## Appendix A: SOURCES OF INSTITUTIONAL INDICATORS FOR OECD NATIONS

## A. Market Institutions

- 1. Regulation of product market. The data refer to the late 1990s and were calculated by Nicoletti, Scarpetta, and Boylaud (1999); they summarize various types of legal regulations affecting the product market. A low score indicates a low degree of regulation. I have chosen a subindicator which excludes direct government participation in the economy, foreign trade barriers, and barriers to entrepreneurship (all of which are handled by separate indicators). Nicoletti and Pryor (2001) compare legal and observer indicators of product market regulation; both series show roughly the same ranking of nations according to their degree of regulation.
- 2. Protection of patent rights. This index was calculated for 1990 by Ginarte and Park (1997). It covers five different categories of patent laws and contains a total of sixteen legal provisions of the patent laws in 110 nations, which were combined using subjective weights. The authors also tried to measure actual protection by listing the number of complaints by American patent holders about patent enforcement in foreign countries that were made to the U.S. Trade Representative or the U.S. International Trade Commission in the period from 1986 through 1995; none of the OECD nations, however, were on the list of countries with poor patent enforcement. My index is based on slightly revised data supplied by Walter G. Park. The Ginarte-Park scale, which ran from 0 through 5, was transformed into a scale running from 0 through 1.

Kondo (1994) provides a second scale of patent protection, which and covers twenty-three aspects of patent law in thirty-three nations. Unfortunately, his index does not cover all OECD nations and therefore could not be used.

3. Good legal environment for markets. This indicator consists of four components, each

rescaled from 0 (poor) to 1 (good) and equally weighted. (a) One component, calculated by Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2002a) is a measure of the costs of legal procedures in the late 1990s, It posits a hypothetical commercial dispute over a check returned for non-payment and calculates both the number of procedural actions the plaintiff would have to undertake and the number of days required to resolve the case. (b) A second component is a measure of the efficiency of the judicial system, which represents an average from 1980 through 1993 of investor assessments. These data come from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1996) and were drawn from the data base of Business International Corporation, a risk-rating agency. (c) The third component is an assessment of the risk of contract repudiation by the government. The original data are an average for April and October between 1982 and 1995 and are reported by La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1996). (d) The final component is an index of the "rule of law," as presented by Kaufmann, Kraay, and Mastruzzi (2003).

- **4. Barriers to starting new businesses**. This indicator for 1999 focuses on the total costs (both in time and money) of meeting the various legal requirements for setting up a new business (defined in terms of a "standardized firm"). These costs are measured as a percentage of the average per capita GDP. The legal requirements include safety and health, environmental, tax, labor, and various screening regulations. The data come from Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2002b).
- **5. Social partnership of capital and labor**. This statistic, designated as market integration by Siaroff (1999), describes "a long-term cooperative pattern of shared economic management involving the social partners and existing at various levels such as plant-level management, sectoral wage bargaining, and joint shaping of national policies influencing competitiveness (education,

social policy, etc." He uses an index of eight different indicators. I have averaged his calculations for the late 1980s and mid 1990s and have transformed his data to a 0-1 scale.

- **6. Ratio of production subsidies to GDP**. These data are the average ratios of governmental subsidies to the GDP, both in current price, for the period from 1988 through 1992. For the various countries the data come from Table 1 in OECD (1998). For Germany, the data cover only West Germany; in 1991-92, subsidies as a percent of GDP were 0.4 percentage points higher in the united Germany than in West Germany alone.
- 7. Inter-sectoral grants for research and development. These data show the share of R and D carried out by agents other than those ultimately financing the research. They are calculated as the sum of R and D financed but not carried out by the government plus that financed from abroad plus that financed by business enterprises but not carried in the business sector. If the share of R and D financed by business enterprises minus share of R and D carried out by business was greater than zero, this was considered a net grant by business; otherwise, the business grants were considered to be zero. For most countries these OECD data (2001b: 150-51) represent an average for 1989 and 1991.
- **8. Foreign trade barriers**. This index has three components: the average MFN (most favored nation) tariff rates, weighted by constant overall OECD import values; the standard deviation for all tariff lines; and the frequency of non-tariff barriers in various product lines, weighted by each country's own value-added in that product line. Since all three components had very roughly the same average for the sample nations as a group, I simply calculated an overall index using subjective weights respectively of 70 percent, 20 percent, and 10 percent. Such indices were computed for 1988 and 1993, averaged, and then rescaled from 0 through 1, with 1

representing the nation with the highest index. The underlying data come from OECD (1997c). Data for Australia, Austria, Canada, Finland, Japan, New Zealand, Norway, Sweden, Switzerland, and the United States are provided separately. Because of the harmonization efforts by the nations of the European Union, the values for Belgium, Denmark, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, and the U.K. are given as the average for the EU as a whole.

