

# Endnotes

## Overview

1. Clemens, Montenegro, and Pritchett (2008), background paper for this Report.
2. Collier (2007).
3. In Zambia a person in a settlement with more than 5,000 people is considered urban; in India the threshold is 20,000. To compare urbanization across countries, this Report pioneers a new measure of population density, the “agglomeration index” (see chapter 1).
4. See World Bank 2007k.
5. Fujita 2007.
6. Mukherjee 2007.
7. Koh and Chang 2005.
8. de Blij 2005.
9. Khanna 2008.
10. World Bank 2008e.
11. Throughout this Report, what is often called “regional development” or “territorial development” is referred to as “area development.” These policies must contend with even greater spatial unevenness as their scope widens to encompass a country.

## Navigating This Report

1. [http://nobelprize.org/nobel\\_prizes/economics/laureates/1971](http://nobelprize.org/nobel_prizes/economics/laureates/1971).
2. [http://nobelprize.org/nobel\\_prizes/economics/laureates/1971/kuznets-lecture.html](http://nobelprize.org/nobel_prizes/economics/laureates/1971/kuznets-lecture.html).
3. Brown and others 2008.

## GIM 1

1. See Engerman and Sokoloff (2000a) and Acemoglu, Johnson, and Robinson (2002).
2. For a more detailed discussion of U.S. economic geography, see Kim and Margo (2004).
3. Fogel (1979) suggests that no single technology was responsible for this reduction in cost. For example, he estimates that U.S. output in 1890 would have been only 4 percent lower if goods were transported by water rather than rail.
4. McCallum (1995).

## Chapter 1

1. Farvacque-Vitkovic, Casalis, and Eghoff (2007), p. 37.
2. United Nations/Wilbur Smith Associates (1980), p. 2.
3. Siegel (1997), p. 61.
4. NUTS provides a single uniform classification of territorial units for producing regional statistics for the European Union. The first two administrative levels in most member states correspond to NUTS 2 and NUTS 3. NUTS 1, a larger unit representing the major socioeconomic regions, often does not correspond to existing administrative units within member states.
5. The figures in this paragraph are derived from data on total land area, proportion of land area dedicated to agricultural uses, total employment, proportion of employment in agriculture, GDP, and proportion of gross value added (GVA) generated in agriculture (Eurostat 2005; Belgium’s Office of National Statistics 2006).

Employment figures are for 2003, population figures for 2002, and GDP figures for 2005. All GDP figures are quoted using purchasing power standard (PPS) exchange rates.

6. Population figures are for year 2007 ([www.citypopulation.de/world.htm](http://www.citypopulation.de/world.htm)).

7. The tendency for the populations of the primate or largest few cities in a country to considerably outweigh the populations of cities down the hierarchy of places is reflected in the tendency of the rank-size rule to break down at the top end of the size distribution of cities.

8. These definitions of the rank-size rule and Zipf’s law are approximate. For more precise definitions see Gabaix and Ioannides (2004).

9. Eeckhout 2004.

10. Martin 2005. Even in the United Kingdom, which has a highly spatially and institutionally concentrated financial sector, large cities such as Birmingham, Manchester, Leeds, and Edinburgh have fairly large concentrations of venture capital firms, although regional stock exchanges had been abolished by the beginning of the 1970s.

11. Kim and Margo 2004.

12. Office of the Deputy Prime Minister 2003.

13. Thanh, Anh, and Tacoli 2005.

14. Tiffen 2003.

15. Glaeser and Kahn 2001, p. 21.

16. Baker and others 2005, p. 15.

17. Peng, Zhu, and Song 2008, p. 7.

18. Glaeser and Kahn 2001.

19. Estimated from the gross product of the world’s major cities published in [www.citymayors.com](http://www.citymayors.com); Price Waterhouse Cooper 2007.

20. This is equal to the excess of GVA measured on a workplace basis over GVA measured on a residence basis for London. Calculation is based on data from Office of National Statistics (2006).

21. Figures on flows of earnings associated with commuting come from the U.S. Bureau of Economic Analysis.

22. Quote taken from the glossary of the World Urbanization Prospects: The 2007 Revision Population Database (<http://esa.un.org/unup/>).

23. Even with time-series analysis, some care needs to be exhibited with the World Urbanization Prospects database. For some countries the official definition of an urban area has changed over time. In China, for example, the urban share in 1999 could have been 24 percent, 31 percent, or 73 percent depending on the official definition of urban population used (Satterthwaite 2007).

24. Glaeser, Kolko, and Saiz 2001.

25. Statistics taken from Price Waterhouse Cooper 2007.

26. The estimates of urban consumption shares are based on available household surveys of different years, and the per capita GDP estimates are in 2000 U.S. dollars for the respective years (the data set is described in detail in Montenegro and Hirn 2008).

27. Maddison 2008b.

28. Kim and Margo 2004.
29. This is the so-called home market effect of the new economic geography, also discussed in chapter 4. The concentration of economic activity in urban areas also entails additional productivity-enhancing effects, as discussed in chapter 4.
30. This tendency for urbanization to produce a divergence in basic welfare indicators in favor of urban areas distinguishes the modern-day developing countries from the industrializers of the nineteenth and early twentieth centuries, discussed below.
31. Based on 2003 data from Maddison (2008b).
32. European Commission 2001.
33. Miles 2007.
34. As measured in constant 1990 international dollars using data from Maddison (2008b).
35. An area is defined as predominantly urban (rural) if more than 50 percent of its population lives in urban (rural) areas. An area is also classed as predominantly urban if its urban population share is between 15 and 50 percent and it has an urban center of more than 500,000 inhabitants (1 million for Japan) representing in excess of 25 percent of the area's population.
36. Some care is required in this case. The increase in the U.S. urban wage premium during this period might have had less to do with better lives in cities than with the effects of large declines in the relative prices of agricultural commodities (Barro and Sala-I-Martin 2004, p. 470).
37. These estimates of urban consumption and urban shares of population are based on country household surveys of different years, depending on availability.
38. As illustrated later for China, however, this is not the case for all developing countries. Although there is a negative relationship across Chinese provinces between the urban share and the ratio of urban to rural income, this relationship has shifted upward since the late 1990s.
39. "Access to water" is defined here as any access to improved water sources. These sources vary according to the local context, but include wells, communal taps, piped water, and trucks selling water. Similarly, "sanitation" refers to a range of qualified items such as latrines and outhouses.
40. The countries included in the sample are Bangladesh, Benin, Bolivia, Burkina Faso, Cameroon, Chad, Colombia, the Dominican Republic, the Arab Republic of Egypt, Ghana, Guatemala, Haiti, India, Indonesia, Kazakhstan, Kenya, Malawi, Mali, Morocco, Mozambique, Namibia, Nepal, Nicaragua, Nigeria, Peru, the Philippines, Tanzania, Turkey, Uganda, Vietnam, Zambia, and Zimbabwe.
41. Gwatkin and others 2007.
42. Satterthwaite and others 2007.
43. *The Economist* 2007a.
44. Satterthwaite and others 2007.
45. Satterthwaite and others 2007.
46. Data on Delhi's population comes from United Nations (2006).
47. Smith 1989.
48. Crafts 2008.
49. Williamson 1982.
50. *The Economist* 2007a.
51. Satterthwaite and others 2007.

52. This figure, together with all other historical urban share figures quoted in this section, is based on the definition of an urban area as a city with more than 5,000 inhabitants and taken from Bairoch and Goertz (1986). All figures on urban shares and populations for contemporary developing countries in this section have been taken, or calculated using data, from the United Nations (2006c). As previously noted, using this database to compare *changes* in urban share across countries is not as problematic as using it to compare *levels* of urban shares across countries.

53. This sample consists of Belgium, Denmark, Finland, France, Germany, Greece, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. Its composition was determined by the availability of historical data from Bairoch and Goertz (1986).

54. Figure 1.13 illustrates a number of countries that, according to the United Nations (2006), experienced positive change in urban share between 1985 and 2005. A handful of countries with populations greater than 1 million experienced "negative urbanization" over this period (for example, Armenia, Estonia, Georgia, Kyrgyzstan, Latvia, Moldova, Tajikistan and Uzbekistan). Although the definitions of an urban area have not changed for these countries, the pattern of declining urban shares may, in these cases, be related to the dissolution of the Soviet Union. A further two of the countries (the Czech Republic and the Slovak Republic) were parts of the former Czechoslovakia, and the dissolution of this country, along with the transition away from a planned economy, may have likewise affected their urban shares. For the remaining six countries (Iraq, Mauritius, Papua New Guinea, Sri Lanka, the United Arab Emirates, and Zambia), a number have unconventional or changing definitions of an urban area. For example, Papua New Guinea's definition of an urban area is a center with 500 inhabitants or more, an unusually small threshold, while the United Arab Emirates' urban population is measured as the population of nine cities.

