Chapter Two
The WTO Commitments and the Financial Liberalization Index

2.1 Introduction to the WTO schedules of commitments on financial services sector

The construction of the financial liberalization index in this dissertation is grounded on the negotiation results within the WTO. The WTO requests that member countries negotiate with each other on the liberalization of trade in goods, trade in services, and trade-related intellectual property rights.[6] This dissertation deals only with the second category, that is, trade in services. There are twelve sectors that are included in the content of services and introduced in Chapter One, and we particularly focus on the financial services sector, which is the largest service sector in the context of the *General Agreement on Trade in Services* (GATS). Furthermore, this services sector can be categorized into two major subsectors, one being the *banking and other financial services* subsector and the other the *insurance and insurance-related services* subsector. In our assessment, the negotiation results within the WTO for both subsectors are taken into account when the financial liberalization index is constructed.

The GATS negotiations on trade in services have so far gone through two stages. The first stage started in 1994 and continued until 2000, whereas the second stage started in 2001 and extended through 2006. During the first period, the critical part of the GATS negotiations, which were referred to as the *specific* commitments in regard to the schedules of commitments, was submitted by the WTO members beginning in 1994.

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[6] These three parts are stipulated under the *General Agreement on Tariffs and Trade* (GATT), the *General Agreement on Trade in Services* (GATS), and the *Agreement on Trade Related Aspects of Intellectual Property Rights* (TRIPS), respectively.

After that, the first round of negotiations on financial services in the context of the GATS was concluded in December 1997 and became fully subject to multilateral trade rules. Some members, nevertheless, did not provide their liberalization schedules until 2000 for the sake of their domestic situation. Not only did the agreement consolidate the relatively open policies of industrial countries that account for much of the world's trade in financial services, but it also evoked wide participation from both developing countries and countries in transition. The wide coverage of the WTO members is the reason why, in this dissertation, we build the financial liberalization index based on the WTO schedules of commitments.

The next round of negotiations to further liberalize trade in services started March 28, 2001, when the WTO Council for Trade in Services adopted the *Guidelines and Procedures for the Negotiations* as the basis for continuing the negotiations. Participants were to submit requests and offers for the *specific* commitments by certain deadlines. However, as the requests and offers negotiations continued among the WTO members, the contents of the *specific* commitments also continued to be updated until 2006. As a result, our data for financial liberalization and the coordinating macroeconomic data are classified into the two periods, 1994-2000 and 2001-2006.

The kernel of the WTO schedules of commitments is the *specific* commitments that are made by the WTO members. To a large extent the effect of the WTO commitments is determined on the *specific* commitments (Hoekman, 1995, 1996). 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 to determining sectoral coverage, and then only subject to whatever qualifications or conditions are listed, reflecting a negative list with respect to the maintenance of measures. In addition to the *specific* commitments, WTO members also submit the *horizontal* commitments. The *horizontal* commitments comprise a consolidation of laws and policies that restrict the use of a certain mode of supply, independent of the sector involved.

The GATS identifies the *specific* commitments in regard to the schedules of commitments into two types of limitations, which are 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.

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 the use of 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. As for mode 3, the worldwide Citi-Group branch establishments would be a typical case. Sending intra-corporate transferees to one specific branch is an instance of mode 4. Basically, modes 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.

Our financial liberalization index is measured in accordance with all the activities listed in the *Annex on Financial Services*. Four activities are categorized into the *insurance and insurance-related services* subsector: (1) direct insurance (including co-insurance): (i) life, and (ii) non-life; (2)

reinsurance and retrocession; (3) insurance intermediation, such as brokerage and agency; and (4) services auxiliary to insurance, such as consultancy, actuarial, risk assessment and claim settlement services. Twelve activities are classified into the *banking and other financial services* subsector: (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 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.

It is interesting to explore, at least to some degree, how the WTO commitments relate to actual liberalization measures in the real world. The extent of the liberalization effected by the WTO commitments on financial services is somewhat limited, with many members binding either at the level of their existing practices or at a level lower than their existing practices (PECC International Secretariat, 2003). In the latter cases, the WTO commitments (the de jure indication) were a misleading indicator of the extent to which liberalization had actually taken place (the de facto indicators). There are reasons for WTO members choosing to have this kind of situation. The WTO schedules of commitments are legally binding for all members. Strict dispute settlement procedures will be initiated by members whenever their benefits are impeded once the schedules of commitments is not followed by a certain member or members. To avoid the legal constraints mentioned above, some members would end up having their WTO commitments no more favorable than the real regulations.

Besides, recognizing the benefits of liberalizing trade in services has encouraged a number of economies, including some in the APEC region such as Korea, Singapore, and Taiwan, to undertake unilateral liberalization in this sector. Subsequent unilateral liberalization by some members has widened the gap between the WTO commitments and actual measures. The credit for such autonomous liberalization is currently an important negotiating issue for those economies that have engaged in it (PECC International Secretariat, 2003).

2.2 Construction of the financial liberalization index under the WTO

Our 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. A novelty of this dissertation is that our data combines the financial liberalization under the WTO over the two periods 1994-2000 and 2001-2006 respectively, which is the most comprehensive one. Our ninety-five sample countries consists of 15 countries in East Asia and Pacific, 33 countries in Europe and Central Asia, 28 countries in Latin America and Caribbean, 10 countries in Middle East and North Africa, 2 countries in North America, 3 countries in South Asia, and 4 countries in Sub-Saharan Africa. See Table 2-1 for detailed classification of countries. By the classification of income group, our sample encompasses 24 high income OECD countries, 13 high income non-OECD countries, 26 upper-middle income countries, 28 low-middle income countries, and 4 low income countries. See Table 2-2 for detailed classification of countries.

The documents of the WTO schedules of commitments are obtained from the Taiwan WTO Center at the Chung-Hua Institution for Economic Research. However, all documents during the first round of negotiation are available from the WTO website,[7] more than two thirds of the sample countries file the documents as restricted during the second round of negotiation. The document symbol and the document availability for our ninety-five sample countries during the two rounds of negotiations are reported in Table 2-3.

Our financial liberalization index is constructed by using the *specific* commitments listed in WTO schedules of commitments. Since there are limitations on market access/national treatment and four modes of supply, each activity contains eight entries to be calculated. Since there are four activities in the *insurance and insurance-related services* subsector and twelve activities in the *banking and other financial services* subsector, each member's schedule in financial services sector cover 128 entries to be assessed.

As mentioned in the Chapter One, commitments promised by each country 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 are applied on either market access or national treatment for a given mode of supply or activity.

Because the impediments to trade and investment in services tend to be in

[7] http://docsonline.wto.org/gen_search.asp?searchmode=advanced

the form of non-tariff barriers (NTBs), which are less transparent and difficult to quantify, researchers often adopt the frequency measures methodology.[8] PECC (1995), Hoekman (1995, 1996), and Hoekman and Primo Braga (1997) are among the seminal studies to employ the frequency measures methodology to compile indices of services to evaluate the degree of restrictiveness or liberalization of trade in services. Hoekman (1995, 1996) uses three numerical indicators to quantify the above three categories of commitments: 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, the greater the degree of liberalization of trade in services. Hoekman (1995, 1996) also argues that scaling *unbound* as 0, and scaling *bound* as 0.5 reflect a perception that scheduling and binding has value, no matter how restrictive the policies that are maintained.

McGuire and Schuele (2000) also propose a restrictiveness index for banking services,[9] and compile a list of non-prudential regulations on entry and operations for banking services from various sources. These sources include the GATS commitments, the information from APEC Individual Action Plans, WTO Trade Policy Reviews, and information provided by several countries to the IMF as a requirement for receiving standby credit facilities. Mattoo (1998, 2000) constructs 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, and evaluates 105 countries' market access commitments in banking services (deposits and lending activities) and insurance services (life and non-life insurance activities). Mattoo, Rathindran, and Subramanian (2006) present a financial services index of openness to quantify the nature and extent of restrictions on international trade in financial services. On the other hand, there are some researches that present the level of financial liberalization in a slightly distinct

[8] This is also referred to as index methodology.

