rho}{4} \left[2R\frac{d_1}{d_1+d_2^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) + 2R\frac{d_1}{d_1+d_4^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) - R \right] - d_1 \right\}$$
$$d_2^* = \max_{d_2} \left\{ \frac{\rho}{4} \left[2R\frac{d_2}{d_2+d_1^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) + 2R\frac{d_2}{d_2+d_3^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) - R \right] - d_2 \right\}$$
$$d_3^* = \max_{d_3} \left\{ \frac{\rho}{4} \left[2R\frac{d_3}{d_3+d_2^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) + 2R\frac{d_3}{d_3+d_4^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) - R \right] - d_3 \right\}$$
$$d_4^* = \max_{d_4} \left\{ \frac{\rho}{4} \left[2R\frac{d_4}{d_4+d_1^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) + 2R\frac{d_4}{d_4+d_3^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) - R \right] - d_4 \right\}$$

whose first order conditions give:

$$\frac{d_2}{(d_1+d_2)^2} + \frac{d_4}{(d_1+d_4)^2} = \frac{d_1}{(d_2+d_1)^2} + \frac{d_3}{(d_2+d_3)^2} =$$
$$\frac{d_4}{(d_3+d_4)^2} + \frac{d_2}{(d_3+d_2)^2} = \frac{d_1}{(d_4+d_1)^2} + \frac{d_3}{(d_4+d_3)^2} = \frac{2}{\rho R}$$

The solution is:

$$d_1^* = d_2^* = d_3^* = d_4^* = \frac{\rho R}{4}$$

With one RTA[34], the Nash equilibrium defence spending are defined by:

$$
\begin{aligned}
d_1^* =& \max_{d_1} \left\{ \frac{\rho}{4} \left[2R\frac{d_1}{d_1+d_2^*} - \pi_{\text{RTA}}(1-\tau) + 2R\frac{d_1}{d_1+d_4^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) - R \right] - d_1 \right\} \\
d_2^* =& \max_{d_2} \left\{ \frac{\rho}{4} \left[2R\frac{d_2}{d_2+d_1^*} - \pi_{\text{RTA}}(1-\tau) + 2R\frac{d_2}{d_2+d_3^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) - R \right] - d_2 \right\} \\
d_3^* =& \max_{d_3} \left\{ \frac{\rho}{4} \left[2R\frac{d_3}{d_3+d_2^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) + 2R\frac{d_3}{d_3+d_4^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) - R \right] - d_3 \right\} \\
d_4^* =& \max_{d_4} \left\{ \frac{\rho}{4} \left[2R\frac{d_4}{d_4+d_3^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) + 2R\frac{d_4}{d_4+d_1^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) - R \right] - d_4 \right\}
\end{aligned}
$$

The solution is:

$$d_1^* = d_2^* = d_3^* = d_4^* = \frac{\rho R}{4}$$

Finally, with two RTAs, the Nash equilibrium defence spending are defined by:

$$
\begin{aligned}
d_1^* =& \max_{d_1} \left\{ \frac{\rho}{4} \left[2R\frac{d_1}{d_1+d_2^*} - \pi_{\text{RTA}}(1-\tau) + 2R\frac{d_1}{d_1+d_4^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) - R \right] - d_1 \right\} \\
d_2^* =& \max_{d_2} \left\{ \frac{\rho}{4} \left[2R\frac{d_2}{d_2+d_1^*} - \pi_{\text{RTA}}(1-\tau) + 2R\frac{d_2}{d_2+d_3^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) - R \right] - d_2 \right\} \\
d_3^* =& \max_{d_3} \left\{ \frac{\rho}{4} \left[2R\frac{d_3}{d_3+d_4^*} - \pi_{\text{RTA}}(1-\tau) + 2R\frac{d_3}{d_3+d_2^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) - R \right] - d_3 \right\} \\
d_4^* =& \max_{d_4} \left\{ \frac{\rho}{4} \left[2R\frac{d_4}{d_4+d_3^*} - \pi_{\text{RTA}}(1-\tau) + 2R\frac{d_4}{d_4+d_1^*} - \pi_{\text{ind}}(1-\tau)(1-\varphi) - R \right] - d_4 \right\}
\end{aligned}
$$

The solution is again:

$$d_1^* = d_2^* = d_3^* = d_4^* = \frac{\rho R}{4}$$

II.A.2 The decision to form an RTA

Regional integration is strictly preferred to independence if $U^{\text{RTA}} > U^{ind}$. From equation II.1, we know that gains from regional integration arise from 3 sources: market size, conflict and relative defence spending. Those "expected gains from regional integration" ($EGRI$) should outweigh the heterogeneity costs from

[34] I assume $k_W < k_E$; the Western continent is then the first to create an RTA.

integration k_s, such that:

$$EGRI > k_s \text{ where } EGRI = (Y_i^{\text{RTA}} - Y_i^{ind}) + (\sum_{j \neq i} E(G_{ij})^{\text{RTA}} - \sum_{j \neq i} E(G_{ij})^{ind}) - (d_i^{\text{RTA}} - d_i^{ind})$$

Substituting together with equation equation (II.2), (II.6) and (II.7), $EGRI$ equals:

$$EGRI = \frac{\rho}{4}(1-\tau)\left[(\pi_{\text{ind}} - \pi_{\text{RTA}})(1-\varphi) - \pi_{\text{RTA}}\varphi\right] + (1-\tau)\varphi$$

II.B Impact of RTAs on war with alternative definition of MID

Table II.9: Impact of RTAs on war: robustness tests

Model	(1)	
Dependent variable:	MID2	Dispute
Deep RTA membership	-0.48^{c}	0.10
	(0.27)	(0.10)
FTA membership	0.30	-0.25
	(0.26)	(0.15)
PA membership	-0.06	-0.00
	(0.13)	(0.07)
Nbr. of peaceful years	-0.01^{b}	-0.00^{a}
	(0.00)	(0.00)
Log distance	-0.01	-0.32^{a}
	(0.12)	(0.02)
Contiguity dum.	0.43^{c}	0.30^{a}
	(0.23)	(0.07)
Bil. trade dependence (t-4)	0.34	1.68^{a}
	(0.68)	(0.23)
Multil. trade dependence (t-4)	0.19	-0.30^{a}
	(0.12)	(0.05)
Zero trade dum. (t-4)	0.18	-0.21^{a}
	(0.15)	(0.03)
Common language dum.	-0.34^{a}	0.16^{a}
	(0.09)	(0.04)
Colonial relationship dum.	-0.32	0.54^{a}
	(0.20)	(0.09)
Common colonizer dum.	0.08	0.10^{c}
	(0.13)	(0.06)
Sum of democracy indexes	-0.48^{a}	0.22^{a}
	(0.07)	(0.03)
Common defense alliance dum.	-0.43^{a}	0.47^{a}
	(0.16)	(0.06)
Log area	-0.04	0.12^{a}
	(0.05)	(0.01)
UN vote correlation (t-4)	0.47	-0.99^{a}
	(0.33)	(0.05)
Nbr. Of landlocked dum.		-0.22^{a}
		(0.03)
Constant	2.47^{a}	1.33^{b}
	(0.85)	(0.56)
Estimator	Heckprob	
Sample	Full	
Observations	127259	
Uncensored Obs.	7884	
Log likelihood	-23086.6	
Rho (Wald test of independent eqn.)	-0.51	

Note: Heteroscedasticity-robust standard errors are in parentheses, with a, b and c respectively denoting significance at the 1%, 5% and 10% levels. Standards errors are clustered by dyad. Time dummies are included but not reported.

II.C Regional Trade Agreements

Name	Official dates
Common markets	
Benelux	1961
European Union (EU) *	1992
Custom Unions	
Benelux	1947-1960
European Communities (EC)	1958-1991
Equatorial Customs Union	1959-1965
Custom Union of West African States	1960-1996
East African Community	1967-1977
Custom Union EU-Cyprus	1973
Mano River Union	1973
Caribbean Community and Common Market (CARICOM)	1973
Southern Common Market (MERCOSUR) *	1991
Central American Common Market *	1993
Andean Customs Union *	1995
Customs Union EU-Turkey *	1996
West African Economic and Monetary Union *	1998
Free Trade Agreements	
European Free Trade Agreement (EFTA) *	1960
Central American Common Market	1961-1975
Caribbean Free Trade Area	1968-1972
Papua New Guinea and Australia Trade and Commercial Relation Agreement	1977
Closer Trade Relations Trade Agreement *	1983
Central European Free Trade Agreement *	1993
European Economic Area *	1994
North American Free Trade Agreement (NAFTA) *	1994
Group of Three *	1995
Preferential Arrangements	
Council for Mutual Economic Assistance (CMEA)	1949-1990
Latin American Free Trade Association (LAFTA)	1961-1980
Tripartite Agreement *	1968
Protocol relating to Trade Negotiations among Developing Countries *	1973
West African Economic Community	1973-1997
Bangkok Agreement *	1976
South Pacific Regional Trade and Economic Cooperation Agreement	1981
Gulf Cooperation Council (GCC)	1984
Andean Community	1988-1997
General System of Trade Preferences among Developing Countries (GSTP) *	1989
Economic Cooperation Organization	1992
ASEAN Free Trade Agreement	1992
Melanesian Spearhead Group	1993
Latin American Integration Association (LAIA) *	1993
Common Market for Eastern and Southern Africa (COMSESA) *	1994
South Asian Preferential Trade Agreement *	1995

continued on next page

Name	**Official dates**
Bilateral Free Trade Agreements	
EU-Norway	1973
EU -Switzerland	1973
EU -Egypt *	1977
United States of America -Israel *	1985
EU -Hungary *	1992
EU -Poland *	1992
EFTA -Turkey *	1992
EFTA -Bulgaria *	1993
EFTA -Hungary *	1993
EFTA -Israel *	1993
EFTA -Poland *	1993
EU -Bulgaria *	1994
Mexico -Bolivia *	1995
Mexico -Costa Rica *	1995
MERCOSUR -Chile *	1996
MERCOSUR -Bolivia *	1996
Canada -Chile *	1997
Canada -Israel *	1997
Israel -Turkey *	1997
Poland -Israel *	1998
EU -Tunisia *	1998
Hungary -Israel *	1998
Hungary -Turkey *	1998
India -Sri Lanka *	1998
Bulgaria -Turkey *	1999
Chile -Mexico *	1999
EFTA -Morocco *	1999
EU -Israel *	2000
EU -Morocco *	2000
EU-Mexico *	2000
EU -South Africa *	2000
Mexico -Israel *	2000
Poland -Turkey *	2000
Bilateral Preferential Arrangements	
Chile-Venezuela *	1993
Chile-Colombia *	1994

Source: WTO (http://www.wto.org/english/tratop_e/region_e/region_e.htm), Foroutan (1993, 1998), Langhammer and Hiemenz (1990), Frankel (1997), Machlup (1977) and other public sources.
* RTAs included in the second part of the empirical analysis.

II.D First stage regressions

Table II.10: First stage estimates

Dependent variable:	Propensity to dispute			
Second stage dependent variable:	deep RTAs	shallow RTAs	deep RTAs	shallow RTAs
Major power dum.	0.26[a]	0.26[a]	0.16[a]	0.16[a]
	(0.02)	(0.02)	(0.02)	(0.02)
Religious proximity	-0.01	0.00	-0.02	-0.03
	(0.02)	(0.02)	(0.01)	(0.02)
Remoteness (1960)	-0.03[a]	-0.03[a]	-0.03[a]	-0.03[a]
	(0.01)	(0.01)	(0.01)	(0.01)
ln distance	-0.03[a]	-0.03[a]	-0.03[a]	-0.03[a]
	(0.01)	(0.01)	(0.01)	(0.01)
Contiguity dum.	0.25[a]	0.25[a]	0.24[a]	0.24[a]
	(0.05)	(0.05)	(0.05)	(0.05)
Common language dum.	0.04[b]	0.04[b]	0.03[c]	0.04[c]
	(0.02)	(0.02)	(0.02)	(0.02)
Common colonizer dum.	-0.02	-0.02	0.05[c]	0.05[c]
	(0.03)	(0.03)	(0.03)	(0.03)
log diff. GDP per capita (1960)	0.02[a]	0.02[a]	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)
log sum GDP per capita (1960)			0.01	0.01
			(0.01)	(0.01)
log sum GDP (1960)			0.06[a]	0.06[a]
			(0.01)	(0.01)
log diff. GDP (1960)			-0.01[a]	-0.01[a]
			(0.00)	(0.00)
Nbr. of landlocked countries			-0.03[a]	-0.03[a]
			(0.01)	(0.01)
Sum of democracy indexes			0.05[a]	0.05[a]
			(0.01)	(0.01)
Common defence alliance dum.			0.05[b]	0.05[b]
			(0.02)	(0.02)
Constant	0.56[a]	0.55[a]	-0.02	-0.02
	(0.12)	(0.12)	(0.13)	(0.13)
Observations	1648	1648	1534	1534
Centered R^2	0.33	0.33	0.42	0.42

Note: Robust standard errors in parentheses. a, b and c respectively denote significance at the 1%, 5% and 10% levels.