55. Satterthwaite 2007.

56. United Nations 2006c.

57. This conclusion is based on historical estimate of U.S. urban population growth derived by combining historical data on urban shares from Bairoch and Goertz (1986) with historical data on country population sizes from Maddison (2008b).

58. Gwatkin and others 2007.

59. Gwatkin and others 2007.

60. Woods 2000.

61. Williams and Galley 1995.

62. Orwell 1937.

63. Crafts 2008.

64. Williamson 1990.

65. Stockel 2002.

66. Kim and Margo 2004.

## Chapter 2

1. Armstrong and Taylor 2000. See, in particular, chapter 8.
2. Beaumier 1998.
3. Krugman (1991a), pp. 11–13.
4. See, for example, Barro and Sala-I-Martin (2004).
5. OECD (2007), p. 14.
6. Blanchard and Katz 1992.
7. OECD (2006), p. 13.

8. France's National Statistics Office's Web site ([www.insee.fr/fr/default.asp](http://www.insee.fr/fr/default.asp)).

9. Länder National Accounts Working Group (<http://www.statistik-portal.de>).

10. This pattern is familiar to development specialists as the "Kuznets curve," named for the Nobel economist Simon Kuznets. Although the Kuznets curve depicts a relationship between a country's economic development and its interpersonal income inequality, the hypothesis Kuznets forwarded to explain this relationship corresponds to that underlying the relationship between spatial inequality and development documented in this chapter.

11. Poncet 2006.

12. Buys, Deichmann, and Wheeler 2006.

13. Poncet 2005.

14. Poncet 2006.

15. Tobler 1970.

16. Angeriz, McCombie, and Roberts 2008.

17. Lipsey and Nakamura 2006.

18. Henderson, Kuncoro, and Nasution 1996.

19. Deichmann and others forthcoming.

20. Henderson, Shalizi, and Venables 2001.

21. U.S. Bureau Census, various years.

22. Aghion and Williamson (1998), pp. 144–51.

23. Taylor and Williamson 2006.

24. Angeriz, McCombie, and Roberts 2008.

25. Fingleton 2003.

26. Deichmann and others 2005.

27. Hering and Poncet 2006.

28. Da Mata and others 2007.

29. Paillacar 2007.

30. Head and Mayer 2006.

31. Collier 2007.

32. Estimates generated from Nordhaus's Geographically Based Economic Database (<http://gecon.yale.edu/>), compiled from information gathered in 1990.

33. Time-series data on spatial concentration were assembled for 10 countries—some, however, with only two observations. Countries in the sample are Canada (1890–2006), Spain (1850–2000), France (1801–1999), the Netherlands (1850–2006), Japan (1900–2000), United States (1960–2000), Brazil (1960–2004), Chile (1975–2004), Thailand (1975–2004), Indonesia (1989–2005), and the Philippines (1980–2005). Except France, Spain, and the Netherlands, where population is used, economic mass is measured based on GDP. Data come from a variety of sources. But, as explained below, this combination of information sources does not constitute a significant problem because the concentration measure—a ratio—is robust to various indicators.

34. In what follows, the concentration measure is defined according to the following method. First, we estimate an area's hypothetical share of national GDP under the assumption that this GDP exhibits a uniform spatial distribution. Second, we identify the area with the highest actual share of national GDP. Third, we divide the actual GDP share of this leading area by its hypothetical (uniformly spatially distributed) share to get our measure of spatial concentration. For example, if the leading area has an actual share of 10 percent and a hypothetical share of 2 percent, then the measure of concentration is equal to 5.

35. The concentration measure in this section focuses only on the level of concentration (density) in the leading area of each country. It does not provide information for the spatial distribution of density across the remaining areas.

36. GDP per capita figures are taken from Maddison (2008b).

37. Krugman (1991a), pp. 11–13.

38. Ingram and Whitehead 2008.

39. The source of information is a set of more than 120 household surveys in 75 countries, with some countries having two years of observations. For each country and year, we estimate household consumption for individual households. In some countries, only household incomes are available. Then, we aggregate the household consumption into total household consumption for each census region of the country. The concentration measure for a country is proxied by the highest regional share of total household consumption.

40. The source of information is Yale University's William Nordhaus's Geographically Based Economic Database (<http://gecon.yale.edu/>). This database of population, gross product, and land area of subnational areas covers more than 90 countries.

41. In cross-country comparisons, use of a standardized grid cell helps avoid the cross-level fallacy, in which the number of partitions can affect the variance of the measure. Like the procedure for estimating the spatial Gini coefficient, we rank the terrestrial grid cells in descending order according to their GDP density and plot the cumulative land area on the horizontal axis against cumulative gross product on the vertical axis. Then a polynomial function is fitted to the data to predict the share of GDP within the densest 5 percent of the country's land area.

42. Spatial Gini coefficients consider the distribution of density across a country's *entire* land area. The coefficient equals zero if economic density is evenly distributed across space, while it equals one if all production takes place within a single terrestrial grid cell. Spatial Gini coefficients of GDP density are computed in three steps. First, grid cells are ranked in descending order according to density of economic mass (GDP per square kilometer). Second, cumulative shares of land area are derived, plus a corresponding series of cumulative shares of GDP, by grid cell. Third, these two measures are plotted against each other to produce a Lorenz curve, and the spatial Gini coefficient is calculated as the ratio of the area between the uniform distribution line and the Lorenz curve to the area below the uniform distribution line.

43. Krugman 1993.

44. Based on constant 1990 international Geary-Khamis dollars in Maddison (2008b).

45. The coefficient of variation increased from 0.107 to 0.148 (Crafts 2005).

46. Comparison based on GDP per capita figures from Maddison (2008b).

47. Roberts 2004.

48. Barro and Sala-I-Martin 1992.

49. Green 1969.

50. We define the welfare measure as per capita gross cell product, and spatial disparity as the ratio of the highest-to-lowest per capita gross cell product. Other measures of spatial inequality—such as the difference between the 90th percentile and the 10th percentile and that between the mean for the top 10 grid cells and the

mean for the bottom 10 grid cells—and coefficients of variation show similar stylized patterns.

51. For each country and year, we estimate a Mincerian-type regression with per capita household consumption as the dependent variable, a set of location dummies as the independent variables, and standard observable household characteristics (such as household size and household head's education, gender, age, and marital status) as control variables. The location variables are broad census regions. The difference between the maximal and minimal coefficients on the location dummy variables is our disparity measure in consumption between leading and lagging areas, purely because of location.

52. We estimate the relationship between spatial disparity and GDP per capita by pooling the disparity estimates from each household survey in a regression analysis that also controls for the number of census regions within each country and each country's land area. The inverse relationship between spatial disparities in consumption and the level of development was found to be robust to various model specifications (to the use of different sets of control variables).

53. These estimates are in 2000 U.S. dollars for the years of the household surveys during the 2000s.

54. Yemtsov 2005.

55. Kanbur and Zhang 2005; Milanovic 2005.

56. Demurger and others 2002.

57. World Bank 2007.

58. Georgia was the only country in the region not to enjoy a reduction in absolute poverty over the period. Douthat, Poe, and Cutler (2006), p. 52, and World Bank (2005e).

59. Ferreira 2000.

60. GDP per capita figures taken from Maddison 2008b.

61. Naudé and Krugell 2006.

62. Cárdenas and Pontón 1995.

63. Hill, Resosudarmo, and Vidyattama 2007.

64. Wisaweisuan forthcoming.

65. Son forthcoming.

66. Based on United Nations (1997) and United Nations (2005).

67. Garcia-Verdu 2005; Fuentes and Montes 2004.

68. Public Administration Research and Consultation Centre (PARC) 2004.

69. Government of India Planning Commission 2002b.

70. Sri Lanka National Council for Economic Development and UNDP (2005).

71. Government of Sri Lanka 2008.

72. Kenya Ministry of Planning and National Development and UNDP (2005).

73. Smith (1976), p. 122.

74. Venables 2006.

75. Chang 2005.

76. Hanson 1998b.

77. Demurger and others 2002.

78. He forthcoming.

79. Venables 2006.

80. Crafts (2005), table 4, p. 59.

81. Calculations are for 2005, based on data from the *China Statistical Yearbook* (2006), (<http://www.stats.gov.cn/tjsj/ndsj/2006/indexeh.htm>).

