Notes

Chapter 1

1. From this point on "countries" will be used to denote both countries and customs territories.

2. When 2007 is not available, then the most recent period shown in the tables and charts in this report is 2006.

3. Some indicators in any given year or time period may have no country coverage (for example, the nontariff measures frequency ratio since 2002). For other indicators in the most recent years, country coverage varies from a minimum of 79 (the production-weighted import tariff) to 202 (2006 rest-of-the-world tariffs), and a maximum of 203 countries (2006 governance indicators) out of a total of 210 countries and territories. In between are indicators for simple tariff averages (with 149–52 countries in 2006 and 2007, respectively), and for aggregate trade outcomes (with 152–61 countries in 2006 and 2007, respectively).

4. A detailed description and a full set of indicators and country briefs, with accompanying Trade-At-A-Glance (TAAG) tables with a subset of 80 indicators, can be found at http://www.worldbank.org/wti2008.

5. Tariff and trade indicators by 22 product groups are available in the World Tariff Profiles 2006 and in the World Tariff Profiles 2007 (forthcoming 2008), a joint ITC, UNCTAD, and WTO database and publication (available at http://www.wto.org/english/res_e/statis_e/statis_e.htm). Online detailed information by product groups and by tariff line is accessible from the International Trade Centre's Market Analysis Services portal (http://www.intracen.org/mas/). These databases are linked to the WTI database.

6. This indicator is available for 79 countries for which matching tariff and production data are available at the disaggregated level in the Global Trade Analysis Project (GTAP) database.

7. The medium-term goal is to offer WTI Web site users the flexibility to construct weighted averages of the indicators (weighting for example by population, output, or trade share in the world total) for customized analyses of user-defined country groupings.

Chapter 2

1. For a brief discussion of the theoretical and empirical literature supporting the choice and organization of indicators, see the evidence and references mentioned in appendix B to this report and also the various papers cited in World Bank (2001).

2. There may be some differences in precise ranking across individual countries, but generally the countries are ranked similarly within a category. Note that the online WTI database defaults to a particular representative indicator (see appendix B), but users may rank countries by any other indicators or a combination of any five indicators based on user-defined weights.

3. The discussion in this paper refers to applied rather than bound tariffs. There are two indicators in the database that deal with bound tariff rates: the share of tariff lines that have been bound in the WTO and the tariff overhang (bound/applied ratio).

4. See Kee and others (2008) for more details on the TRIs, which use estimated elasticities to calculate the impact of a tariff schedule on a country's imports. These measures are based on actual or current trade patterns and thus do not capture restrictions facing new or potential trade. They also do not take into account domestic subsidies or export taxes. The latest available TRIs were published in May 2008 but were calculated in December–November 2007 and were based mostly on tariff and trade flows for 2006 (see http://go.worldbank.org/C5VQJIV3H0).

5. MFN applied tariffs are the nonpreferential tariffs applicable to all WTO partners per national schedules (as opposed to bound levels at the WTO).

6. An effort managed by the International Trade Centre and funded by the World Bank and other donors is under way to update nontariff measure information for about a dozen countries, but additional funding for increasing country coverage remains to be secured (about US$100,000 per country is required).

7. The spike in the high-income non-OECD applied tariff (including preferences) shown in the second panel of figure 2.2 is driven by an outlier, Bermuda, whose early 2000s average tariff was 173.6 percent (in the UNCTAD Trade Analysis and Information System [TRAINS] database), but whose late 1990s tariff was missing (it is about 30 percent for later periods). Without it, the chart would have displayed a gradual decrease in the protection rate for this country group.

8. In 2005, Madagascar simplified the structure of its duties and taxes on imports, in particular by abolishing a large "import tax" and a small "statistical tax" on imports and consolidating them in its customs tariffs. Thus, the large increase in the WTI tariff-based indicators between the early and the mid-2000s does not represent an increase in protection but a change in the type of protection accorded. In fact, (consolidated) import revenues remained virtually unchanged between 2005 and 2006. For this reason, Madagascar is not included among the 31 countries that raised their tariffs.