[9] McGuire and Schuele (2000) use higher scores to denote higher degrees of restriction, whereas we use higher scores to denote higher degrees of liberalization. In other words, the restrictiveness index produced by McGuire and Schuele (2000) is similar to our liberalization index in terms of the concept, yet opposite in terms of the content's meaning.

way. Kono et al. (1997), and Sorsa (1997) display summary tables identifying which restrictive measures are applied in each country. WTO (1998) exhibits a summary list indicating which countries make commitments in financial services.

The estimates of the measures for the liberalization of services trade in the preceding literatures, however, contain several shortcomings. This dissertation commences to reform the previously produced financial liberalization index in three respects. First, and most importantly, we attempt to score different degrees of liberalization in partial commitments further. Then we cover four modes of supply on trade in services and all the activities listed in the *Annex on Financial Services* in calculation of the liberalization index. Finally, we propose to distribute weights to four modes of supply. These three major types of revisions are accounted for below in sequence.

First, partial commitments are assessed more deeply. Due to the difficulty in judging how the presence of specific restrictions is to be evaluated, Hoekman (1995, 1996) assigned scores of 0.5 for each partial commitment. Although this method has its merits in that it is simple and straightforward, the information resulting from different degrees of liberalization has been lost. Mattoo (1998, 2000) adopts a slightly more sophisticated approach, which is 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 whether other less restrictive measures are applied. But Mattoo (1998, 2000) only handles the partial commitments in relation to mode 3 by this approach. Qian (2000) and Valckx (2002) also utilize the same kind of method suggested by Mattoo (1998, 2000). Furthermore, Valckx (2002) believes that the feature of *unbound* is slightly better than a blank entry, and hence a score of 0.05 is given instead of 0. Valckx (2002) also gives licensing subject to requirements a slightly higher score than discretionary licensing, in order to make a distinction between the two limitations. This dissertation makes use of the methodology proposed by WTO (2005) to deal with this issue more delicately.

Our methodology of scoring partial commitments deserves more detailed description. As suggested by WTO (2005), each member's *specific* commitments are entered according to an arithmetic formula referred to as a continuous function C^n, where C denotes any coefficient between 0 and 1, and superscript n denotes the number of scheduled restrictions in a particular mode of supply or activity. For practical purposes, the coefficient C is set at a value of 0.5 in this dissertation, although it could be any number given that it equally applies to whole schedules for all members.[10] The formula is based on two considerations. First, each limitation on market access or national treatment is an additional burden for foreign services suppliers (or domestic consumers). Therefore, an accurate and reliable methodology has to allow barriers to trade for every scheduled limitation to be tracked. Second, it is assumed that the marginal burden that falls on the foreign services suppliers due to an additional limitation is decreasing.

For simplicity, our methodology counts the number of scheduled limitations affecting market access or national treatment according to the classification proposed by Bosworth et al. (2000). Besides the classification specified in Article XVI of the GATS, Bosworth et al. (2000) add one more limitation affecting market access, "others", to avoid missing any other kinds of restrictions. The classification of the scheduled limitations affecting market access includes the following: (1) limitations on the number of foreign services suppliers; (2) limitations on the total value of foreign services transactions or assets; (3) limitations on the total number of foreign services operations or on the total quantity of foreign services outputs; (4) limitations on the total number of natural persons that may be employed in a particular foreign services sector; (5) limitations on the specific types of legal entity or joint venture through which foreign services suppliers may supply services; (6) limitations on the participation of foreign capital; and (7) other limitations affecting market access. The classification of the scheduled limitations affecting national treatment includes the following: (1) discriminatory taxes; (2) discriminatory incentives/subsidies; (3) government procurement policies;

[10] The value of the coefficient is not of particular relevance since comparability across commitments and members lies at the heart of the exercise.

(4) local content requirements; (5) nationality, citizenship or residence requirements; and (6) other limitations affecting national treatment.

Second, our liberalization index consists of four modes of supply on trade in services. Except for Hoekman (1995, 1996), McGuire and Schuele (2000), and Claessens and Glaessner (1998), who comprise only some parts of mode 4 (movement of natural persons), past studies typically do not take this mode into account.[11] The criteria for scoring the liberalization index for mode 4 are depicted in Table 2-4, where higher scores denote higher degrees of liberalization. The two extreme cases, *unbound* (no commitment) and *none* (full commitment), are assigned scores of 0 and 1, respectively. Partial commitments are here distributed scores from 0.25 to 0.75, depending on the respective degrees of openness for the entry of natural persons based on the classification summarized in WTO (2003), which describes frequently-used categories of natural persons included under mode 4 in the *horizontal* commitments of members' schedules of commitments. The four main categories are listed as follows: (1) intra-corporate transferees (ICT); (2) business visitors (BV) and services salespersons (SS); (3) contractual services suppliers (CSS), which contains employees of juridical persons and independent professionals; and (4) other categories, which contains graduate trainees, and spouses and partners of ICT. In addition, our measurement takes account of all the activities covered in the *Annex on Financial Services*. By contrast, Claessens and Glaessner (1998), Mattoo (1998, 2000), McGuire and Schuele (2000), Qian (2000), and Valckx (2002) do not encompass the activities as completely as our assessment do here.[12]

Finally, the third revision concerns the distribution of weights to four modes of supply.[13] Most countries do not provide a precise identification of the patterns of trade based on different modes, except the United States.

[11] For example, Mattoo (1998. 2000), Qian (2000), Valckx (2002), and Mattoo, Rathindran, and Subramanian (2006) do not take mode 4 into consideration.

[12] For instance, Mattoo (1998. 2000), and Qian (2000) only cover deposits and lending activities in banking services, and life and non-life insurance activities in insurance services.

[13] Maurer (2005) reported the weights for the four modes as 0.35, 0.12-0.15, 0.5, and 0.01-0.02, respectively. However, these figures are derived on an aggregated level and cover all of the services sectors.

Therefore, previous studies often use simple average to compute a composite liberalization index when more than one mode of supply is estimated. By considering that commitments to a particular mode of supply with heavier amounts of trade should be assigned more weight, we therefore follow Mattoo's (1998, 2000) method to adopt the data from the *United States International Trade Commission*. In insurance services, establishment trade and cross-border trade is 48.7 and 13.9 billion respectively. In banking and other services, establishment trade and cross-border trade is 5.9 and 1.7 billion respectively. These data exhibit that trade through mode 3 is three and a half times greater than trade through mode 1 in the insurance and banking services, respectively. This can be argued that the commitments of mode 3 have greater value than mode 1. Mattoo (1998, 2000) also propose a difference between mode 1 and mode 2 is that under the GATS, commitments to allow cross-border supply of a service oblige a country to allow the necessary capital movements, while those to allow consumption abroad do not. Therefore, commitments of mode 1 have greater value than mode 2. However, Mattoo (1998, 2000) does not consist of mode 4 and contains only parts of the activities.[14] We therefore make some modifications to Mattoo's (1998, 2000) approach and present the final weights among four modes of supply in Table 2-5. After our improvements, the trade that takes place as a result of the commercial presence in the *insurance and insurance-related services* subsector is about four times that generated through cross-border trade. In the *banking and other financial services* subsector, the trade arising through the commercial presence is two and a half times that achieved through the cross-border trade.

