International Research Journal of Finance and Economics
ISSN 1450-2887 Issue 97 September, 2012

http://www.internationalresearchjournaloffinanceandeconomics.com

Determinants of Banking Liberalization: Evidence from Two Rounds of Negotiations on Trade in Services under the WTO

Ching-Yang Liang
Assistant Professor of Department of Finance and Taxation
Takming University of Science and Technology, Address: No. 56, Sec. 1, Huanshan Rd
Neihu District, Taipei City 11451, Taiwan (Republic of China)
E-mail: cyliang@takming.edu.tw
Tel: +886-2-2658-5801 ext. 5274

Abstract

This paper provides new empirical evidence on the determinants of a country's level of commitments in banking services under the WTO. The results show that European and Central Asian countries, higher per capita GDP, and higher government governance quality, entirely play a role in determining a higher liberalization level in banking services commitments, whereas Latin American and Caribbean countries, and countries with a bargaining coalition, altogether contribute to a lower liberalization level in banking services commitments.

Keywords: Banking services, liberalization, trade in services, WTO
JEL Classification Codes: F13, G21

1. Introduction

Analysis to the determinants of nations' trade policy or trade barriers is one of the attractive focuses on trade theory. Theoretical explanations turn to the theory of endogenous protection or the political-economy theory to determine trade protection.[1]. On the other hand, voluminous empirical work outlines the political-economy of trade protection.[2]These studies provide a valuable contribution to examining the political-economy role for implementing trade policy, taking account of trade in goods. In contrast to the extensive researches mentioned above, the question of what influences policy formation of trade in services has received scarce systematic attention. In the framework of the WTO, the negotiations on trade in services cover twelve sectors.[3] Among these sectors, the financial services

[1] Mayer (1984), Baldwin (1985), Hillman (1989), and Magee, Brock, and Young (1989) argued that, in response to increased import competition, private domestic interest groups will intensify their lobbying activity for protection, that is, a higher level of import penetration will lead to greater protection. In this regard, Rodrik (1995) and Magee (1997) have provided comprehensive surveys.

[2] Marvel and Ray (1983, 1987) and Ray (1981a, 1981b) investigated that protection structure across industries depends on the particular political and economic characteristics of each industry. See also Trefler (1993), Lee and Swagel (1997), Gawande (1998), and Gawande and Bandyopadhyay (2000).

[3] The classification of services established by the Group of Negotiations on Services (GNS) is as follows: (1) business services; (2) communication services; (3) construction and related engineering services; (4) distribution services; (5) educational services; (6) environmental services; (7) financial services; (8) health related and social services; (9) tourism and travel related services; (10) recreational, cultural and sporting services; (11) transport services; and (12) other services.

sector is the largest in the context of the *General Agreement on Trade in Services* (GATS). This services sector includes two major subsectors, the *insurance and insurance-related services* subsector, and the *banking and other financial services* subsector, a highly regulated industry in each country. This study attempts to explore empirically the determinants of liberalization of banking services under the WTO.

The GATS negotiations on trade in services have gone through two stages. The first stage started in 1994 and continued until 2000, whereas the second stage started in 2001 and extended through 2008. This paper investigates the determinants of trade liberalization in banking services under the WTO. Although there are few researches on the determinants of trade liberalization in banking services under the WTO, to the best of our knowledge, there is no empirical study merging two runs negotiations on trade in financial services under the WTO over the two periods 1994-2000 and 2001-2008. A novelty of this paper uses data that combines financial liberalization under the WTO over the two periods 1994-2000 and 2001-2008, which is the most comprehensive one.

The estimated results point out that European and Central Asian countries, an increase in per capita GDP, an increase in financial trade size, a decrease in corruption, an increase in legal system power, an increase in bureaucracy quality, and an increase in trade and financial policy freedom, altogether contribute to the greater degree of liberalization in banking services commitments. In contrast, Latin American and Caribbean countries, countries with membership in either the Cairns Group or the so-called MFA group, an increase in inflation rate volatility, and an increase in restricting bank's activities in nonfinancial firms, insurance, and real estate, entirely play a role in determining a lower level of banking services commitments.

The remainder of this paper is structured as follows. Section 2 provides a review of the literature. Section 3 introduces the methodology of measuring the liberalization index of banking services under the WTO. Section 4 outlines the econometric model. Section 5 describes the data sources. Section 6 provides the empirical findings. Finally, Section 7 concludes the paper.

2. Literature Review

Although potential contribution of liberalizing trade in financial services seems to be clear, Adlung and Roy (2005) concluded that only one-third of services sectors have been included in schedules of commitments in the Doha Round, and many entries have been combined with significant limitations on market access and national treatment or with the complete exclusion of particular types of transactions. Besides, relatively few researches have examined what determines the implementation of trade policy in financial services. Harms, Mattoo, and Schuknecht (2003, thereafter HMS) suggested that the chance of receiving larger gains from future multi-sector negotiations may induce countries to not open their current non-interest export industry. However, existing protectionist barriers abroad would not in be a sufficient argument for a small country to maintain its own protection as a bargaining chip for future negotiations. Hoekman and Kostecki (2001) claimed that constituting a bargaining coalition by small countries would be a successful way for them to increase negotiating leverage. The Cairns Group and the countries facing quantitative restrictions on their textiles/clothing exports under the MFA have been successful coalitions in the WTO. HMS (2003) found that these countries indeed have lower liberalization level.

Valckx (2004) found that Latin American and Caribbean countries prefer a lower degree of liberalization in banking services. Wang, Shen, and Liang (2008, thereafter WSL) displayed that Latin American and Caribbean countries commit to the lowest liberalization level in banking services, whereas European and Central Asian countries commit to the highest liberalization level. In addition, Valckx (2004) found that countries with higher per capita GDP tend to enact more liberal commitments. As described in WSL (2008), higher income countries seem to commit to a higher liberalization level, while lower income countries commit to a lower liberalization level. Barth, Marchetti, Nolle, and Sawangngoenyuang (2010) also observed that developed countries take a more open stance under the WTO than do developing countries.

