GGDC Sectoral Database for Asia
Sources and Methods

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Introduction

This document described the sources and methodology used in compiling the GGDC Sectoral database for Asia. This database has been constructed along the lines of the sectoral database for Europe described in van Ark (1996). Despite the continuous interest in the subject, the published statistical information on long-term sectoral output and employment trends in Asian economies as a whole is incomplete. As yet, no international organisation publishes figures for Asia in a comparative framework as for example the OECD does for OECD countries. Various international organisations provide series with sectoral detail. Sectoral GDP series can be found in the annual United Nations, *National Accounts Statistics* and the International Labour Organisation provides sectoral detail on employment statistics in its *Yearbook of Labour Statistics*. Also, the Asian Development Bank collects data within its Statistical Database System (SDBS).[1] However, the presented series are short and breaks due to shifts in a benchmark year or change in industrial classification are left unresolved. Also they often lack sectoral detail and are sometimes inconsistent, especially when used together with other sources. The main advantage of the present database is the provision of long time series on GDP and employment which are more consistent over time, and consistent with each other, based on an analysis of available national and international statistical sources. In general, national sources are preferred and when international data sources are used, they are checked against national data whenever possible.[2]

Content of database

The database provides series on GDP at current and constant national prices and employment (persons engaged) in ten economic sectors of nine Asian economies for the period 1953 - 2000 (initial years depending on data availability). The following countries are covered: Hong Kong, India, Indonesia, Japan, Malaysia, Singapore, South Korea, Taiwan and Thailand. The

[1] SDBS is a relational database system that contains the Bank's developing member countries' (DMCs) time series on population, labor force, national accounts,production, energy, price indexes, money and banking including exchange rates, government finance, external trade, balance of payments, international reserves, external indebtedness and direction of trade. These data are revised and updated continuously through Bank missions, questionnaires sent to statistical contacts and hardcopy as well as electronic subscriptions to statistical databases of DMCs and international institutions. Parts of the SDBS are published annually in the ADB, *Key Indicators of Developing Asian and Pacific Countries*.

[2] This can be worthwhile. For example, for Japan, the OECD *National Accounts 1999* on CD-rom wrongly state that business services is included with finance, insurance and real estate. Comparison with data from the Economic Planning Agency, National Accounts, reveal that it is not, and show that it is included in the category Community etc. services.

classification of the 10 sectors which together cover the total economy, are described in Table 1.

Table 1 Description of 10 sectors in GGDC sectoral database

		ISIC rev. 2	ISIC rev. 3	ISIC rev. 3
1	Agriculture, hunting, forestry and fishing	Major division 1	Division 01-05	A+B
2	Mining and quarrying	Major division 2	Division 10-14	C
3	Manufacturing	Major division 3	Division 15-37	D
4	Electricity, gas and water	Major division 4	Division 40-41	E
5	Construction	Major division 5	Division 45	F
6	Wholesale and retail trade, restaurants and hotels	Major division 6	Division 50-55	G+H
7	Transport, storage and communication	Major division 7	Division 60-64	I
8	Finance, insurance, real estate and business services	Major division 8	Division 65-74	J+K
9	Community, social and personal services	Division 9 (a)	Division 75-99 (a)	O+P+Q
10	Producers of government services	Division 9 (a)	Division 75-99 (a)	L+M+N

(a) As ISIC is an classification according to kind of economic activity, and does not draw distinctions according to kind of ownership, type of legal organisation or mode of operation, no clear distinction in terms of divisions can be made for this sector.

The aim of the database

The aim of the database is to provide basic data for international productivity comparisons. The current database allows for international comparisons of growth rates of labour productivity. Future plans are to refine the labour input measure (hours worked), to include capital data for total factor productivity comparisons, and industry-of-origin purchasing power parities to allow for international level comparisons. Also the inclusion of more countries is envisaged, in particular China and the Phillipines. The database does not aim at maximum coverage of countries, but instead focuses on countries for which long-term reliable and consistent data could be found.