The comparison of the liberalization index between preceding measurements and the method developed by this dissertation is revealed in Table 2-6. The advantage of Hoekman's (1995, 1996) method seems to contain all activities, all types of limitations, and all modes of supply, but the disadvantage seem to lose the information from different degrees of

[14] Mattoo (1998, 2000) covers only life and non-life insurance services in the insurance subsector, and deposits and lending services in the banking subsector, as shown in Table 2-2.

limitations. By contrast, the advantage of Mattoo's (1998, 2000) method appears to capture the information from different degrees of limitations, but the disadvantage appears to merely cover partial activities, partial types of limitations, and partial modes of supply, and appears that the a prior assessment of limitations may be subjective. Our methodology endeavors to merge the both advantages, and wipe out the disadvantages.

The liberalization index in each activity, L_i, is defined as:

$$L_i = \left(\sum_{j=1}^{4} w^j MA_i^j + \sum_{j=1}^{4} w^j NT_i^j \right) \Big/ 2, \tag{2-1}$$

where the superscript j denotes the mode of supply, the subscript i denotes the activity listed in the *Annex on Financial Services* with four activities belonging to the insurance subsector and twelve activities belonging to the banking subsector, w^j is the weight of mode j as presented in Table 2-5, MA_i^j is the numerical value of commitment on market access under mode j in activity i, and NT_i^j is the numerical value of commitment on national treatment under mode j in activity i. Equation (2-1) points out that the liberalization index in each activity is the simple average of the modal weighted average of market access and national treatment.

The liberalization index of insurance services in each country, $COMMIT\_INSUR$, is defined as:

$$COMMIT\_INSUR = \sum_{I=1}^{4} L_I \Big/ 4. \tag{2-2}$$

where the subscript I denotes the activity belonging to the insurance subsector. Equation (2-2) exhibits that the liberalization index of insurance services is the simple average of the liberalization index in four insurance activities.

The liberalization index of banking services in each country, $COMMIT\_BANK$, is defined as:

$$COMMIT\_BANK = \sum_{B=1}^{12} L_B \Big/ 12. \tag{2-3}$$

where the subscript B denotes the activity belonging to the banking subsector. Equation (2-3) indicates that the liberalization index of banking services is the simple average of the liberalization index in twelve banking activities.

The liberalization index of financial services in each country, $COMMIT\_FIN$, is defined as:

$$COMMIT\_FIN = (COMMIT\_INSUR + COMMIT\_BANK)/2. \tag{2-4}$$

Equation (2-4) states that the liberalization index of financial services is the simple average of the liberalization index of insurance and banking services.

The comparison of the financial liberalization between previous researches and the index measured by this dissertation is presented in Table 2-7. There are three noteworthy features of our financial liberalization index. First, our index utilize the WTO schedules of commitments which are legally binding, while other studies use the date of deregulation as a proxy which has the problem that liberalization process may be temporarily reversed in some countries. Second, our index focuses on the liberalization of last decade, whereas others center on the liberalization of the 1980s and 1990s. Third, in contrast to dummy variable, our index may further discriminate different degree of liberalization to some extent.

2.3 The patterns of the financial liberalization under the WTO

After constructing the financial liberalization index based on WTO schedules of commitments, we will highlight ten distinctive characteristics in the following.

First, a country with a higher degree of liberalization in one of two subsectors tends to have a higher degree of liberalization in the other subsector. The correlation coefficient of the liberalization indices between the *insurance and insurance-related services* subsector and the *banking and other financial services* subsector is 0.705 over the period 1994-2000, and is 0.729 over the period 2001-2006.

Second, there is a positive relationship between the levels of liberalization of commitments on market access and national treatment. The correlation coefficients of the liberalization indices between market access and national treatment are 0.736 and 0.690 in the *insurance and insurance-related services* subsector over the two periods respectively, and are 0.840 and 0.809 in the *banking and other financial services* subsector over the two periods respectively. In addition, most countries are inclined to more or equally liberalize with respect to the commitments on national treatment than on market access, with eighty-two and eighty-five countries in the *insurance and insurance-related services* subsector over the two periods respectively, and eighty-two and seventy-seven countries in the *banking and other financial services* subsector over the two periods respectively.

Third, with regard to the liberalization index of insurance services, it is found in Table 2-8, in which countries are classified by geographic region, that East Asian and Pacific, European and Central Asian, Middle Eastern and North African, and Sub-Saharan African countries choose to liberalize mode 2 more compared to other modes on market access over the two periods but liberalize mode 4 less, whereas Latin American and Caribbean countries choose to liberalize mode 3 more but mode 4 less, North American countries choose to liberalize mode 2 more but mode 3 less, and South Asian countries choose to liberalize mode 4 more but mode 3 less. Considering the difficulty involved in regulating consumption abroad, many WTO members therefore appear to accept higher commitments on mode 2 on market access. On the other hand, East Asian and Pacific, Latin American and Caribbean, Middle Eastern and North African, and Sub-Saharan African countries adopt higher levels of liberalization on mode 3 on national treatment but lower levels on mode 4, while European and Central Asian, and North American countries adopt higher levels of liberalization on mode 2 but lower on mode 4, and South Asian countries adopt higher levels of liberalization on mode 4 but lower on mode 1. European and Central Asian countries, on the whole, enact the highest levels of liberalization compared to other regions in the *insurance and insurance-related services* subsector, yet South Asian countries enact the lowest levels of liberalization.

Fourth, as reported in Table 2-9, the patterns of the liberalization indices of banking services is approximately parallel to insurance services discussed above, expect that South Asian countries agree on less liberal commitments on mode 1 and mode 2 on market access in the *banking and other financial services* subsector, while less liberal commitments on mode 3 in the *insurance and insurance-related services* subsector. European and Central Asian countries, on average, liberalize the most compared to other regions in the *banking and other financial services* subsector, yet Latin American and Caribbean countries liberalize the least.

Fifth, generally speaking, East Asian and Pacific, and Latin American and Caribbean countries, which comprise many developing countries, are willing to more liberalize mode 3 compared to other modes in the two subsectors. By more liberalizing commitments on mode 3, through which these countries may attract experienced foreign financial institutions, these countries through inward foreign direct investment not only in a great way develop their own domestic financial industries, but also raise their domestic employment in these areas. Mode 3, as a result, is traditionally the most popular liberalization process for the governments in these regions. In addition, commitments to liberalize mode 1 of a service sector under the WTO oblige a member to allow the necessary capital movements. To reduce the probability of the occurrence of a financial crisis facilitated by capital movements, many WTO members therefore choose to liberalize mode 1 as less as possible. Compared with other regions, European and Central Asian, and North American (except for the *insurance and insurance-related services* subsector) countries assume a higher degree of liberalization on mode 1.

Sixth, we notice in Table 2-10 that the levels of liberalization indices over the period 2001-2006 are generally higher than the period 1994-2000 in the two subsectors except for Latin America and Caribbean, and Sub-Saharan

Africa in the *banking and other financial services* subsector. South Asian countries improve the liberalization indices the most, especially on mode 3 and mode 4 as revealed in Table 2-8 and Table 2-9, among other regions regardless of improvements of level and percentage. Also, we find that some regions have similar liberalization performances across different subsectors in the case of ranking, but that some regions do not. In the former cases, East Asian and Pacific countries rank fourth, and European and Central Asian countries rank first in both subsectors. By contrast, the ranking of financial liberalization in North America and Sub-Saharan Africa are distinctly dissimilar among the two subsectors. For instance, North America is the second most liberal region in the *banking and other financial services* subsector, whereas the fifth most liberal region in the *insurance and insurance-related services* subsector. The degree of liberalization in North America in the latter subsector surprisingly lags behind many other less developed regions, East Asia and Pacific, Middle East and North Africa, and Sub-Saharan Africa. In the case of level of financial liberalization, South Asian, and Sub-Saharan African countries choose apparently different performance across the two subsectors.