Egger and Lanz (2008) did not focus on a single sector but investigate the determinants of coverage ratio of commitments in all sectors on mode 3 and mode 1. Their study manifests the first attempt to explain the overall level of commitments under the GATS. Their result suggested that large and rich countries, countries that were involved in free trade agreements prior to the GATS, and countries with their trading partners engaging in extensive service liberalization are more inclined to liberalize services than other countries. Based on the work of Egger and Lanz (2008), Roy (2010) also investigated countries' varying levels of market access commitments under the GATS. The finding indicated that countries better endowed with human capital, countries with greater level of democratization, countries that have acceded to the WTO after the Uruguay Round, and countries with greater relative power generally undertake more GATS commitments.

Although Harms, Mattoo and Schuknecht (2003), Valckx (2004), Egger and Lanz (2008), and Roy (2010) analyzed the determinants of liberalization of banking services, these works used data for the WTO commitments in the first stage. A novelty of this paper uses data that combines financial liberalization under the WTO over the two periods 1994-2000 and 2001-2008, which is the most comprehensive one.

3. Measurement of Liberalization

A seminal study to assess the degree of liberalization of trade in services is provided by Hoekman (1995, 1996). This work used three numerical indicators to quantify commitments into three categories: 1 in all instances where *none* is stated; 0.5 in all instances where *bound* is stated; 0 in all instances where *unbound* is stated. The higher the number is, the greater the degree of liberalization of trade in services is. Hoekman (1995, 1996) also argued that scaling *unbound* as 0, and scaling *bound* as 0.5 reflects a perception that scheduling and binding has value, no matter how restrictive the policies that are maintained. Mattoo (1998, 2000) constructed a financial liberalization index of commitments using a specific weighting scheme based on U.S. data, to consider the importance of different modes of supply. Mattoo adopted a slightly more sophisticated approach, based on first recognizing the most restrictive measures in a particular mode of supply or activity, and then applying a value according to an a prior assessment of its restrictiveness, regardless of other less restrictive measures. Qian (2000) and Valckx (2002) utilized the same method suggested by Mattoo (1998, 2000).

On the other hand, other researchers have presented the level of financial liberalization in a slightly distinct way. Kono, Low, Luanga, Mattoo, Oshikawa, and Schuknecht (1997), and Sorsa (1997) displayed summary tables identifying which restrictive measures apply in each country. WTO (1998) exhibited a summary list indicating which countries make commitments in financial services. Adlung and Roy (2005) provided an overview of specific commitments under the GATS in the Doha Round. Appendix 1 gives a detailed description of the WTO commitments.

The liberalization index of banking services in this study is measured according to activities listed in the *Annex on Financial Services*, which classifies twelve activities into the *banking and other financial services* subsector.[4] Hoekman's (1995, 1996) method advantageously contains all activities,

[4] Twelve activities are as follows: (1) Acceptance of deposits and other repayable funds from the public; (2) Lending of all types, including consumer credit, mortgage credit, factoring and financing of commercial transaction; (3) Financial leasing; (4) All payment and money transmission services, including credit, charge and debit cards, travellers cheques and bankers drafts; (5) Guarantees and commitments (6) Trading for own account or for account of customers, whether on an exchange, in an over-the-counter market or otherwise, the following: (i) money market instruments (including cheques, bills, certificates of deposits), (ii) foreign exchange, (iii) derivative products including, but not limited to, futures and options, (iv) exchange rate and interest rate instruments, including products such as swaps, forward rate agreements, (v) transferable securities, (vi) other negotiable instruments and financial assets, including bullion; (7) Participation in issues of all kinds of securities, including underwriting and placement as agent (whether publicly or privately) and provision of services related to such issues; (8) Money broking; (9) Asset management, such as cash or portfolio management, all

all types of limitations, and all modes of supply, but loses information from different degrees of limitations. By contrast, Mattoo's (1998, 2000) method advantageously captures information from different degrees of limitations, but only covers partial activities, partial types of limitations, and partial modes of supply. The measure of liberalizing content of the WTO commitments on banking services originates from WSL (2008). This work commenced to reform the previously produced financial liberalization index in three respects. First, and most importantly, their measurement attempted to score different degrees of liberalization in partial commitments further on mode 1 to mode 3 using the methodology proposed by WTO (2005). Second, their evaluation covered four modes of supply on trade in services and all the activities listed in the *Annex on Financial Services*. Finally, their calculation distributed weights to four modes of supply by following Mattoo's (1998, 2000) method. To sum up, WSL's (2008) methodology endeavors to merge both advantages, and wipes out the disadvantages.

4. Econometric Model

This section is concerned chiefly with whether there are any methodical elements that may have influenced the commitments of banking services submitted by the WTO members during the two rounds of negotiations, 1994-2000 and 2001-2008.

The model is specified as follows.

$$COMMIT\_BANK_{it} = \alpha + \mathbf{X}'_{it}\boldsymbol{\beta} + \varepsilon_{it}, \tag{1}$$

where i and t denote the ith country at time t, *COMMIT_BANK* is the dependent variable, **X** represents the vector of independent variables, and ε is an error term. *COMMIT_BANK* is the liberalization index of banking services defined in Section 3. **X** comprises nine types of variables, which are bargaining coalition, region, income, financial trade orientation, financial market depth, macroeconomic environment, governance, policy freedom, and regulatory restriction.