- **9. Freedom to set prices**. This series is the arithmetic average of two estimates, both for 1990. The first is variable 3.40 from the World Economic Forum (1991), which represents the "freedom of companies to set competitive prices," with a high score representing fewer controls. The second comes from Gwartney and Lawson (1997: 244) and represents "the extent countries imposed price controls on various goods and services," with a high score representing few controls. Their calculation is based partly on their own data and partly on data from Price, Waterhouse.
- 10. Product market competition. This indicator represents the percentage of business respondents in 1999 agreeing with the statement "competition in the local market is intense and market shares fluctuate constantly." The data, drawn from indicator 10.01 (local competition) from World Economic Forum (annual, 2000), are based on a seven point scale and were rescaled from 0 to 1.
- 11. Effectiveness of antitrust laws. These data for 1990 come from a survey of business people and represent the percentage agreeing that antitrust laws in their country are effective. The are drawn from variable 3.34 from the World Economic Forum (1991). A high score indicates that the laws are considered effective.
- **12. Pervasiveness of clusters**. The data come from a survey of business people who were asked whether they strongly agreed or disagreed with the following statement: "Clusters are present

in most international industries and include not only suppliers, but specialized institutions such as university research programs and training providers." The answers refer through 1999 and are drawn from World Economic Forum (2000), variable 10.16.

#### B. Labor Market

- 1. Coverage of collective bargaining agreements. This is the ratio of employees working under a collective agreement to the total number of employees in the private sector. The data, primarily for 1990, come from Traxler, Blaschke, and Kittel (2001: 196). For Denmark and France the indicators are estimated from similar data for other years. For Greece and Ireland the data refer respectively to 1995 and 1994 and come from ILO (1997-98: 248) and the denominator covers all employees in the formal sector.
- 2. Formal centralization of the largest peak union organization. This represents the number of powers (originally scaled 0 through 7) of the largest peak labor union organization. These include having the right to conclude collective agreements on behalf of members, having its own strike fund, having veto power over agreements at a lower level, etc. The data come from Traxler, Blashke, and Kittel (2001: 67). For Greece I have used the verbal description by Henley and Tsakalotos (1993: 68).
- **3. Powers of workplace representatives of the labor union**. These include formal authority to organize strikes, control their own strike fund, conclude collective agreements (that is, not to have representatives of peak organization on the union body conducting collective bargaining). The data come from Traxler, Blaschke, and Kittel (2001: 67), but their four-point scale has been reversed and rescaled from 0 to 1.
  - **4. Protection of labor and employment**. This is a summary index of twenty-nine different

indicators. The data, rescaled to rune from 0 to 1, refer to 1997 and come from Botero, Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2003).

- 5. Strength and protection of labor in collective bargaining. This index consists of sixteen indicators of the power of labor unions, legal protection of the right to collective bargaining, the legality of strikes, the absence of procedural restrictions to the right to strike, compulsory third party arbitration during disputes, and the absence of strong powers of employers during collective dispute. The data come from Botero, Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2003); I have, however, omitted their indicators of labor's right to appoint directors or to participate in worker councils. This index has also been rescaled to run from 0 to 1.
- **6. Strength of coordination of unions and employers in wage negotiations**. The data come from OECD (1997a, p. 71) and represent the degree to which employer groups and trade unions coordinate their negotiations. This is rescaled to run from 0 through 1.
- 7. Strength of vocational training system. The data are based on the share of each age cohort in either secondary or post-secondary vocational training and focus on the predominant system in the 1990s. They are coded in the following manner: weak vocational training system = 0, company-based systems = 0.5; dual apprenticeship programs = 0.75; vocational colleges = 1. The original data come from Estevez-Abe, Iversen, and Soskice (2001), p. 170.
- **8. Level of economy at which wage bargaining**. This is an unweighted average of four sets of estimates for 1990: Golden and Wallerstein (2002), Henley and Tsakalotos (1993: 63-4), OECD (1994: 175), and OECD (1997a: 71). The ratings for Henley and Tsakalotos's data were derived from their verbal descriptions. 0 = bargaining at the plant or enterprise level; 0.5 = bargaining at the industry or sectoral level; 1.0 = bargaining at the national level.