The aim of international long-term productivity comparisons puts the following requirements on the data:

a. intertemporal consistency of each individual series of output (GDP) and employment. This is the most important aspect of the database which is presented here. Possible problems which are encountered include breaks introduced by a change in the coverage of activities (revisions), changes in the methods of calculation, change in base year for prices, changes in industrial classifications etc.

b. internal consistency between national output (GDP) and input (labour) series. This includes the use of the same industrial classification for both series and the same coverage of activities.

c. international consistency in terms of industrial classifications and concepts of output and employment.

Below we discuss the various problems encountered in compiling the data set according to these requirements, first with respect to GDP, then with respect to employment. For a similar discussion in the context of the European sectoral database, see van Ark (1996).

Consistency in national series of GDP

There are a number of problems which frequently re-occur when trying to compile long time series of GDP. Series at current prices are frequently 'plagued' by a change in the coverage of activities (revisions) and changes in the industrial classification. Particular problems for the series at constant prices include changes in the methods of calculation (for example from Laspeyres to chained indices) and changes in the base year for prices.

Most of the countries covered in this database are, or were, at low levels of per capita income, which implies that the incidence of small-scale and informal activities is large. Problems of measurement inherent to these activites force national statistical agencies to make rough assumptions, which are often refined at a later stage. The recent revisions of the National Accounts in India and Indonesia are a case in point. These revisions led to an upward adjustment of total GDP of about 9 per cent. These revisions were unrelated with the implementation of the new SNA 1993, but were prompted by discoveries of major undercoverage of certain economic activities.[3]

Our general approach is to start with GDP levels for the most recent available benchmark year expressed in that year's prices. Series were subsequently linked to this benchmark year. This ensures that the growth rates of the individual series are retained, but absolute levels are adjusted according to the most actual information and methods. If GDP is revised, by using this method we implicitly adjust the previous periods as well. Similarly, when industrial reclassifications have occurred, we use the most recent classification and try to adjust the data which is only available according to the old classification.

International comparability of GDP measures

For GDP we used figures gathered within the framework of the System of National Accounts (SNA 1968). Although all countries more or less adhere to these standards, differences in national accounting still exist. Methodological differences exist for example in the use of different base years, use of chain or fixed base indices and different procedures to link series for sub-periods (Maddison 1996). To this can be added the recent practice of an increasing number of countries to use hedonic price indices for some sectors, notably computers and peripherals. Except for Japan, none of the other Asian countries have yet introduced this, but it is likely to be a source of international incomparability in the near future, as it is now for

[3] See for a description of the Indian case the article in the Economic and Political Weekly, *New Series of National Accounts Statistics,* April 3-9, 1999 (www.epw.org.in).

comparisons of OECD countries. Similarly, differences in timing of the implementation of the new SNA 1993 will cause international incomparability of GDP levels in the near future.

With respect to sectoral accounts, important differences exist in the way in which real GDP by industry-of-origin estimates are obtained: estimates can be based on single or double deflation procedures or on the use of quantity indicators, the treatment of secondary activities often differs and GDP measures are valued at different valuation systems (market prices, factor costs or basic prices) (van Ark 1996). A quick overview of differences in national accounting practices is provided in United Nations, *National Accounts Statistics*.

In addition, countries can make particular adjustments for GDP. Young (1995) offers a variety of particular national accounting practices in Asia. For example, he reports that in the Taiwanese national accounts an unusual approach was taken in measuring the output in the public sector by incorporating a 'quality adjustment' which leads to an overestimation of the growth performance of this sector compared to other countries. And GDP in manufacturing at constant prices in Singapore appears to be largely based on undeflated output measures. These issues have not been resolved here.

As the industrial classification of all countries is based on ISIC, major differences are not to be expected at this level of aggregation. Countries mostly deviate from ISIC in the sub-sector classifications.[4] The only problem is in the distinction between community, social and personal services and government services in this database. In some cases this was somewhat artificial as ISIC is an classification according to kind of economic activity, and does not draw distinctions according to kind of ownership, type of legal organisation or mode of operation. Activities such as education and health may be provided by both private and government bodies.