82. GDP per capita figures for Shanghai and Guizho have been calculated for 2005 by multiplying the estimates for relative provincial performance by Maddison's estimate of national GDP per capita. The figures are in 1990 international dollars. Comparisons with Britain are likewise based on Maddison's data from Maddison (2008b).

### Chapter 3

1. Figures are based on Maddison (2006). Between 1820 and 1998, GDP increased from \$694.4 billion to \$33,725.9 billion in 1990 international dollars. Population during that time grew from 1.04 billion to 5.3 billion, a fivefold increase at about 1 percent per year.

2. These estimates are based on the G-Econ project database assembled at Yale University (see Nordhaus 2006). The database provides estimates for 1990 of GDP, population, and land area of regular grid cells that are about 100 by 100 kilometers at the equator. These figures likely underestimate actual concentration.

3. Ohmae 1990.

4. The numbers include land borders between nation-states only. So, borders between colonies in the nineteenth or early twentieth century are not considered.

5. Blake 2005.

6. The measure summarizes four indicators representing restrictions to the flow of goods, capital, people, and ideas: (1) average tariffs (World Bank data), (2) capital openness (Chinn and Ito 2006), (3) proportion of countries that need a visa to visit that country (Neumayer 2006), and (4) a press freedom index that includes information such as Internet filtering (Reporters without Borders for Press Freedom 2007). These measures are discussed in more detail later in the chapter. All indicators were normalized and rescaled from more open to more closed borders and summed. An index based on rank sizes provides similar results. The data typically refer to 2005 or 2006, but in a few instances they refer to 2004. For a few countries with only three of the four indicators were available, the missing values were replaced by the overall mean. Among the larger countries, this affected Afghanistan, Cuba, the Democratic Republic of Congo, Serbia and Montenegro, Tajikistan, and the Republic of Yemen. The index captures many but not all barriers and divisions. For instance, incompatible laws and regulations can have an impact on country well-being.

7. There are several globalization indexes that capture similar aspects of international barriers. One example is the KOF Index of Globalization ([globalization.kof.ethz.ch](http://globalization.kof.ethz.ch)). However, these indexes typically mix country regulations such as tariff levels with outcome variables such as the share of exports in GDP. For the illustrative analysis in this chapter, we are strictly interested in how countries themselves manage economic interaction.

8. See McCallum (1995) and Helliwell (2002).

9. Anderson and van Wincoop 2003; 2004.

10. Bhagwati and Srinivasan 2002; Alcalá and Ciccone 2004.

11. Rodríguez and Rodrik 2000; Slaughter 2001.

12. World Bank 2007j.

13. Kee, Nicita, and Olarreaga (2006) develop measures of trade restrictions that include some of these aspects. Available for a smaller set of countries than the average tariff index, this subset shows a high correlation with the average tariff index.



14. See Chinn and Ito (2006). The Chinn-Ito index of capital openness is derived from the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions* (AREAER). It is the first principle component of four binary variables reported: existence of multiple exchange rates, restrictions on current account, capital account transactions, and requirement of the surrender of export proceeds. See Chinn and Ito (2006). The original index values were rescaled between 0 (lowest restrictions among all countries) and 100 (highest restrictions). The regional averages are unweighted.

15. McKenzie 2001; Kose, Prasad, Rogoff, and Wei 2006; Chinn and Ito 2006; Henry 2007.

16. Quinn and Toyoda 2006.

17. Bekaerta, Harvey, and Lundblad 2005.

18. Kose, Prasad, Rogoff, and Wei 2006.

19. Pritchett 2006.

20. Quantifying these benefits is difficult. But a recent study estimates that a 3 percent increase in the labor force of industrial countries could provide a \$356 billion gain (World Bank 2005).

21. Pritchett 2006.

22. Neumayer 2006.

23. McKenzie 2007.

24. Linden, Kraemer, and Dedrick 2007. Another example of the importance of knowledge-intensive activities is given by Oppenheimer (2008): Of each cup of Latin American-grown coffee that U.S. consumers buy, only 3 percent of the price goes to the region's farmers. The rest funds genetic engineering, processing, branding, marketing, and other knowledge-based activities, which are mostly based outside the region.

25. Criscuolo, Haskel, and Slaughter 2004.

26. Brunettia and Weder 2003; Keefer and Khemani 2005.

27. Data available online at [www.rsf.org](http://www.rsf.org).

28. Gallup, Sachs, and Mellinger 1999.

29. See Collier 2007.

30. Alesina and Spolaore (2003), p. 81.

31. Winters and Martins 2004.

32. Bertram 2004; World Bank 2006a.

33. Alesina, Devleeschauwer, Easterly, Kurlat, and Wacziarg 2003.

34. Collier 2007.

35. Spolaore and Wacziarg 2005.

36. Simmons 2006.

37. Blake 2005.

38. Collier 2003; 2007. Miguel, Satyanath, and Sergenti (2004) show that the impact can also be in the opposite direction. Based on data for African countries from 1981–99 and using rainfall data to correct for potential endogeneity, they estimate that a negative growth shock of 5 percent increases the likelihood of conflict by one-half in the following year.

39. See endnote 2 for data source. These data by grid cells may still underestimate concentration, because the estimates are based on data for 1990 and high-concentration areas have likely grown faster than low-concentration areas.

40. Maddison 2006.

41. Bairoch 1982.

42. Tilly 1990.

43. Maddison 2006.

44. See box 0.2 for definitions of WDR regions.

45. Disdier and Head 2008.

46. Leamer (2007) highlights this point.

47. Bourguignon and Morrisson 1998; World Bank 2007a.

48. Morrisson and Murtin 2005.

49. Maddison 2006.

50. Bourguignon and Morrisson 2002.

51. Collier 2007.

52. Cutler, Deaton, and Lleras-Muney (2006) discuss the drivers of falling mortality rates that led to these increases in longevity.

53. Morrisson and Murtin 2005.

54. The inequality numbers may underestimate the true disparities in human capital outcomes. "Years of schooling" relates only to primary and secondary education and therefore has an inherent maximum value. Many developed countries have essentially achieved a natural maximum some time ago, but they have made further progress in improving the quality of education and in expanding tertiary education. Developing countries have been catching up on primary and secondary education, but less so in other dimensions of human capital.

55. Cohen and Soto 2007.

56. These numbers may overstate improvements somewhat, because no data are available for several countries that are likely among the worst performers.

57. Baumol 1986; De Long 1988; Barro and Sala-I-Martin 1992; Quah 1996.

58. Maddison 2006. Pre-1990 data for Eastern Europe are likely somewhat less reliable.

59. Lederman, Maloney, and Servén 2005.

60. Pallage and Robe 2003.

61. Nordhaus 2006.

62. Snow, Craig, Deichmann, and Marsh 1999.

63. Caselli 2005.

64. Easterly and Levine 2001.

65. Baldwin, Martin, and Ottaviano 2001.

66. Puga and Venables 1999; Shatz and Venables 2005.

67. Levinson 2006.

68. Economic Intelligence Unit 2007.

69. Wolf 2004. Others, however, such as Bordo, Eichengreen, and Irwin (1999), think trade and capital markets are more integrated today.

70. Leamer 2007.

71. According to UN Comtrade data for 2004 and using figures reported by China—for example, Japan has a trade surplus in manufacturing of US\$21 billion with China, the Republic of Korea US\$34 billion, Thailand US\$6 billion, the Philippines US\$5 billion, and Indonesia US\$1 billion.

72. *New York Times*, February 22, 1999.

## GIM 2

1. Baldwin and Wyplosz 2006; Crafts and Toniolo 1996.

2. Baldwin 2008.

3. Baldwin 1995.

## Chapter 4

1. Smith (1976), p. 21.

2. See Glaeser, Kolko, and Saiz 2001; Sinai and Waldfogel 2004.

3. Discussion of agglomeration economies dates as far back as Smith's consideration of specialization and the division of labor (Smith (1976)); Marshall's information spillovers, searching and

matching processes, and input-sharing (Marshall (1890)); and more recently, interindustry supply linkages (Chinitz (1961)); learning-by-doing (Arrow (1962)); and cross-fertilization of ideas and innovation (Jacobs (1970)).

4. McCann (2001), p. 56.

5. See, for example, Henderson (1986); Henderson, Kuncoro, and Turner (1995); Nakamura (1985); Hammond and von Hagen (1994); Sveikauskas, Gowdy, and Funk (1988); Greytak and Blackley (1985); Glaeser and others (1992); and Bernstein and Nadiri (1988).