## C. Enterprises and Production

- 1. Concentration of corporate ownership. The data report the percentage of "median firms" where the largest individual shareholder holds less than 20 percent of the voting rights. The data come from La Porta, Lopez-de-Silanes, and Shleifer (1998), who define "median firms" as the ten smallest firms in each country with a market capitalization of common equity of at least \$500 million at the end of 1995. The sample excludes affiliates of foreign firms, banks, and utilities, as well as firms owned either wholly privately or wholly by the government (and, therefore, are not listed). They also focus on the ultimate owners, rather than proximate owners, so that if over 20 percent of the voting rights in one firm are held by a second firm, the first firm is considered to be widely held if the second firm is widely held. This ownership-concentration variable was designed to determine the relative frequency of owner-dominated and manager-dominated firms. The authors also report estimates where the largest individual shareholder holds less than 10 percent of the voting rights. This statistic yields roughly same results with one major exception: the nations with a West European economic system no longer appear to have significantly less ownership concentration
- 2. Importance of large manufacturing firms. This statistic shows the percentage of those working in manufacturing enterprises with a labor force of at least 500 workers and employees. For most countries the data come from European Commission, Eurostat (1994). Three major problems of comparability arose. First, although I chose to look at manufacturing (because the size of enterprises for the economy as a whole depends on the relative proportion of manufacturing and service production), the manufacturing sector is not defined in a completely uniform fashion. More specifically, for some countries the data refer to NACE categories 2 through 4 for 1990; for other

countries the data refer strictly to manufacturing, which is a slightly narrower category. Second, the firm is defined somewhat differently in the various OECD countries and, allegedly, the "Latin countries" tend to define a firm at a more consolidated level than the English-speaking or Nordic nations. In particular, we can define the firm as either a legal unit or an ownership unit. Third, some countries include all the various branches of predominantly manufacturing firms, while other countries include only those entities which are specifically engaged in manufacturing production. For those 10 countries outside of the Eurostat survey, the following sources are used:

Australia. The data are for manufacturing in 1986/87 and come from Australian Bureau of Statistics (1991).

Austria. The data are for manufacturing in 1999 and come from Austria (2002).

Canada. Data were supplied by John Baldwin, Director, Micro Economics Analysis Division, Statistics Canada.

Denmark. The data are for 1991 and are drawn from a study by the OECD and downloaded from < www.oecd.org/dataoecd/61/17/2763123.xls>. I have taken the total of number of firms and the labor force of "continuing firms" (which lasted the entire year) plus firms which existed at the beginning of the year but exited during the year, plus one-half of the firms and labor force of the firms which entered and exited during the year.

*Ireland*. The data are for manufacturing enterprises in 1997 and were obtained from the Central Statistics Office of Ireland.

*Japan.* The data are for manufacturing enterprises in 1999 and were downloaded from the web site of the Statistics Bureau, Ministry of Public Management, Home Affairs, Post and Telecommunications <a href="https://www.stat.go.jp/english/data/jigyou/kekka.htm">www.stat.go.jp/english/data/jigyou/kekka.htm</a>.

Netherlands. The data are for manufacturing enterprises in 1993 and are estimates based on the number of enterprises in each size class (supplied by Thea Bosten-Eurlings of the Centraal Bureau voor de Statistiek). To estimate the number of employees I have taken the average number of employees in enterprises in each size class in twelve other European nations (from European Commission, Eurostat, 1994) and multiplied this by the number of firms in the size class in the Netherlands.

New Zealand. The data are for manufacturing enterprises in 1997 and were downloaded from the web site of the Statistics Bureau <www.stats.govt.nz/>. I had, however, to make an estimate of the labor force for enterprises with 500 or more employees.

*Sweden.* The data refer to manufacturing enterprises in 1993 and were downloaded from the web site of Statistika centralbyrån <www.scb.se/indexeng.asp>.