In compiling the dataset the industrial classification was sometimes overruled because of the requirement to match GDP with employment figures. For example, for the case of Japan we had to include business services with community, social and personal services because the employment figures were not detailed enough to split off business services from the latter sector.

[4] In more detailed studies in which output and productivity levels are compared across countries such as in Pilat (1994) and Timmer (2000) for Asia, this issue becomes more important and is treated more in-depth.

Comparison with GDP in GGDC Total Economy Database

For a number of reasons the sum of sectoral GDP presented in this paper and total GDP at constant prices as presented in the GGDC Total Economy Database do not coincide. One of the reasons is conceptually and due to the practice of linking series valued at different base year prices. Most national accounts use a Laspeyres price index for deflation of sectoral and total GDP. When only one base year is used, sectors will sum to total. However, when series are linked, the additive property of the Laspeyres index is lost. Here we impose the additivity by simply defining total GDP as the sum of all sectoral GDPs. The difference between this sum and total GDP calculated by linking total GDP series will deviate only when both the sectoral price and real growth rates differ considerably. This is normally not the case.

Another important conceptual difference is found in the treatment of various items such as bank service charges and taxes. In general, total GDP as defined in the national accounts is defined as the sum of sectoral GDP plus activities not elsewhere classified, plus imputed owner-occupied dwellings, minus imputed bank service charges[5], plus import duties and plus value added tax. It is clear that the differences between the level of sectoral GDP as presented in this dataset and the level of total GDP as presented in the total economy database can differ considerably, although growth rates are normally quite close. We present both the sum of the sectoral GDP and the total economy GDP. The difference is given in a column titled "Not allocated by industry".

Consistency and comparability of employment measures

Labour input in this database is defined as "all persons employed", i.e. the number of all paid employees and self-employed persons. Unfortunately, the treatment of the armed forces is not fully consistent across countries. This is also the case for persons who own an enterprise but are temporarily not at work and unpaid family workers. To provide standardised accounts of sectoral employment one can basically make use of two different primary sources, namely household surveys (for example population censuses and labour force surveys) or establishment surveys (such as production censuses or employment surveys).[6]

Unfortunately, only a few countries in the world have reconciled the figures from the different sources and generally differences exist which can be large both in terms of levels and growth rates (see for example the case of South Korea presented in Timmer 2000). Even household surveys differ from each other and lack consistency due to differences in concepts, procedures, seasonal timing etc (see Hugo et all 1987 for an in-depth study of Indonesia). Van Ark (1996) argues that for sectoral accounts it is preferable to estimate the number of employees per sector on the basis of returns from establishments, as in household surveys the respondents' statement concerning the industry in which he or she is employed is often not in accordance with the official classification. Moreover multiple job-holders are only counted

[5] It must be noted that sectoral GDP in the accounts presented here is defined as the "gross domestic product including bank service charges" which is in accordance with the SNA68. Only at the aggregate level, bank services charges are subtracted.

[6] In the accompanying volumes to the *Yearbook of Labour Statistics*, titled *Sources and Methods: Labour Statistics,* the International Labour Organisation, provides descriptions of national methods and practices with respect to employment statistics.

once in the labour force survey according to their most important activity, while they may be active in more than one sector.

However, the latter does not seem to be a disadvantage in the case when labour input is measured in persons employed rather than hours worked. Ideally, hours worked should be used but setoral statistics on hours worked are scarce, shaky and contradicting. If data on hours worked was available, multiple job holders could be counted in two or more sectors with the appropriate number of hours worked in each sector. However without correcting for hours worked, counting of multiple job-holders in more than one sector would results in a large overestimation of the labour input in countries with a large number of multiple job-holders. In addition, countries at low levels of per capita income have large parts of the population employed in agriculture and small-scale, unregistered, industrial activities and services. Establishment surveys do not cover the agricultural sector and the informal unregistered sector. Usually they also only cover establishments of a given importance, that is, those fulfilling certain conditions, such as having more than a certain number of employees, having more than a certain value of output or capital etc. Therefore establishment data is subject to some bias and is likely to mispresent the sectoral composition of the labour force, especially in developing countries. They are more useful to indicate trends than to indicate absolute levels.