Chapter III

Foreign Direct Investment and Bilateral Investment Treaties: an International Political Perspective[1]

> *"Ulysses, too, saw the value of binding himself to the mast. Constraints on sovereignty are, therefore, the aim of the exercise. In a world of international transactions and multiple jurisdictions, constraints on sovereignty are also desirable. Otherwise, the potential for conflict and unpredictability seems almost limitless."*
>
> (Wolf, 2005, p.91)

The fall in trade barriers during the second half of the last century has gone hand in hand with an increasing regulation of international trade flows, through the creation of supranational institutions - preferential trade agreements at the regional level and the World Trade Organization at the multilateral level - or the interaction between domestic and international institutions such as the New York Convention (Berkowitz *et al.*, 2006). On the contrary, international capital flows, especially foreign direct investment (FDI), have not benefited from global governance mechanisms which would enforce common rules across the globe. Accordingly, the

[1] This chapter is based on Desbordes and Vicard (2007).

main devices of protection of property rights for foreign investors are Bilateral Investment Treaties (BITs).

BITs are signed between two countries in order to reciprocally encourage, promote and protect foreign investments in either country (UNCTAD, 2000). They include clauses of expropriation defining what is deemed to be expropriation actions and specify compensations and mechanisms of disputes settlement, such as the recourse to international arbitration courts. In this respect, BITs are said to reduce the risk and costs of investing abroad. Using bilateral panel data, Egger and Pfaffermayr (2004) find that, overall, the actual implementation of a BIT increases outward FDI stock by 30%.[2] This average effect may nevertheless hide some heterogeneity in the effectiveness of BITs across country pairs. As suggested by Martin Wolf, in the absence of constraints on the host country's sovereignty, the activities of multinational enterprises (MNEs) are subjected to the host governments' actions. BITs are thus a means for host governments to credibly commit not to expropriate MNEs in the future. In this chapter, we argue that, as a commitment device, the effectiveness of a BIT should depend on the risk sustained by MNEs when operating in a host country.

MNEs face two kinds of political risks when investing abroad: a systemic domestic risk, common to all investors, related to the quality of domestic institutions, and an idiosyncratic risk specific to each pair of home and host countries, related to interstate political relations. Because the existing literature on FDI determinants has largely considered that FDI takes place within an international political vacuum, the role of the latter risk has been ignored.[3] Anecdotal evidence and survey studies suggest that interstate political relations have a significant effect on MNE decision to invest abroad. This effect may be positive or negative depending on the

[2] Papers using aggregate FDI data find an ambiguous impact of BITs on FDI, ranging from positive (Neumayer and Spess, 2005) to insignificant (Rose-Ackerman and Tobin, 2005).

[3] Nigh (1985) is one of the few papers in the international business literature to have investigated this subject. He finds that conflictual and cooperative diplomatic relationships exert respectively a negative and positive impact on US manufacturing FDI in developing countries. His study is however specific to the diplomatic relationships of the United States, does not account for other FDI determinants, and only covers the particular period of the Cold War (1948-1978).

quality of these relations. Transparency International (2002) emphasizes that, after corruption, diplomatic pressures are an important means for MNEs to gain unfair business advantages. More crucially, foreign firms may suffer from the retaliatory consequences of deteriorating diplomatic relations between their home and host countries, through various devices of expropriation (Boehmer *et al.*, 2001). Foreign investors are, therefore, likely to be sensitive to the quality of interstate political relations, since their deterioration could increase the risk of seizure of their return on investment in a given host country. In this framework, BITs should affect the volume of bilateral FDI not only directly as a cost reducing mechanism, but also indirectly trough two channels. First, the entry into force of a BIT can offset political tensions between states and the related expropriation risks. Second, it can work either as a complement or a substitute for good domestic institutions (Hallward-Driemeier, 2003).

The link between FDI and interstate political relations has been hardly investigated, due to the lack of information allowing the evaluation of the quality of these relations over the last decades. This chapter overcomes this obstacle thanks to the use of a new database which compiles a high number of recent interstate political interactions. The creation of an indicator of the quality of interstate political relations allows us to estimate their impact on bilateral FDI stocks between 30 OECD countries and 62 OECD and non-OECD countries over the 1991-2000 period. We find that the quality of diplomatic relations exerts a significant impact on bilateral FDI flows. The effect of a BIT on FDI stocks is found to depend crucially on the quality of interstate relations; it has no effect between friendly countries while it increases significantly FDI between countries undergoing political tensions. Our results also uncover that the effectiveness of the host government's credible commitment, through the implementation of a BIT, increases with the quality of domestic governance. Good domestic institutions and BITs are found to be complement to attract FDI.

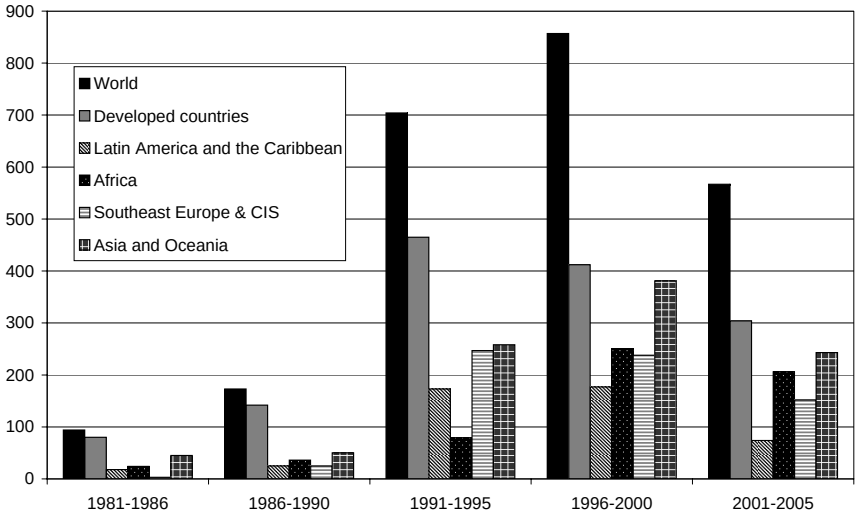
This chapter proceeds as follows. Section 2 reviews the different arguments

explaining the links between interstate political relations, bilateral investment treaties and FDI. Section 3 describes the indicators used to evaluate the quality of interstate political relations and explains the specification and data used for the empirical estimation. The impact of interstate political relations and BITs on bilateral FDI stocks is then presented in section 4. Section 5 concludes.

1 Related literature

The number of BITs has dramatically increased from the 1990's on. At the end of 2005, 2495 treaties had been signed, of which 1891 had entered into force, suggesting that more and more countries see them as a way to attract FDI and protect their FDI outflows (figure III.1).

Figure III.1: Number of Bilateral Investment Treaties signed by region



Source: UNCTAD

The emergence of BITs as the main vehicle through which foreign investors'

property rights are protected[4] has taken place during an uncertain and changing period regarding the regulation of international investments (Guzman, 1998). The classic formulation of the customary international law on FDI, known as the "Hull Rule", requires a "prompt, adequate and effective compensation" in case of expropriation by the host government. This rule has been challenged by Latin American countries and former colonies and weakened by resolutions adopted by the UN General Assembly in the 1960's and 1970's. The Charter of Economic Rights and Duties of States adopted by the UN General Assembly in December 1974 emphasizes the sovereignty of host countries regarding their treatment of foreign investors (Guzman, 1998; Bubb and Rose-Ackerman, 2007). In the framework of this charter, domestic courts are the only authority that determines what an appropriate compensation is to be.

Bubb and Rose-Ackerman (2007) point out that the protection provided by the customary international law on FDI is weak: any claim by an expropriated foreign investor has to be supported by its home government to proceed. Moreover, claims could only concern egregious expropriation and not simple breaches of contracts. These cases of open expropriations have peaked in the 1970's, with the nationalizations carried by developing countries in sectors of natural resources, but have declined since then.

1.1 Foreign direct investment and interstate political relations

The quality of institutions of a host country is an important factor influencing the location decision of a MNE, since it determines the security of its property rights (Globerman and Shapiro, 2002). Good legal institutions indeed reduce the risk of expropriation and the cost of operating on the host market, and so the risk premium requirements for sunk cost investment by MNEs. Property rights must not only be

[4] UNCTAD (2008) reports that, in 2007, 78% of the investor-state cases filed under international investment agreements were initiated following a violation of a BIT provision, 13% under NAFTA, and 6% under the Energy Charter Treaty.

protected against the actions of private agents (individuals or enterprises) but also against the state since it can abuse its monopoly of legitimate violence to expropriate investors. As outlined by Djankov *et al.* (2003), a state powerful enough to enforce contracts and secure property rights is also able to use this power to its own benefit. Since MNEs bear a sunk cost when investing abroad, once their investment is made they are subject to any policy change or attempt to renegotiate contracts by the host government. Then, foreign investors can only resort to disinvestment or appeal to political influence, through lobby or diplomatic pressures.

The concept of expropriation can be understood in a large sense: Stulz (2005, p.1597) defines it as "*[..] actions that state rulers take to improve their welfare by reducing the return on corporate investments*". A government facing a reelection may, for instance, gain from harming foreign investors if that allows it to secure a greater number of voters. One of the main criteria discriminating investors is their nationality. Foreign investors, as informal representatives of their country, may suffer from the degradation of the diplomatic relations between their home and host countries, since their expropriation can be used as a retaliatory instrument in an interstate conflict. Boehmer *et al.* (2001) show how valuable interstate linkages, such as FDI, can serve as a costly signaling mechanism. They assume a rationalist explanation of war, i.e. that war is the consequence of the inability of two states to reach a negotiated arrangement due to a lack of information on the preferences of the other. From this perspective, the *ex-ante* destruction of mutually valuable interstate economic linkages can be seen as a mean of communication through which disagreeing parties signal their resolve by sending a credible (and costly) signal. By reducing the uncertainty about the preferences of at least one actor this signal favors the emergence of a peaceful negotiated settlement without any military fight. International security concerns can thus lead a country to expropriate foreign investors.[5] Hence, MNEs should invest less in countries where they are likely to suffer from interstate conflicts, since the risk of expropriation is high. On the contrary,

[5] It is worth noting that in this case, the actions of expropriation undertaken by state rulers are related to the existence of several policy objectives rather than the private benefit of rulers.

a rise in the quality of diplomatic relations between two countries should foster bilateral FDI, by guaranteeing MNEs of both countries a better protection of their property rights.

1.2 Foreign direct investment and bilateral investment treaties

The expropriation risk sustained by MNEs in the midst of interstate relations is related to the very structure of the international system, in which jurisdictions of courts are delimited by political boundaries and no multinational legal standards for the treatment of FDI have emerged. The attempts to negotiate multilateral investment agreement have failed. The 1965 Washington Convention has established a multilateral dispute arbitration body for investor-state disputes, the International Center for the Settlement of Investment Disputes (ICSID), but it focused only on procedural issues (Bubb and Rose-Ackerman, 2007); the attempt to initiate a multilateral investment treaty among OECD countries in 1995 has been definitely abandoned in 1998. Some regional trade agreements, such as the European Union and the NAFTA, do provide an extended protection to investors from partner countries. In addition, the 1995 Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement defines minimum standards for intellectual property right laws and their enforcement. As part of the WTO, disputes over TRIPS obligations are subject to the dispute settlement mechanism. Compliance with the TRIPS agreement should promote the improvement of domestic institutions protecting intellectual property rights but leaves a broad flexility to signatory governments (Maskus, 2000).[6]

BITs can be understood as a means to reduce the uncertainty related to expropriation risks, allowing host governments to credibly commit not to expropriate investors. BITs generally include provisions prohibiting discriminatory treatments against foreign investors. They also include investment performance requirements

[6] The TRIPS agreement allows a transitional period for transition economies and developing countries (5 years) and least-developed countries (11 years).

and they ensure the possibility to repatriate profits without delays (UNCTAD, 2000). More remarkably, many BITs grant foreign investors the right to sue the host government through international arbitration if actions undertaken by the host government are deemed to be tantamount to expropriation, i.e. a nationalization or even a regulatory change (Hallward-Driemeier, 2003). This possibility of resorting to a supranational authority, whose decisions are binding on governments, highlights how BITs grant foreign investors a greater protection of their property rights than domestic investors. Under a BIT, a contract is binding for the foreign investor as well as the host government since any breach of contract falls under international law (Guzman, 1998). This increases the cost for the host government of reneging on its commitment.[7] By implementing a BIT, host countries accept the possibility of being sued by foreign investors and send a costly signal that they will not renege on their contracts.[8] By accepting some limitations on their sovereignty, signatory governments state their credibility as third-party that secures property rights (Elkins *et al.*, 2006).

Regarding domestic institutions, two different interactions with BITs have been put forward by the literature. First, by signing a BIT, a country could indicate that it is determined to offer foreign investors an institutional framework which better secures property rights than the current domestic institutional framework (Neumayer and Spess, 2005). From this perspective, a BIT would act as a substitute for good domestic institutions. Second, the implementation of a BIT could signal foreign investors that a country will not damage the protection of property rights already granted by domestic institutions in order to achieve its national objectives and security choices: BITs and good domestic institutions would then be complementary (Hallward-Driemeier, 2003).

