別紙様式第２号

学位論文及び審査結果の要旨

横浜国立大学

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学位の種類	博士（経済学）
学位記番号	国府博甲第６号
学位授与年月日	平成２８年９月１６日
学位授与の根拠	学位規則（昭和 28 年 4 月 1 日文部省令第 9 号）第４条第１項及び横浜国立大学学位規則第５条第１項
研究科(学府)・専攻名	国際社会科学府　経済学専攻
学位論文題目	ESSAYS ON CONFLICT, INTERNATIONAL TRADE AND TRADE COST
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論文の要旨

This thesis presents three essays in international trade economics. It considers three cases in which international trade and trade costs are linked to conflicts.

First chapter, “International Trade, Conflict and the Distance Puzzle: A Structural Gravity Model”, empirically analyzes the relationship between conflict (both intrastate and militarized interstate conflict) and international trade using a structural gravity model. Conflict can be expected to increase international trade cost by a big margin, and hence making it important to fully understand how it affects trade. Using year-by-year cross country regressions, this chapter also focuses on how the distance variable, which proxies the trade cost in gravity model of trade, behaves over time using global dataset from 1962 through 2001. This is analyzed when the effect of conflict is included in the trade cost function of the structural gravity model. This non decreasing distance effect in the gravity model is called the *distance puzzle*.

Costs linked to conflict found to have a substantial negative effect on international trade. Militarized interstate conflict reduces trade by 61% (in tariff equivalent terms) and this is

about double the effect of intrastate conflict which has 32%. This chapter also found that due to conflict, high income countries' trade is affected more negatively than low income countries although they can quickly recover. However, on the other hand we found an unexpected distance trend. Although the distance puzzle is not completely solved by using the structural gravity model, the trade cost is stable, that is, over time it is neither increasing nor decreasing by a significant margin. Distance coefficient is constant under the structural gravity model while increasing when the standard gravity model is applied. This chapter concludes that the distance puzzle lies in the structure of the gravity model used and not in the omitted variables.

Second chapter, co-authored with Craig, R. Parsons, "International Trade Cost and Conflict" tries to answer the question of how large is the cost of conflict on trade cost? The effect of conflict on trade may, at first seem apparent. Such violent disruption must surely reduce trade, *ceteris paribus*. Some empirical findings in the literature find a negative effect of conflict on trade. This chapter adds to the nascent literature in two ways. First, much of the literature is focused on the effect of conflict on bilateral trade. In this chapter, we separately examine the effect on trade by both intrastate conflict (civil war) and interstate conflict. Second contribution is the measure of trade costs used. We use the Novy (2013)[1] measure of trade costs. The novelty of the trade model, which is based on micro-models of trade, is that what is important is to compare internal trade to international trade between any two countries. As such, we are measuring the effect of the conflicts on the "trade costs" between countries. We confirmed the negative effects of both types of conflict on trade. We find, in our sample of 110 countries, that interstate conflict raises bilateral trade costs by approximately 21.6% (in tariff equivalent terms), while intrastate conflict raises the trade costs by only 7%. As such, interstate is roughly three times as damaging to trade.

Third chapter, "International Trade and Trade Cost using Non-CES Preferences:

[1] Published in Journal of International Economics.

Translog Gravity Model" studies the effect of conflicts on trade. In contrary to most previous literature on this issue, this chapter empirically analyzes the relationship between conflict (Militarized Interstate Conflict) and international trade using a non-Constant Elasticity of Substitution (CES) based gravity model following Novy (2013)[2]. Like the first chapter, this section also analyzes the *distance puzzle* (sometimes called the *missing globalization puzzle*) of international economics, in this case, when translog gravity model is applied. Using a micro founded gravity equation which is based on a translog demand system this chapter sheds more light on the non-decreasing distance coefficient of the gravity model using data from 1970 through 2001. The missing globalization in the gravity model may be due to the CES preferences based part of the model. Trade is sensitive to trade costs if the exporting country provides a small share of the destination country's imports. Using the non-CES gravity model, this paper found that the distance puzzle to some extend has been solved while using the standard gravity model, the absolute distance coefficient is increasing. The results are the same despite the inclusion of conflict effect. In general, given that there is no significant difference in the absolute distance coefficients despite including the effects of conflicts, this shows that the distance puzzle is not present due to the omitted variables, in this case conflict effects. However, since the distance puzzle varnishes after using the translog gravity model it shows that the puzzle lies in the structure of the gravity model.