Our default option is to use annual or quarterly labour foce surveys based on household data. This was possible for all countries, except Hong Kong (for which an establishment survey was used) and India and Indonesia. For the latter we used data from population censuses held every 10 years. The years inbetween were intrapolated by using the average annual labour productivity growth rates for each sector.

Comparability of national GDP and Employment series

Employment statistics and GDP statistics in general cover the same activities. In the SNA, the production boundary of GDP is all production actually destined for the market, whether for sale or barter. It also includes all goods or services provided free to individual households or collectively to the community by government units or NPISHs (non-profit institutions serving households). And it includes all production of goods for own use, as goods can be switched between market and non-market use even after they have been produced, but it excludes all production of services for own final consumption within households. Because in labour force statistics economically active persons are defined as those engaged in productive activities as defined in the SNA, this ensures the same coverage of activities for both GDP and employment. However, a notable exception is for the own-account production of housing services by owner occupiers. For this an imputation of rent is made and added to GDP in many contries, according to the SNA. However, this imputed production does not have an employment equivalent and should preferably not be included in output for the purposes of labour productivity comparisons. This appeared to be feasible for all countries, except Japan.

References

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DETAILED SOURCE DESCRIPTION
of GGDC Sectoral Database for Asia

Hong Kong

Gross Domestic Product in Constant Prices
Sources:
- Figures on GDP for the period 1961-1999 for the total economy from Census and Statistics Department, "Estimates of GDP", various issues. Supplemented with production indices from ADB, SDBS and price indices from Census and Statistics Department, "Hong Kong Annual Digest of Statistics", various issues, linked in 2000
- 2000-2005 from Hong Kong Census and Statistics department

Notes:
- figures are at 2000 factor prices
- Only GDP at constant Market Prices calculated from the expenditure side for the total economy is available (up to 1999). In order to derive sectoral GDP in constant 1990 prices we used a 3-step procedure. First we applied the real growth rate of GDP at market prices from the expenditure side to 1990 sectoral sum in current prices. Second, we estimated constant price series for each sector separately. For Agriculture (1979-96), an index of agricultural production was used. Other years were derived by applying a growth rate derived by deflating current series by the CPI (for middle incomes) for foodstuffs. For manufacturing and mining, the manufacturing production index for 1982-1996 was applied to 1990 current GDP. Other years were derived by applying a growth rate derived by deflating current series by the average CPI (for middle incomes) for foodstuffs and clothing and footwear. For other sectors, current series were deflated by various appropriate components of the CPI. Lastly, we controlled for total by scaling the sectoral series for each year by the difference between sectoral sums derived in step 2 and total GDP derived in step 1.

Gross Domestic Product by Industry in Current Prices
Sources:
- 1970-1978 From Census and Statistics Department, "Estimates of GDP, 1966 to 1980", Hong Kong, linked in 1979 to
- 1979 ADB, Key Indicators 2002
- 1980-2004 from Census and Statistics Department, "Estimates of GDP".

Notes:
- Figures given are at factor cost
- Figures before 1980 are not strictly comparable with those of 1980 onwards. The former are income-based estimates whereas the latter are production-based estimates.
- Ownership of dwellings is included in finance, insurance and real estate.
- Government services is included in Community, Social and Personal Services

Number of Persons Employed by Industry
Sources:
- 1974-76 trend from Census and Statistics Department, "Hong Kong Annual Digest of Statistics", 1981, Hong Kong, applied to 1976
- 1976 from by-census of 1976 as published in Census and Statistics Department, "Hong Kong Annual Digest of Statistics", 1981.
- 1981 from Census and Statistics Department, Hong Kong 1981 Census Basic Tables.
- 1985-2005 from ILO, Laborstat.

Notes:
- Periods between 1976, 1981 and 1985 are based upon exponential trend.
- Figure for Construction for 1974 and 1975 was estimated using trend in Manufacturing.
- Agricultural employment for 1974 and 1975 based on annual trend for 1976-81.