The implementation of a BIT is expected to exert an impact on the volume

[7] Elkins *et al.* (2006) report that the governments of the Czech Republic, Lebanon and Ecuador had to pay 250, 266 et 70 US$ millions respectively to foreign firms for having expropriated them.

[8] Schelling (1960) develops the same rational regarding the purpose of an enforced legal system for interactions between domestic firms.

of bilateral FDI, as it influences the security of property rights enjoyed by foreign investors. Beside its direct effect on the cost of investing abroad, the entry into force of a BIT should also indirectly affect FDI flows depending on both the quality of interstate relations between the signatory countries and the quality of domestic institutions. The existing literature has largely ignored these indirect effects of BITs on FDI. Within a bilateral framework, Hallward-Driemeier (2003) is the only paper to take the latter indirect effect into account; she finds weak evidence supporting the complementarity between BITs and good domestic institutions. The risk specific to pairs of home and host countries has nevertheless never been taken into account, which is not surprising since diplomatic relations remain a "missing" determinant in the FDI literature.

Moreover, even in the absence of a BIT with their home country, MNEs may take into account the agreements signed with third countries. The number of BITs already signed by a host country with other partners could indeed work as an additional signal of the credibility of its government in protecting the property rights of foreign investors. It may be interpreted as the extent to which the international community acknowledges the host country's credibility. In this respect, countries having implemented a large number of BITs should attract more FDI even from non-signatory countries.

2 Empirical model and data

Before turning to the estimation of the impact of BITs, we need to investigate the effect of the quality of interstate relations on bilateral FDI flows. This preliminary step of the empirical analysis is achieved through the construction of an original indicator of the quality of interstate political relations using event data.

2.1 The quality of interstate political relations

When working on interstate interactions, two types of data are available: qualitative data on armed conflicts and quantitative data on daily events. In the first case, the actors, duration, geographical location and intensity of each conflict have been recorded and documented by researchers. Such efforts can only be undertaken for infrequent interstate interactions of a high intensity like armed conflicts. In the second case, daily events are automatically extracted by computers from wired reports or newspapers and are coded automatically by actors and type of observed actions. In comparison to armed conflicts data sets, it is quasi impossible to know whether these data globally pertains to the same united historical case. However data on daily events has the great advantage of providing information about both conflictual and cooperative relations between states, whatever the intensity of the underlying event.

The evaluation of the quality of diplomatic relations between countries is based on a new event dataset, developed by the *Kansas Events Data System* (KEDS) and made available by Gary King on his website.[9] Computers have been programmed to read the first sentence of news reports from wire services and to code each event according to the actor, the target, the type of event and the date. King and Lowe (2002) describe in detail this process and provide evidence that computer coding is equivalent to human coding in the short run and more efficient in the long run. The typology of events comes from the *Integrated Data for Events Analysis* (IDEA, see Bond *et al.* (2003) for a complete description of the coding scheme).

In order to aggregate the daily events compiled in this data set the level of conflict or cooperation embodied in each case needs to be taken into account. The Goldstein (1992) scale allows the transformation of daily interactions into two distinct annual flows of cooperative and conflictual interstate political relations.[10] The values attributed to each category of event, reported in King and Lowe (2002), are indicated

[9] http://gking.harvard.edu

[10] The mapping of IDEA categories onto Goldstein scale, first developed for the World Event/Interaction Survey (WEIS), is available from IDEA's website (http://vranet.com/idea).

in appendix A. This scale gives a score between 0 and +10 (respectively 0 and -10) to each category of event according to the amount of cooperation (conflict) embodied in each event case. Both flows of cooperation and conflict are then combined into a single net indicator of the quality of interstate political relations (QIR) following the transformation proposed by Pollins (1989):

$$QIR_{ijt} = Coop_{ijt} \times \frac{Coop_{ijt}}{Coop_{ijt} + |Conf_{ijt}|} \tag{III.1}$$

where $Coop_{ijt}$ and $Conf_{ijt}$ stand for the flows of cooperative and conflictual interstate political relations between countries i and j in year t. Such transformation has been chosen for two reasons. First, since our aim is to assess the quality of interstate relations, we need to combine flows of cooperation and conflict into a "net" indicator. Second, this transformation enables us to take into account the interdependence between the levels of cooperation and conflict, and to measure both the level of cooperativeness or hostility as well as the intensity of interactions. Using a simple linear transformation (the sum of flows of cooperation and conflict) yields qualitatively similar results (see appendix B).

Equation (III.1) defines a single non-negative net indicator which allows the evaluation of the quality of interstate political relations between two countries in year t. The higher the value of this indicator is, the higher the degree of cooperation between the two states is. A value of zero means that only conflictual or neutral events have occurred. Data are available over the 1991-2000 period for most dyadic interstate political relations.

2.2 The gravity model for FDI

The workhorse econometric model for bilateral trade flows, i.e. the gravity model, is now increasingly used when investigating patterns of FDI flows (Wei, 2000; Razin and Sadka, 2007; Blonigen *et al.*, 2007). Recently, Head and Ries (2008), and Bergstrand and Egger (2008) have provided theoretical micro-foundations for a

gravity model of FDI. The basic gravity specification relates the volume of bilateral FDI to the GDPs of the home and host countries and to their geodesic distance. The larger the market sizes of both countries are, the larger the expected FDI are. Distance is a proxy for the investment costs, such as management costs, and therefore is expected to reduce FDI. In line with the literature, we add variables capturing geographical and historical proximity of the host and home countries (contiguity and common language) and the GDP per capita of each country. The impact of the latter is ambiguous since a high GDP per capita is simultaneously correlated with high purchasing power and high nominal wages, each exerting an opposite effect on FDI, positive and negative respectively (Globerman and Shapiro, 2002, 2003). We also include our two measures of investment risks - an indicator of the quality of the domestic legal and political institutions as a proxy for the host country specific risk, and our indicator of the quality of interstate relations as a proxy for the risk specific to the pair of home and host countries. Finally, we add a dummy indicating the entry into force of a BIT. Larger risks should increase investment costs and impede FDI, while a BIT should increase FDI.

The main specification estimated in the following section is:

$$\begin{aligned}\ln(FDI_{ijt}) = \beta_0 &+ \beta_1 \ln(GDP_{it}) + \beta_2 \ln(GDP_{jt}) + \beta_3 \ln(GDPPC_{it}) + \beta_4 \ln(GDPPC_{jt}) \\ &+ \beta_5 \ln(d_{ij}) + \beta_6 C_{ijt} + \beta_7 \ln(INST_{jt}) + \beta_8 \ln(QIR_{ijt}) + \beta_9 BIT_{ijt} \\ &+ \beta_{10} BIT_{ijt} \times \ln(QIR_{ijt}) + \beta_{11} BIT_{ijt} \times \ln(INST_{ijt}) + E_i + I_j + T_t + \epsilon_{ijt} \quad \text{(III.2)}\end{aligned}$$

where FDI_{ijt} stands for the bilateral stock of FDI in country j originating from country i in year t, d_{ij} is the bilateral distance, C_{ijt} is a vector of gravity-specific dummies (contiguity and common language), $INST_{jt}$ is a measure of the quality of domestic institutions, QIR_{ijt} is our proxy for the quality of interstate political relations, BIT_{ijt} is a dummy variable for bilateral investment treaty between country i and j, I_j (E_i) corresponds to a host (home) country time-invariant fixed effect, T_t is a country-invariant time effect and ϵ_{ijt} is the error term.

In order to assess the indirect effects of BITs on FDI, interaction terms between the existence of a BIT and either the quality of interstate relations or the quality of domestic institutions are included. As a commitment device, a BIT should be more effective when implemented between countries experiencing bad interstate relations; we therefore expect β_{10} to be negative. As stated above, BITs may be substitute or complementary to a good public governance; the sign of β_{11} is thus ambiguous.

Time-invariant determinants are captured by both home and host countries fixed effects and time dummies control for the effect of worldwide factors which influence simultaneously all bilateral FDI stocks.

2.3 Data and methodology

Our dependent variable is the bilateral FDI stocks [FDI]. It originates from the *OECD International Direct Investment statistics* database, which reports data for bilateral stocks among 30 OECD countries and between OECD countries and 32 non-OECD emerging countries, over the period 1991-2000. FDI stocks are preferred to FDI flows as the former are less volatile, which is particularly important when working with yearly data. All FDI stocks are converted into millions of current US dollars.

A well-known problem of the log specification of the gravity model is the difficulty of accounting for zeros in the dependent variable, because dropping them could create a selection bias. In the case of this chapter, 8% of the 8001 observations are equal to zero. To deal with this problem, we implement a Poisson quasi maximum likelihood estimator (QMLE). This strategy has been suggested by Santos Silva and Tenreyro (2006) concerning gravity models of trade flows (see Head and Ries (2008) for an application to FDI). They point out that standard log-linear models as well as Tobit models implemented to account for selection bias yield inconsistent estimates in the presence of heteroscedasticity. Their proposed estimation procedure, Poisson QMLE, is not only consistent in the presence of heteroscedasticity, but it also allows

us to incorporate zero values of the dependent variable in our regressions.

Data on GDP [GDP] and GDP per capita [GDPPC] are taken from the *World Bank World Development Indicators database*. GDP is in current US dollars and GDP per capita is in current PPP US dollars. Time-invariant bilateral characteristics (distance, contiguity and common language) come from the CEPII.[11] In addition, an important determinant of FDI flows is the quality of domestic institutions [$INST$] (Wei, 2000; Globerman and Shapiro, 2002; Benassy-Quere *et al.*, 2007). Our proxy comes from the *International Country Risk Guide*, which provides ratings of economic, financial and political risks for a large number of countries.[12] We construct an annual index for the quality of domestic institutions using a simple average of 4 components of the political risk index: government stability, investment profile (which measures contract viability/expropriation, profits repatriation and payment delays), law and order (which measures the strength and impartiality of the legal system and the popular observance of the law), and bureaucracy quality.[13] The higher the index, ranging between 0 and 10, the lower the risk perceived. The indicator of the quality of interstate political relations [QIR] has been introduced in section 3.1. Finally, the BIT dummy [BIT] takes the value one starting from the year when a BIT between two countries enters into force.[14] Data on BITs come from the UNCTAD Investment Treaty Database.[15]

Summary statistics are given in table III.1.

[11] www.cepii.fr
[12] See http://www.prsgroup.com/.
[13] Each component is recomputed on a scale of 10.
[14] Egger and Pfaffermayr (2004) show that a BIT increases significantly bilateral FDI only if it is actually implemented, underlining that the international commitment of the host country must appear to be credible to foreign investors. Hence, we use the date of entry into force of a BIT rather than its date of signature.
[15] http://www.unctadxi.org/templates/Startpage___718.aspx

Table III.1: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
FDI	8001	3025.28	12410.2	0	303591.7
ln(FDI)	7374	5.39	2.75	-4.25	12.62
ln GDP origin	8001	12.83	1.50	8.67	16.10
ln GDP host	8001	12.67	1.51	8.67	16.10
ln Distance	8001	8.24	1.10	4.09	9.88
Contiguity	8001	0.07	0.26	0	1
Common language	8001	0.08	0.27	0	1
ln GDP per capita (origin)	8001	9.68	0.61	7.26	10.44
ln GDP per capita (host)	8001	9.53	0.68	7.26	10.44
Quality of domestic institutions (host)	8001	7.46	1.27	2.29	9.79
ln Quality of domestic institutions (host)	8001	1.99	0.18	0.83	2.28
Quality of Interstate Relations (QIR)	8001	37.19	99.97	0	1778.64
ln Quality of Interstate Relations	8001	2.37	1.59	0	7.48
BIT	8001	0.28	0.45	0	1

3 Results

In this section, we first present the estimation of the effect of the quality of interstate relations. Having established its relevance regarding bilateral FDI flows, we turn to the estimation of equation (III.2) and investigate the direct and indirect effects of BITs on FDI. Following this, we present results on related third country effects.

3.1 Quality of interstate political relations

Results are presented in table III.2. Regarding control variables and from the host country's perspective, a large market, good public governance, shared language and contiguity tend to exert a positive impact on bilateral investment, whereas the opposite is true for bilateral distance and GDP per capita. The sign of the latter can be interpreted as reflecting the impact of high labor costs. These results are in line with previous studies using the same specification, such as Benassy-Quere *et al.* (2007) or Head and Ries (2008). Although the signs and significance of our control

variables are sensitive to the specification used[16], it is reassuring to note that the coefficient of our proxy for the quality of interstate political relations (QIR) is always positive and significant, indicating that countries having good diplomatic relations invest more in each other. The economic effect is substantial since, according to the specification considered in table III.2, a one standard deviation increase from the mean of the quality of interstate political relations increases the bilateral FDI stock from 46% (column (2)) to 83% (column (4)).

The subsequent columns of table III.2 report a number of robustness tests. First, the importance of multilateral resistance terms emphasized by Anderson and van Wincoop (2003) and Feenstra (2004) concerning bilateral trade flows is likely to be also somewhat relevant for investments flows. In a panel setting, it can be captured by including country-and-year fixed effects (Baier and Bergstrand, 2007). Column (5) presents the estimation using the PQML estimator with country-and-year fixed effects. Results remain qualitatively similar.