6. Prateen 1988.

7. Junius 1997.

8. Of 27 estimated scale coefficients, 23 show increasing returns to scale, most above 4 percent, robust to various specifications of the production function (Griliches and Ringstad 1971, and Ringstad 1978).

9. Baldwin and Gorecki 1986.

10. Owen (1983) for Europe, and Scherer (1980) and Hall (1988; 1990) for the United States.

11. Industry-level scale returns in the range of 1.30 are found for many U.S. manufacturing industries (see Paul and Siegel 1999), and Chilean plant-level data for eight industries exhibit a comparable scale elasticity of between 1.20 and 1.44 (Levinsohn and Petrin 1999).

12. Antweiler and Trefler (2002) for 71 countries over the period 1972–92.

13. The average scale elasticity estimate of 1.051 is within the bounds of estimates in the United States (Basu and Fernald 1997) and in Canada (Fuss and Gupta 1981).

14. See Roeger (1995) for the United States, and Martins, Scarpetta, and Pilat (1996) for the Organisation for Economic Co-operation and Development.

15. Junius 1997.

16. Roeger 1995.

17. Hughes and Mester (1998) detect that, as scale increases, banks economize on resources to manage risks, preserve capital, and signal institutional strength. Calem (1994) and Hughes and others (1999) suggest that geographic expansion of bank branches produces scale efficiency gains from lower deposit volatility, higher expected returns, and more diversified risk. There is also evidence of increasing returns to scale in data processing activities (for example, Hancock, Humphrey, and Wilcox (1999) for payment system).

18. Bossone and Lee (2004), using a sample of 875 commercial banks drawn from the FitchLBCA's Bank Scope database.

19. Named after three economists: Alfred Marshall, Kenneth Arrow, and Paul Romer (Glaeser and others 1992).

20. Hanson 1996.

21. See [www.referenceforbusiness.com/industries/Textile-Mill/Women-s-Full-Length-Knee.html](http://www.referenceforbusiness.com/industries/Textile-Mill/Women-s-Full-Length-Knee.html).

22. Donsky 1990.

23. U.S. Bureau of Census website.

24. Henderson (1986), based on cross-sectional data for the United States and Brazil.

25. Jacobs 1970.

26. Henderson, Kuncoro, and Turner 1995. Henderson (1997a) finds the largest effects on productivity from own-industry employment are lagged two to five years, because it takes time to learn from neighbors. Jaffe, Trajtenberg, and Henderson (1993) corroborate

the slow diffusion over space of location- and industry-specific information.

27. Carlton 1983; Wheeler and Mody 1992; Carlino 1979; and Hay (1979) find that concentration of industrial activity is favorable for influencing U.S. firms investment and location decisions.

28. World Bank 2006c.

29. Burchfield and others 2006.

30. Instituto de Pesquisa Economica Aplicada ([ipeadata.gov.br](http://ipeadata.gov.br)).

31. Data from World Bank (2007j).

32. Devereux, Griffith, and Simpson (2004) for the United Kingdom; Ellison and Glaeser (1997) for the United States; and Maurel and Sédillot (1999) for France.

33. Rosenthal and Strange 2004.

34. Kim 1995.

35. Duranton and Overman 2002.

36. Henderson, Shalizi, and Venables 2001.

37. Henderson, Shalizi, and Venables 2001.

38. Henderson, Lee, and Lee 2001.

39. Krugman (1991b) notes that “the most spectacular examples of localization in today's world are, in fact, based on services rather than manufacturing . . . and technology . . . will promote more localization of services” (p. 66).

40. In 2004, the rest of the nonfarm employment went to transport and trade (22 percent) and forestry, utilities, and construction (7 percent) (Kolko 2007).

41. Audretsch and Feldman 1996.

42. Feldman (1994) documents that, in the United States, services, such as innovative or knowledge-intensive activity, are far more densely packed than manufacturing. Audretsch and Feldman (1996), using a count of new product introductions by the Small Business Administration in 1982, find that knowledge-oriented industries have more spatially concentrated innovative activity. Dekle and Eaton (1999) provide evidence that external economies from clustering are even stronger for business services than for manufacturing activities. Feldman and Audretsch (1999) find that sectors in which R&D, university research, and skilled labor are important inputs tend to be more spatially concentrated.

43. Kolko 2007.

44. Fafchamps and Desmet 2000.

45. Desmet and Fafchamps 2006.

46. At the upper tail of the distribution, however, the opposite is true, with large cities losing jobs in favor of intermediate size urban areas (Carlino and Chatterjee 2001; Desmet and Fafchamps 2003).

47. Kolko 1998.

48. Martin, R. 2005.

49. See, for example, Holmes and Stevens (2002).

50. Head, Reis, and Swenson (1995) and Smith Jr. and Florida (1994) find strong preferences of Japanese automotive assemblers to locate near each other to take advantage of backward and forward linkages. Hammond and von Hagen (1994) examining employment in four U.S. cities and three two-digit industries, find that labor-sharing tends to be stronger in expanding markets while asset-sharing is more important in mature markets. Holmes (1999) offers the most direct and compelling evidence of input-sharing as a source of agglomeration economies: the pantyhose industry is concentrated in North Carolina with 62 percent of national employment, and purchased input intensity of 53 percent, compared with 40 percent nationally. This pattern is found for other concentrated

industries as well. Holmes (1999) examines the textile industry, finding evidence in support of input-sharing. In particular, he finds a positive relationship between the size of the textile industry at a location and the presence of local specialized input suppliers to the industry.

51. Costa and Kahn 2000.

52. See Bikhchandani, Hirshleifer, and Welch (1998), and Sobel (2000) for surveys of the literature on social learning.

53. Marshall (1890) emphasizes how cities favor the diffusion of innovations and ideas while Jacobs (1970) stresses how the environment offered by cities improves the prospects for generating new ideas. Lucas Jr. (1988) also suggests that learning encompasses, not just of cutting-edge technology, but incremental mundane knowledge (knowing how, knowing who, etc.) through intended and unintended communications, and cities are the best place for knowledge transmission.

54. Marshall 1890.

55. Jaffe, Trajtenberg, and Henderson 1993. Jaffe (1986) finds evidence for local research and development (R&D) spillovers among 432 U.S. firms where the number of patents per dollar of R&D spending is higher for firms located in areas with above-average R&D spending.

56. Rauch (1993) shows that wages are higher where average education levels are high, because workers will be more productive and employers will be willing to pay high wages in competing for them. Moretti (2004a) finds a positive effect of college graduates on a city's wages. Charlot and Duranton (2004) use survey data to show that workplace communication is more extensive in urban areas and that this communication increases wages.

57. This is known as the home market effects in the literature.

58. Holmes and Stevens (2002) look at the relationship between firm size and city size across county-industries in the United States, and interpret their findings as evidence of increased productivity associated with concentration that allows the plants to become larger.

59. Holmes 1999; Henderson 2005a.

60. Davis and Weinstein (1999), examining production across Japanese prefectures, find that an industry's production is concentrated where the demand for that industry's good is relatively high. Wheat (1986) and Glaeser and others (1992) find evidence that manufacturing employment grows faster in subnational areas with more rapid population growth. Justman (1994) finds strong positive comovements of local supply and local demand for manufacturing industries in U.S. cities.

61. See, for example, Shefer (1973); Mera (1973); Segal (1976); Kawashima (1975); Sveikauskas (1975); Moomaw (1981) and Moomaw (1983); and Bartelsman, Caballero, and Lyons (1994).

62. Henderson, Shalizi, and Venables 2001).

63. As Glaeser and others (1992) observe "intellectual breakthroughs must cross hallways and streets more easily than oceans and continents" (p. 1127).

64. Feldman and Audretsch 1999.

65. Angeriz, McCombie, and Roberts 2008.

66. On this point see Feldman and Audretsch (1999), pp. 409–29.

67. On this point see Venables (2006), pp. 61–85.

68. There were, of course, some exceptions, most notably in the work of Young (1928) and Kaldor (see, for example, Kaldor 1972).

These economists failed, however, to provide the technical solutions associated with the modeling of increasing returns to scale.