9. Each group average is significantly different from that of the rest-of-the-world.

10. Low or no average increases, however, do not reveal whether actual changes on individual products occurred.

11. The production-weighted tariff tends to overstate protection as it takes into account only those tariff lines corresponding to goods produced by the country, which have usually higher tariff rates than other goods. It is useful to look at alternative measures of protection in order to understand a country's overall policy stance.

12. Specific tariffs require complex estimation of ad valorem equivalent rates, involving unit prices, to be averaged with the more prevalent ad valorem tariffs. As market conditions change, unit prices change and so does the implied protection afforded by an unchanged specific tariff (to be also reflected in all aggregate measures of tariffs

and often also in the maximum tariff rate), even though no change in tariff policy has occurred.

13. The high variability in the MNA regional average figures stems from a combination of factors. In the early 2000s, Tunisia's negative escalation dominates Jordan's, the only other country in the database. In 2005 and 2007, the inclusion of Egypt (with overall escalation rates of 468 and 603 percent, respectively) trumps the other 7–8 countries' numbers for which such estimates are available. In 2006, the unavailability of Egypt's escalation estimates is responsible for the much lower regional average.

14. The high ratio for the non-OECD high-income group is driven by Bahrain, Kuwait, and the Bahamas.

15. See Mattoo, Stern, and Zanini 2008; World Bank 2008.

16. Each entry by subsector and by mode in the commitment schedule has been graded 1, 0.5, or 0, depending on whether scheduled liberalization commitments are full and unqualified, partial or qualified, or unbound (nil or virtually nil). Such raw scores are then aggregated by subsectors and modes to which specific weights are assigned to reflect their economic importance in the world economy.

17. In fact, countries usually at the top of global competitiveness rankings and whose actual policies and regulations are very open to services trade, like Singapore, Hong Kong (China), and the United Arab Emirates, rank very low using this indicator (26, 23, and 17, respectively), due solely to weak commitments under the GATS.

18. An ongoing project at the World Bank surveying selected services sectors in a number of developing countries (56 in its first pilot phase) will enable the construction of a more comprehensive set of indices of actual services trade restrictiveness, which are expected to be included in the next (late 2008) update of the online WTI database.

19. In banking, both the subsector index of the GATS commitment index discussed and a sector-specific index constructed independently by the U.S.I.T.C show that the LAC region and many EU member countries have the lowest commitments (with the Baltic states at the bottom). The EAP region, Japan, ECA countries that have not acceded to the EU, and upper-middle-income countries have the highest commitments. Within such groups, however, there are large differences. For instance, in the LAC region, Costa Rica is the country most closed to foreign providers of banking services, while Mexico and Uruguay are fully open to foreign banking services providers. In the EAP region, China is the most restrictive market for banking services providers, while Indonesia, Malaysia, and Vietnam in contrast are fully open.

20. The data on preferences are partial since South–South agreements are not fully covered in the TRAINS or ITC databases. Neither do they fully include preferences granted by all the high-income countries, although recent years' preferences are covered better than in the past and EU and U.S. preferences are well covered. Better quality of the data on preferences in the last two years may explain some of the market access improvements noted in this section (see also footnotes 22, 24).

21. See Kee, Nicita, and Olarreaga (2008) for more details on this indicator. The MA-TTRI computes a single "uniform tariff" equivalent of all tariffs facing the given country's exports, using estimated elasticities to calculate the impact on trade flows. It is calculated using bilateral trade and preferential tariffs (and assuming their full utilization) as recorded in the TRAINS database. It is also based on actual or current trade patterns, a static measure that does not capture dynamic trade dimensions such as new exports that may result from changes in policies or market conditions. Just as for the TRIs, a version including nontariff measures (the MA-OTRI, based on the latest available information for 2001 or earlier) is available in the WTI database (see http://go.worldbank.org/C5VQJIV3H0 for more details on the World Bank TRIs).