Seventh, the levels of liberalization on mode 1, mode 2, and mode 3 in the two subsectors are principally positively correlated with the income level, as displayed in Table 2-11 and Table 2-12. There is, however, no such link under mode 4. This is probably because mode 4 is related to the natural persons, and because developing countries have relatively scarce professional labor resources or specialists. Thus, developing countries tend to promote liberalization on mode 4 to a certain extent. By contrast, developed countries are modest in terms of liberalizing mode 4 and focus more on the issues of improving transparency and procedures related to the movement of natural persons.

Eighth, as presented in Table 2-13, the levels of financial liberalization over the period 2001-2006 are overall higher than the period 1994-2000. High income non-OECD countries improve the liberalization indices of insurance services the most among other income groups, and then low income countries enhance the liberalization indices of banking services the most.

Ninth, we examine the relationship between the financial liberalization index and the trade balance, that is, the current account, of financial services for ninety-five WTO members.[15] It is observed in Table 2-14 that, regardless of the subsectors, the liberalization index has a higher degree of correlation coefficient with the total trade balance, which is exports plus imports, than the net trade balance, which is exports minus imports. The net trade balance, theoretically speaking, should be more closely connected with each member's exchange rate and competitiveness in their respective areas. We then turn to the connection between the financial liberalization index and the magnitude of financial services trade orientation proxied by two variables. The first measure is the financial services trade openness, which is financial services exports plus imports as a share of GDP, and the second is the financial services trade size, which is financial services exports plus imports as a share of world's volume. As reported in Table 2-12, the correlation coefficient between the liberalization index and the financial services trade size is exclusively higher than the financial services trade openness.

Finally, we compare our calculated liberalization index with Mattoo's (1998, 2000) and Valckx's (2004) index, as illustrated in Figure 2-1, Figure 2-2, and Figure 2-3 respectively. Mattoo (1998, 2000) and Valckx (2004) utilize the same kind of method to access the liberalization index,[16] but the difference between these two indices is coverage of activity.[17] The correlation coefficients of insurance and banking liberalization between these two indices are 0.419 and 0.439 respectively. However, the correlation coefficients of insurance and banking liberalization between our index and Mattoo's (1998, 2000) are 0.169 and 0.219 respectively. In addition, correlation coefficients of

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[15] Detailed descriptions of financial services trade will present in the Chapter Four.

[16] The methodology is first based on 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 whether other less restrictive measures are applied.

[17] The former contains life and non-life insurance activities in insurance services, and deposits and lending activities in banking services, the latter contains life insurance, non-life insurance, reinsurance, and intermediation activity in insurance services, and deposits, lending, money broking, trading, issue and underwriting, securities settlement, asset management, payment and settlement, and provision of financial information in banking and other services.

insurance and banking liberalization between our index and Valckx’s (2004) are 0.585 and 0.752 respectively. The correlation between our and Valckx’s (2004) index, which use different method but the same coverage of activity, is higher than the correlation between our and Mattoo’s (1998, 2000) index, which use different method and different coverage of activity. This suggests that higher correlation may be under the influence of coverage of activity. The correlation between Mattoo’s (1998, 2000) and Valckx’s (2004) index, which use the same method but different coverage of activity, is higher than the correlation between our and Mattoo’s (1998, 2000) index, which use different method and different coverage of activity. This implies that the higher correlation may be under the influence of methodology. Therefore, it is suggested that our method of calculation of the financial liberalization may be distinct from Mattoo’s (1998, 2000).

Table 2-1　The Classification of Countries by Geographic Region

Geographic Region	Country
East Asia and Pacific	Australia, Brunei, China, Fiji, Hong Kong, Indonesia, Japan, Korea, Macao, Malaysia, New Zealand, Philippines, Singapore, Taiwan, and Thailand
Europe and Central Asia	Albania, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, and United Kingdom
Latin America and Caribbean	Argentina, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, El Salvador, Grenada, Guatemala, Guyana, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, and Uruguay
Middle East and North Africa	Bahrain, Egypt, Israel, Jordan, Malta, Morocco, Oman, Qatar, Tunisia, and United Arab Emirates
North America	Canada and United States
South Asia	India, Pakistan, and Sri Lanka
Sub-Saharan Africa	Gabon, Kenya, Mauritius, and South Africa

Table 2-2 The Classification of Countries by Income Level

Income Group	Country
High income OECD countries	Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, and United States
High income non-OECD countries	Bahrain, Brunei, Cyprus, Hong Kong, Israel, Liechtenstein, Macao, Malta, Qatar, Singapore, Slovenia, Taiwan, and United Arab Emirates
Upper-middle income countries	Argentina, Barbados, Belize, Chile, Costa Rica, Croatia, Czech Republic, Dominica, Estonia, Gabon, Grenada, Hungary, Latvia, Lithuania, Malaysia, Mauritius, Mexico, Oman, Panama, Poland, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Slovak Republic, Trinidad and Tobago, and Uruguay
Low-middle income countries	Albania, Bolivia, Brazil, Bulgaria, China, Colombia, Cuba, Dominican Republic, Egypt, El Salvador, Fiji, Guatemala, Guyana, Honduras, Indonesia, Jamaica, Jordan, Macedonia, Morocco, Paraguay, Peru, Philippines, South Africa, Sri Lanka, Suriname, Thailand, Tunisia, and Turkey
Low income countries	India, Kenya, Nicaragua, and Pakistan

Table 2-3 The Document Symbol and the Document Availability of the WTO Schedules of Commitments

Country	The first round		The second round	
	Symbol	Availability	Symbol	Availability
Albania	GATS/SC/131	A	TN/S/O/ALB	R
Argentina	GATS/SC/4	A	TN/S/O/ARG	R
Australia	GATS/SC/6/Suppl.4	A	TN/S/O/AUS/Rev.1	A
Austria	GATS/SC/31/Suppl.4/Rev.1	A	TN/S/O/EEC/Rev.1	A
Bahrain	GATS/SC/97/Suppl.1	A	TN/S/O/BHR/Rev.1	R
Barbados	GATS/SC/9	A	TN/S/O/BRB	R
Belgium	GATS/SC/31/Suppl.4/Rev.1	A	TN/S/O/EEC/Rev.1	A
Belize	GATS/SC/10	A	TN/S/O/BLZ	R
Bolivia	GATS/SC/12/Suppl.2	A	TN/S/O/BOL/Rev.1	R
Brazil	GATS/SC/13/Suppl.3	A	TN/S/O/BRA/Rev.1	R
Brunei	GATS/SC/95	A	TN/S/O/BRN	R
Bulgaria	GATS/SC/122/Suppl.2	A	TN/S/O/BGR	R
Canada	GATS/SC/16/Suppl.4/Rev.1	A	TN/S/O/CAN/Rev.1	A
Chile	GATS/SC/18/Suppl.3	A	TN/S/O/CHL/Rev.1	A
China	GATS/SC/19	A	TN/S/O/CHN/Rev.1	R
Colombia	GATS/SC/20/Suppl.3	A	TN/S/O/COL/Rev.1	R
Costa Rica	GATS/SC/22/Suppl.1	A	TN/S/O/CRI	R
Croatia	GATS/SC/130	A	TN/S/O/HRV	R
Cuba	GATS/SC/24	A	TN/S/O/CUB	R
Cyprus	GATS/SC/25/Suppl.2/Rev.1	A	TN/S/O/EEC/Rev.1	A
Czech Republic	GATS/SC/26/Suppl.3	A	TN/S/O/EEC/Rev.1	A
Denmark	GATS/SC/31/Suppl.4/Rev.1	A	TN/S/O/EEC/Rev.1	A
Dominica	GATS/SC/27	A	TN/S/O/DMA	R
Dominican Republic	GATS/SC/28/Suppl.3	A	TN/S/O/DOM	R
Egypt	GATS/SC/30/Suppl.2	A	TN/S/O/EGY/Rev.1	R
El Salvador	GATS/SC/29/Suppl.2	A	TN/S/O/SLV	R
Estonia	GATS/SC/127	A	TN/S/O/EEC/Rev.1	A
Fiji	GATS/SC/32	A	TN/S/O/FJI	R
Finland	GATS/SC/31/Suppl.4/Rev.1	A	TN/S/O/EEC/Rev.1	A
France	GATS/SC/31/Suppl.4/Rev.1	A	TN/S/O/EEC/Rev.1	A
Gabon	GATS/SC/34	A	TN/S/O/GAB	R
Germany	GATS/SC/31/Suppl.4/Rev.1	A	TN/S/O/EEC/Rev.1	A
Greece	GATS/SC/31/Suppl.4/Rev.1	A	TN/S/O/EEC/Rev.1	A
Grenada	GATS/SC/96	A	TN/S/O/GRD	R
Guatemala	GATS/SC/36	A	TN/S/O/GTM	R
Guyana	GATS/SC/37	A	TN/S/O/GUY	R
Honduras	GATS/SC/38/Suppl.1	A	TN/S/O/HND/Rev.1	R
Hong Kong	GATS/SC/39/Suppl.3	A	TN/S/O/HKG/Rev.1	R
Hungary	GATS/SC/40/Suppl.3	A	TN/S/O/EEC/Rev.1	A