India

Gross Domestic Product in Constant Prices
Sources:
- 1950-79 trend in 1980/81 prices from CSO, *National Accounts Statistics (NAS)*, *Disaggregated Statements*, 1950/51-1979/80;
- 1980-92 trend in 1980/81 prices from CSO, *NAS*, various issues., linked in 1993
- 1993-1997 in 1993/94 prices from ADB, Key indicators of developing Asian and Pacific countries 2006.
- 1998-2005 in 1993/94 prices from ministry of statistics and programme implementation, CSO.

Notes:
- Figures given are at 1993/94 factor cost
- 1950 refers to fiscal year 1950/51 etc.
CSO has revised its national accounts in 1999. These revisions include: 1. Better estimation of unregistered activities, 2. Inclusion of new products, 3. Improvement in coverage of existing products, and 4. Methodological improvements. In practice GDP in 1993 was revised upwards by about 9 per cent. However, growth rates generally remained unchanged. (see Economic and Political Weekly, *New Series of National Accounts Statistics,* April 3-9, 1999).

Gross Domestic Product by Industry in Current Prices
Sources:
- 1950-1987 trend from National accounts statistics, CSO, National Accounts Statistics (NAS), various issues, linked in 1993.
- 1988-1995 ADB, Key indicators of developing Asian and Pacific countries 2006
- 1996-2005 from ministry of statistics and programme implementation, CSO.

Notes:
- at factor costs
- 1950 refers to fiscal year 1950/51 etc.
- CSO has revised its national accounts in 1999. These revisions include: 1. Better estimation of unregistered activities, 2. Inclusion of new products, 3. Improvement in coverage of existing products, and 4. Methodological improvements.
The data for 1992 and backwards have been upscaled, using the ratio between 1993 (unrevised) and 1993 (revised). In practice GDP in 1993 was revised upwards by about 9 per cent (note that this differs considerably between sectors). However, growth rates generally remained unchanged. (see Economic and Political Weekly, *New Series of National Accounts Statistics,* April 3-9, 1999).

Number of Persons Employed by Industry
Sources:
- 1961, 1971, 1981, 1991, and 2001, Census of India.
- 1991-2004 trends for all sectors (except for agriculture 1991-2001) from CSO, Labour-related establishment survey, various issues. Data obtained from ILO, Labour statistics database.

Notes:
- For 1991, public utilities separated from manufacturing, and FIRE from other services, using data for the organised sector from Ministry of Finance, Economic survey 1994/95. We assume public utilities and FIRE consist only of organised firms.
- Figures for years between census years (namely 1961-1971, 1971-1981 and 1981-1991) are estimated using average sectoral labour productivity growth rates for these periods. For agriculture the average growth rate of employment between census years was taken.

- Figures for 1991-2001 except agriculture are interpolated using the sectoral employment growth rates from the labour-related establishment survey. Sectoral growth rates from the labour-related establishment survey are moderated upon the sectoral employment growth rates from the 1991 and 2001 census.
- Agriculture 1991-2001 is estimated using average growth rates between the 1991 and 2001 census year.
- Figures for 2001-2004 are extrapolated using sectoral employment growth rates from the labour-related establishment survey.

Indonesia

Gross Domestic Product in Constant Prices
Sources:
- 1960-71 trend in 1960 prices from BPS, National Income, various issues linked in 1971
- 1971-83 trend in 1973 prices from BPS, National Income, various issues, linked in 1983
- 1983-88 trend in 1983 prices trend from BPS, National Income, various issues, linked in 1988
- 1988-1995 trend in 1993 prices from ADB SDBS dataset, March 1999 (new series).
- 1996-2001 trend in 1993 prices from ADB, Key indicators 2002: Population and Human Resource Trends and Challenges.
- 2000-2005 in 2000 prices from ADB, Key indicators 2006

Notes:
- Figures given are at 2000 market prices
- For 1960-71 Government services included Community etc. services
- Trend for 1988 and earlier in Community etc. services includes business services.
- BPS has revised national accounts in 1993. The new series have some methodological refinements and a sectoral reclassification. Total GDP in 1993 was increased by about 9%. Revisions back to 1988 have been published. Most important reclassification involved the transfer of ownership of dwellings into finance, insurance and real estate services. Also in the new series business services, which were included in other private services in the old series, were moved to FIRE.