22. The LAC region's relative standing is negatively affected by the lack of updated information on FTA preferences for the Central American countries (for more details see footnote 24) in the database used to calculate market access restrictiveness indicators. Note however that the WTI estimates discussed below on the value of U.S. preferences rely on national data for 2006 and thus do reflect the post-CAFTA (Central America Free Trade Agreement) preferences, although their impact on trade flows will become apparent only in later years.

23. Between 2005 and 2006, the rest-of-the-world trade-weighted applied tariffs (including preferences) for Brazil went from 7.8 to 3.8 percent for all goods and from 19.9 to 12.8 percent for agriculture; for Argentina they dropped from 10.5 to 4.8 percent for all goods, and from 6.8 to 3 percent for agriculture.

24. After the DR-CAFTA with the United States became effective in April 2006, the high effective pre-CAFTA preferential tariffs that the United States imposed on Central American exports of cotton products were reduced significantly, in many cases to zero, but the TRAINS database (and thus also the various restrictiveness indicators that rely on this database) still reflect for 2006 the higher, pre-CAFTA preferential tariffs. Thus, Central American countries' (and the LAC region's) relative standing on market access is expected to improve once the 2007 applied tariffs will be taken into account in the next WTI update. The WTI estimates discussed below of the value of U.S. preferences rely on national data for 2006 and thus do reflect the post-CAFTA preferences, although their impact on trade flows is expected to become visible only in later years.

25. Note that the criterion used excludes China and Thailand, both large exporters of garments and textiles from the rest-of-the-world point of view, as the focus here is on the economic importance of this product category for the exporting country, not the global economy.

26. While such partial correlations do not help identify causality or the relative importance of one variable to the determination of the other when many factors are contributing to the final outcome, these patterns suggest that enhanced unilateral preferences aimed at improved market access may help trade and export growth in the beneficiary countries.

27. Note that some trade flows with FTA/CU partners may still be subject to some tariffs, depending on the degree of coverage of each FTA/CU arrangement, and so the WTI indicator should be interpreted as the potential share of trade under FTA/CU arrangements that could be subject to zero duties. Also, the share of trade occurring with FTA/CU partners cannot be simply added to the MFN-0 share to get an overall picture of trade occurring duty free, since some of the trade recorded as FTA/CU trade may well take place under MFN-0 as well.

28. LDCs are 50 of the poorest countries that have a special status in the WTO and enjoy special tariff preferences from most OECD countries. They are so classified by UNCTAD according to three criteria: low income, human resource scarcity, and economic vulnerability.

29. The value of potential preferences is the difference between the MFN duty and the potential preferential duty (regardless of whether the trade was subjected or not in reality to that preferential duty) times eligible exports. The actual value of preferences is the difference between the MFN duties on those exports that actually entered under preferences and the duties that have been actually paid using trade preferences granted to that country times actual exports. For ease of comparison across the countries, they are both expressed as a percentage of a beneficiary country's

total exports to the relevant preference-granting country(ies) (the United States and the EU for this WTI 2008 round).

30. Brenton and Ikezuki (2005) reach the same conclusion on their work on Africa and LDCs. This paper makes the same point but at the global level. The tariff savings are small, either because the share of exports for which preferences granted is small, or for which preferences claimed is small, for example, due to restrictive rules of origin, or because the preferential margins (difference between MFN and preferential tariffs) are small or in some cases nil (for example, in case of MFN-0).

31. Appendix B has a discussion of the theoretical and empirical literature that links the institutional environment to trade outcomes. There is a vast literature on how good institutional environments support trade. See also World Bank 2002.

32. The 2008 Ease of Doing Business findings were released in October 2007, based on underlying surveys conducted in the spring of 2007.