Our results may also suffer from endogeneity. The causality between FDI and interstate political relations may be bi-directional since according to the liberal peace paradigm, growing economic interdependence fosters better interstate political relations (Polachek, 1980; Oneal and Russett, 1997, 1999; Barbieri, 2002). In addition, omitted country-pair specific variables correlated with the quality of interstate political relations, may be the true factor driving the impact of the quality of diplomatic relations on FDI. We deal with each problem consecutively, because no exogenous time-varying instrumental variable for the quality of interstate political relations is readily available.

The first source of endogeneity, simultaneity, can be accounted for by finding a suitable cross-sectional instrument. However, since even in a cross-section we could

[16] The lack of significance of GDP and GDP per capita may be explained by the inclusion of host and home country fixed effects and the multicollinearity among these variables (because population varies slowly).

Table III.2: The impact of interstate political relations on FDI

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent var.	ln(FDI)	ln(FDI)	FDI	FDI	FDI	ln(FDI)	FDI	FDI
Estimator	OLS		Poisson QMLE			2SLS	Poisson QMLE	
ln GDP origin	-0.41^b	-0.33^c	0.11	0.27			0.27	0.18
	(0.18)	(0.18)	(0.22)	(0.20)			(0.20)	(0.21)
ln GDP host	0.96^a	1.14^a	0.32	0.47^b			0.47^b	0.37
	(0.16)	(0.17)	(0.24)	(0.22)			(0.22)	(0.23)
ln distance	-1.02^a	-0.86^a	-0.47^a	-0.37^a	-0.36^a	-0.39^a	-0.38^a	
	(0.06)	(0.07)	(0.05)	(0.05)	(0.05)	(0.14)	(0.06)	
Contiguity	0.63^a	0.58^a	-0.13	-0.18	-0.18	0.19	-0.15	
	(0.19)	(0.17)	(0.14)	(0.13)	(0.13)	(0.22)	(0.15)	
Common language	0.79^a	0.63^a	0.59^a	0.52^a	0.51^a	0.17	0.38^a	
	(0.19)	(0.18)	(0.10)	(0.08)	(0.08)	(0.23)	(0.09)	
ln GDP per capita origin	2.39^a	1.81^a	3.21^a	2.74^a			2.84^a	3.24^a
	(0.45)	(0.44)	(0.85)	(0.81)			(0.84)	(0.87)
ln GDP per capita host	-0.40	-0.71	0.88^b	0.50			0.55	0.81^c
	(0.42)	(0.46)	(0.45)	(0.41)			(0.40)	(0.42)
ln Quality of domestic institutions host (INST)	0.56^a	0.55^b	0.17	0.25			0.24	0.18
	(0.21)	(0.23)	(0.16)	(0.16)			(0.17)	(0.16)
ln Quality of interstate relations (QIR)		0.17^a		0.31^a	0.34^a	0.81^a	0.28^a	0.10^a
		(0.02)		(0.03)	(0.03)	(0.19)	(0.03)	(0.02)
Pair ever in a colonial relationship							0.39^a	
							(0.11)	
Ever same country							2.39^a	
							(0.34)	
Militarized Interstate Dispute							0.02	
							(0.11)	
EU							0.20	
							(0.13)	
NAFTA							0.00	
							(0.14)	
GATT							0.05	
							(0.11)	
Year fixed effects	Yes	Yes	Yes	Yes	-	-	-	Yes
Country fixed effects	Yes	Yes	Yes	Yes	-	Yes	Yes	-
Country-pair fixed effects	-	-	-	-	-	-	-	Yes
Country-and-year fixed effects	-	-	-	-	Yes	-	-	-
Observations	7374	7374	8001	8001	8149	440	7956	7560
Number of groups	-	-	-	-	-	-	-	1080
Sargan-Hansen statistic	-	-	-	-	-	0.376	-	-

Notes: a, b and c denote respectively significance at the 1, 5 and 10% level. Heteroscedasticity- and autocorrelation-robust standard errors are in parentheses.

not find good external instruments[17], we resort to internal instruments, the lagged values of the quality of interstate political relations eight and nine years earlier. These lags have been chosen according to the first-stage F test statistic, the partial R-squared and the Hansen (1982) J tests of overidentifying restrictions. The first-stage F statistics and partial R^2 indicate that these instruments can be regarded as "strong" since they respectively equal 17.9 - well above the Stock *et al.* (2002)'s rule of thumb of 10 -, and 0.09, and the Sargan-Hansen test does not reject their exogeneity. Note that the econometric methodology, in column (6) of table III.2, is two stage least squares estimation.

To remedy for the second source of endogeneity, the problem of omitted variable, we first include country-pair specific variables which could be correlated with the quality of interstate political relations. In column (7), historical ties, i.e. the existence of a colonial relationship and the possibility that two countries used to belong to the same entity, e.g. Czech Republic and Slovakia, military conflict occurrence and common membership in NAFTA, the EU and the WTO/GATT are accounted for. Second, all time-invariant (unobservable) country-pair characteristics which may affect bilateral FDI, such as cultural proximity, are taken into account by the inclusion of country-pair specific fixed effects in column (8), in place of geographic and linguistic bilateral variables and country-specific effects. We use the xtpqml Stata package developed by Tim Simcoe, which computes robust standard errors for fixed-effects Poisson models, as suggested by Wooldridge (1999).[18] This is a particularly demanding specification since the impact of the quality of interstate political relations on FDI is only identified through the effect of its variation on FDI over time.

When endogeneity is controlled for, the results confirm our previous findings; the coefficient on the QIR variable remains positive and significant at the 1% level. In

[17] We tried to instrument the quality of interstate political relations with alliance similarity, UN vote correlation, religious similarity, or conflict history. However, the Sargan-Hansen test rejected in every case their exogeneity.

[18] http://www.rotman.utoronto.ca/timothy.simcoe/xtpqml.txt. This methodology is equivalent to including bilateral country-pair dummies when using a a Poisson Quasi Maximum Likelihood estimator with heteroscedasticity-robust standard errors.

the instrumental variable regression reported in column (6), the coefficient of the QIR variable remains significant. Results remain unchanged when controlling for additional determinants of bilateral FDI in column (7). They shows that historical ties influence bilateral FDI but do not drive the effect of the quality of diplomatic relations. However, in column (8), the coefficient on the QIR variable decreases significantly as the inclusion of country-pair fixed effects implies that only the impact of differences in the quality of interstate political relations on bilateral FDI over time are investigated, leaving out the additional impact of the inter-country differences in the quality level of interstate political relations. The positive and strongly significant coefficient of the QIR variable highlights the importance of interstate political relations as a determinant of FDI. Together, these modifications of our initial specification demonstrate the robustness of the impact of the quality of interstate political relations on bilateral FDI.

3.2 Bilateral investment treaties

We now turn to the estimation of the impact of BITs on FDI. In table III.3, we introduce consecutively our two interaction variables in order to assess the impact of the entry into force of a BIT conditionally on the quality of interstate relations and the quality of domestic institutions. The three first columns present results using country fixed effects while the remaining four present results using country-pair fixed effects.

The coefficient and significance of the BIT variable depend on whether country-pair fixed effects are included (columns (1) and (5)). The fact that the coefficient is only significant in the specification including country-pair fixed effects suggests that countries "choose well" when signing a BIT, as suggested by Baier and Bergstrand (2007) concerning free trade agreements. Indeed, when unobservable characteristics between two countries reduce their bilateral FDI flows, countries will be more likely to sign a BIT if the latter prevents these unobservable characteristics to deter bilateral FDI flows, i.e. if expected gains from signing a BIT are large. As mentioned

earlier, bilateral fixed effects control for the endogeneity bias related to omitted (unobservable) variables that are likely to affect both the level of bilateral FDI and the opportunity to enter a BIT. When such factors are taken into account, the average effect of the entry into force of a BIT on bilateral FDI stock is positive and significant (column (5)). Without controlling for the interdependence between BITs and the risk sustained by MNEs, we find an average effect of BITs of 32%, similar to Egger and Pfaffermayr (2004).

The effectiveness of BITs is nevertheless conditional on the risk sustained by MNEs when investing abroad. The introduction of the interaction term between the BIT dummy and the quality of interstate relations (columns (2) and (5)) shows that the entry into force of a BIT increases bilateral FDI but that it is significantly less effective between countries having good diplomatic relationships. These findings confirm that BITs work as a commitment device: the host government's credible commitment not to expropriate foreign investors is more valuable when MNEs face risks related to interstate political tensions. In addition, the interaction term between the BIT dummy and the quality of domestic institutions is significant in the country pair fixed effect specification (column (6)). The positive, sign on the interaction term confirms that a BIT and a good institutional framework are complement rather than substitute. It suggests that a BIT signals foreign investors from the signatory country that the host country's government will not damage the good protection provided by its domestic institutions. In this specification, the coefficient on BITs becomes insignificant. It nevertheless does not mean that BITs have no direct effect on FDI. In order to assess the effectiveness of a BIT we need to measure the total effect of its entry into force as well as the statistical significance of this effect conditionally on the level of the quality of both interstate relations and domestic institutions (Brambor *et al.*, 2006). Figure III.2 depicts the marginal effect of the entry into force of a BIT, and its 95% confidence interval, depending on the quality of interstate relations between signatory countries, at three different level of domestic institutional quality (median, firth decile and ninth decile). The

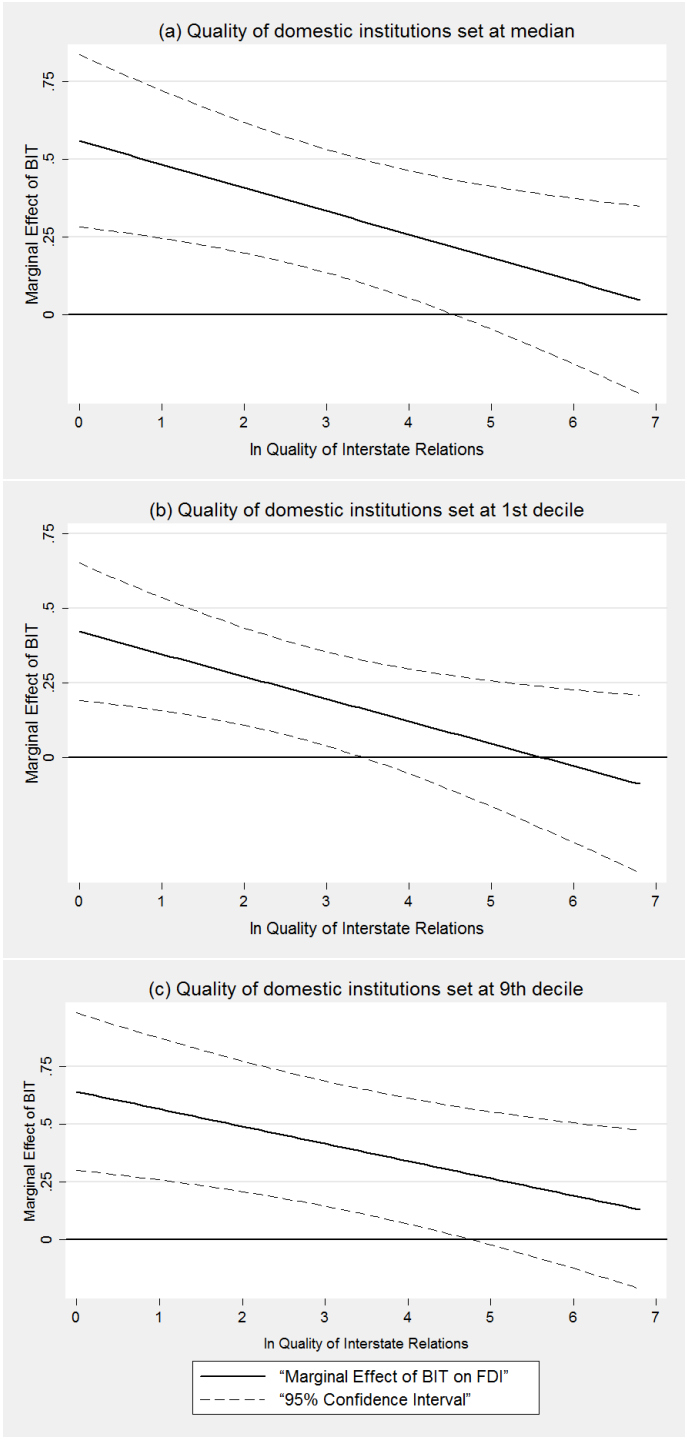
Table III.3: The impact of bilateral investment treaties on FDI