United States. The data are for manufacturing enterprises in 1992 and came from U.S. Bureau of the Census (1997).

No data are available for Greece.

I also experimented with two other measures of enterprise size: (a) The Florence medium (measured by lining up all firms according to size of the labor force, then lining up their workers in front of the firms, and finally determining as the median measure of firm size the employment in that firm where the median worker is employed) yields an unambiguous positive correlation with per capita GDP. If we hold per capita GDP constant, none of the economic systems has a significantly larger or smaller average firm size. (b) The percentage of those working in manufacturing enterprises with a labor force of less than fifty workers and employees yields a significantly negatively correlation with per capita GDP. If we hold per capita GDP constant, the Southern

European nations have a significantly higher share of their manufacturing labor force in these small firms. No significant correlations emerged between average firm size and any of the other three economic systems.

- **3. Powers of largest peak employer-organization**. This represents the number of powers (originally scaled 0 through 7) of the largest peak employer organization. One point is given to each of seven different powers such as: the authority to conclude collective agreements on behalf of affiliates; to receive a share in dues collected by affiliates; to have its own fund for industrial action; to veto collective agreements or lockouts by affiliates, etc. The data come from Traxler, Blaschke, and Kittle (2001: p. 67). The data for Greece are my own estimates, based on materials supplied by George S. Argyropoulos, Director General of the Federation of Greek Industries. I rescaled this series to run from 0 to 1.
- **4. Shareholder rights (investor protection)**. This index, by La Porta, Lopez-de-Silanes, Shleifer and Vishney (1996, 1997), is composed of five equally weighted rights of stockholders including those against management, such as rights that support the voting mechanisms against interference by insiders (rights that make it easier to vote enterprise directors out) and certain remedial rights.(for instance, the right to sue enterprise directors). The original data, which run from 0 through 5, are rescaled to run from 0 to 1. The data from the two cited articles are slightly different in several cases from those published on their web site: http://iicg.som.yale.edu/data/datasets.shtml.
- **5.** Creditor rights. This index, by La Porta, Lopez-de-Silanes, Shleifer and Vishney (1996), is composed of five equally weighted rights of creditors, in contrast to rights of management, during bankruptcy proceedings. To the four listed by the authors I have added a fifth, which specifies whether the company must hold a monetary reserve for creditors that is at least 10 percent of the

capital of the firm. The series was rescaled to run from 0 to 1.

6. Significant worker role in firm decisions. This composite index includes three indicators, each socred 0 if the characteristic was absent, 1 if it was present: (a) workers and/or unions have legal rights to appoint members to the boards of directors (weight = 40%). (b) Worker councils are mandated by law (weight = 40%). (Worker councils are institutions of employees and workers created for discussion of a company's policies affecting workers at the company level; the employer has sole rights to decide on operations of the company but must negotiate and decide all matters affecting workers within the framework of the council). (c) Legal rights of labor to participate in management are written into the nation's constitution (weight = 20%, or lesser weights if officially declared as matters of public policy or public interest). The original data pertain to 1997 and come from Botero, Djankov, La Porta, Lopez-de-Silanes, and Shleifer. (2003) but I have used a weighting system different from theirs.

## D. Government

- 1. Government's share of gross fixed investment. These data are the average ratios of government direct gross, fixed, investment (i.e., excluding capital transfers) to total gross, fixed investment of the entire country for the period from 1988 through 1992. For data for most countries come from Tables 1 and 6 in OECD (1998). For New Zealand the data come from official national accounts downloaded from <www.stats.govt.nz>; they include investment of state-run enterprises, but exclude capital transfers. For Germany, the data cover only West Germany; in 1991-92, such government investment as a percent of total gross capital formation was 0.9 percentage points higher in the united Germany than in West Germany alone.
  - **2.** Government share of total consumption. These data are the share of current government

consumption of goods and services to total private and governmental consumption and the data come from Table 1 in OECD (1998). For Germany, the data cover only West Germany; in 1991-92, current government consumption as a percent of total government plus private consumption was 1.2 percentage points higher for the united Germany than for West Germany alone.