33. See the Worldwide Governance Indicators (WGI) at http://www.govindicators.org. These composite indicators refer to surveys conducted and indicators produced by various organizations in 2006. The value of these indicators ranges from −2.5 to 2.5 with a higher value corresponding to better governance.

34. For empirical work linking overall trade and governance indicators in the context of gravity models see Islam and Reshef (2006); the paper also discusses other empirical research in this area.

35. Because of the strong relationship between income and better governance, these relationships were also examined controlling for income per capita. Better governance is associated with a greater share of manufacturing and services in exports, lower real export growth volatility, and higher real export growth.

36. This section draws largely from World Bank (2007b) and the LPI dataset available at http://www.worldbank.org/lpi.

37. The LPI and its indicators have been constructed on the basis of the information gathered from a 2006 worldwide survey of logistics companies responsible for moving goods—the multinational freight forwarders and main express carriers. More than 5,000 individual country evaluations were used to prepare the LPI, which covers 150 countries. The value of the index ranges from 1 to 5 for each component; 1 is the lowest score and 5 is the maximum score.

Chapter 3

1. The 2007 world trade growth rate is not significantly different in statistical terms from rates in the early 2000s and late 2006, and neither is the export growth rate compared to all previous three periods. For 2000–04, the trade growth rate in developing countries (8.7 percent) was significantly different from that in high-income countries (6.7 percent). The different growth rates between the 1995–99 and the 2005–06 periods are not significant.

2. Intra-EU trade is included in the calculation of total trade outcomes for each EU country.

3. The average trade integration average for the SAS region has been calculated by assuming for 2007 the same very high share of trade over GDP (176 percent in 2006, much higher than the rest of the region) for the Maldives, a small country with no available data yet for 2007. Without such adjustment, the average regional share of trade would show a precipitous drop between 2006 and 2007.

4. In a study of trade in SSA, Rodrik (1998) finds that "country size (as measured by population) and per-capita income are two very strong determinants of the openness of an economy. Smaller and richer countries trade more (as a share of their GDP). The estimated coefficients imply that a doubling of population decreases trade by 16% of GDP while a doubling of per-capita income increases it by 12%." Other papers also find a positive correlation between openness and income.

5. Benin, Uganda, Niger, Sudan, Rwanda, Burkina Faso, and the Central African Republic.

6. Trade shares of GDP in high-income and small island countries range between 29–474 percent and 43–326 percent, respectively, and average 121 and 120 percent, respectively.

7. Note that these types of concentration indicators tend to be quite vulnerable to cyclical fluctuations in relative prices, in a way that commodity price rises make commodity exporters look more concentrated.

8. Recent research has shown that diversification is not monotonically increasing with income levels and that past a certain level of income, countries show a tendency to reconcentrate their exports (see Klinger and Lederman 2004 or Carrère et al. 2007).

9. The data do not, however, provide evidence that export concentration is correlated with the volatility of (nominal) export revenues when compared across countries.

10. See Jansen (2004) for a survey of the literature and opposite findings based on his analysis of changes in terms of trade and export earnings. He concludes that "the more concentrated are the exports, the more volatile a country's terms of trade are likely to be, in particular if exports are concentrated in commodities. Terms of trade volatility, in turn, affects income volatility positively and so does openness."

11. Export concentration values for both SSA (most concentrated) and ECA (least concentrated developing country region) are significantly different from their rest-of-the-world counterparts in all time periods.

12. Intra-EU trade is included.

13. The index is calculated similarly to the export product concentration index.

Chapter 4

1. Many countries in the EAP region are small islands for which a number of trade indicators are unavailable.

2. In March of this year, the Slovak Republic announced it would change from borrower to aid provider status in the World Bank Group.

3. For instance, Chile ranks 32nd (out of 151) in trade facilitation, behind only high-income countries and a handful of developing ones such as South Africa, Malaysia, China, and Thailand.

4. See however the qualifications in footnotes 20, 22, and 24 in chapter 2 and regarding post-CAFTA market access that will be reflected in the next update of the WTI database and other weaknesses of date or preference.