69. Krugman 1991b.

70. Warsh (2006) provides an entertaining and accurate account of intellectual progress in dealing with increasing returns to scale. The advances are based on the special features of ideas, highlighted elegantly in Romer (1994). An idea, once developed, may be used costlessly by others as a starting point for new ideas, making it "nonrival," unlike labor, capital, land, and other inputs for production. Though ideas are nonrival, however, they are generally neither free nor nonexcludable. Coming up with useful ideas usually requires effort, and through secrecy or the enforcement of intellectual property rights, it is possible to exclude people from using ideas to improve products or production processes, even if temporarily. This excludability results in knowledge that confers a monopoly power on the creators of the knowledge. By adding knowledge explicitly to formulations of economic growth, economists are able to recognize the centrality of ideas and the importance of increasing returns, but this also requires recognizing the proliferation of imperfect competition.

71. Dixit and Stiglitz 1977.

72. Henderson 1974.

73. Black and Henderson 1999; Calem and Carlino 1991; Combes 2000; Desmet and Fafchamps 2006; Duranton and Puga 2005; Duranton and Puga 2004; Feldman and Audretsch 1999; Fujita and Ishii 1999; and Glaeser and others 1992.

74. Glaeser and Maré 2001; Henderson 1986; Henderson, Kuncoro, and Turner 1995; Henderson 1997b; Henderson 1997a; Henderson 2003b; Moomaw 1981; Moomaw 1983; Kolko 1999; Nakamura 1985; Rosenthal and Strange 2001; Rosenthal and Strange 2003; Sveikauskas, Gowdy, and Funk 1988.

75. Black and Henderson 1999; Dumais, Ellison, and Glaeser 2002; Eaton and Eckstein 1997; Henderson 1997a; Henderson 2003a; and Kim 1995.

76. This has been recognized in geography as long ago as since Christaller (1933) and Lösch (1940).

77. Duranton and Puga 2000.

78. Henderson (1997b) for the United States, Fujita and Ishii (1999) for Japan, and Kolko (1999) and Henderson, Lee, and Lee (2001) for the Republic of Korea.

79. Henderson 1997b.

80. Glaeser, Scheinkman, and Schleifer 1995; Fafchamps and Desmet 2000.

81. Henderson 2005b and Henderson, Kuncoro, and Nasution 1996.

82. Glaeser and Kahn 2001.

83. Diversity is measured by the inverse of the Herfindal Index of local employment shares of different sectors.

84. Feldman and Audretsch 1999.

85. Fujita and Ishii 1999 and Duranton and Puga 2001.

86. Duranton and Puga 2005.

87. Chandler Jr. 1977 and Kim 1999.

88. Toffler 1980; Naisbitt 1995; Negroponte 1995; and Knoke 1996.

89. Feldman and Audretsch 1999 and Venables 2006.

90. Kolko 2000.

91. Glaeser and others 1992; Henderson, Kuncoro, and Turner 1995.

92. Black and Henderson (2003) show that cities that dramatically grew (the Phoenix population multiplied 10-fold during 1950–90) or shrank (the Detroit population halved during the same period) are the exceptions, as relative sizes of U.S. cities have been stable over the last century. Eaton and Eckstein (1997) and Dobkins and Ioannides (2001) also find a pattern of overall stability in France, Japan, and the United States. They observe that the relative populations of the top 40 urban areas in France (1876–1990) and Japan (1925–85) remained essentially unchanged.

93. Henderson (1997b). Kim (1995) shows a high (0.64) correlation coefficient of regional localization for two-digit industries in the United States between 1860 and 1987 at the state level. Dumais, Ellison, and Glaeser (2002) also find that, for most industries, agglomeration patterns were strikingly stable over 1972–92. Henderson (2003a) finds stable specialization patterns over 30 years in a study of nine three-digit industries.

94. See, Dunne, Roberts, and Samuelson (1989b); Dunne, Roberts, and Samuelson (1989a); Davis and Haltiwanger (1992); and Herzog Jr. and Schlottmann (1991).

95. Brezis and Krugman 1997.

96. Henderson, Kuncoro, and Turner 1995.

97. Van der Linde 2003.

98. Kolko 1998.

99. United Nations (2006c), Fact Sheet 9.

100. Gribbin (2000), pp. 30–31.

101. Quote from a top UN official, Lars Reutersward, Nairobi-based director of the UN Human Settlements Program.

102. Quoting Lars Reutersward in Ward 2006.

103. United Nations 2004b.

104. Gill and Kharas 2007.

105. Au and Henderson 2006a.

106. Rosenthal and Strange 2004 cited from Hoover and Vernon 1959.

107. Santos and Shaffer 2004.

108. McCrae 2006.

109. World Bank 2002a.

## Chapter 5

1. Bureau of Transport Statistics 2003.

2. While returns to capital vary by place (between urban and rural areas, leading and lagging regions, and rich and poor countries), lower marginal returns in a given location can be explained by inadequate complementary factors (Caselli and Feyrer 2007).

3. In 2000 China sent only 458,000 migrants abroad, while 120 million people migrated internally. In the second half of 1990s, fewer than 300,000 people emigrated from Vietnam, while 4.3 million people migrated internally. See Anh, Tacoli, and Thanh (2003) in Deshingkar and Grimm (2004).

4. Migration from rural areas to cities accounts for only about a third for the growth of urban areas worldwide. Nam, Serow, and Sly (1990) and Deshingkar and Grimm (2004) show that the largest flows of internal migrants in developing countries are from rural areas to other rural areas. In India, where permanent migration seems to have stabilized, temporary “circular” migration—particularly by workers in poor households—is increasing.

5. More than half the migrants to the United States come from Central and South America. About the same portion of migrants to the EU-15 come from Europe and Central Asia. And up to 70 per-

cent of migrants to Japan come from other countries in East Asia and the Pacific.

6. The largest share of emigrants in Sub-Saharan Africa (more than 63 percent) and South Asia (34 percent) settle in countries within the same region, typically in an adjacent country. See Ratha and Shaw (2007). This phenomenon is in part a colonial legacy, because borders were drawn arbitrarily across traditional lands dividing long-standing trading partners and even people of the same ethnic groups.

7. Obstfeld, Shambaugh, and Taylor 2004.

8. Taylor 1996; Obstfeld and Taylor 2002.

9. See Caselli and Feyrer 2007.

10. See de Blij (2005) for a review of the geographic and climatic drivers of early migrations.

11. See Massey (2003) for a review of the modern history of international migration.

12. Comparable statistics of emigration from European countries and Japan are available in Massey (1988).

13. Massey (1988) calculates a correlation coefficient of 0.59 between the onset of industrialization (proxied by the year when rail track exceeded 1,000 kilometers), and the initiation of large-scale international movement of labor (defined as the period when emigration first exceeded 10,000 people).

14. See the International Organization of Immigration (IOM) Web page for updated statistics, at <http://www.iom.org>. An international migrant is defined as a person living in a country other than where he or she was born (Ozden and Schiff 2007).

15. Massey 2003.

16. Ratha and Shaw 2007.

17. The notable exceptions are Australia, because of isolation, and Israel, because of the religious and political nature of the decision to immigrate.

18. Experts point out that although appealing to governments in high-income countries, selective immigration policies are probably not transferable to other popular destinations. A crucial element to the viability of these policies in Canada and Australia is the relative geographic isolation of these countries, which makes movement across their borders easier to monitor and control.

19. Timmer and Williamson (1998), cited in Massey (2003).

20. The best data currently available are still likely to underestimate the internal mobility of labor. Census and survey data used to track internal migration are notoriously inadequate. Census and survey instruments typically fail to capture seasonal movement to part-time and temporary jobs; movement of migrants who find jobs in the informal economy or who reside in informal settlements; and movement between rural areas. For a detailed discussion of the limitations of data on internal migration see Nam, Serow, and Sly (1990), Lucas (1997), Bell (2003), and Deshingkar and Grimm (2004).

21. Lucas (1997) cites quantitative studies by Connell and others (1976) and Skeldon (1986) to support this assertion.

22. Rodriguez 2004.

23. Deshingkar and Grimm (2004) give a detailed description of biases in data collection instruments that lead to a systematic underestimation of rural-to-rural migration, and particularly of temporary “circular” migration, which leads to the “invisibility” of a large portion of internally labor movements to policy makers that is captured only in qualitative village-level studies. Lucas



(1997) points out that the failure of the early literature on internal migration to capture the dominant rural-to-rural movement can be explained by the greater visibility of urban growth, and by the portrayal of rural sectors in the early theoretical models as homogenous, within which migration did not confer any real benefits.