Bargain Coalition: The group of bargaining coalition, *BARGAIN*, is a dummy variable and equal to 1 if a country holds membership in one of the two bargaining coalitions: the Cairns Group,[5] and their textile/clothing exports are constrained by quantitative restrictions under the *Multi-Fibre Agreement* (MFA).[6]

The Cairns Group accounts for over 25 per cent of the world's agricultural exports, and is engaged in achieving free and fair trade in agriculture that provides real and sustainable benefits for the developing world. The Cairns Group successfully forced agriculture onto the agenda of the Uruguay Round, eventually leading to the *Agreement on Agriculture*. The Cairns Group also negotiated effectively during the Doha Round to reach agreement on the *Framework on Agriculture* that will guide the final phase of agriculture negotiations.

The MFA was established in 1974 as a temporary measure to provide developed countries with time and space to adapt to the increasing competition from developing countries in the importation of textiles and clothing. The MFA developed restraint mechanisms through establishing quota restrictions

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forms of collective investment management, pension fund management, custodial, depository and trust services; (10) Settlement and clearing services for financial assets, including securities, derivative products, and other negotiable instruments; (11) Provision and transfer of financial information, and financial data processing and related software by suppliers of other financial services; (12) Advisory, intermediation and other auxiliary financial services on all the activities listed in (1) through (11), including credit reference and analysis, investment and portfolio research and advice, advice on acquisitions and on corporate restructuring and strategy.

[5] In alphabetical order, Cairns Group is composed of Argentina, Australia, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Guatemala, Indonesia, Malaysia, New Zealand, Pakistan, Paraguay, Peru, the Philippines, South Africa, Thailand, and Uruguay.

[6] In alphabetical order, the countries experienced their textiles/clothing exports constrained by MFA is composed of Bahrain, Brazil, Bulgaria, Colombia, Costa Rica, Czech Republic, Dominican Republic, Egypt, El Salvador, Haiti, Hong Kong, Hungary, India, Indonesia, Jamaica, Kenya, Korea, Kuwait, Macao, Malaysia, Mauritius, Mexico, Pakistan, the Philippines, Poland, Romania, Singapore, Slovak Republic, Sri Lanka, Turkey, and Uruguay.

on specific textiles and clothing items. One of the major accomplishments of the Uruguay Round was the *Agreement on Textiles and Clothing* (ATC) which replaced the MFA and set out a process to integrate trade in textiles and clothing into the framework of GATT.[7]

Grossman and Helpman (1995) suggested that an opportunity to exchange concessions across industries in the next bargaining round might induce a country to keep current protection. HMS (2003) claimed that countries with high protection in their areas of export interest and sufficient negotiating leverage have the incentives to forego current gains for receiving larger future gains in the multi-sector negotiations. Using the data estimated by Finger and Schuknecht (2001),[8] HMS (2003) detected that agriculture and textiles/clothing sector faced a particularly high level of protection. Nevertheless, a small country that maintains its own protection for their non-interest industry would not be a sufficient bargaining chip for future negotiations. Hoekman and Kostecki (2001) contended that successfully forming coalitions by small countries could be an effective way to increase negotiating leverage. The Cairns Group and the countries facing quantitative restrictions on their textiles/clothing exports under the MFA were the attractively successful coalitions in the WTO. HMS (2003) used a dummy variable to proxy this consideration, and found that these countries commit to less liberalization. This paper also expects that the group of bargaining coalition have negative effect on the liberalization index.

Region: The regional dummy consists of two variables, *EUROPE* and *LATIN*, where *EUROPE* is a dummy variable, and equal to 1 if it is a European and Central Asian country and zero otherwise; *LATIN* denotes the dummy of a Latin American and Caribbean country. Valckx (2004) found that Latin American and Caribbean countries agree on less liberal commitments. Furthermore, as described in WSL (2008), European and Central Asian countries have the highest liberalization level in banking services, whereas Latin American and Caribbean countries have the lowest liberalization level in banking services. This paper expects that the European and Central Asian dummy to be positively correlated with the liberalization index, while the contrary holds for the Latin American and Caribbean dummy.

Income: The wealth of countries is proxied by *LOGPCGDP*, which is the logarithm of per capita GDP. Valckx (2004) found that countries with higher per capita GDP choose a greater degree of liberalization. In addition, as displayed in WSL (2008), the liberalization level positively relates to income level to a certain extent, that is, higher income countries tend to have a higher liberalization level, while lower income countries seem to have a lower liberalization level. This paper expects that the higher the income level in per capita GDP, the higher the liberalization index.

Financial Trade Orientation: The magnitude of financial services trade orientation is proxied by *FIN_SIZE*, which is the sum of exports and imports of insurance and financial services as a share of the world's volume. The coverage of insurance and financial services is based on the fifth edition of the *Balance of Payments Manual*.[9][10]

HMS (2003) proposed that trade openness, which is exports and imports as a share of GDP, may account for the possibility that trade-oriented countries in general are more interested in financial services liberalization, whereas their results are insignificant. Besides, the correlation coefficient between trade liberalization in banking services and financial services trade size (0.323) is higher than

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[7] The MFA restrictions were phased out over a 10-year period and were scheduled to end in January 2005. The MFA phase-out comprises two parts: a four-stage process eliminating export restraints, and an increase in quota growth rates for products still under restriction during the transition period.

[8] After the Uruguay Round, the average tariff rates for all WTO members on agricultural products were 14 percent and 10 percent on textiles/clothing, compared to 4 percent for all other manufactures.

[9] Insurance services contains the provision of insurance to nonresidents by resident insurance enterprises, and vice versa. Such services cover freight insurance, other types of direct insurance, reinsurance, and agent commissions related to insurance transactions.