5. And possibly partly reflecting the impact of high tariffs on imports.

6. However, information in the international databases about these nontariff measures has not been updated to reflect changes since 2001.

7. In 2005–06, Sri Lanka claimed less than half (48 percent) of the preferences that it could have taken advantage of, compared with 64 percent for Bangladesh.

8. Economic growth in SSA accelerated from 5.7 percent in 2005–06 to 6.1 percent in 2007, with a robust 8.1 percent among oil exporters (notably Angola and Sudan) and 5.3 percent among oil-importing countries. Trade with nontraditional partners, particularly in Asia, has increased in recent years (Broadman 2007). By 2004 the Asian share of African exports (27 percent) was on par with the EU's (32 percent) and the United States' (29 percent). In particular, Africa's exports to China grew by 48 percent annually during 1999–2004, compared to 14 percent for India. However, most of these exports come from five oil and mineral producing countries (85 percent).

Appendix B

1. For instance, Bolaky and Freund (2004) find that increased openness does not stimulate growth in economies with high regulation. There is some evidence that openness may even hamper growth in economies with excessive regulation. Research by de Groot and others (2004) highlights institutional quality as an explicit determinant of bilateral trade, recognizing that the performance of institutions can have a significant impact on transaction costs, which in turn affect trade. Various contributions in the literature explain the value of institutions to international trade through their impact on information asymmetries, property rights, and contract enforcement. Anderson and Marcouillier (2002) develop a model in which corruption and poor contract enforcement reduce trade between countries. Levchenko (2004) models institutional differences as a source of comparative advantage and shows, among other things, that developing countries may not gain from trade due to the poor quality of their institutions and that factor prices may diverge when institutional quality varies among trading partners. Souva and Rowan (2005) examine the relative importance of political versus market institutions for trade and conclude that it is the latter that counts. Islam and Reshef (2006) look at the impact of institutional quality versus differences in institutional design on trade values.

2. For instance, Hausman, Lee, and Subramanian (2005) find that logistics performance has a statistically significant relationship with the level of bilateral trade. Many empirical studies have examined the effect of transport costs on trade flows. Notably, Limão and Venables (2001) find a robust statistical link between transport costs and international trade flows. They also find a clear link between the quality of infrastructure and transport costs—and thus conclude that infrastructure investments are important for export-led economic growth. Other studies find that differences in logistics performance are driven only in part by poor quality of physical infrastructure services such as road, rail, waterways, port services, and telecommunications (Subramanian and Arnold 2001). Instead, the inadequacies often are caused by (nontariff) policy and institutional constraints—such as procedural red tape, inadequate enforcement of contracts, poor definition and enforcement of rules of engagement, delays in customs, delays at ports and border crossings, pilferage in transit, and highly restrictive protocols on movement of cargo.

3. Principal component analysis (PCA) is a statistical method to reduce multidimensional datasets to lower dimensions to find patterns. PCA summarizes a p-dimensional dataset into a smaller number, q, of dimensions while preserving the variation in the data to the maximum extent possible. The q new dimensions are constructed such that (i) they are linear combinations of the original variables, (ii) they are independent of each other, and (iii) each dimension captures a successively

smaller amount of the total variation in the data. The p original variables are combined into q linear combinations, which form the new principal components of the system. A standardized linear combination Z_i of data vector, $X_i = (X_{11}, X_{12}, \ldots, X_{1p})$ of length p is defined as: $Z_i = w_i^t X_i$; where the sum of the squares of the weights, w_i^t is equal 1. PCA chooses the weights by determining the linear combination of all p variables in the transformed dataset that maximizes the variance of the data. Each principal component provides a set of factor loadings of the indicators, which correspond to their importance for the component.

Appendix C

1. These indices are grounded in the same transparent and quantitative scoring methodology used also (with minor differences) by WBI for producing the index of overall services trade commitments across all services sectors (see section on services trade in chapter 2).