- **3.** Government domestic transfer payments as a percent of current GDP. These are the average ratios to GDP of total transfers, excluding subsidies and transfers abroad, for 1988 through 1992. The data come from Tables 1 and 6 in OECD (1998). If the government subsidy data in Table 6 were larger than those reported in Table 1, which happened in several cases, the difference was added to the total transfers. For New Zealand, the data come from official national accounts, downloaded from <www.stats.govt.nz> and include social security cash benefits and social assistance cash benefits. For Germany, the data cover only West Germany; this ratio was 1.3 percentage points higher for the united Germany in 1991-92 than for West Germany alone.
- 4. Direct government share of total employment. These are the average ratios to total employment of employees working for various direct administrative arms of national, state or provincial, and local governments to total employment. Whenever possible I also include employees of the social security and health care systems. The data come from the "analytic data base" of OECD (1997d). The same publication provides data from two other (slightly different) data bases on public employment; but the analytic data base provides more details, so that I could make some adjustments to achieve greater comparability. It was not always easy to draw the line between the government per se and state-owned enterprises; I try to include the postal services among the latter (see indicator 5). Distinguishing people financed by government grants from government employees raised other difficulties. The data for all countries are from some year in the period 1993-95; for Austria,

Belgium, and the U.K., I also had to make some small estimates.

- 5. Share of total employment by state-owned enterprises (SOEs). These data also come from the same analytic data base of the OECD (1997d). As noted above, I tried to exclude employees of the social security and health care systems from the SOE category, but to include the postal service workers. The data for all countries are from some year in the period 1993-95 for which the data were available.
- **6. Share of research and development in government sector**. These OECD data (2001b: 150) show the share of R and D directly carried out by the government. They represent an average for 1989 and 1990.
- **7. Coverage of social security system**. These data draw on 12 of the various governmental benefits for old age, disability, sickness, death, and unemployment benefits are calculated by Botero, Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2003).

# E. Financial Sector

- 1. Central bank independence. As Marcano (1998) warns us, the measurement of a central bank; sindependence invariably contains some subjective elements, both in establishing the criteria for independence and then in measuring them. I have tried to avoid some of these pitfalls by averaging components of two quite different calculations. My index has three major components (weights in given in parentheses):
- a. Legal (formal) independence (45%). This was, in turn, composed of two subindices:
- i. Cukierman (1992: 396-411) unweighted index of six indicators of legal independence during the 1980s. These include his four variables about top personnel, the bank's

monopoly position in making monetary policy, and the bank's official objectives regarding price stability.

ii. Grilli, Masciandarao and Tabellino (1991: 368) index of 8 indicators of legal/political independence, apparently for the 1960s through to the end of the 1980s.

Each subindex was rescaled to run from 0 to 1 and then combined into a weighted average, where the weight of each index was the average value of the other subindex.

- b. Policy tools and independence (45%). This was composed of two subindices:
- i. Cukierman (1992) unweighted index of 7 indicators of policy making independence during the 1980s. These included authority in decision-making in disputes with other government agencies and 6 indicators of various constraints on lending.
- ii. Grilli, Masciandarao and Tabellino (1991, p. 369) index of seven indicators of policy independence, apparently for the 1960s through to the end of the 1980s.

Each subindex was rescaled to run from 0 to 1 and then combined into a weighted average, where the weight of each index was the average value of the other subindex.

- c. Annual turnover of central bank directors (10%). A high turnover of central bank leaders is, according to Cukierman, a crude indicator of the lack of actual political independence of the central bank director. The data come from his estimates (p. 384) for the period from 1950 through 1989 and rescaled to run from 0 to 1, where the value points in the same direction as the other two components of the index.
- 2. Restrictedness of bank activities. The original data are based on a determination of whether banks can sell or underwrite insurance, invest in real estate investments, and own and control nonfinancial firms. I have combined these three scales and have rescaled the results so that

they run from 0 to 1. The data originally came from Barth, Caprio, and Levine, 2001); I obtained them from a CD rom accompanying Demirgüç-Kunt and Levine (2001).