[10] Financial services consists of financial intermediary and auxiliary services (except those of insurance enterprises and pension funds) conducted between residents and nonresidents. Such services include intermediary service fees, commissions and other fees related to transactions in securities, commissions of commodity futures traders, and services related to asset management, financial market operational and regulatory services, security custody services, etc.

financial services trade openness (0.114). For instance, the highest ratio of the financial services trade size over 1994-2008 is found in the United States (17.266%), while the lowest ratio is in Suriname (0.002%). However, the ratio of financial services trade openness for the United States and Suriname are 0.345% and 0.341%. Accordingly, this paper suggests that *FIN_SIZE* may be a better proxy for a country's magnitude of financial services trade orientation, and expect that the higher the financial services trade size, the higher the liberalization index.

Financial Market Depth: Financial market depth comprises development of banking sector and capital sector. Banking development variable (or referred to as the depth of the banking industry) is proxied by *LENDING*, which is the ratio of claims on the private sector by banks to GDP.[11][12] Stock market development variable (or referred to as the depth of the equity market) is proxied by *STOCKTRA*, which is the ratio of total stock traded value to GDP.[13][14]

HMS (2003) found that banking development is positively correlated with liberalization index, while Valckx's (2004) finding was ambiguous. Countries with underdeveloped financial markets may be prone to introduce foreign financial institutions through foreign direct investment (mode 3) to help develop their domestic financial sectors, while countries with well developed financial markets may be willing to make it convenient for domestic residents and firms to contact foreign cross-border services (mode 1 and mode 2). However, Demirgüç-Kunt and Detragiache (2001) found that financial liberalization has a very large and statistically significant effect on the probability of banking crisis. Tornell, Westermann, and Martinez (2004) showed that financial liberalization leads to more rapid growth by accelerating financial deepening and easing financial constraints, but also to financial fragility and credit risk by lifting restrictions. The relationship between financial development and liberalization index may be blurred. Therefore, this paper has no hypothesis on the sign of this coefficient.

Macroeconomic Environment: Volatility of the macroeconomic environment is proxied by *STDINFLA*, which is the standard deviation of inflation rate. HMS (2003) found a negative relationship between inflation and liberalization index, whereas Valckx (2004) found a positive relationship in a large sample.

Governance: Government governance contains three variables. First, corruption, *CORRUPTION*, assesses corruption within the political system. Law and order, *LAW_ORDER*, assesses the strength and impartiality of the legal system, as well as the popular observance of the law. The preceding two variables range from 0 to 6, with a higher value indicating lower political risk. Finally, bureaucracy quality, *BUREAUCRACY*, measures the extent to which bureaucracy has the strength and expertise to govern a country. The variable ranges from 0 to 4, with a higher value indicating lower political risk. HMS (2003) and Valckx (2004) found that regulation quality is positively correlated with liberalization.

Policy Freedom: The condition of policy freedom encompasses two variables. Trade freedom, *TRADE_FREE*, estimates the degree to which government hinders access to and the free flow of foreign commerce. Financial freedom, *FIN_FREE*, gauges the relative openness of each country's banking and financial system. These two indices are graded from 0 to 100, with a higher number denoting more freedom.

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[11] Levine and Zervos (1998) proposed that claims on the private sector by banks to GDP improve traditional financial depth measures of banking development both by isolating the credit issued by banks, as opposed to the credit issued by the central bank or other financial intermediaries, and by indentifying credit to the private sector, as opposed to the credit issued to government.

[12] De Gregorio and Guidotti (1995), Levine and Zervos (1998), and Shen and Lee (2006) have used *LENDING* to proxy the depth of banking industry.

[13] Demirgüç-Kunt and Levine (1996b) indicated that *STOCKTRA* generally be referred to the ability to easily buy and sell securities, that is, a measure of liquidity.

[14] Demirgüç-Kunt and Levine (1996a), and Levine and Zervos (1998), Rousseau and Wachtel (2000), and Shen and Lee(2006) have used these variables as proxies for the depth of stock market.

Regulatory Restriction: The condition of regulatory restriction on banking activities consists of three variables. *RESTRI_NF* measures the extent to which banks may own and control nonfinancial firms. *RESTRI_I* measures the extent to which banks may engage in insurance underwriting and selling. *RESTRI_R* measures the extent to which banks may engage in real estate investment, development, and management. The three indices described above are the regulatory restrictiveness for banks' activities, ranging from 1 to 4, where 1 represents that activities is unrestricted, 2 is permitted, 3 is restricted, and 4 is prohibited.

HMS (2003) claimed that the liberalization level may associate with governance quality and macroeconomic stability, however, the relationship is not unambiguous, depending on whether a government treats financial liberalization as an "antidote" or "toxicant" to other policies. This paper, then, does not imply any hypothesis on the effect of macroeconomic environment, governance, policy freedom, and regulatory restriction.

5. Data Sources

The data in this paper is taken from various sources. The dependent variable, *COMMIT_BANK*, is taken from WSL (2008). Macro variables, *LOGPCGDP*, *FIN_SIZE*, and *STDINFLA*, and geographic regions, *EUROPE* and *LATIN*, are taken from the *World Development Indicators* (WDI) published by the World Bank.[15] The financial market development variables, *LENDING* and *STOCKTRA*, are taken from Beck, Demirgüç-Kunt, and Levine (2000). Concerning the government governance variable, *CORRUPTION*, *LAW_ORDER*, and *BUREAUCRACY* are taken from the *International Country Risk Guide* (ICRG) published by the Political Risk Services. The policy freedom variables, *TRADE_FREE* and *FIN_FREE*, are taken from the Heritage Foundation. The banking restriction variables, *RESTRI_NF*, *RESTRI_I*, and *RESTRI_R*, are taken from Barth, Caprio, and Levine (2006). See Table 1 for the definitions and sources of the variables.