24. Borjas 1990; Borjas, Bronars, and Trejo 1992; Dunlevy and Bellante 1983.

25. Deshingkar and Grimm 2004; United Nations 2006b.

26. Lucas 1997; 2003; McKenzie and Rapoport 2007.

27. Schiff and Özden 2006.

28. Docquier 2006.

29. Lucas 1997.

30. Solow 1956; Swan 1956.

31. Romer 1986; Lucas Jr. 1988.

32. A recent comprehensive review of economic theories and empirical evidence on internal labor migration is available in Lall, Selod, and Shalizi (2006), on which this subsection is based.

33. Todaro 1969.

34. Harris and Todaro 1970.

35. Lucas 1997.

36. Cole and Sanders 1985; Packard 1997.

37. Romer (1986) and Lucas Jr. (1988), originally delivered as an address in 1985.

38. Lucas Jr. 1988.

39. Lucas Jr. (1988) with an acknowledgment of Jacobs (1970).

40. Moretti 2004b; Rosenthal and Strange 2004; Ciccone and Peri 2006.

41. As discussed in other chapters of this Report, urban economies provide a range of arguments in favor of clustering that are independent of spillovers to human capital. For example, cities provide the large markets for producers to exploit productivity gains from scale, as shown by Faini (1996), as well as “thick” labor markets that lower hiring costs for employers. Clustering workers adds to growth by increasing backward and forward linkages, as shown by Adelman and Robinson (1978) in a study of the Republic of Korea.

42. Clemens, Montenegro, and Pritchett 2008.

43. Ratha and Xu 2008.

44. Pritchett 2006.

45. Andrews, Clark, and Whittaker 2007.

46. Cited in Andrews, Clark, and Whittaker (2007).

47. In the United States, rates of internal migration among the native born declined from 1850 to 1940 but accelerated significantly thereafter coinciding with the rapid rate of economic growth after World War II. See Rosenbloom and Sundstrom (2003).

48. Schmertmann 1992.

49. Fujita and Tabuchi 1997.

50. Xenos 2004.

51. Anh 2003.

52. Timmins 2005.

53. Au and Henderson 2006a; 2006b.

54. Shukla and Stark 1986.

55. For evidence on nineteenth-century labor market integration in the United States, see Lebergott (1964) and Margo (2000).

56. Coe and Emery 2004.

57. Hunt 1986.

58. Gallaway and Vedder 1971.

59. Rosenbloom and Sundstrom 2003.

60. McInnis 1966.

61. European Commission 2007.

62. Decressin and Fatás (1994) examine regional labor markets dynamics in Europe and the United States. They analyze the adjustment mechanisms that a typical region’s specific shock triggers in regional labor markets. In Europe they find that for the first three years, most of the shock is absorbed by changes in the participation rate, while in the United States, it is immediately reflected in migration.

63. Tabuchi 1988.

64. Barro and Sala-I-Martin 1992; Brown 1997.

65. Fujita and Tabuchi 1997. However, the authors observe that inequality then rose in a third stage, after 1975, as the impact of agglomeration economies accelerated income growth in large metropolitan areas, such as Tokyo.

66. De Brauw and Giles (2008) on China, and McKenzie and Rapoport (2007) on Mexico.

67. Overseas Development Institute 2006.

68. Soto and Torche 2004.

69. Timmins 2005.

70. Koola and Özden 2008.

71. Beegle, De Weerd, and Dercon 2008.

72. Adams Jr. (2006) as cited in Özden and Schiff (2007).

73. Acosta, Fajnzylber, and Lopez (2007) in Özden and Schiff (2007).

74. Yang 2008.

75. World Bank 2007k.

76. Garrett 2005.

77. De Brauw and Giles 2008.

78. Zhu and Luo 2008.

79. Iliffe (1995) on the historical impact of drought on population distribution in Africa; Bryceson (1999) on the Sahel and Sudan; Hardoy and Satterthwaite (1989) on Mauritania.

80. Wandschneider and Mishra (2003), cited in Deshingkar and Grimm (2004), on the drought-induced migration of 60,000 people out of Bolangir, in the Indian state of Orissa, in 2001.

81. Venables and Kanbur 2005.

82. Deshingkar and Grimm 2004; Rodriguez 2004.

83. Docquier, Beine, and Rapoport 2006.

84. Docquier 2006.

85. Easterly and Nyarko 2008.

86. Sahn and Stifel 2003.

87. Anderson and Pomfret 2005.

## Chapter 6

1. Some of these trends were due to the rise in trade with Europe as a share of GDP. But non-European trade declined even as a share of GDP.

2. Krugman 1991b; see also Krugman 2007.

3. See, for example, Antweiler and Trefer (2002), who find that international trade is fueled as much by scale economies as by differences in factor endowments.

4. Limão and Venables 2001.

5. Gallup, Sachs, and Mellinger 1999.

6. World Bank 2007d.

7. Anderson and van Wincoop 2004.

8. It has also meant a change in long-distance trade, mainly in a rise in manufacturing exports (based on differences in labor abun-

dance) and a fall in the share of agricultural goods (based on climatic differences) from developing countries.

9. Rostow 1960.
10. Williamson 1974.
11. Mitchell 1964.
12. Crafts, Mills, and Mulatu 2007.
13. Metzger 1974.
14. Hurd 1975.
15. Roy 2002.
16. Mohammed and Williamson 2004.
17. Harley 1980.
18. O'Rourke and Williamson 1994.
19. Yasuba 1978.
20. Krueger 2006.
21. Baldwin and Martin 1999.
22. Krugman 2007.
23. Combes and Lafourcade 2005. Costs are approximated by ad valorem shares of trade values between geographic regions and distance and take into account that the real price for transportation depends on the physical transportation network, technology, traffic conditions, and structure of the market for transport services.
24. Ivaldi and McCullough 2007.
25. Gordon 1990.
26. Hummels 2007.
27. United Nations Conference on Trade and Development (various years).
28. Tolofari 1986.
29. Button 1999.
30. United Nations 1970.
31. Gilman 1984.
32. Tramp prices are set in competitive markets and quoted in U.S. dollars. Two deflators are used to compute the development of real prices: the U.S. GDP deflator and the price index for bulk commodities that typically are shipped by tramp.
33. Levinson 2006.
34. Hummels 2007.
35. Harrigan 2005.
36. Hummels 2001.
37. Evans and Harrigan 2005. For a similar analysis on trade between East and West Europe compare Nordas, Pinali, and Grosso (2006).
38. Harrigan and Venables 2006.
39. Krugman 1995; Venables 2001.
40. Freund and Weinhold 2004.
41. Fink, Mattoo, and Neagu 2005.
42. Rauch 1999.
43. Antras, Garicano, and Rossi-Hansberg 2006.
44. Rajan and Wei 2004.
45. Amiti and Wei 2005.
46. Baiocchi 1988.
47. Christaller 1966.
48. Feenstra and Hanson 1997.
49. Evans and Harrigan 2005.
50. Duranton and Puga 2004.
51. Leamer and Storper 2001.
52. Storper and Venables 2007.
53. Winston 1993.
54. Nikomborirak 2007.

55. Hulten, Bennathan, and Srinivasan (2003), summarized in Hummels, Lugovsky, and Skiba (2007). Scale economies in the manufacturing sector derive from the benefits of many independent producers with relatively small market shares moving close together and interacting (monopolistic competition). Indivisibility and network effects, by contrast, favor monopolies or oligopolies in which one or a few providers generate scale economies that are internal to a private or public transport provider that dominates a port, airport, or railway.

56. Estache, Gonzalez, and Trujillo 2002.

57. Hulten 2007.

58. Canning and Bennathan (2007), for example, find a large variation across countries but a general tendency of middle-income countries to have a deficit in infrastructure investment, in particular road infrastructure. The macroeconomic rates of return calculated in these studies derive from the agglomeration and specialization benefits provided by the lowering of transport costs. These benefits increase with an increasing level of development. See Estache and Fay (2007) for a review of these studies.