- **3. Openness of external finance**. These data are averages for the period from 1988 through 1992 and come from Quinn and Toyoda (2003), who have used IMF data on restrictions on the capital account and have coded two equally weighted indicators: openness of inward receipts and openness of outward payments.
- **4. Comprehensiveness of accounting reports to the public**. An index created by examining and rating companies' 1990 annual reports on their inclusion or omission of 90 items in their balance sheets and income statements. The data come from the C-D data rom accompanying Demirgüç-Kunt and Levine (2001) and were rescaled to run from 0 to 1. The original data were drawn from research published by the Center for International Financial Analysis and Research, Inc.
- **5. Bank concentration**. This is the share of total banking assets in 1990 held by the three largest banks; the results were then rescaled from 0 to 1. For Ireland, New Zealand, and Sweden, the data are for a year close to 1990. The data come from the CD rom accompanying Demirgüç-Kunt and Levine (2001)
- **6. Relative size of financial system**. This is the ratio of deposit money bank assets and stock market capitalization to the GDP for the period from 1980 through 1995. These data come from the "overall size variable" on the CD rom accompanying Demirgüç-Kunt and Levine (2001).
- **7. Stock market activity/bank activity**. This series has two components, both reflecting the size of the stock market relative to the size of the banking sector. The first part measures size in terms of total capitalization (stock market) or assets (banks). The second part measures size in terms of total ratio of the annual value of stock traded (stock market) and annual claims of private sector

by deposit banks. The two series were scaled from 0 to 1, with the endpoints representing, respectively, the lowest and highest ratios in the sample and then averaged. The data are for the period 1980 through 1995. The data come from the CD rom accompanying Demirgüç-Kunt and Levine (2001). The results are rescaled with 0 and 1 representing respectively the lowest and highest and lowest shares of any country in the sample.

# Appendix B: SOURCES OF MAJOR ECONOMIC PERFORMANCE DATA

- 1. Growth and inflation. These results were calculated by fitting an exponential curve to data from OECD (200c) for the period 1980 through 2000. The German results cover only the area of the former West Germany, and the appropriate data for 1990 2000 were obtained from the Statistisches Bundesamt.
- **2. Unemployment**. The data come from OECD (2001a, 2002) and represent an average for the years 1980 through 2000. The German results cover only the area of the former West Germany, and the appropriate data for 1990 through 2000 were obtained from the Statistisches Bundesamt.
- **3. Pollution**: The data on pollution emissions for 1988 through 1992 come from OECD (2000a). The density data come from United Nations (1996); and the data on pollution regulations, from Pryor (2002).

# **Appendix C: SOURCES OF OTHER PERFORMANCE INDICATORS**

- 1. Strikes. Data on the number of total days lost in strikes in the manufacturing sector per 1,000 employees for the period 1988 through 1992 come from International Labour Organization (1996). This is also the source for the days lost per year for those workers on strike in the manufacturing sector.
- **2. Absenteeism**. The data reflect the annual work days lost per worker in 1990 in the manufacturing sector because of absenteeism. The basic data come from variables 6.31 and 6.32 in World Economic Forum (1991). For thirteen countries, direct estimates of absenteeism are available (variable 6.32). For all countries, however, data are available for results of a survey of business people on the impact of labor absenteeism (variable 6.31). Since the two variables are highly correlated for the thirteen countries ( $R^2 = .77$ ), I used these regression results to estimate the rate of absenteeism for the other countries.
- **3. Work accidents and fatilities**. Data on the average number of days lost because of industrial accidents per 1,000 employees and on fatalities per 1,000 employees are averages for the period 1988 through 1992. They come from International Labour Organization (1996).
- **4. Health indicators**. All data, including days of sickness per worker per year, life expectancies, infant mortality, and percentage of low-weight babies, are averages for the period 1988 through 1992. They come from OECD (2000a).
  - **5. Pollution**. These data come from OECD (2000a).
- **6. Patents issued per 1,000 adult residents**. Two sets of data are used. The first come from national statistics and reflect the average number of patents issued in the period 1988 through 1992 per 1,000 residents between the ages of 15 through 65. as reported by the World International

Property Organization (2003). For Germany the data cover only the former West Germany. The population data come from OECD (2000b). Unfortunately, such data suffer from comparability problems, because the criteria for issuing patents in the individual nations differ. The second set of data are patents issued to non-residents in various countries by the U.S. Patent and Trademark Office (USPTO), which uses the same criteria for all countries. Data from USPTO (2003), are supplemented by information supplied by Paul Harrison of this agency. The U.S. had to be excluded from this sample because we must assume that foreigners only register "important" patents in the U.S., while residents in the U.S. register all patents there.

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