Sample selection is founded on those WTO members that have submitted updated schedules of commitments during the second round of negotiations, regardless of those members that have submitted schedules during the first round, but not during the second round. Although liberalization indices in WSL (2008) include ninety-five countries, it may be difficult to collect the corresponding explanatory variables. Therefore, the maximum feasible sample is seventy-five countries according to the variables contained in the regression. Besides, the sample covers the negotiations on trade in services under the WTO over the period 1994-2000 and 2001-2008.

The seventy-five sample countries consists of 12 countries in East Asia and Pacific, 30 countries in Europe and Central Asia, 17 countries in Latin America and Caribbean, 8 countries in Middle East and North Africa, 2 countries in North America, 3 countries in South Asia, and 3 countries in Sub-Saharan Africa.[16] By the classification of income group, the sample encompasses 23 high income OECD countries, 7 high income non-OECD countries, 19 upper-middle income countries, 23 low-middle income countries, and 3 low income countries.[17]

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[15] The trade data originates from the *Balance of Payments Statistics*, published by the International Monetary Fund

[16] In alphabetical order, East Asian and Pacific countries are Australia, China, Fiji, Hong Kong, Indonesia, Japan, Korea, Malaysia, New Zealand, the Philippines, Singapore, and Thailand; European and Central Asian countries are Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Macedonia, the Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom; Latin American and Caribbean are Argentina, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, El Salvador, Guatemala, Guyana, Jamaica, Mexico, Panama, Paraguay, Peru, Trinidad and Tobago, and Uruguay; Middle Eastern and North African countries are Bahrain, Egypt, Israel, Jordan, Malta, Morocco, Oman, and Tunisia; North American countries are Canada and the United States; South Asian countries are India, Pakistan, and Sri Lanka; Sub-Saharan African countries are Kenya, Mauritius, and South Africa.

[17] In alphabetical order, High income OECD countries are Australia, Austria, Belgium, Canada, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States; High income non-OECD countries are Bahrain,

6. Empirical Results

The estimated results from Table 1 to Table 5 use the ordinary least square method (OLS). Table 1 presents the estimated result of Equation (1) when taking the effect of bargaining coalition into account exclusively. The coefficients of *BARGAIN* are found overwhelmingly significantly negative regardless of specification, suggesting that countries with membership in either the Cairns Group or the so-called MFA group tend to show a lower liberalization level in banking services. Therefore, the chance of receiving larger gains from multi-sector negotiations in the future induces the Cairns Group members and countries whose textiles/clothing exports are constrained by quotas under the MFA to protect their non-interest export industry. That is, those countries agree on less liberal commitments in banking services for the present. Results of this study are consistent with the empirical findings in HMS (2003) who found that these countries commit to less liberalization.

The coefficients of *FIN_SIZE* are significantly positive for five out of the eight specifications. This reflects that countries with higher financial trade volume relative to the world's are willing to liberalize banking services. The coefficients of financial development, *LENDING* and *STOCKTRA*, are all statistically insignificant, indicating that increasing lending to the private sector and stock traded value do not encourage countries to engage more in the liberalization process in banking services. Besides, the impact of financial development is small. The coefficients of *STDINFLA* are significantly negative for four out of the eight specifications. The significantly negative coefficients imply that the standard deviation of inflation rate has a negative effect on approval to a greater degree of liberalization in banking services. However, the effect of macroeconomic environment volatility is tiny.

Table 1: Determinants of the Liberalization Index of Banking Services: I

Independent Variables	1	2	3	4	5	6	7	8
Constant	0.390* (4.647)	0.288* (2.788)	0.280* (2.980)	0.035 (0.252)	0.344* (4.421)	0.821* (10.079)	0.769* (8.802)	0.792* (9.295)
Bargain	-0.134* (-2.869)	-0.105** (-2.111)	-0.126* (-2.706)	-0.117* (-2.627)	-0.118** (-2.473)	-0.135* (-3.236)	-0.163* (-3.840)	-0.121* (-2.810)
Fin_Size	0.011*** (1.940)	0.009 (1.531)	0.006 (0.988)	0.013** (2.165)	0.011*** (1.667)	0.011** (2.303)	0.009 (1.551)	0.009** (2.033)
Lending	0.001 (1.126)	0.000 (0.523)	0.000 (0.400)	0.001 (1.600)	0.001 (1.641)	0.001 (1.526)	0.001 (1.231)	0.001 (0.932)
Stocktra	-0.000 (-0.434)	-0.000 (-0.138)	-0.000 (-0.467)	-0.000 (-0.397)	0.000 (0.066)	-0.000 (-0.675)	-0.000 (-0.118)	-0.000 (-0.160)
Stdinfla	-0.000*** (-1.718)	-0.000 (-0.659)	-0.000*** (-1.657)	0.000 (0.202)	-0.000 (-0.895)	-0.000 (-1.254)	-0.000*** (-1.659)	-0.000** (-2.148)
Corruption	0.051* (2.934)							
Law_Order		0.064* (3.266)						
Bureaucracy			0.108* (3.589)					
Trade_Free				0.007* (3.748)				
Fin_Free					0.003** (1.998)			
Restri_Nf						-0.102* (-4.564)		

Cyprus, Hong Kong, Israel, Malta, Singapore, and Slovenia; Upper-middle income countries are Argentina, Barbados, Chile, Costa Rica, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malaysia, Mauritius, Mexico, Oman, Panama, Poland, Slovak Republic, Trinidad and Tobago, and Uruguay; Low-middle income countries are Bolivia, Brazil, Bulgaria, China, Colombia, Egypt, El Salvador, Fiji, Guatemala, Guyana, Indonesia, Jamaica, Jordan, Macedonia, Morocco, Paraguay, Peru, the Philippines, South Africa, Sri Lanka, Thailand, Tunisia, and Turkey; Low income countries are India, Kenya, and Pakistan.