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent var.	FDI	FDI	FDI	FDI	FDI	FDI	FDI
Estimator:	Poisson QMLE						
ln GDP origin	0.27	0.28	0.27	0.19	0.20	0.20	0.22
	(0.20)	(0.20)	(0.20)	(0.21)	(0.21)	(0.21)	(0.21)
ln GDP host	0.46^b	0.47^b	0.47^b	0.36	0.37	0.37	0.37
	(0.22)	(0.22)	(0.22)	(0.23)	(0.23)	(0.23)	(0.23)
ln distance	-0.37^a	-0.37^a	-0.37^a				
	(0.05)	(0.05)	(0.05)				
Contiguity	-0.19	-0.19	-0.19				
	(0.13)	(0.13)	(0.13)				
Common language	0.52^a	0.51^a	0.51^a				
	(0.08)	(0.08)	(0.08)				
ln GDP per capita origin	2.74^a	2.74^a	2.74^a	3.23^a	3.21^a	3.22^a	3.24^a
	(0.81)	(0.81)	(0.81)	(0.86)	(0.86)	(0.86)	(0.85)
ln GDP per capita host	0.50	0.50	0.50	0.82^b	0.82^b	0.82^b	0.75^c
	(0.41)	(0.41)	(0.41)	(0.42)	(0.41)	(0.42)	(0.43)
ln Quality of domestic institutions host (INST)	0.25	0.26	0.24	0.18	0.19	0.08	0.12
	(0.16)	(0.16)	(0.18)	(0.16)	(0.16)	(0.19)	(0.19)
BIT	0.09	0.42^b	0.22	0.28^a	0.48^a	-0.39	-0.67
	(0.11)	(0.16)	(0.53)	(0.08)	(0.12)	(0.51)	(0.61)
ln Quality of interstate relations (QIR)	0.31^a	0.32^a	0.32^a	0.10^a	0.10^a	0.10^a	0.10^a
	(0.03)	(0.03)	(0.03)	(0.02)	(0.03)	(0.03)	(0.02)
BIT*ln QIR		-0.11^b	-0.11^b		-0.07^b	-0.08^b	-0.07^b
		(0.05)	(0.05)		(0.03)	(0.03)	(0.03)
BIT*ln INST host			0.10			0.47^c	0.62^c
			(0.28)			(0.28)	(0.34)
EU							0.20
							(0.15)
NAFTA							-0.12^b
							(0.06)
GATT							-0.19
							(0.14)
TRIPS (host)							-0.24^c
							(0.14)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	-	-	-	-
Country-pair fixed effects	-	-	-	Yes	Yes	Yes	Yes
Observations	8001	8001	8001	7560	7560	7560	7560
Number of groups	-	-	-	1080	1080	1080	1080

Notes: a, b and c denote respectively significance at the 1, 5 and 10% level. Heteroscedasticity- and autocorrelation-robust standard errors are in parentheses.

quantification of the effect of BIT on FDI is based on specification (6) of table III.3, which is our preferred since the inclusion of country pair fixed effects controls for self-selection into BITs.

Figure III.2: Total effect of the entry into force of a BIT on FDI



Note: based on specification (7) of table III.3.

Figure III.2 clearly confirms that the effect of the entry into force of a BIT depends crucially on the quality of political relations between the signatory countries. A BIT exerts its strongest effects when foreign investors are confronted to recurrent diplomatic disputes as it assures foreign investors that they will not be the subject of retaliation through various devices of expropriation. It increases FDI stocks by more than 53% when our indicator of the quality of interstate relations is set at its minimum and the quality of domestic institutions is held at its median (panel (a) of figure III.2), while it has no significant effect for friendly partner countries. When both the quality of domestic institutions and interstate relations are held at their mean, a BIT increases bilateral FDI stocks by 37%. In addition, our results point to a complementarity between BITs and good domestic governance. In particular, for low level of QIR, implementing a BIT has a lower effect when the host country exhibits poor domestic institutions (panel (b)) than when it has good domestic institutions (panel (c)). Moreover, the statistical significance of BITs disappears at lower level of QIR when host country's institutions are poor. When host country's institutions are poor (panel (b)), the total effect of a BIT on bilateral FDI stock is clearly lower than in the case of median domestic institutions (panel (a)), while it is only slightly larger when institutions are good (panel (c)). It suggests that the credible commitment of the government not to damage the property rights of investors from a home country is more valuable when domestic institutions are good. In a risky market, where domestic governance is poor, this commitment is clearly less valuable for MNEs because the host government may not be powerful enough to secure property rights and enforce contracts. However, when domestic institutions exceed a quality threshold, the complementarity becomes weak since an additional increase in the quality of institutions only slightly increases the effectiveness of BITs on FDI. Overall, figure III.2 suggests that implementing a BIT signals the credibility of domestic governance, as the host country is less likely to damage the protection granted by its domestic institutions.

Finally, in column (7), we control for the membership of the home and host

countries in international organizations that provide various levels of protection of property rights to investors coming from signatory countries. We include dummies for common membership in regional trade agreements, the EU and the NAFTA, and the GATT/WTO, and a dummy indicating whether the host country is part of the TRIPS agreement. These agreements are designed mainly to regulate trade flows; their effect on FDI is ambiguous since it depends on their relative impact on trade and investment barriers (Bergstrand and Egger, 2008). The negative and significant coefficient found for the TRIPS agreement dummy suggests that the concomitant entry into force of the WTO in 1995 reduced international trade barriers to a larger extent compared to international investment barriers. In this specification, the results confirm previous evidence regarding the quality of interstate relations and the quality of domestic institutions and their effect on the impact of BITs on FDI.

Overall, these results support our argument that the purpose for a host country in signing a BIT is to send a costly signal stating its credibility as a third party guaranteeing foreign investors' property rights. Through the signature of a BIT, two partner countries reciprocally abandon the use of retaliatory actions against foreign firms and a part of their sovereignty in order to mark their determination to offer a safe business climate for foreign investors on a long-term basis.

3.3 Third country effects

In this section, we investigate whether maintaining good interstate relations or implementing a BIT with a given partner exerts any side effects on FDI originating from third countries, as an additional signal of the credibility of the host country's government. First, a proxy for the quality of interstate political relations of a host country vis-a-vis all its partners is included [QIR multilateral]. It is constructed as the average of bilateral interstate political relations weighted by the market size of partner countries (GDP). Results are presented in columns (1) and (2) of table III.4. It appears that good interstate political relations with countries other than the partner country do not exert any significant impact on FDI. This confirms that

the impact of interstate political relations on FDI is country-pair specific and that various foreign investors in the same host country will not experience the same level of protection of their property rights. In columns (3) and (4), beyond the BIT dummy, the stock of BITs, i.e. the cumulative number of BITs that the host country has signed with all its partners, is included [BIT total].[19] Indeed, if a BIT acts as a costly signal for the quality of the protection of property rights in the host country and the commitment of the host government towards MNEs from the signatory partner country, BITs signed with other countries should also signal the good business climate in the host country to international investors even from non-signatory countries. We find that FDI coming from a non-signatory country are positively influenced by the stock of BITs implemented by the host country. This implies that a high number of BITs signals foreign investors that the host country has been judged credible, by the international community, in its determination to offer, on a long term basis, a business climate favorable to MNEs. This last result confirms our previous findings.

4 Conclusion

Most of the literature dealing with the location of FDI has globally ignored that MNEs are not stateless and that their activities take place within an international political system. When investing abroad, the business environment faced by MNEs is not only shaped by the quality of domestic institutions: the return on their FDI can also be greatly influenced by the quality of interstate political relations between their home and host countries. In this framework, implementing BITs can be understood as commitment devices enabling host countries' governments to state their credibility as third party guaranteing the property rights of foreign investors. Through the signature of a BIT, two partner countries reciprocally abandon the use of retaliatory

[19] Data originates from the UNCTAD FDI database (http://stats.unctad.org/FDI/ReportFolders/ReportFolders.aspx).

Table III.4: Bilateral FDI and third country effects

Model	(1)	(2)	(3)	(4)
Dependent var.	FDI	FDI	FDI	FDI
Estimator:		Poisson QMLE		
GDP origin	0.27	0.20	0.34^{b}	0.25
	(0.20)	(0.21)	(0.17)	(0.19)
GDP host	0.46^{b}	0.36	0.38^{c}	0.29
	(0.22)	(0.23)	(0.20)	(0.21)
Ln distance	-0.37^{a}		-0.37^{a}	
	(0.05)		(0.05)	
Contiguity	-0.19		-0.19	
	(0.13)		(0.13)	
Common language	0.51^{a}		0.51^{a}	
	(0.08)		(0.08)	
GDP per capita origin	2.74^{a}	3.22^{a}	2.81^{a}	3.25^{a}
	(0.80)	(0.86)	(0.84)	(0.90)
GDP per capita host	0.50	0.82^{b}	0.57	0.89^{b}
	(0.41)	(0.42)	(0.38)	(0.40)
ln Quality of domestic institutions host (INST)	0.23	0.08	0.11	-0.05
	(0.18)	(0.19)	(0.17)	(0.18)
ln quality of interstate relations (QIR)	0.32^{a}	0.10^{a}	0.33^{a}	0.11^{a}
	(0.03)	(0.03)	(0.03)	(0.02)
BIT	0.21	-0.40	-0.17	-0.85^{c}
	(0.53)	(0.50)	(0.54)	(0.45)
BIT*ln QIR	-0.11^{b}	-0.08^{b}	-0.11^{b}	-0.08^{b}
	(0.05)	(0.03)	(0.05)	(0.03)
BIT*ln INST host	0.10	0.47^{c}	0.31	0.76^{a}
	(0.27)	(0.28)	(0.28)	(0.24)
ln QIR multilateral	0.01	0.01		
	(0.05)	(0.05)		
BIT total			0.01^{a}	0.01^{b}
			(0.00)	(0.00)
Year fixed effects	Yes	Yes	Yes	Yes
Country fixed effects	Yes	-	Yes	-
Country-pair fixed effects	-	Yes	-	Yes
Observations	8001	7560	8001	7560
Number of groups	-	1080	-	1080

Notes: a, b and c denote respectively significance at the 1, 5 and 10% level. Heteroscedasticity- and autocorrelation-robust standard errors are in parentheses.

actions against foreign firms and thus accept constraints on their sovereignty in order to attract FDI.

This chapter remedies to this omission of the literature by testing the impact of the quality of interstate political relations and how it affects the effect of BITs on bilateral FDI. Empirical findings indicate that having good interstate political relations positively influences FDI. The effect of a BIT is found to crucially depend on the risk sustained by MNEs when investing in a certain location. BITs have a larger effect when implemented between countries having bad interstate relations while they have no significant effect between friendly countries. Our results confirm that BITs work as a commitment device: the host government's credible commitment not to expropriate foreign investors is more valuable when MNEs face risks related to interstate political tensions. In addition, they suggests that BITs and good domestic institutions are complementary to attract FDI.

Overall, when the direct as well as both indirect effects are considered, the entry into force of a BIT increases bilateral FDI stocks by 37% when the quality of interstate relation and domestic institutions are held are their mean. However, the magnitude and significance of this effect crucially differ according to the political relations between the home and host countries and the quality of domestic institutions.

III.A Appendix A: Events and corresponding weights in Goldstein scale

Definition	Goldstein	Definition	Goldstein
Extend military aid	8.3	Comment	-0.1
Extend humanitarian aid	7.6	Decline comment	-0.1
Rally support	7.6	Pessimistic comment	-0.1
Extend economic aid	7.4	Ask for protection	-0.1
Improve relations	5.4	Deny	-1
Promise material support	5.2	Grant asylum	-1.1
Promise economic support	5.2	Criticize or blame	-2.2
Promise military support	5.2	Reduce routine activity	-2.2
Promise humanitarian support	5.2	Complain	-2.4
Agree	4.8	Informally complain	-2.4
Collaborate	4.8	Formally complain	-2.4
Promise	4.7	Accuse	-2.8
Promise policy support	4.5	Warn	-3
Endorse	3.5	Alerts	-3
Forgive	3.5	Denounce or denigrate	-3.4
Praise	3.4	Halt negotiations	-3.8
Empathize	3.4	Reject	-4
Solicit support	3.4	Reject proposal	-4
Ask for material aid	3.4	Refuse to allow	-4
Agree or accept	3	Defy norms	-4
Ease sanctions	2.9	Impose curfew	-4
Host a meeting	2.8	Censor media	-4
Assure	2.8	Veto	-4
Extend invitation	2.5	Political flight	-4
Grant	2.2	Disclose information	-4
Provide shelter	2.2	Break law	-4
Evacuate victims	2.2	Non-specific threats	-4.4
Observe truce	2.2	Arrest and detention	-4.4
Relax censorship	2.2	Political arrests and detention	-4.4
Relax administrative sanction	2.2	Criminal arrests and detention	-4.4
Demobilize armed forces	2.2	Administrative sanctions	-4.5
Relax curfew	2.2	Sanction	-4.5
Apologize	2.2	Strikes and boycotts	-4.5
Acknowledge responsibility	2	Demand	-4.9
Travel to meet	1.9	Expel	-5
Release or return	1.9	Protest demonstrations	-5.2
Request	1.6	Protest obstruction	-5.2
Ask for economic aid	1.6	Protest procession	-5.2
Ask for military aid	1.6	Protest defacement	-5.2
Ask for humanitarian aid	1.6	Reduce or stop aid	-5.6
Consult	1.5	Sanctions threat	-5.8
Offer peace proposal	1.5	Threaten	-6.4
Call for action	1.2	Non-military force threats	-6.4
Yield	1.1	Seize	-6.8
Discussions	1	Police seizure	-6.8
Propose	0.8	Other seizure	-6.8
Yield to order	0.6	Carjacking	-6.8
Yield position	0.6	Hostage taking and kidnapping	-6.8
Optimistic comment	0.1	Control crowds	-6.9
Ask for information	0.1	Demonstrate	-6.9
Animal incidents	0	Give ultimatum	-6.9
Economic activity	0	Protest altruism	-6.9
Other human action	0	Military force threats	-7
Human illness	0	Break relations	-7