Iceland	GATS/SC/41/Suppl.2	A	TN/S/O/ISL/Rev.1	A
India	GATS/SC/42/Suppl.4	A	TN/S/O/IND/Rev.1	R
Indonesia	GATS/SC/43/Suppl.3	A	TN/S/O/IDN	R
Ireland	GATS/SC/31/Suppl.4/Rev.1	A	TN/S/O/EEC/Rev.1	A
Israel	GATS/SC/44/Suppl.2	A	TN/S/O/ISR	R
Italy	GATS/SC/31/Suppl.4/Rev.1	A	TN/S/O/EEC/Rev.1	A
Jamaica	GATS/SC/45/Suppl.2	A	TN/S/O/JAM	R
Japan	GATS/SC/46/Suppl.3	A	TN/S/O/JPN/Rev.1	A
Jordan	GATS/SC/128	A	TN/S/O/JOR	R
Kenya	GATS/SC/47/Suppl.1	A	TN/S/O/KEN	R
Korea	GATS/SC/48/Suppl.3/Rev.1	A	TN/S/O/KOR/Rev.1	A
Latvia	GATS/SC/126	A	TN/S/O/EEC/Rev.1	A
Liechtenstein	GATS/SC/83-A	A	TN/S/O/LIE/Rev.1	A
Lithuania	GATS/SC/133	A	TN/S/O/EEC/Rev.1	A
Luxembourg	GATS/SC/31/Suppl.4/Rev.1	A	TN/S/O/EEC/Rev.1	A
Macao	GATS/SC/50/Suppl.1	A	TN/S/O/MAC/Rev.1	R
Macedonia	GATS/SC/138	A	TN/S/O/MKD	R
Malaysia	GATS/SC/52/Suppl.3	A	TN/S/O/MYS/Rev.1	R
Malta	GATS/SC/54/Suppl.1	A	TN/S/O/EEC/Rev.1	A
Mauritius	GATS/SC/55/Suppl.2	A	TN/S/O/MUS	R
Mexico	GATS/SC/56/Suppl.3	A	TN/S/O/MEX/Rev.1	R
Morocco	GATS/SC/57/Suppl.1/Rev.1	A	TN/S/O/MAR	R
Netherlands	GATS/SC/31/Suppl.4/Rev.1	A	TN/S/O/EEC/Rev.1	A
New Zealand	GATS/SC/62/Suppl.2	A	TN/S/O/NZL/Rev.1	A
Nicaragua	GATS/SC/63/Suppl.1	A	TN/S/O/NIC	R
Norway	GATS/SC/66/Suppl.4	A	TN/S/O/NOR/Rev.1	A
Oman	GATS/SC/132	A	TN/S/O/OMN	R
Pakistan	GATS/SC/67/Suppl.3	A	TN/S/O/PAK	A
Panama	GATS/SC/124	A	TN/S/O/PAN	R
Paraguay	GATS/SC/68	A	TN/S/O/PRY	R
Peru	GATS/SC/69/Suppl.2	A	TN/S/O/PER/Rev.1	R
Philippines	GATS/SC/70/Suppl.3	A	TN/S/O/PHL	R
Poland	GATS/SC/71/Suppl.3	A	TN/S/O/EEC/Rev.1	A
Portugal	GATS/SC/31/Suppl.4/Rev.1	A	TN/S/O/EEC/Rev.1	A
Qatar	GATS/SC/120	A	TN/S/O/QAT	R
Singapore	GATS/SC/76/Suppl.3	A	TN/S/O/SGP/Rev.1	R
Slovak Republic	GATS/SC/77/Suppl.3	A	TN/S/O/EEC/Rev.1	A
Slovenia	GATS/SC/99/Suppl.1	A	TN/S/O/EEC/Rev.1	A
South Africa	GATS/SC/78/Suppl.3	A	TN/S/O/ZAF	R
Spain	GATS/SC/31/Suppl.4/Rev.1	A	TN/S/O/EEC/Rev.1	A
Sri Lanka	GATS/SC/79/Suppl.2	A	TN/S/O/LKA	R
St. Kitts and Nevis	GATS/SC/119	A	TN/S/O/KNA	R
St. Lucia	GATS/SC/73	A	TN/S/O/LCA	R

St. Vincent and the Grenadines	GATS/SC/74	A	TN/S/O/VCT	R
Suriname	GATS/SC/80	A	TN/S/O/SUR/Rev.1	R
Sweden	GATS/SC/31/Suppl.4/Rev.1	A	TN/S/O/EEC/Rev.1	A
Switzerland	GATS/SC/83/Suppl.4	A	TN/S/O/CHE/Rev.1	R
Taiwan	GATS/SC/136/Rev.1	A	TN/S/O/TPKM/Rev.1	R
Thailand	GATS/SC/85/Suppl.3	A	TN/S/O/THA/Rev.1	R
Trinidad and Tobago	GATS/SC/86	A	TN/S/O/TTO	R
Tunisia	GATS/SC/87/Suppl.2	A	TN/S/O/TUN	R
Turkey	GATS/SC/88/Suppl.3	A	TN/S/O/TUR/Rev.1	A
United Arab Emirates	GATS/SC/121	A	TN/S/O/ARE	R
United Kingdom	GATS/SC/31/Suppl.4/Rev.1	A	TN/S/O/EEC/Rev.1	A
United States	GATS/SC/90/Suppl.3	A	TN/S/O/USA/Rev.1	R
Uruguay	GATS/SC/91/Suppl.1	A	TN/S/O/URY/Rev.1	R

Notes: “A” denotes the document is available from the WTO website, and “R” denotes the document is restricted.