Gross Domestic Product by Industry in Current Prices
Sources:
- 1966-1988 trend from BPS, National Income, various issues linked in 1988
- 1988-1996 from CBS, Official Communication, 9 April 1999
- 1997-2005 from ADB, Key indicators 2005: Population and Human Resource Trends and Challenges.

Notes:
- Figures given at market prices
- Trend for 1988 and earlier in Community, Social and Personal Services includes business services.
- BPS has revised national accounts in 1993. The new series have some methodological refinements and a sectoral reclassification. Total GDP in 1993 was increased by about 9%. Revisions back to 1988 have been published. Most important reclassification involved the transfer of ownership of dwellings into finance, insurance and real estate services. Also in the new series business services, which were included in other private services in the old series, were moved to FIRE.

Number of Persons Employed by Industry
Sources:
- 1961, 1971 and 1980 from Hugo et all, The Demographic Dimension in Indonesian Development (1987), Table 8.7, based on Population Censuses
- 1990 from Hill 1996, Table 2.2, based on 1990 Population Census.
- Trends for 1989-98 from ILO, Yearbook of Labour statistics, various issues, applied to 1990.
- Trends for 1998-2005 from BPS, National Labour Force Survey, various issues, applied to 1998.

Notes:
There are a number of sources on labour force statistics but they lack consistency due to differences in concepts, procedures, seasonal timing etc (see Hugo et all, 1987). This especially effects the number of workers reported in agriculture and trade. Therefore we choose to rely

solely on population censuses to maximise intertemporal consistency, and apply trends from the labour force survey to these benchmarks. Population census have been held in 1961, 1971, 1980 and 1990.
- 1989 and 1991-94, 1996-97 by applying growth rates from ILO, Yearbook of Labour statistics, various issues (which uses figures based on labour force surveys) to 1990 population census benchmark.
- in 1995 no labour force survey was held. An average of 1994 and 1996 is taken instead.
- 1980 split for manufacturing and public utilities, and for finance and community etc. services based on shares for 1980 from ILO, Yearbook of Labour Statistics.
- 1990 split for mining and public utilities, and for finance and community etc. services based on shares for 1990 from ILO, Yearbook of Labour Statistics.
- Figures for years between 1971-1980 and 1980-1989 are estimated by using sectoral average labour productivity growth rates for these periods.

Japan

Gross Domestic Product in Constant Prices
Sources:
- 1953-1969 growth rates for all sectors, except Community, Social and Personal Services and Government Services, from Pilat (1994).
- 1970-1999 growth rates from EPA, annual report on national accounts
- 2000-2004 from EPA, annual report on national accounts

Notes:
- Figures given are at 2000 market prices
- Figures for 1953 and 1954 are based upon the old 1953 SNA and therefore not completely comparable
- 1953-1960 trend for Community, Social and Personal Services and Government Services combined from Pilat (1994) was used for both individual series

Gross Domestic Product by Industry in Current Prices
Sources:
- 1953-1969 growth rates for all sectors, except Community, Social and Personal Services and Government Services, from Pilat (1994)
- 1970-1995 growth rates from EPA, annual report on national accounts
- 1996-2004 EPA, annual report on national accounts

Notes:
- Figures given are at Market Prices
- Figures for 1953 and 1954 are based upon the old 1953 SNA and therefore not completely comparable
- 1953-1960 trends for Community, Social and Personal Services and Government Services combined from Pilat (1994) was used for both individual series

Number of Persons Employed by Industry
Sources:
- 1953-1954 growth rates from Ohkawa, Shinohara & Meisner (1979)
- 1955-1970 growth rates from Economic Planning Agency, Report on National Accounts from 1955-1989, Tokyo, October 1991;
- 1971-1980 growth rates from EPA, Annual Report on National Accounts, 1997.
- 1981-2003 from OECD STAN database May 2003.