59. Brushett 2005.

60. Wilson, Mann, and Otsuki 2004.

61. Wilson, Luo, and Broadman 2006.

62. World Bank 2008.

63. Evans and Harrigan 2005; Harrigan and Venables 2006.

64. Martinez-Zarzoso and Marquez-Ramos 2007.

65. Arvis, Raballand, and Marteau 2007.

66. Arnold 2006.

67. World Bank 2008.

68. Fischer, Harrington, and Parry forthcoming.

69. Nordhaus and Boyer 2000.

70. Tol 2005.

71. World Bank 2008.

## GIM 3

1. Allen and others 2007.

2. Smith (1979), p. 189.

3. Kuroda 2007.

## Chapter 7

1. Ravallion 2007.

2. Soto 2000.

3. De Long and Shleifer 1993.

4. A passage explicitly mentioning the land law is found in North (1971), p. 123.

5. Wordie 1983.

6. Craft 1989; Turner 1986; Wordie 1983; Wrigley 1985.

7. Craft 1989.

8. Sokoloff and Engerman 2000b.

9. Sokoloff and Engerman 2000b.

10. Rodrik, Subramanian, and Trebbi 2004.

11. Acemoglu, Johnson, and Robinson 2001.

12. This discussion of Mumbai is drawn from Buckley, Bertaud, and Phatak 2005; Buckley and Kalarickal 2006.

13. United Nations 2001; [www.mymoneyblog.com/archives/2006](http://www.mymoneyblog.com/archives/2006).

14. World Bank 2007j; purchasing power parity adjusted per capita gross national income (GNI).

15. Brueckener 2007; Henderson 2007.

16. Buckley and Kalarickal (2006), box 3.4.

17. In 2002, a Ministry of Cities was established to overhaul the regulatory framework allowing cities to more effectively manage land use and subdivision and be more responsive to changes in market needs.

18. World Bank 2007b.

19. Chiquier, Hassler, and Lea 2004.

20. World Bank 2006d.

21. Lall and others 2004.

22. World Bank 2002a.

23. The discussion is based on the historical collection of transport pamphlets the London School of Economics library has converted into digital format and made available for public download ([www.lse.ac.uk/library/pamphlets/Transport/transportpamphletpages/urban\\_transport.htm](http://www.lse.ac.uk/library/pamphlets/Transport/transportpamphletpages/urban_transport.htm)). These pamphlets cover London transport history (eight pamphlets), transport policy in London (nine pamphlets), the tramways (three pamphlets), and urban transport policy more generally (three pamphlets). These pamphlets were issued by a variety of organizations, including private-sector providers of transport, local political parties, and what might now be called think-tanks. See Roberts (2008), a background paper for this Report.

24. Hargan 2007.

25. Land Enquiry Commission 1914.

26. Offer (1981), p. 291.

27. GDP per capita figures have been taken from Maddison's (2007) historical database (<http://www.ggdc.net/maddison/>). They are quoted in 1990 international Geary-Khamis dollars.

28. Bairoch and Goertz (1986), table 3, p. 288.

29. Staff City Population Database, Human Settlements Group, International Institute for Environment and Development (IIED).

30. Mumford 1963.

31. Dunlap 1992.

32. Lane 1860.

33. O'Gorman 1939a; 1939b.

34. Santos and Shaffer 2004.

35. Meyer 1917.

36. Victoria Transport Policy Institute 2007.

37. Pucher and others 2005.

38. World Bank 2002a.

39. Metro Bits (<http://mic-ro.com/metro>).

40. Booth 1901.

41. Abreu 2008, a note prepared for this Report.

42. Nessler 2003.

43. Borgegård and Kemeny 2004.

44. Hall and Vidén 2005.

45. Swedish Council for Building Research 1990; Borgegård and Kemeny 2004.

46. Hoffman 1996.

47. Hall 2002; Chandler 1992.

48. Chandler 1992.

49. Imperato and Ruster 2003; Abreu 2008.

50. World Bank 2007j.

51. Hall 1984.

52. Trackman, Fisher, and Salas 1999.

53. Mackay 1999; Jones and Datta 2000, based on Abreu 2008.

54. Mackay 1999, based on Abreu 2008.

55. Goodlad 1996; Mackay 1999; Jones and Datta 2000.

56. These comparisons are based on data from Maddison 2006.

57. *World Urbanisation Prospects: The 2007 Revision Population Database* (<http://esa.un.org/unup/>).

58. Cohen and Soto 2001.

59. The discussion that follows is largely based on Oh (2008), a note prepared for this Report.

60. The discussion that follows is based in part on Chen (2008), a note prepared for this Report.

61. Figure derived from *China Statistical Yearbook 2007*.

62. World Bank 2003b; 2007k; Bertaud 2004.

63. *World Urbanisation Prospects: The 2007 Revision Population Database* (<http://esa.un.org/unup/>).

64. Human Development and Reform Commission 2005; Changsha-Zhuzhou-Xiangtan Cluster Regional Plan.

65. Kilroy 2007.

66. Lall 2005.

67. Lall 2005.

68. Yepes and Lall 2008.

69. Sohn 2003, based on Oh 2008.

70. Evans 2002, Sohn 2003, respectively.

71. *World Urbanisation Prospects: The 2007 Revision Population Database* (<http://esa.un.org/unup/>).

72. Maddison 2006. GDP per capita is quoted in constant 1990 international dollars.

73. Comparisons based on urban agglomeration population data from *World Urbanisation Prospects*.

74. Cohen and Soto 2007.

75. World Bank 2007j.

76. Neuwirth 2007, based on Vidler 2008.

77. BBC World Service, Thursday, April 27, 2000 (<http://news.bbc.co.uk/1/hi/sci/tech/727966.stm>).

78. The discussion of Turkey above is based on Vidler (2008), a note prepared for this Report.

79. Bertaud 2003.

80. Government of India Planning Commission 2002a.

81. Selod 2007.

82. Tinbergen 1952.

## Chapter 8

1. Azzoni, Menezes-Filho, Menezes, and Silveira-Neto (2000), World Bank 1998.

2. World Bank (2007b), figure 8.2 comes from this Report.

3. World Bank 2007a.

4. Estimate based on figures reported in Maddison (2008). In 1700 India's GDP was \$90,750 million compared with a world GDP of \$371,369 million in 1990 international dollars (Maddison 2008).

5. In landlord systems, the landlord was responsible for collecting revenues from villages after retaining part of the revenue he collected; in individual systems, British government officers collected revenue directly from cultivators; in village systems, a village community body bore the responsibility for revenue collection (Banerjee and Iyer 2005).

6. Lall, Wang, and Deichmann 2008b.

7. Government of India 2006.

8. Hunt 2000.

9. Gorzelak 2007.

10. European Commission 2002.

11. Between 1994 and 1999 structural funds allocated resources to areas on the basis of five "objectives": supporting development

and structural adjustment of areas whose development is lagging, helping frontier areas or parts of areas seriously affected by industrial decline, combating long-term unemployment and facilitating labor market integration of persons excluded from the labor market, speeding adjustment of agricultural structures as part of common agriculture policy reform and structural adjustment of rural areas, and promoting development and structural adjustment in areas with low population density.

12. Rodríguez-Pose and Fratesi 2004.
13. European Commission 2007.
14. Objective One is to help regions (called “areas” in this Report) whose development is lagging to catch up. Some 50 regions, representing 22 percent of the EU’s population, are included.
15. Dall’Erba 2003.
16. Estimates suggest that resettlement costs were US\$7,000 per family in the mid-1980s (Adhiati and Bobsien 2001).
17. Davezies (2001), Martin (2005). This figure shows that the coefficient of variation of per capita GDP (orange line, left axis) across NUTS 2 areas in France rises between 1982 and 2002; whereas the coefficient of variation of per capita disposable incomes falls (blue line, right axis).
18. Morrisson and Murtin 2005.
19. United States Census Bureau 2002.
20. About \$8 an hour in 2007 U.S. dollars.
21. Engel, Galetovic, and Raddatz 1998.
22. Gibson and Rozelle 2003.
23. Escobal and Torero 2000.
24. Baer 1995.
25. Stewart 2008.
26. Hill and Gaddy 2003.
27. Rolfes 2002.
28. Whalley and Zhang 2007.
29. Hewings, Feser, and Poole 2008; population figure for 1996.
30. Rephann and Isserman (1994). One of the first ex post evaluations of regional development programs ever conducted in the United States using an experimental design.
31. Specific examples are discussed later in this chapter.
32. Andrienko and Guriev 2003.
33. Based on recent research using census micro data for Brazil between 1960 and 2000.
34. Margo 1988.
35. Borsch-Supan 1987.
36. Duarte, Ferreira, and Salvato Jr. 2004. The labor force in the northeast has 4.6 years of schooling compared with the average of 6.4 years nationwide, and 7.3 years in the southeast.
37. Shah and Shen 2006.
38. They will be accountable to the higher levels of government providing these transfers.
39. Numbers are for 2000 (Chakraborty 2003).
40. Euractiv (2008).
41. World Bank (2003b) provides a comprehensive treatment of land management practices and policies in different parts of the world, and how specific policies promote development and reduce poverty.
42. Palacin and Shelburne 2005.
43. Bayes 2007.
44. World Bank 2008b.
45. World Bank 2008a.