Table 2-4 Evaluation of the Liberalization Index on Mode 4

Criterion	Score
Unbound	0
(1) Only referring to general requirements for entry, including the economic need test (ENT) or making reference to laws and regulations (2) Conditionally allowing the entry of 1-2 kinds of the above-mentioned natural persons	0.25
(1) Unconditionally allowing the entry of 2 kinds of the above-mentioned natural persons (2) Conditionally allowing the entry of 3-4 kinds of the above-mentioned natural persons	0.5
Unconditionally allowing the entry of 4 kinds of the above-mentioned natural persons	0.75
None	1

Table 2-5 Comparison of Weights among Four Modes in the Financial Sector

	Insurance Subsector			Banking Subsector		
	Mattoo (1998, 2000)			Mattoo (1998, 2000)		
Mode	Life insurance activities	Non-life insurance activities	Weights adopted by us	Deposits activities	Lending activities	Weights adopted by us
Mode 1	0.12	0.20	0.18	0.12	0.20	0.24
Mode 2	0.03	0.05	0.045	0.03	0.05	0.06
Mode 3	0.85	0.75	0.75	0.85	0.75	0.6
Mode 4	-	-	0.025	-	-	0.1

Table 2-6 Comparison of the Method of Calculation of the Financial Liberalization Index

Criterion	Our Method	Hoekman's (1995, 1996) Method	Mattoo's (1998, 2000) Method
Coverage of activity	All activities in financial services: 4 activities in insurance subsector and 12 activities in banking subsector	All activities in financial services: 4 activities in insurance subsector and 12 activities in banking subsector	Direct insurance activities (life and non-life insurance) in insurance subsector, and deposits and lending activities in banking subsector
Coverage of type of limitation	Limitations on MA and NT	Limitations on MA and NT	Limitations on MA
Coverage of mode of supply	Mode 1-Mode 4	Mode 1-Mode 4	Mode 1-Mode 3
Calculation of partial commitments	Mode 1-Mode 3: based on the following three steps Step 1: making an a prior classification of 7 limitations on MA and 6 limitations on NT Step 2: counting the number of limitations for a particular mode of supply or activity according to the classification Step 3: applying a value based on a formula 0.5^n, where n is a value from Step 2 Mode 4: assigning scores from 0.25 to 0.75, depending on the respective degrees of liberalization as described in Table 2-4	0.5	Mode 1 and Mode 2: 0.5 Mode 3: based on the following three steps Step 1: making an a prior assessment of 6 limitations ranging from 0.1 to 0.75 Step 2: identifying the "most restrictive" limitation for a particular activity Step 3: applying a value based on the assessment of the "most restrictive" limitation

Table 2-7 Comparison of Literatures on Financial Liberalization

Literature	Type of Data	Definition of Liberalization	No. of Country	Time Period
Demirgüç-Kunt and Detragiache (2001)	Dummy variable	Liberalization date of interest rate	53	1980-1995
Kaminsky and Schmukler (2003)	Ordinal variable ranging from 1 to 3, with a higher value indicating higher degree of liberalization	Three criteria: (1) capital account: liberalization date of offshore borrowing by banks and corporations (2) domestic financial sector: liberalization date of interest rates (3) stock market: liberalization date of acquisition of shares by foreigners	28	1973-1999
Claessens and Glaessner (1998)	Ordinal variable ranging from 1 to 5, with a higher value indicating higher degree of liberalization	Assessing openness of trade in insurance, banking, and securities services based on WTO commitments	8	1994-1996
Henry (2000)	Dummy variable	First liberalization date of acquisition of shares by foreigners	11	1986-1991
Bekaert and Harvey (2000)	Dummy variable	(1) liberalization date of acquisition of shares by foreigners (2) first introduction date of ADR and country fund (3) date of increase in net U.S. capital flows	20	1986-1995
Tornell, Westerman, and Martinez (2004)	Dummy variable	Liberalization date of trend break in net cumulative capital inflows	33	1980-1999
Bekaert, Harvey, and Lundblad (2001)	Dummy variable	Liberalization date of acquisition of shares by foreigners	30	1980-1997
Bekaert, Harvey, and Lundblad (2005)	Dummy variable	(1) liberalization date of acquisition of shares by foreigners (2) first introduction date of ADR and country fund	40	1980-2000
Hoekman (1995, 1996)	Continuous variable ranging from 0 to 1, with a higher value indicating higher degree of liberalization	Assessing openness of trade in financial services (including insurance, and banking and other) based on WTO commitments	96	1994
McGuire and Schuele (2000)	Continuous variable ranging from 0 to 1, with a higher value indicating lower degree of liberalization	Assessing restrictiveness of trade in banking services based on WTO commitments	38	1994-1997

Literature	Type of Data	Definition of Liberalization	No. of Country	Time Period
Mattoo (1998, 2000)	Continuous variable ranging from 0 to 1, with a higher value indicating higher degree of liberalization	Assessing openness of trade in financial services (including insurance and banking) WTO commitments	105	1994-1996
Mattoo, Rathindran, and Subramanian (2006)	Ordinal variable ranging from 1 to 8, with a higher value indicating higher degree of liberalization	Three criteria: (1) domestic market structure in banking services based on WTO commitments (2) foreign equity permitted in banking services based on WTO commitments (3) openness of current and capital account	75	1994-1996
Valckx (2002)	Continuous variable ranging from 0 to 1, with a higher value indicating higher degree of liberalization	Assessing openness of trade in financial services (including insurance, and banking and other) WTO commitments	92	1994-1999
Financial liberalization in this dissertation	Continuous variable ranging from 0 to 1, with a higher value indicating higher degree of liberalization	Assessing openness of trade in financial services (including insurance, and banking and other) WTO commitments	95	1994-2006

Table 2-8 The Liberalization Index of Insurance Services Classified by Geographic Region over the Two Periods

Geographic Region	No. of Countries	Period	Market Access: Mode 1	Market Access: Mode 2	Market Access: Mode 3	Market Access: Mode 4	Market Access: Weighted average	National Treatment: Mode 1	National Treatment: Mode 2	National Treatment: Mode 3	National Treatment: Mode4	National Treatment: Weighted average
East Asia and Pacific	15	1994-2000	0.371	0.513	0.463	0.360	0.446	0.421	0.446	0.646	0.375	0.590
		2001-2006	0.454	0.608	0.488	0.379	0.485	0.510	0.527	0.750	0.338	0.687
Europe and Central Asia	33	1994-2000	0.727	0.818	0.571	0.363	0.605	0.875	0.886	0.821	0.428	0.824
		2001-2006	0.755	0.858	0.678	0.487	0.695	0.900	0.922	0.905	0.506	0.895
Latin America and Caribbean	28	1994-2000	0.184	0.182	0.311	0.144	0.278	0.218	0.204	0.427	0.157	0.373
		2001-2006	0.189	0.194	0.325	0.198	0.291	0.218	0.208	0.453	0.213	0.394
Middle East and North Africa	10	1994-2000	0.550	0.575	0.452	0.234	0.470	0.506	0.509	0.650	0.238	0.607
		2001-2006	0.538	0.644	0.533	0.372	0.535	0.581	0.628	0.763	0.359	0.714
North America	2	1994-2000	0.375	0.875	0.191	0.500	0.263	0.641	0.859	0.625	0.250	0.629
		2001-2006	0.375	0.875	0.223	0.500	0.286	0.641	0.859	0.625	0.250	0.629
South Asia	3	1994-2000	0.250	0.125	0.073	0.323	0.113	0.000	0.083	0.083	0.281	0.073
		2001-2006	0.375	0.188	0.177	0.500	0.221	0.083	0.167	0.167	0.375	0.157
Sub-Saharan Africa	4	1994-2000	0.516	0.781	0.516	0.313	0.523	0.656	0.906	0.938	0.375	0.871
		2001-2006	0.547	0.781	0.531	0.438	0.543	0.656	0.906	0.938	0.438	0.873

Notes: The classification of countries is the same as that in Table 2-1. Weights among the four modes are the same as those adopted by the authors in Table 2-5. The index for each of M1-M4 is the simple average for the respective geographic region.