Table 1: Determinants of the Liberalization Index of Banking Services: I - continued

Restri_I							-0.072* (-3.056)	
Restri_R								-0.079* (-4.038)
R^2	0.250	0.269	0.277	0.250	0.202	0.284	0.234	0.279
Obs.	138	138	138	145	145	132	133	133

***Notes*:** t-values are in parentheses; *, **, and *** denote significance at the 1%, 5%, and 10% levels, respectively.

The coefficients of government governance, *CORRUPTION*, *LAW_ORDER*, and *BUREAUCRACY*, are all significantly positive. These imply that a lower degree of corruption, a more powerful legal system, and a higher bureaucracy quality stimulate countries to implement higher commitments in banking services. The coefficients of policy freedom, *TRADE_FREE* and *FIN_FREE* are all significantly positive. These mean that countries whose trade and financial policy are less restricted to impediments incline to assume more liberal commitments in banking services. The coefficients of bank's activities restrictiveness, *RESTRI_NF*, *RESTRI_I*, and *RESTRI_R*, are all significantly negative. These suggest that countries whose banks are restricted to participate in nonfinancial firms, insurance, and real estate are accustomed to assume a smaller degree of liberalization in banking services. As suggested by HMS (2003), our results imply that a government treats financial liberalization as an "antidote" to government governance, policy freedom, and regulatory restriction. Our results are consistent with the empirical findings in HMS (2003) and Valckx (2004) who found that regulation quality positively correlates with liberalization.

Table 2 reports the estimated result of Equation (1) when considering the effect of region exclusively. The coefficients of *EUROPE* are found overwhelmingly significantly positive regardless of specification, indicating that European and Central Asian countries tend to adopt higher commitment levels in banking services. The coefficients of *LATIN* are found overwhelmingly significantly negative regardless of specification, reflecting that Latin American and Caribbean countries incline to choose commitments that are more limited in banking services. Our results are consistent with the empirical findings in Valckx (2004), who found that Latin American and Caribbean countries agree on less liberal commitments, and with WSL's (2008) findings, which found that European and Central Asian countries have the highest level of liberalization in banking services, whereas Latin American and Caribbean countries have the lowest level of liberalization in banking services. The results of other explanatory variables accord with the results displayed in Table 1, though they are not always statistically significant.

Table 3 describes the estimated result of Equation (1) when taking the effect of income into consideration exclusively. The coefficients of *LOGPCGDP* are overwhelmingly significantly positive regardless of specification, meaning that higher per capita GDP seems to stimulate countries to implement higher commitments in banking services. Our results are consistent with the empirical findings in Valckx (2004), who found that countries with higher per capita GDP choose a greater degree of liberalization, and with WSL's (2008) findings, which found that higher income countries have a higher liberalization level, while lower income countries have a lower liberalization level. The results of other explanatory variables are nearly correspondent with the results illustrated in Table 1 and Table 2, though they do not always emerge with significant coefficients.

Table 2: Determinants of the Liberalization Index of Banking Services: II

Independent Variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Constant	0.384* (7.083)	0.370* (4.693)	0.344* (4.476)	0.143 (1.419)	0.294* (4.271)	0.581* (6.997)	0.516* (6.455)	0.532* (6.350)
Europe	0.254* (6.230)	0.257* (6.432)	0.248* (6.266)	0.239* (5.986)	0.262* (6.966)	0.224* (5.741)	0.250* (6.586)	0.230* (5.833)

Table 2: Determinants of the Liberalization Index of Banking Services: II - continued

Latin	-0.121** (-2.152)	-0.110*** (-1.827)	-0.114** (-1.993)	-0.152** (-2.503)	-0.141* (-2.600)	-0.117** (-2.005)	-0.115*** (-1.886)	0.111***- (-1.823)
Fin_size	0.013* (4.165)	0.013* (3.913)	0.012* (3.286)	0.013* (4.123)	0.011* (3.189)	0.013* (4.186)	0.012* (3.667)	0.012* (4.030)
Lending	0.001 (1.432)	0.001 (1.321)	0.001 (1.152)	0.001 (1.318)	0.001 (1.404)	0.001 (1.560)	0.001 (1.460)	0.001 (1.213)
Stocktra	-0.000 (-0.920)	-0.000 (-0.803)	-0.000 (-0.950)	-0.001 (-1.131)	-0.000 (-0.742)	-0.001 (-1.318)	-0.000 (-0.944)	-0.000 (-0.878)
Stdinfla	-0.000 (-0.627)	-0.000 (-0.594)	-0.000 (-0.637)	-0.000 (-0.175)	-0.000 (-0.353)	-0.000 (-0.619)	-0.000 (-0.802)	-0.000 (-0.726)
Corruption	0.009 (0.541)							
Law_order		0.010 (0.529)						
Bureaucracy			0.028 (0.945)					
Trade_free				0.004** (2.533)				
Fin_free					0.002*** (1.789)			
Restri_nf						-0.058** (-2.488)		
Restri_i							-0.036*** (-1.743)	
Restri_r								-0.035*** (-1.826)
R^2 Obs.	0.456 138	0.456 138	0.459 138	0.481 145	0.471 145	0.459 132	0.444 133	0.447 133

***Notes*:** t-values are in parentheses; *, **, and *** denote significance at the 1%, 5%, and 10% levels, respectively.

This study further divides the sample into two periods, 1994-2000 and 2001-2008, which are the two runs negotiations on trade in financial services under the WTO. This work reports only those results where government governance is proxied by *CORRUPTION*, where policy freedom is proxied by *TRADE_FREE*, and regulatory restriction is proxied by *RESTRI_NF*.