continued on next page

Definition	Goldstein	Definition	Goldstein
Human death	0	Threaten military attack	-7
Economic status	0	Threaten military blockade	-7
Other human condition	0	Threaten military occupation	-7
Natural disaster	0	Threaten military war	-7
Accident	0	Military clash	-7
Other incident	0	Threaten nuclear attack	-7
Animal attack	0	Military alert	-7.6
Animal death	0	Military air display	-7.6
Animal illness	0	Military naval display	-7.6
Other animal incident	0	Military troops display	-7.6
Arts and entertainment performance	0	Military demonstration	-7.6
Sports contest	0	Military mobilization	-7.6
Transactions	0	Military border fortification	-7.6
Government transactions	0	Riot or political turmoil	-8.3
Private transactions	0	Bombings	-8.7
Government default on payments	0	Seize possession	-9.2
Default on payment	0	Abduction and hijacking	-9.2
Elect representative	0	Military seizure	-9.2
Administrative adjustment	0	Military occupation	-9.2
Non-governmental adjustment	0	Military border violation	-9.2
Judicial actions	0	Force	-9.6
Infectious human illness	0	Physical assault	-9.6
Non-infectious human illness	0	Beatings	-9.6
Currency reserves	0	Shooting	-9.6
Exchange rates	0	Bodily punishment	-9.6
Equity prices	0	Sexual assault	-9.6
Debt yields	0	Torture	-9.6
Commodity prices	0	Assassination	-9.6
Affective state	0	Military engagements	-10
Beliefs and values	0	Military raid	-10
Drought	0	Coups and mutinies	-10
Earthquake	0	CBR weapons use	-10
Flood	0	Grenade/RPG use	-10
Hurricane	0	Suicide bombing	-10
Tornado	0	Mine explosion	-10
Volcano	0	Vehicle bombing	-10
Tsunami	0	Chemical weapons use	-10
Wildfire	0		
Hazardous material spill	0		
Private default on payments	0		

Source: King and Lowe (2002)

III.B Sensitivity to the construction of the quality of interstate relations

This section provides sensitivity analysis regarding the construction of the indicator of the quality of interstate relations. We build an alternative net indicator of interstate interactions using the sum of the annual flows of cooperation and conflict. We transform this indicator into strictly positive figure by adding 491.8 (because of the log specification of the gravity equation). The correlation between the two indicators is 0.70. The estimations presented in table III.5 confirm the robustness of our results to the transformation chosen for the construction of the variable of quality of interstate relation. Having good interstate relations increases bilateral FDI stocks while it reduces the effectiveness of the entry into force of a BIT.

Table III.5: Robustness analysis

Model	(1)	(2)	(3)
Dependent var.	FDI	FDI	FDI
Estimator	Poisson QMLE		
ln GDP origin	0.15	0.15	0.16
	(0.19)	(0.19)	(0.20)
ln GDP host	0.38^{c}	0.39^{c}	0.38^{c}
	(0.22)	(0.21)	(0.21)
ln distance	-0.41^{a}		
	(0.05)		
Contiguity	-0.09		
	(0.14)		
Common language	0.36^{a}		
	(0.09)		
ln GDP per capita origin	2.82^{a}	3.14^{a}	3.14^{a}
	(0.77)	(0.79)	(0.79)
ln GDP per capita host	0.73^{c}	0.80^{c}	0.80^{c}
	(0.44)	(0.43)	(0.43)
ln Quality of domestic institutions host (INST)	0.21	0.20	0.10
	(0.16)	(0.16)	(0.19)
ln QIR (simple linear combi)	0.82^{a}	0.72^{a}	0.74^{a}
	(0.10)	(0.17)	(0.18)
BIT			3.54
			(2.49)
BIT*ln QIR (simple linear combi)			-0.67^{c}
			(0.40)
BIT*ln INST host			0.50^{c}
			(0.27)
Year fixed effects	Yes	Yes	Yes
Country fixed effects	Yes	-	-
Country-pair fixed effects	-	Yes	Yes
Observations	8001	7560	7560
Number of group	-	1080	1080

Notes: a, b and c denote respectively significance at the 1, 5 and 10% level. Heteroscedasticity- and autocorrelation-robust standard errors are in parentheses.

General Conclusion

This thesis emphasizes the relevance of the institutional framework where cross-border exchanges take place for the study of interstate economic cooperation and conflicts. It puts forward that taking account of the specificities of the international system is necessary to fully understand why international economic agreements are created and their effectiveness in promoting trade and foreign direct investments.

The first chapter investigates whether the form of regional integration is related to the depth of trade integration. Within a gravity framework, I estimate the effect of membership in the different kinds of RTAs, namely preferential arrangements, free trade agreements, customs unions and common markets, on bilateral trade. Using panel data and country pair fixed-effects with panel data is necessary to take into account self-selection into agreements. Results first confirm that different country pairs choose to create different kinds of RTAs, resulting in biased coefficient estimates when cross-section unobserved heterogeneity is not controlled for. Then, I show that any kind of RTAs providing trade preferences to their members significantly increases bilateral trade. Their average treatment effect on bilateral trade nevertheless does not significantly differ according to the form/depth of agreements: creating a free trade area or a customs union have a similar effect on intra-regional trade flows.

The empirical evidence presented in chapter 1 suggests that the explanation for the heterogeneity in the form of RTAs is not necessarily directly related to trade issues. Chapter 2 proposes an explanation for the choice of different strategies of regional integration based on the interplays between security and trade, and presents empirical evidence supporting the relevance of security issues in the choice of different forms of RTAs. I develop a model of endogenous formation of RTAs in an insecure

world. Incentives to create RTAs are found to differ according to their ability to manage interstate disputes and prevent their escalation into war. Pairs of countries undergoing lots of interstate disputes tend to create deep agreements, such as a customs union or a common market, whereas country pairs having to deal with few interstate disputes create shallow RTAs, i.e. preferential arrangement or free trade agreements. Moreover, countries more integrated into the world trading system, i.e. facing less natural transport costs, are more likely to create deep than shallow RTAs. These predictions of the model are confirmed empirically.

Finally, the third chapter emphasizes the significance of political risks related to interstate relations for the understanding of MNE's location decisions and the effectiveness of BITs. We show that the effect of the entry into force of a BIT crucially depends on the quality of political relations between signatory countries: it has no effect between friendly countries while it increases significantly FDI between countries undergoing political tensions. Results also provide evidence that BITs and good domestic institutions are complement. The empirical analysis presented in chapter 3 supports a view of BITs as commitment devices allowing host countries' governments to credibly commit not to damage the good protection of property rights granted by their domestic institutions in case of interstate political disputes.

The first two chapters of this thesis put forward that RTAs should be understood not only as process lowering tariffs but also as regulation mechanisms for interstate relations. By preventing the outbreak of wars between members, and more broadly by managing interstate disputes likely to damage future gains from trade, RTAs deal with the uncertainty related to the lack of sound governance mechanism at the supranational level. Some RTAs allow national governments to put less emphasis on matter of security when deciding their trade policy, and facilitate interstate cooperation on trade issue. The required supranational institutional device could doubtfully be provided at the multilateral level. These works thus suggest that regionalism could be a building block for multilateral liberalization. Formally investigating this issue would be a natural and promising area of future research,

which could lead to interesting insights regarding the costs of trade liberalization in terms of constraints on national sovereignties. As underlined by Rodrik (2000), globalization puts pressure on national sovereignty as well as the democratic status of the states, which is likely to generate frictions and increasingly more interstate disputes as globalization deepens. International economic agreements would be devices alleviating the pressures of globalization on national sovereignty and the resulting international insecurity. This raises the issue of the cost of the delegation of economic policies at the regional level (related to the heterogeneity of preferences across countries), or the cost of constraining national policy decisions in the case of BITs, and of the range of policies that can be delegated at the interstate level and with whom.

Bibliography

Alesina, A. and Spolaore, E. (2003), *The Size of Nations*, MIT Press, Cambridge MA.

Alesina, A. and Spolaore, E. (2005), "War, Peace, and the Size of Countries", *Journal of Public Economics*, vol. 89: pp. 1333–1354.

Alesina, A. and Spolaore, E. (2006), "Conflict, defense spending, and the number of nations", *European Economic Review*, vol. 50 nº 1: pp. 91–120.

Alesina, A. and Wacziarg, R. (1999), "Is Europe Going too far?", *Carnegie-Rochester Conference Series on Public Policy (supplement of Journal of Monetary Economics)*, vol. 51: pp. 1–42.

Alesina, A., Perotti, R. and Spolaore, E. (1995), "Together or separately? Issues on the costs and benefits of political and fiscal unions", *European Economic Review*, vol. 39: pp. 751–758.

Alesina, A., Spolaore, E. and Wacziarg, R. (2000), "Economic Integration and Political Disintegration", *American Economic Review*, vol. 90 nº December: pp. 1276–1296.

Alesina, A., Devleeschauwer, A., Easterly, W., Kurlat, S. and Wacziarg, R. (2003), "Fractionalization", *Journal of Economic Growth*, vol. 8 nº 2: pp. 155–94.

Anderson, J. E. and Marcouiller, D. (2002), "Insecurity and the Pattern of Trade: An Empirical Investigation", *Review of Economics and Statistics*, vol. 84 nº 2: pp. 345–352.

Anderson, J. E. and Marcouiller, D. (2005), "Anarchy And Autarky: Endogenous Predation As A Barrier To Trade", *International Economic Review*, vol. 46 nº 1: pp. 189–213.

Anderson, J. E. and van Wincoop, E. (2003), "Gravity with Gravitas: a Solution to the Border Puzzle", *American Economic Review*, vol. 93 nº 1: pp. 170–192.

Anderson, J. E. and van Wincoop, E. (2004), "Trade Costs", *Journal of Economic Literature*, vol. XLII: pp. 691–751.

Anderton, C. H., Anderton, R. A. and Carter, J. R. (1999), "Economic activity in the shadow of conflict", *Economic Inquiry*, vol. 37: pp. 166–179.

Bagwell, K. and Staiger, R. (2002), *The Economics of the World Trading System*, The MIT Press.

Bagwell, K. and Staiger, R. W. (1997a), "Multilateral tariff cooperation during the formation of customs unions", *Journal of International Economics*, vol. 42 nº 1-2: pp. 91–123.

Bagwell, K. and Staiger, R. W. (1997b), "Regionalism and Multilateral Tariff Cooperation", NBER Working Papers 5921, National Bureau of Economic Research, Inc.

Baier, S. and Bergstrand, J. (2004a), "Do free trade agreements actually increase members' international trade?", Manuscript.

Baier, S., Bergstrand, J. and Egger, P. (2007), "The New Regionalism: Causes and Consequances", *Integration & Trade*, vol. 26: pp. 9–30.

Baier, S. L. and Bergstrand, J. H. (2004b), "Economic Determinants of Free Trade Agreements", *Journal of International Economics*, vol. 64 nº 1: pp. 29–64.

Baier, S. L. and Bergstrand, J. H. (2007), "Do Free Trade Agreements Actually Increase Members' International Trade?", *Journal of International Economics*, vol. 71 nº 1: pp. 72–95.

Balassa, B. (1961), "Towards a Theory of Economic Integration", *Kyklos*, vol. 16: pp. 1–17.

Baldwin, R. (2008), "Big-Think Regionalism: A Critical Survey", Working Paper 14056, National Bureau of Economic Research.

Baldwin, R. and Taglioni, D. (2006), "Gravity for Dummies and Dummies for Gravity Equations", NBER Working Paper 12516.

Baldwin, R. E. (1997), "The Causes of Regionalism", *The World Economy*, vol. 20 nº 7: pp. 865–888.

Barbieri, K. (2002), *The liberal illusion: does trade promotes peace?*, Ann Arbor: University of Michigan Press.

Bearce, D. H. (2003), "Grasping the Commercial Institutional Peace", *International Studies Quarterly*, vol. 47 nº 3: pp. 347–370.

Bearce, D. H. and Omori, S. (2005), "How do Commercial Insttitutions Promote Peace?", *Journal of Peace Research*, vol. 42 nº 6: pp. 659–678.

Beck, N., Katz, J. and Tucker, R. (1998), "Taking time seriously: time-series-cross-section analysis with binary dependent variable", *American Journal of Political Science*, vol. 42 nº 4: pp. 1260–1288.

Benassy-Quere, A., Coupet, M. and Mayer, T. (2007), "Institutional Determinants of Foreign Direct Investment", *The World Economy*, vol. 30 nº 5: pp. 764–782.

Bergstrand, J. H. and Egger, P. (2008), "A knowledge-and-physical-capital model of international trade flows, foreign direct investment, and multinational enterprises", *Journal of International Economics*, vol. 73 nº 2: pp. 278–308.

Berkowitz, D., Moenius, J. and Pistor, K. (2006), "Trade, Law and Product Complexity", *Review of Economics and Statistics*, vol. 88 nº 2: pp. 363–373.