Table 2-9 The Liberalization Index of Banking Services Classified by Geographic Region over the Two Periods

Geographic Region	No. of Countries	Period	Market Access Mode 1	Market Access Mode 2	Market Access Mode 3	Market Access Mode 4	Market Access Weighted average	National Treatment Mode 1	National Treatment Mode 2	National Treatment Mode 3	National Treatment Mode 4	National Treatment Weighted average
East Asia and Pacific	15	1994-2000	0.303	0.592	0.422	0.336	0.395	0.459	0.492	0.602	0.309	0.532
		2001-2006	0.310	0.650	0.415	0.347	0.397	0.500	0.536	0.669	0.300	0.584
Europe and Central Asia	33	1994-2000	0.771	0.831	0.608	0.361	0.636	0.877	0.908	0.865	0.408	0.825
		2001-2006	0.801	0.848	0.703	0.488	0.714	0.916	0.915	0.815	0.518	0.816
Latin America and Caribbean	28	1994-2000	0.079	0.106	0.245	0.121	0.184	0.074	0.101	0.330	0.109	0.233
		2001-2006	0.068	0.096	0.215	0.152	0.166	0.075	0.101	0.341	0.146	0.243
Middle East and North Africa	10	1994-2000	0.436	0.535	0.370	0.214	0.380	0.469	0.573	0.644	0.289	0.562
		2001-2006	0.410	0.575	0.402	0.326	0.407	0.428	0.608	0.625	0.396	0.554
North America	2	1994-2000	0.906	0.941	0.353	0.500	0.536	1.000	1.000	0.561	0.250	0.661
		2001-2006	0.906	0.941	0.353	0.500	0.536	1.000	1.000	0.561	0.250	0.661
South Asia	3	1994-2000	0.069	0.056	0.238	0.517	0.215	0.056	0.056	0.289	0.448	0.235
		2001-2006	0.097	0.083	0.520	0.691	0.409	0.083	0.083	0.653	0.517	0.468
Sub-Saharan Africa	4	1994-2000	0.340	0.413	0.477	0.223	0.415	0.309	0.392	0.486	0.260	0.415
		2001-2006	0.361	0.413	0.471	0.282	0.422	0.309	0.392	0.372	0.282	0.349

Notes: The classification of countries is the same as that in Table 2-1. Weights among the four modes are the same as those adopted by the authors in Table 2-5. The index for each of M1-M4 is the simple average for the respective geographic region.

Table 2-10 The Financial Liberalization Index Classified by Geographic Region over the Two Periods

Geographic Region	No. of Countries	Period	Insurance Services	Banking Services	Financial Services
East Asia and Pacific	15	1994-2000	0.518	0.463	0.491
		2001-2006	0.586	0.490	0.538
Europe and Central Asia	33	1994-2000	0.714	0.730	0.722
		2001-2006	0.795	0.765	0.780
Latin America and Caribbean	28	1994-2000	0.325	0.209	0.267
		2001-2006	0.343	0.205	0.274
Middle East and North Africa	10	1994-2000	0.539	0.471	0.505
		2001-2006	0.624	0.480	0.552
North America	2	1994-2000	0.446	0.599	0.522
		2001-2006	0.458	0.599	0.528
South Asia	3	1994-2000	0.093	0.225	0.159
		2001-2006	0.189	0.439	0.314
Sub-Saharan Africa	4	1994-2000	0.697	0.415	0.556
		2001-2006	0.708	0.386	0.547

Notes: The classification of countries is the same as that in Table 2-1. Weights among the four modes are the same as those adopted by the authors in Table 2-5. The index for each of M1-M4 is the simple average for the respective geographic region.

Table 2-11 The Liberalization Index of Insurance Services Classified by Income Level over the Two Periods

Income Group	No. of Countries	Period	Market Access Mode 1	Market Access Mode 2	Market Access Mode 3	Market Access Mode 4	Market Access Weighted average	National Treatment Mode 1	National Treatment Mode 2	National Treatment Mode 3	National Treatment Mode 4	National Treatment Weighted average
High income OECD countries	24	1994-2000	0.776	0.867	0.552	0.344	0.602	0.853	0.868	0.832	0.323	0.825
		2001-2006	0.772	0.862	0.641	0.510	0.671	0.855	0.868	0.901	0.490	0.881
High income non-OECD countries	13	1994-2000	0.397	0.550	0.450	0.212	0.439	0.481	0.531	0.615	0.269	0.579
		2001-2006	0.445	0.724	0.544	0.329	0.529	0.587	0.700	0.769	0.344	0.723
Upper-middle income countries	26	1994-2000	0.407	0.456	0.383	0.264	0.388	0.524	0.510	0.567	0.313	0.551
		2001-2006	0.460	0.494	0.448	0.298	0.448	0.547	0.532	0.639	0.298	0.609
Low-middle income countries	28	1994-2000	0.298	0.365	0.416	0.286	0.389	0.331	0.382	0.572	0.313	0.514
		2001-2006	0.318	0.395	0.429	0.325	0.405	0.363	0.415	0.596	0.329	0.539
Low income countries	4	1994-2000	0.266	0.188	0.242	0.273	0.245	0.156	0.156	0.438	0.305	0.371
		2001-2006	0.313	0.188	0.273	0.469	0.281	0.219	0.219	0.500	0.375	0.434

Notes: The classification of countries is the same as that in Table 2-2. Weights among the four modes are the same as those adopted by the authors in Table 2-5. The index for each of M1-M4 is the simple average for the respective income group.

Table 2-12 The Liberalization Index of Banking Services Classified by Income Level over the Two Periods

			Market Access					National Treatment				
Income Group	No. of Countries	Period	Mode 1	Mode 2	Mode 3	Mode 4	Weighted average	Mode 1	Mode 2	Mode 3	Mode 4	Weighted average
High income OECD countries	24	1994-2000	0.879	0.935	0.649	0.340	0.690	0.881	0.875	0.844	0.319	0.802
		2001-2006	0.884	0.953	0.700	0.509	0.740	0.922	0.872	0.840	0.488	0.826
High income non-OECD countries	13	1994-2000	0.408	0.614	0.349	0.192	0.364	0.504	0.610	0.616	0.240	0.551
		2001-2006	0.412	0.624	0.411	0.281	0.411	0.479	0.629	0.590	0.317	0.538
Upper-middle income countries	26	1994-2000	0.296	0.409	0.326	0.226	0.314	0.404	0.460	0.543	0.234	0.474
		2001-2006	0.307	0.420	0.375	0.252	0.349	0.407	0.471	0.515	0.243	0.459
Low-middle income countries	28	1994-2000	0.188	0.238	0.383	0.297	0.319	0.269	0.292	0.492	0.325	0.410
		2001-2006	0.193	0.264	0.381	0.317	0.322	0.298	0.319	0.520	0.337	0.436
Low income countries	4	1994-2000	0.146	0.146	0.244	0.264	0.217	0.063	0.146	0.262	0.248	0.206
		2001-2006	0.167	0.167	0.271	0.438	0.256	0.083	0.167	0.375	0.307	0.286

Notes: The classification of countries is the same as that in Table 2-2. Weights among the four modes are the same as those adopted by the authors in Table 2-5. The index for each of M1-M4 is the simple average for the respective income group.

Table 2-13 The Financial Liberalization Index Classified by Income Level over the Two Periods

Income Group	No. of Countries	Period	Insurance Services	Banking Services	Financial Services
High income OECD countries	24	1994-2000	0.713	0.746	0.730
		2001-2006	0.776	0.783	0.780
High income non-OECD countries	13	1994-2000	0.509	0.457	0.483
		2001-2006	0.626	0.475	0.550
Upper-middle income countries	26	1994-2000	0.469	0.394	0.432
		2001-2006	0.529	0.404	0.466
Low-middle income countries	28	1994-2000	0.451	0.364	0.408
		2001-2006	0.472	0.379	0.426
Low income countries	4	1994-2000	0.308	0.211	0.260
		2001-2006	0.358	0.271	0.314

Notes: The classification of countries is the same as that in Table 2-2. Weights among the four modes are the same as those adopted by the authors in Table 2-5. The index for each of M1-M4 is the simple average for the respective income group.