Table 3: Determinants of the Liberalization Index of Banking Services: III

Independent Variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Constant	-0.272*** (-1.958)	-0.275** (-2.040)	-0.238*** (-1.739)	-0.373* (-2.763)	-0.323** (-2.366)	0.062 (0.379)	-0.131 (-0.836)	0.059 (0.381)
Logpcgdp	0.081* (3.563)	0.068* (3.201)	0.067* (2.721)	0.069* (3.050)	0.087* (4.965)	0.084* (4.618)	0.092* (5.379)	0.080* (4.763)
Fin_Size	0.010*** (1.758)	0.008 (1.381)	0.008 (1.351)	0.012** (2.018)	0.009 (1.561)	0.008** (2.062)	0.007 (1.294)	0.006 (1.494)
Lending	0.001 (0.896)	0.000 (0.297)	0.000 (0.646)	0.001 (1.282)	0.001 (1.043)	0.001 (0.723)	0.000 (0.632)	0.000 (0.227)
Stocktra	-0.001 (-1.406)	-0.001 (-1.072)	-0.001 (-1.370)	-0.001 (-1.102)	-0.000 (-0.933)	-0.001*** (-1.947)	-0.001 (-1.313)	-0.001 (-1.231)
Stdinfla	-0.000* (-2.790)	-0.000 (-1.344)	-0.000** (-2.485)	-0.000 (-1.119)	-0.000*** (-1.824)	-0.000*** (-1.934)	-0.000*** (-1.922)	-0.000* (-2.717)
Corruption	0.025 (1.104)							
Law_Order		0.051** (2.418)						
Bureaucracy			0.064 (1.557)					
Trade_Free				0.004 (1.468)				

Table 3: Determinants of the Liberalization Index of Banking Services: III - continuied

Fin_Free					0.001 (0.790)			
Restri_Nf						-0.099* (-4.406)		
Restri_I							-0.046*** (-1.918)	
Restri_R								-0.070* (-3.734)
R^2 Obs.	0.261 138	0.284 138	0.268 138	0.252 145	0.241 145	0.313 132	0.255 133	0.307 133

***Notes*:** t-values are in parentheses; *, **, and *** denote significance at the 1%, 5%, and 10% levels, respectively.

Table 4 presents the estimated result of Equation (1) over the period of 1994-2000. The estimated results show that the coefficients of *BARGAIN* remain significantly negative in specification 1-3. As reported in specification 4-6, the coefficients of *EUROPE* remain significantly positive, however, the coefficients of *LATIN* are found statistically insignificantly negative. In specification 7-9, it is noted that the coefficients of *LOGPCGDP* remain significantly positive. The results of other explanatory variables are in line with the results displayed in Table 1 to Table 3, though they are not always statistically significant.

Table 4: Determinants of the Liberalization Index of Banking Services over 1994-2000

Independent Variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Constant	0.333** (2.381)	0.011 (0.058)	0.831* (6.832)	0.380* (4.172)	0.097 (0.736)	0.587* (4.785)	-0.229 (-1.225)	-0.357** (-1.964)	0.042 (0.183)
Bargain	-0.127** (-1.980)	-0.119** (-1.979)	-0.152* (-2.585)						
Europe				0.258* (4.372)	0.225* (3.857)	0.227* (4.024)			
Latin				-0.082 (-1.009)	-0.128 (-1.449)	-0.088 (-0.929)			
Logpcgdp							0.073** (2.204)	0.059** (1.966)	0.088* (3.449)
Fin_size	0.017** (2.071)	0.018** (2.099)	0.011 (1.361)	0.015* (2.844)	0.016* (2.907)	0.012** (2.050)	0.014*** (1.693)	0.016*** (1.929)	0.005 (0.798)
Lending	0.001 (0.481)	0.001 (0.821)	0.001 (0.546)	0.001 (1.013)	0.001 (0.866)	0.001 (0.900)	0.000 (0.375)	0.001 (0.683)	0.000 (0.100)
Stocktra	-0.000 (-0.421)	-0.000 (-0.285)	0.000 (0.146)	-0.000 (-0.384)	-0.001 (-0.747)	-0.000 (-0.353)	-0.001 (-1.000)	-0.001 (-0.777)	-0.001 (-0.677)
Stdinfla	-0.000 (-1.106)	0.000 (0.152)	-0.000 (-1.116)	-0.000 (-0.699)	-0.000 (-0.176)	-0.000 (-0.657)	-0.000** (-2.244)	-0.000 (-0.916)	-0.000*** (-1.917)
Corruption	0.061** (2.038)			0.002 (0.085)			0.031 (0.830)		
Trade_Free		0.007* (3.042)			0.005** (2.165)			0.005 (1.505)	
Restri_Nf			-0.099* (-2.729)			-0.066*** (-1.868)			-0.097* (-3.072)
R^2 Obs.	0.258 68	0.272 71	0.270 62	0.429 68	0.466 71	0.430 62	0.258 68	0.264 71	0.294 62

***Notes*:** t-values are in parentheses; *, **, and *** denote significance at the 1%, 5%, and 10% levels, respectively.

Table 5 describes the estimated result of Equation (1) over the period of 2001-2008. The estimated results reveal that *BARGAIN*, *EUROPE*, *LATIN*, and *LOGPCGDP* remain statistically significant, and emerge with the expected sign. The results of other explanatory variables approximately correspond with the results illustrated in Table 1 and Table 4, though they do not always emerge with significant coefficients.