46. World Bank 2008e.
47. Econometric analysis based on panel data (Lei and Haynes 2004).
48. Kloeppinger-Todd 2007. Overall, there are more than 20 million mobile phone subscribers in the Philippines.
49. Jensen 2007.
50. Luo 2004.
51. Yepes and Lall 2008.
52. Baldwin, Forslid, Martin, Ottaviano, and Robert-Nicoud 2003. The predictions of new economic geography models are as follows: Infrastructure policies that facilitate interregional trade between leading and lagging areas will increase spatial concentrations of economic activity in leading areas. These policies will also increase growth in the whole economy while reducing nominal income inequalities between areas and between workers and capital owners. By contrast, infrastructure policies that improve connectivity within lagging areas may enhance local economic growth but can slow the growth of the whole economy.
53. Faini 1983.
54. Combes and Lafourcade 2001.
55. Jacoby 2000.
56. World Bank 2008b.
57. Lall, Schroeder, and Schmidt 2008.
58. Government of Malaysia 2001.
59. Malaysia Industrial Development Authority (<http://www.mida.gov.my/>).
60. Al-Hassan and Diao 2007.
61. Park forthcoming.
62. Lee (2008).
63. The following examples are based on background research for this report.
64. Donoso-Clark and Lenihan (2008) call these centrally administered policies to disperse economic activity “first-generation” approaches to territorial development.
65. Donoso-Clark and Lenihan 2008.
66. Drabenstott 2005.
67. Hewings, Feser, and Poole 2008.
68. Carvalho, Lall, and Timmins 2006. Constitutional funds were created in 1989 to finance economic activities in the north and northeast regions.
69. World Bank 1977; Scott 1982.
70. Chakravorty and Lall 2005.
71. Fay, Felkner, and Lall 2008.
72. Based on research done by the Secretary of Economic Policy, reported in Calmon (2003) and World Bank (2005a).
73. Details are provided in Calmon (2003).
74. Haussman, Rodrik, and Velasco 2005.
75. Donoso-Clark and Lenihan 2008 point out that a feature of the failed “first-generation” territorial development programs of the 1960s and 1970s was that they depended on external inputs and expertise, rather than exploiting local assets and comparative advantage.
76. A recent paper on firm location in developing countries summarizes the findings from empirical work on the main factors influencing location choices (see Deichmann, Lall, Redding, and Venables forthcoming).
77. Uvalic 1993.
78. Bolton and Roland 1997.



## Chapter 9

1. Woronoff (1972), p. 141. The *Entente* was created in 1959 and designed to promote the economic development of members by raising funds, guaranteeing loans, and encouraging trade and investment. It operates through the Mutual Aid and Loan Guarantee Fund headquartered in Abidjan, Côte d'Ivoire. The original member states were Dahomey (now Benin), Côte d'Ivoire, Niger, and Upper Volta (now Burkina Faso); Togo joined in 1966.
2. Collier 2007.
3. See Brühlhart (2008) for a detailed analysis on intermediate goods.
4. Coulibaly 2008.
5. See Yoshino (2008), using both the World Bank enterprise survey database and the *Doing Business* database.
6. Melitz 2003.
7. See Schiff and Winters (2003) for a detailed development on these points.
8. Viner 1950; Meade 1956; Balassa 1967; Aitken 1973; among others.
9. Baier and Bergstrand 2004; Bond 2005; Evenett 2005; Bergstrand 2006.
10. Bhagwati 1995; Bhagwati, Greenaway, and Panagariya 1998; Krishna 1998.
11. Krugman 1991; Frankel, Stein, and Wei 1996; Carrere 2005.
12. Martin, Mayer, and Thoenig (2008) estimate that countries trading a lot with their neighbors are less likely to have an armed conflict with them than countries trading mainly with distant partners.
13. World Bank 2004a; United Nations 2007.
14. Also in the 1970s, Sub-Saharan Africa was made up of vast countries, mostly rural with a few isolated, densely populated areas (mostly on the coast) and no interconnecting infrastructure—hardly conducive to regional integration (CSAO/ECOWAS 2005).
15. The current WTO rules specify that regional trade agreements should cover substantially all sectors, which excludes sector-specific trade deals for today's developing countries. But the principle of starting with focused areas of cooperation is still valid.
16. Venables (2003) shows that regional integration between low-income countries tends to lead to income divergence between the least developed and the relatively more advanced member countries. Goyal and Staal (2004) show that small countries are more in favor of integration, whereas large countries prefer integrating with countries of equal size.
17. Coulibaly 2006.
18. World Bank 2004b.
19. Laeven and Woodruff 2007.
20. Box 3.3 of the report on food safety and agricultural health standards (World Bank 2005c).
21. Gibbon and Ponte 2005; Chandra 2006; Broadman 2006; Czubala, Shepherd, and Wilson 2007.
22. Fink and Mattoo 2004; Hoekman 2006.
23. Chow and others 2005; World Bank 2007g.
24. World Bank 2007f.
25. Arvis, Raballand, and Marteau 2007.
26. Djankov, Freund, and Pham 2006.
27. Behar and Manners 2008.
28. World Bank 2004b.
29. Both examples are from a World Bank Independent Evaluation Group report on regional programs.
30. Leigland and Roberts 2007.
31. World Bank 2006n.
32. N'Guessan and Chitou 2006.
33. African Development Bank 2007.
34. Bougheas, Demetriades, and Morgenroth 1999; Limão and Venables 2001.
35. For instance, Foroutan and Pritchett (1993) make this argument for Sub-Saharan Africa.
36. Coulibaly and Fontagné 2006.
37. Buys, Deichmann, and Wheeler 2006.
38. Shepherd and Wilson 2006.
39. Vargas-Hidalgo 1979; Wionczek 1970.
40. Hazelwood 1979; Kasekende and Ng'eno 1999.
41. Brandts and Cooper (2007) show that effective communication is a more powerful coordination mechanism than purely financial incentives.
42. Sandler 2002.
43. Arce 2001; 2004; Arce and Sandler 2002.
44. Schiff and Winters 2002.
45. In Kraske and others (1996), p. 95.
46. See the International Development Association and World Bank (2008) for a thorough discussion of these issues.
47. Schiff and Winters 2002.
48. Mayer 2008.
49. Note that Northeast Asia is an exceptional case, because of its proximity to Japan. Its main markets are still North America and the European Union. For purposes of market access, given its trade links with China, Southeast Asia should be considered as part of the same neighborhood as China.
50. Hill and Gaddy 2003.
51. International Monetary Fund (1998) for the EU enlargement; Schiff and Wang (2003) for NAFTA.
52. World Bank 2002b.
53. Jessen 2002.
54. World Bank (2003a) report on trade and investment.
55. Assessment made using the methodology proposed by Coulibaly (2007). The trade impact of the Gulf Cooperation Council (GCC) is not faring better from this assessment, even if its members took the important step to launch a common market on January 1, 2008.
56. World Bank 2007g.
57. Antweiler and Treffer 2002.
58. See for instance Moreno and Trehan (1997).
59. Arora and Vamvakidis (2005) show the impact of South Africa on its neighbors, while Behar and Collier emphasize on the impact of resource-rich countries on their neighbors in Sub-Saharan Africa.
60. Nabi and Nasim 2001.
61. Naqvi and Schuler 2007.
62. World Bank 2007h.
63. Söderbaum 2001.
64. Behar and Collier 2008.
65. United Nations (2004a) and United Nations and African Union (2006) report on regional integration.
66. N'Dulu 2001.

67. Gregoire and Labazee 1993.
68. Ladman 1979; Asiwaju 2005.
69. Dorosh, Haggblade, and Dradri 2007; Jayne and others 2005; Tschirley and others 2004; Negri and Porto 2007.
70. Little 2007.
71. Gregoire and Labazee 1993; Yade and others 1999.
72. Adebuseye 2006.
73. Jourdan and NEPAD 2006.
74. Hoekman and Njinkeu 2007.
75. Independent Evaluation Group (IEG) 2007.
76. Collier and Venables 2007.

***GIM 4***

1. Alesina, Easterly, and Matuszeski 2006.
2. de Blij 2005.
3. Naudé 2007.
4. Ndulu and others (2007), p. 101.
5. Satterthwaite 2007.
6. Naudé and Matthee 2007.
7. Ramos 2007.
8. Martínez-Zarzoso, García-Menéndez, and Suárez-Burguet 2003.