Table 2-14 The Correlation Coefficient between the Financial Liberalization Index and the Trade Balance, and the Magnitude of Trade

	Financial Trade Balance		Magnitude of Financial Trade	
Subsector	Total trade balance	Net trade balance	Financial trade openness	Financial trade size
Liberalization index of insurance services	0.252	0.209	0.142	0.259
Liberalization index of banking services	0.308	0.185	0.114	0.323
Liberalization index of financial services	0.300	0.210	0.136	0.312

Figure 2-1   The Financial Liberalization Index Calculated by This Dissertation

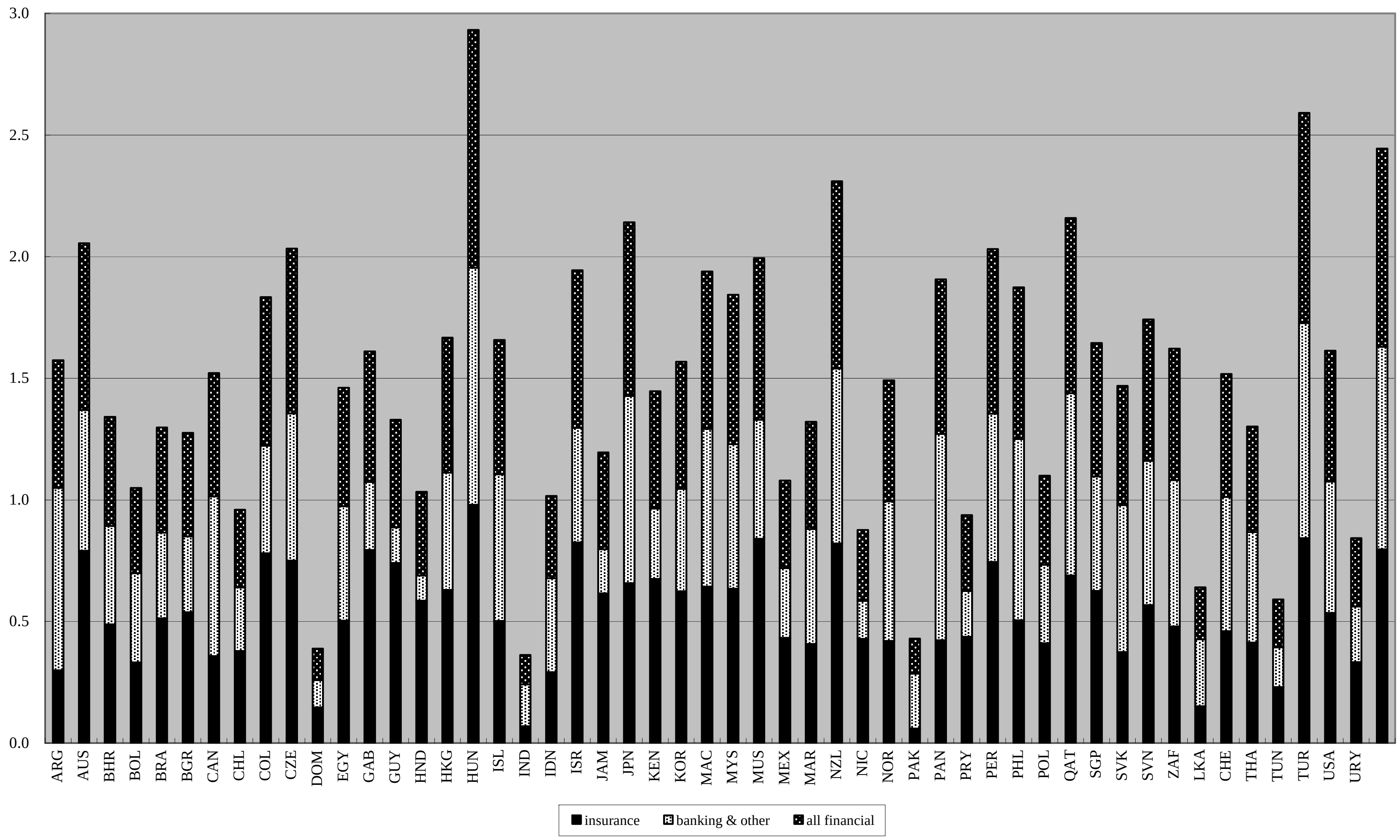

Figure 2-2 The Financial Liberalization Index Calculated by Mattoo (1998,2000)

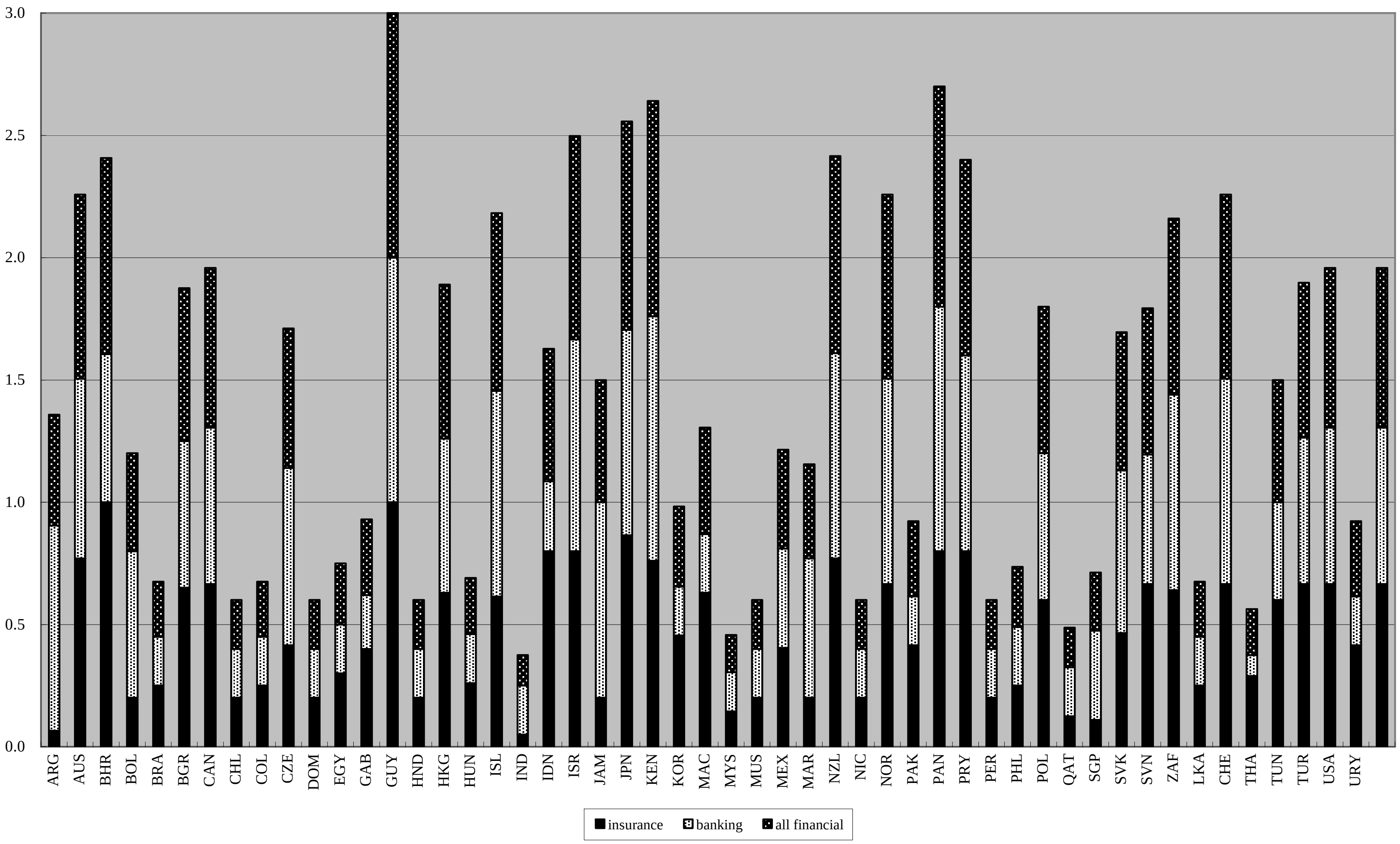

Figure 2-3 The Financial Liberalization Index Calculated by Valckx (2004)