Bernheim, B. D., Peleg, B. and D, W. M. (1987), "Coalition-proof Nash equilibri: Concepts", *Journal of Economic Theory*, vol. 42 nº 1: pp. 1–12.

Best, E. (2005), "Surpranational institutions and regional integration", Mimeo.

Bhagwati, J. (1991), *The world trading system at risk*, Harvester Wheatsheaf: Hemel Hempstead.

Blomberg, S. B. and Hess, G. D. (2006), "How Much Does Violence Tax Trade?", *Review of Economics and Statistics*, vol. 88 nº 4: pp. 599–612.

Blonigen, B. A., Davies, R. B., Waddell, G. R. and Naughton, H. T. (2007), "FDI in space: Spatial autoregressive relationships in foreign direct investment", *European Economic Review*, vol. 51: p. 1303–1325.

Boehmer, C., A, G. E. and Li, Q. (2001), "Investing in the Peace: Economic Interdependence and International Conflict", *International Organization*, vol. 55 nº 2: pp. 391–438.

Boehmer, C., Gartzke, E. and Nordstrom, T. (2004), "Do Intergovernmental Organizations Promote Peace?", *World Politics*, vol. 57 nº 1: pp. 1–38.

Bond, D., Bond, J., Oh, C., Jenkins, J. C. and Taylor, C. L. (2003), "Integrated Data for Events Analysis (IDEA): An Event Typology for Automated Events Data Development", *Journal of Peace Research*, vol. 40 nº 6: pp. 733–745.

Bouzas, R. and Soltz, H. (2000), "Institutions and Regional Integration: the Case of Mercosur", Mimeo (http://www.netamericas.net/Researchpapers/Documents/Bouzas/Bouzas1.pdf).

Brambor, T., Clark, W. R. and Golder, M. (2006), "Understanding Interaction Models: Improving Empirical Analyses", *Political Analysis*, vol. 14: p. 63–82.

Bubb, R. J. and Rose-Ackerman, S. (2007), "BITs and bargains: Strategic aspects of bilateral and multilateral regulation of foreign investment", *International Review of Law and Economics*, vol. 27 nº 3: pp. 291–311.

Carrere, C. (2006), "Revisiting the effects of regional trade agreements on trade flows with proper specification of the gravity model", *European Economic Review*, vol. 50: pp. 223–247.

Collier, P. (2008), "International Political Economy: Some African Applications.", *Journal of African Economies*, vol. 17: pp. 110–139, forthcoming.

Das, S. P. and Ghosh, S. (2006), "Endogenous trading bloc formation in a North-South global economy", *Canadian Journal of Economics*, vol. 39 nº 3: pp. 809–830.

Desbordes, R. and Vicard, V. (2007), "Foreign Direct Investment and Bilateral Investment Treaties an International Political Perspective", Documents de travail du Centre d'Economie de la Sorbonne 07045, Université Paris I Panthéon-Sorbonne.

Dixit, A. K. (2004), *Lawlessness and Economics: Alternative Modes of Governance*, Princeton University Press.

Djankov, S., Glaeser, E., La Porta, R., Lopez-de Silanes, F. and Shleifer, A. (2003), "The new comparative economics", *Journal of Comparative Economics*, vol. 31 nº 4: pp. 595–619.

Drazen, A. (2000), *Political Economy in Macroeconomics*, Princeton University Press.

Egger, H., Egger, P. and Greenaway, D. (2008), "The trade structure effects of endogenous regional trade agreements", *Journal of International Economics*, vol. 74: pp. 278–298.

Egger, P. and Pfaffermayr, M. (2004), "The impact of bilateral investment treaties on foreign direct investment", *Journal of Comparative Economics*, vol. 32 nº 4: pp. 788–804.

Elkins, Z., Guzman, A. T. and Simmons, B. (2006), "Competing for Capital: The Diffusion of Bilateral Investment Treaties: An Empirical Analysis", *International Organization*, vol. 60.

Encyclopedia Britannica (2000), *Encyclopedia Britannica*, Chicago.

Estevadeordal, A. and Suominen, K. (2008), "Sequencing Regional Trade Integration and Cooperation Ageements", *The World Economy*, vol. 31 nº 1: p. 112–140.

Estevadeordal, A., Freund, C. and Ornelas, E. (2008), "Does Regionalism Affect Trade Liberalization Towards Non-Members", *Quarterly Journal of Economics*, vol. 123 nº 4, forthcoming.

Ethier, W. J. (1998), "Regionalism in a Multilateral World", *Journal of Political Economy*, vol. 106 nº 6: pp. 1214–1245.

Faten, G., Palmer, G. and Bremer, S. (2004), "The MID3 Data Set, 1993–2001: Procedures, Coding Rules, and Description", *Conflict Management and Peace Science*, vol. 21: pp. 133–154.

Fearon, J. D. (1995), "Rationalist Explanations for War", *International Organization*, vol. 49 nº 3: pp. 379–414.

Feenstra, R. C. (2004), *Advanced International Trade: Theory and Evidence*, Princeton University Press, Princeton.

Fernandez, R. and Portes, J. (1998), "Returns to regionalism: an evaluation of nontraditionnal gains from regional trade agreements", *The World Bank Economic Review*, vol. 12 nº 2: pp. 197–220.

Findlay, R. and O'Rourke, K. H. (2007), *Power and Plenty: Trade, War, and the World Economy in the Second Millennium*, Princeton University Press.

Fiorentino, R. V., Verdeja, L. and Toqueboeuf, C. (2007), "The changing landscape of regional trade agreements: 2006 update", World Trade Organization discussion paper nº12.

Foroutan, F. (1993), "Regional Integration in Sub-Saharan Africa: Past Experience and Future Prospects", in de Melo, J. and Panagariya, A. (editors), *New Dimensions in Regional Integration*, Cambridge University Press, Cambridge.

Foroutan, F. (1998), "Does Membership in an FTA make a country more or less protectionist?", *The World Economy*, vol. 21 nº 3: pp. 305–335.

Frankel, J. A. (1997), *Regional Trading Blocs*, Institute for International Economics, Washington.

Frankel, J. A. (2000), "Globalization of the Economy", NBER Working Papers 7858, National Bureau of Economic Research, Inc.

Freund, C. (2000a), "Different Paths To Free Trade: The Gains From Regionalism", *The Quarterly Journal of Economics*, vol. 115 nº 4: pp. 1317–1341.

Freund, C. (2000b), "Multilateralism and the endogenous formation of preferential trade agreements", *Journal of International Economics*, vol. 52 nº 2: pp. 359–376.

Frieden, J. (2007), "Will Global Capitalism Fall Again?", Bruegels Essay and Lecture Series.

Garfinkel, M. R., Skaperdas, S. and Syropoulos, C. (2008), *Guns and Butter: The Economic Causes and Consequences of Conflict*, Hess, Gregory D, Cambridge, MA: MIT Press, chapter Globalization and Insecurity: Reviewing Some Basic Issues.

Ghosh, S. and Yamarik, S. (2004a), "Are regional trading arrangements trade creating? An application of extreme bounds analysis", *Journal of International Economics*, vol. 63 nº 2: pp. 369–395.

Ghosh, S. and Yamarik, S. (2004b), "Does trade creation measure up? A reexamination of the effects of regional trading arrangements", *Economics Letters*, vol. 82: pp. 213–219.

Glick, R. and Taylor, A. M. (2009), "Collateral Damage: Trade Disruption and the Economic Impact of War", *Review of Economics and Statistics*, forthcoming.

Globerman, S. and Shapiro, D. (2002), "Global Foreign Direct Investment Flows: The Role of Governance Infrastructure", *World Development*, vol. 30 nº 11: pp. 1899–1919.

Globerman, S. and Shapiro, D. (2003), "Governance Infrastructure and U.S. Foreign Direct Investment", *Journal of International Business Studies*, vol. 34 nº 1: pp. 19–39.

Goldstein, J. S. (1992), "A Conflict-Cooperation Scale for WEIS International Events Data", *Journal of Conflict Resolution*, vol. 36 nº 2: pp. 369–385.

Greene, W. (2003), *Econometric Analysis*, New York: Prentice Hall.

Greif, A. (1993), "Contract enforceability and economic institutions in early trade: the Maghribi traders' coalition", *American Economic Review*, vol. 83: pp. 525–548.

Greif, A., Milgrom, P. and Weingast, B. R. (1994), "Coordination, Commitment, and Enforcement: The Case of the Merchant Guild", *Journal of political economy*, vol. 102 nº 4: pp. 745–776.

Grieco, J. M. (1990), *Cooperation Among Nations*, Ithaca, NY and London: Cornell University Press.

Grossman, G. M. and Helpman, E. (1995), "The Politics of Free-Trade Agreements", *American Economic Review*, vol. 85 nº 4: pp. 667–90.

Grossman, H. (2004a), "Choosing between Peace and War", The Timbergen Lecture Series, n.19, University of Saskatchewan.

Grossman, H. I. (2004b), "Peace and War in Territorial Disputes", NBER Working Papers 10601, National Bureau of Economic Research, Inc.

Guzman, A. T. (1998), "Explaining the Popularity of Bilateral Investment Treaties: Why LDCs Sign Treaties that Hurt Them", *Virginia Journal of International Law*, vol. 38: pp. 639–688.

Hafner-Burton, E. M., von Stein, J. and Gartzke, E. (2008), "International Organizations Count", *Journal of Conflict Resolution*, vol. 52 nº 2: pp. 175–188.

Haftel, Y. Z. (2007), "Designing for Peace: Regional Integration Arrangements, Institutional Variation, and Militarized Inter-state Disputes", *International Organization*, vol. 61 nº 1: pp. 217–237.

Hallward-Driemeier, M. (2003), "Do Bilateral Investment Treaties Attract Foreign Direct Investment? Only a Bit ... and They Could Bite", World Bank Working Paper, nº3121.

Hansen, L. (1982), "Large Sample Properties of Generalizes Method of Moments Estimators", *Econometrica*, vol. 50 nº 3: pp. 1029–1054.

Hausman, J. A. and Taylor, W. E. (1981), "Panel Data and Unobservable Individual Effects", *Econometrica*, vol. 49 nº 6: pp. 1377–1398.

Head, K. and Ries, J. (2008), "FDI as an outcome of the market for corporate control: Theory and evidence", *Journal of International Economics*, vol. 74 nº 1: pp. 2–20.

Head, K., Mayer, T. and Ries, J. (2007), "The erosion of colonial trade linkages after independence", Mimeo.

Hirschleifer, J. (1988), "The Analytics of Continuing Conflicts", *Synthese*, vol. 76: pp. 201–233.

Hirshleifer, J. (2001), *The Dark Side of the Force: Economic Foundations of Conflict Theory*, Cambridge University Press.

Inter-American Development Bank (2006), "Market Access Provisions in Regional trade Agreements", Prepared for expert meeting "Regional Rules in the Global Trading System" IDB-WTO Joint Research Program.

Jackson, J. H. (2003), "Sovereignty-Modern: a New Approach to an Outdated Concept", *The American Journal of International Law*, vol. 97 nº 4: pp. 782–802.

Jackson, M. O. and Massimo, M. (2007), "Political Bias and War", *American Economic Review*, forthcoming.

Kandogan, Y. (2008), "Consistent Estimates of Regional Blocs' Trade Effects", *Review of International Economics*, vol. 16 nº 2: pp. 301–314.

Kant, E. (1795a), *Vers la paix perpétuelle: esquisse philosophique*, GF Flammarion [1991].

Kant, I. (1795b), *Perpetual Peace: A Philosophical Essay*, London: George Allen & Unwin LTD, translated by Mary Campbell Smith [1917].

Karacaovali, B. and Limão, N. (2008), "The clash of liberalizations: Preferential vs. multilateral trade liberalization in the European Union", *Journal of International Economics*, vol. 74 nº 2: pp. 299–327.

KEOHANE, R. O. (2001), "Governance in a Partially Globalized World - Presidential Address, American Political Science Association, 2000", *American Political Science Review*, vol. 95 nº 1: pp. 1–13.

KING, G. and LOWE, W. (2002), "An Automated Information Extraction Tool for International Conflict Data with Performance as Good as Human Coders: A Rare Events Evaluation Design", *International Organization*, vol. 57 nº summer: pp. 617–642.

KINSELLA, D. and RUSSETT, B. (2002), "Conflict Emergence and Escalation int Interactive International Dyads", *The Journal of Politics*, vol. 64 nº 4: pp. 1045–1068.

KRUEGER, A. O. (1997), "Free trade agreements versus customs unions", *Journal of Development Economics*, vol. 54: pp. 169–187.

KRUGMAN, P. (1991a), *International Trade and Trade Policy*, Helpman, Elhanan and Razin, Assaf, Cambridge, MA: MIT Press, chapter Is Bilateralism Bad?, pp. 5–25.

KRUGMAN, P. (1991b), "The Move Towards Free Trade Zones", in OF A FEDERAL RESERVE BANK OF KANSAS CITY SYMPOSIUM, P. (editor), *Policy Implications of Trade and Currency Zones*, pp. 7–42.