審査結果の要旨

This dissertation examines the effect of conflict, both interstate and intrastate, on trade volumes and trade costs. The econometric results are based on a global data set assembled by Simba of 106 countries over the span of 40 years.

第一章

Chapter 1 empirically analyzes the relationship between conflict (both *intra*state, i.e. civil war, etc. and *inter*state conflict) and international trade using a structural gravity model following Yotov (2012). Using year-by-year cross-country regressions, this paper also focuses on how the

[2] Published in Economic Inquiry.

distance variable, which proxies various trade costs, behaves over time. A global dataset from 1962 through 2001 is employed with 106 countries, resulting in yearly cross-sections of over 340,000 observations each. Unlike traditional gravity models, rather than regressing international trade flows on the distance between any two countries and other control variables, Simba follows Yotov and regresses international trade on both international distance and *internal* distance of the country. Internal distance is measured using the formula by Mayer and Zignago (2011). The main point of the Yotov model (similar to the seminal paper by Anderson and van Wincoop) is that international trade depends not only on distance between two countries, but that distance relative to distance (a proxy for trade costs) *within* the country. Simply put, we should expect Belgium to trade more with the foreign partners than say, the US does, because the US`s internal distance is larger (relative to international distances between countries.) Simba`s unique contribution is adding Conflict variables from the Correlates of War database. Other papers have examined conflict on trade, but not using the internal/international distance methods that are becoming popular is empirical trade. Likewise, Yotov did not explore the inclusion of conflict variables in his regressions. Simba finds that interstate trade reduced international trade by 61%, while internal conflict reduces (international) trade by 32%, or about half as much. As such, Simba results are new, interesting and very publishable. He is now preparing this chapter for submission to an international refereed journal.

第二章

This chapter studies the effect of conflict, both internal and international, on trade costs. A measure of *relative* trade costs developed by Novy (2013) is used which is based on a micro-model of trade both within and between countries. Like chapter one, it is important to examine the degree that international trade costs have changed *relative* to domestic (internal) costs. This paper is the first time that this new measure of trade costs has been regressed on conflict (internal and international) variables. The main findings are that international conflicts raise trade costs by 21% and internal conflicts raise trade costs by a mere 7%. This paper is also being prepared for submission to an internationally refereed journal and has already been presented at two conferences, one in Japan (JSIE, 2016) and once in the US (WEAI, 2016.)

第三章

The third chapter, again examines the effect of conflict and trade, this time using a *translog* gravity model also developed by Novy (2013). The advantage of the translog gravity is that it does not impose the restriction that the elasticity of substitution of goods must be the same across countries. Under certain assumptions, countries which do not export a large amount to a particular country may be more sensitive to distance and other trade costs than a country which exports a great deal. Using this specification, again Simba finds that conflict has a statistically significant and negative effect on trade. This is in contrast to the results Simba found when estimating the same set of data, again using import shares as the dependent variable, but with a *traditional*, non-translog specification. In the traditional estimates in repeated cross-sections, for many years, the conflict effect was insignificant. In the translog, however, the conflict is negative and significant in virtually all years of the 40+ year sample. This suggests that the more flexible translog is more appropriate. This third paper is also being prepared for submission to a journal.

以上のことから、本論文審査員一同は、本学府の博士号審査基準３に照らして、Mutsvangwa Simba 氏の学位請求論文 ”Essays on Conflict, International Trade and Trade Cost”が博士（経済学）の学位を授与するに値するものと判断する。