Table 5: Determinants of the Liberalization Index of Banking Services over 2001-2008

Independent Variables	1	2	3	4	5	6	7	8	9
Constant	0.296** (2.515)	0.025 (0.121)	0.756* (6.524)	0.310* (3.668)	0.164 (1.125)	0.540* (4.591)	-0.412*** (-1.743)	-0.477** (-2.174)	-0.068 (-0.264)
Bargain	-0.148** (-2.120)	-0.126*** (-1.844)	-0.130** (-2.035)						
Europe				0.232* (4.088)	0.250* (4.506)	0.221* (4.143)			
Latin				-0.173** (-2.222)	-0.178** (-2.147)	-0.140*** (-1.918)			
Logpcgdp							0.085** (2.432)	0.091** (2.559)	0.089* (3.396)
Fin_size	0.010 (1.418)	0.012 (1.627)	0.015** (2.379)	0.013* (3.321)	0.014* (3.551)	0.016* (3.989)	0.010 (1.556)	0.011 (1.561)	0.013* (2.690)
Lending	0.001 (1.078)	0.002*** (1.786)	0.002** (2.115)	0.001 (0.809)	0.001 (1.204)	0.001 (1.545)	0.001 (1.275)	0.001 (1.531)	0.001 (1.440)
Stocktra	-0.000 (-0.756)	-0.000 (-0.416)	-0.001 (-1.301)	-0.001 (-1.319)	-0.001 (-1.043)	-0.001 (-1.486)	-0.001 (-1.452)	-0.001 (-1.060)	-0.001** (-2.315)
Stdinfla	0.020*** (1.916)	0.017 (1.462)	0.020** (2.355)	0.012 (1.447)	0.011 (1.342)	0.013*** (1.674)	0.020** (2.183)	0.019*** (1.849)	0.022* (3.456)
Corruption	0.074* (3.280)			0.041*** (1.689)			0.036 (1.103)		
Trade_Free		0.006** (2.278)			0.003 (1.394)			0.001 (0.371)	
Restri_Nf			-0.112* (-3.773)			-0.056*** (-1.850)			-0.103* (-3.158)
R^2	0.293	0.248	0.328	0.506	0.507	0.499	0.295	0.265	0.366
Obs.	70	74	70	70	74	70	70	74	70

Notes: t-values are in parentheses; *, **, and *** denote significance at the 1%, 5%, and 10% levels, respectively.

7. Conclusions

This paper provides new empirical evidence on the determinants of a country's level of commitments in banking services under the WTO. The following summarizes our empirical results in five respects. First, countries with membership in either the Cairns Group or the so-called MFA group tend to show a lower liberalization level in banking services. Second, European and Central Asian countries tend to adopt higher commitment levels in banking services, whereas Latin American and Caribbean countries incline to choose more limited commitments in banking services. Third, higher per capita GDP seems to stimulate countries to implement higher commitments in banking services. Fourth, higher financial trade size, lower degree of corruption, more powerful legal system, higher quality of bureaucracy, and more liberal trade and financial policy play a role in the determination of a higher liberalization level in banking services commitments. Finally, higher inflation rate volatility, and more restrictive bank's activities in nonfinancial firms, insurance, and real estate contribute to the explanation of a lower level of banking services commitments.

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Appendix 1

The WTO schedules of commitments contains two types of commitments, *horizontal* and *specific* commitments, where the former denotes a given set of restrictions pertaining to a specific sector, and the latter denotes a given set of restrictions that apply across the sectors. As suggested by Hoekman (1995, 1996), the *specific* commitments largely determine the effect of the WTO commitments. The kernel of the WTO schedules of commitments is related to the *specific* commitments that are made by the WTO members. The *specific* commitments apply only to those service sectors/sub-sectors or activities that are included in a member's schedule, reflecting a positive list with regard for determining sectoral coverage. These are then only subject to whatever listed qualifications or conditions, reflecting a negative list for maintaining of measures. In addition to the *specific* commitments, the WTO members also submit the *horizontal* commitments, which consolidate laws and policies that restrict the use of a certain mode of supply, independent of the sector involved.

The GATS identifies the *specific* commitments into two types of limitations, listed as follows: (1) limitations on market access (MA), determining whether foreign services and services suppliers are assured of the right to enter the domestic market; (2) limitations on national treatment (NT), determining whether foreign services and services suppliers are treated no less favorable than that accorded to like domestic services and services suppliers.

Commitments promised by each country on either market access or national treatment for a particular mode of supply or activity can be classified into three categories: (1) *unbound*, implying that no commitments are made on either market access or national treatment for a particular mode of supply or activity; (2) *bound*, implying that specific restrictions are listed in either market access or national treatment for a particular mode of supply or activity; and (3) *none*, implying that no restrictions apply on either market access or national treatment for a given mode of supply or activity.

The GATS also distinguishes supply of trade in services from foreign suppliers into four possible modes, which are particularized as follows: (1) cross-border supply (mode 1), indicating that foreign services suppliers and domestic consumers still stay in their own domestic territory respectively and proceed to trade via the Internet or through other electronic tools, such as facsimiles; (2) consumption abroad (mode 2), indicating that foreign services suppliers stay in their own domestic territory, while domestic consumers move into the territory of suppliers and proceed to trade there; (3) commercial presence (mode 3), indicating that domestic services consumers stay in their own domestic territory, while foreign suppliers move into the territory of consumers and proceed to trade there through the commercial presence; and (4) the movement/presence of natural persons (mode 4), indicating that domestic services consumers stay in their own domestic territory, while foreign suppliers move into the territory of consumers and proceed to trade there through the presence of natural persons. One example of financial services in mode 1 is buying overseas mutual funds via the Internet. Buying insurance in a foreign country when a person travels abroad is an example of mode 2. The worldwide Citi-Group branch establishments would be a typical case for mode 3. Sending intra-corporate transferees to one specific branch is an instance of mode 4. Basically, mode 1, mode 2, and mode 4 are all different forms of cross-border trade, whereas mode 3 generally involves foreign direct investment in the services-importing economy.