LAKE, D. A. (2006), *Oxford Handbook of Political Economy*, Weingast, Barry R and Wittman, Donald, Oxford University Press, chapter International Political Economy: a Maturing Interdiscipline, pp. 757–777.

LANGHAMMER, R. J. and HIEMENZ, U. (1990), *Regional integration among developing countries*, Westview Press: JCB Mohr.

LEDERMAN, D. and OZDEN, C. (2007), "Geopolitical interests and preferential access to U.S. markets", *Economics and Politics*, vol. 19 nº 2: pp. 335–258.

LEVY, G. and RAZIN, R. (2004), "It takes two: an explanation for the democratic peace", *Journal of the European Economic Association*, vol. 2 nº 1: pp. 1–29.

LIMAO, N. (2006), "Preferential Trade Agreements as Stumbling Blocks for Multilateral Trade Liberalization: Evidence for the United States", *American Economic Review*, vol. 96 nº 3: pp. 896–914.

LIMAO, N. (2007), "Are Preferential Trade Agreements with Non-trade Objectives a Stumbling Block for Multilateral Liberalization?", *Review of Economic Studies*, vol. 74 nº 3: pp. 821–855.

MACHLUP, F. (1977), *A History of thought on economic integration*, London: Macmillan, Chap.5.

Magee, C. S. (2003), "Endogenous Preferential Trade Agreements: An Empirical Analysis", *Contributions to Economic Analysis & Policy*, vol. 2 nº 1.

Maggi, G. and Rodriguez-Clare, A. (1998), "The value of trade agreements in the presence of political pressures", *Journal of Political Economy*, vol. 106: p. 574–601.

Maggi, G. and Staiger, R. W. (2008), "On the Role and Design of Dispute Settlement Procedures in International Trade Agreements", NBER Working Papers 14067, National Bureau of Economic Research, Inc.

Mansfield, E. D. and Pevehouse, J. C. (2000), "Trade Blocs, Trade Flows, and International Conflict", *International Organization*, vol. 54 nº 4: pp. 775–808.

Mansfield, E. D. and Pollins, B. M. (2003), *Economic independence and international trade*, Mansfield, Edward D et Pollins B M, Ann Arbor: University of Michigan Press, chapter Interdependence and conflict: a conceptual and empirical overview.

Mansfield, E. D., Milner, H. V. and Rosendorff, B. P. (2002), "Why Democracies Cooperate More: Electoral Control and International Trade Agreements", *International Organization*, vol. 56 nº 3: pp. 477–513.

Manzetti, L. (1993/94), "The political economy of MERCOSUR", *Journal of Interamerican Studies and World Affairs*, vol. 35: pp. 101–141.

Martin, P., Mayer, T. and Thoenig, M. (2008), "Make Trade not War?", *Review of Economic Studies*, forthcoming.

Maskus, K. E. (2000), *Intellectual Property Rights in the Global Economy*, Washington DC: Institute for International Economics.

Melatos, M. and Woodland, A. (2007a), "Endogenous trade bloc formation in an asymmetric world", *European Economic Review*, vol. 51 nº 4: pp. 901–924.

Melatos, M. and Woodland, A. D. (2007b), "Pareto-optimal Delegation in Customs Unions <link rid="fn1">*</link>", *Review of International Economics*, vol. 15 nº 3: pp. 441–461.

Mitra, D. (2002), "Endogenous political organization and the value of trade agreements", *Journal of International Economics*, vol. 57 nº 2: pp. 473–485.

Neumayer, E. and Spess, L. (2005), "Do Bilateral Investment Treaties Increase Foreign Direct Investment to Developing Countries?", *World Economy*, vol. 33 nº 10: pp. 1567–1585.

Nigh, D. (1985), "The Effect of Political Events on United States Direct Foreign Investment: A Pooled Time-Series Cross-Sectional Analysis", *Journal of International Business Studies*, vol. 16 nº 1: pp. 1–17.

North, D. (1990), *Institutions, Institutional Change and Economic Performance*, Cambridge MA: Cambridge University Press.

North, D. (1994), "Economic Performance through Time", *American Economic Review*, vol. 84 nº 3: pp. 359–368.

Olson, M. (1965), *The Logic of Collective Action: Public Goods and the Theory of Groups*, Harvard University Press.

Oneal, J. R. and Russett, B. M. (1997), "The classical liberals were rigth: democracy, interdependence and conflict, 1950-1985", *International Studies Quarterly*, vol. 41 nº 2: pp. 267–294.

Oneal, J. R. and Russett, B. M. (1999), "Assessing the liberal peace with alternative specifications: trade still reduce conflicts", *Journal of Peace Research*, vol. 36 nº 4: pp. 423–442.

Ornelas, E. (2005a), "Endogenous free trade agreements and the multilateral trading system", *Journal of International Economics*, vol. 67 nº 2: pp. 471–497.

Ornelas, E. (2005b), "Rent Destruction and the Political Viability of Free Trade Agreements", *The Quarterly Journal of Economics*, vol. 120 nº 4: pp. 1475–1506.

Ornelas, E. (2008), "Feasible multilateralism and the effects of regionalism", *Journal of International Economics*, vol. 74 nº 1: pp. 202–224.

Polachek, S. W. (1980), "Conflict and trade", *Journal of Conflict Resolution*, vol. 24 nº 1: pp. 57–78.

Polachek, S. W., Robst, J. and Chang, Y.-C. (1999), "Liberalism and interdependence: extending the trade-conflict model", *Journal of Peace Research*, vol. 36 nº 4: pp. 405–422.

Pollins, B. M. (1989), "Conflict, Cooperation and Commerce: the Effect of International Political Interactions on Bilateral Trade Flows", *American Journal of Political Science*, vol. 33 nº 3: pp. 737–761.

Pomfret, R. (1997), *The Economics of Regional Trading Arrangements*, Oxford University Press.

Pomfret, R. (2007), "Is Regionalism an Increasing Feature of the World Economy?", *The World Economy*, vol. 30 nº 6: pp. 923–947.

Rauch, J. E. (2001), "Business and Social Networks in International Trade", *Journal of Economic Literature*, vol. 39 nº 4: pp. 1177–1203.

Razin, A. and Sadka, E. (2007), "Corporate transparency, cream-skimming and FDI", *European Economic Review*, vol. 51 nº 5: pp. 1263–1276.

Rodrik, D. (2000), "How Far Will International Economic Integration Go?", *Journal of Economic Perspectives*, vol. 14 nº 1: pp. 177–186.

Rose-Ackerman, S. and Tobin, J. (2005), "Foreign Direct Investment and the Business Environment in Developing Countries: The Impact of Bilateral Investment Treaties", Yale Law & Economics Research Paper, n^{o}293.

Ruta, M. (2005), "Economic Theories of Political (Dis)integration", *Journal of Economic Surveys*, vol. 19 n^o 1: pp. 1–21.

Santos Silva, J. and Tenreyro, S. (2006), "The Log of Gravity", *Review of Economics and Statistics*, vol. 88 n^o 4: pp. 641–658.

Schelling, T. C. (1960), *The strategy of conflict*, Oxford, UK, and New-York: Oxford University Press.

Schiff, M. and Winters, L. A. (1998), "Regional Integration as Diplomacy", *World Bank Economic Review*, vol. 12 n^o 2: pp. 271–95.

Schiff, M. and Winters, L. A. (2002), "Regional cooperation, and the role of international organizations and regional integration", Policy Research Working Paper Series 2872, The World Bank.

Schrodt, P. A. and Gerner, D. J. (2000), "Analyzing International Events Data: a Handbook of Computer-Based Techniques", University of Kansas, Online Manuscript, http://www.ku.edu/~keds/papers.dir/automated.html.

SIPRI (2008), "SIPRI Yearbook 2008: Armaments, Disarmament and International Security", Technical report, Stockholm International Peace Research Institute.

Skaperdas, S. (1992), "Cooperation, Conflict, and Power in the Absence of Property Rights", *American Economic Review*, vol. 82 n^o 4: pp. 720–739.

Skaperdas, S. (2006), *Oxford Handbook of Political Economy*, Weingast, Barry R and Wittman, Donald, Oxford University Press, chapter Anarchy, pp. 881–896.

Skaperdas, S. and Syropoulos, C. (2001), "Guns, Butter, and Openness: On the Relationship between Security and Trade", *American Economic Review*, vol. 91 n^o 2: pp. 353–357.

Staiger, D. and Stock, J. H. (1997), "Instrumental Variables Regression with Weak Instruments", *Econometrica*, vol. 65 n^o 3: pp. 557–586.

Steinberg, R. H. and Zasloff, J. M. (2006), "Power and International Law", *The American Journal of International Law*, vol. 100 n^o 1: pp. 64–87.

Stock, J. H., Wright, J. H. and Yogo, M. (2002), "A Survey of Weak Instruments and Weak Identification in Generalized Method of Moments", *Journal of Business and Economic Statistics*, vol. 20 n^o 4: pp. 518–529.

Stulz, R. M. (2005), "The Limits of Financial Globalization", *The Journal of Finance*, vol. 9 n^o 4: pp. 1595–1638.

Summers, L. (1991), "Regionalism and the world trading system", in of a Federal Reserve Bank of Kansas City symposium, P. (editor), *Policy Implications of Trade and Currency Zones*, pp. 295–302.

Tenreyro, S. (2007), "On the trade impact of nominal exchange rate volatility", *Journal of Development Economics*, vol. 82: p. 485–508.

Tinbergen, J. (1962), *Shaping the World Economy*, The Twentieth Century Fund, New York.

Transparency International (2002), "Bribe Payers Index 2002: explanatory notes and comparative tables", Http://www.transparency.org/.

UNCTAD (2000), *Bilateral Investment Treaties 1959-1989*, New-York: United Nations.

UNCTAD (2008), "Latest developments in investor-State dispute Settlement", *IIA MONITOR*, vol. 1.

Vicard, V. (2009), "On Trade Creation and Regional Trade Agreements: Does Depth Matter?", *Review of World Economics*, forthcoming.

Viner, J. (1951), *International Economics*, Glencoe, IL: Free Press.

Waltz, K. N. (1979), *Theory of international politics*, Reading MA: Addison-Wesley.

Wei, S.-J. (2000), "How Taxing is Corruption International Investors?", *Review of Economics and Statistics*, vol. 82 n° 1: pp. 1–11.

Whalley, J. (1996), "Why Do Countries Seek Regional Trade Agreements?", NBER Working Papers 5552, National Bureau of Economic Research, Inc.

Williamson, O. E. (2000), "The New Institutional Economics: Taking Stock, Looking Ahead", *Journal of Economic Literature*, vol. 38: pp. 595–613.

Wolf, M. (2005), *Why globalization works*, Yale University Press: New Haven and London.

Wooldridge, J. (1999), "Distribution-free estimation of some nonlinear panel data models", *Journal of Econonmetrics*, vol. 90 n° 1: pp. 77–97.

Wooldridge, J. M. (2002), *Econometric Analysis of Cross Section and Panel Data*, Cambridge, MA: MIT Press.

Wooldridge, J. M. (2003), *Introductory Econometrics: A Modern Approach*, South-Western College Publishing, Cincinnati OH, second edition.

World Bank (2000), *Trade Blocs*, Policy Research Report, Washington DC.

World Bank (2005), *Global Economic Prospects 2005: Trade, Regionalism and Development*, World Bank, Washington DC.

Yi, S.-S. (1996), "Endogenous formation of customs unions under imperfect competition: open regionalism is good", *Journal of International Economics*, vol. 41 nº 1-2: pp. 153–177.

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Résumé

L'analyse économique des flux internationaux de biens et de capitaux fait abstraction du contexte politique international dans lequel ils s'effectuent. L'absence de juridiction supranationale fait pourtant peser des risques spécifiques sur les échanges entre Etats souverains. Dans cette thèse, nous nous attachons à montrer que la prise en compte des spécificités du système politique international permet de mieux comprendre pourquoi certains pays choisissent de créer certains types d'accords économiques internationaux et leur efficacité. Dans un premier chapitre, nous montrons que les différences observées dans la forme des accords commerciaux régionaux ne reflètent pas des degrés différents d'intégration commerciale. Le second chapitre propose alors une explication du choix de différentes stratégies d'intégration régionale. Nous développons un modèle de formation endogène d'accords commerciaux régionaux dans un monde incertain, où les conflits entre Etats peuvent dégénérer en guerre. Nous montrons alors que les pays connaissant le plus de conflits et naturellement les plus ouverts au commerce créent les accords les plus intégrés politiquement, l'inverse étant vrai pour les accords peu intégrés. Ces résultats théoriques sont confirmés empiriquement. Enfin, dans un troisième chapitre, nous nous intéressons aux traités d'investissement bilatéraux. Nous montrons que les investisseurs étrangers font face à un risque d'expropriation lié aux relations diplomatiques entre leur pays hôte et leur pays d'origine. Notre analyse montre que la signature d'un traité d'investissement bilatéral permet de s'en prémunir, et est donc plus efficace entre pays entretenant de mauvaises relations diplomatiques.

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Intitulé et adresse du laboratoire :
TEAM & CNRS (UMR 8059), Université de Paris I Panthéon-Sorbonne
Maison des Sciences Economiques, 106-112 Boulevard de l'Hôpital
75647 Paris CEDEX 13