Notes:
- Business services are included in Community, Social and Personal Services and not in FIRE.

Malaysia

Gross Domestic Product in Constant Prices
Sources:
- 1970-77 at 1970 prices from United Nations, National Accounts Statistics, various issues, linked in 1978
- 1978-86 at 1978 prices from United Nations, National Accounts Statistics, various issues, linked in 1987
- 1987-2005 at 1987 prices from ADB.

Notes:
- Figures in 1987 market prices
- For 1987-2001, owner-occupied dwellings are included in community etc. services in the original source. This has been reallocated to FIRE using ADB, SDBS, March 1999 and UN, National Accounts Statistics.

Gross Domestic Product by Industry in Current Prices
Sources:
- 1970, 1973 and 1978 from United Nations, National Accounts Statistics, various issues.
- 1987-2005 from ADB.

Notes:
- Figures are given at market prices
- Figures in between 1970, 73, 78, 87 were intrapolated.
- For 1987-2001, owner-occupied dwellings are included in community etc. services in the original source. This has been reallocated to FIRE using ADB, SDBS, March 1999 and UN, National Accounts Statistics.

Number of Persons Employed by Industry
Sources:
- 1975-79 and 1981-84 figures for agriculture, mining, manufacturing and other sectors aggregated from Asian Development Bank, "Key Indicators of developing Asian and Pacific countries", 1996.
- 1980 all sectors from Department of Statistics, “Monthly Statistical Bulletin of Malaysia”, 1994.
- 1985-96 from United Nations 'Statistical Yearbook for Asia and the Far East', various issues.
- 1996-2004 growth rates from ILO, Labour statistics database
- 2005 growth rates from ADB.

Notes:
- For 1975-1979 only total of all sectors, excluding agriculture, mining and manufacturing, is given in source. Controlling for this total, we distributed across the various sectors assuming identical sectoral labour productivity growth rates.
- For 1981-1984 only total of all sectors, excluding agriculture, mining and manufacturing, is given in source. Controlling for this total, we distributed across the various sectors using average productivity growth in each sector for the period 1980-85.
- The ILO and ADB databases figures are based on figures from one survey month only, rather than two or more rounds as the other sources. Hence only trends from these sources should be used.
- For 1996-2000 total of community, social and personal services and government services is given in source. Controlling for this total, we distributed across the various sectors using average productivity growth in each sector for the period 1995-2000.

- For 2001 Sectoral weights from 2000 have been used in order to calculate the employment data for 2001 for Public Utilities, Construction, Trade, T&C, FIRE, CSPS and Government Services

Philippines

Gross Domestic Product in Constant Prices
Sources:
- 1971-1975 at 1975 prices taken from a publication of the Asian Productivity Organization: "Comparative information on productivity levels and changes in APO member countries", january 1986. Linked in 1975.
- 1975-1981 at 1972 prices from Philippine Statistical Yearbook, 1990. Linked in 1981.
- 1981-1997 at 1985 prices from National Statistical Coordination Board.
- 1998-2005 at 1985 prices from National Statistics Office.

Notes:
- Figures in 1985 market prices.

Gross Domestic Product by Industry in Current Prices
Sources:
- 1971-1975 trend from a publication of the Asian Productivity Organization: "Comparative information on productivity levels and changes in APO member countries", january 1986. Linked in 1975.
- 1975-1981 trend from Philippine Statistical Yearbook, 1990. Linked in 1981.
- 1981-1997 from National Statistical Coordination Board.
- 2000-2005 from National Statistics Office.

Notes:
- Figures are given at market prices

Number of Persons Employed by Industry
Sources:
- 1971-1987 trend from Philippine Statistical Yearbook 1990, NSO, linked in 1988.
- 1988-2000 trend from ILO, labour statistics, linked in 2000.
- 2001-2004 from Bureau of Labor and Employment Statistics, june 2003.
- 2005 growth rates from ADB, Key Indicators 2006

Notes:
- Figures from Bureau of Labor and Employment Statistics refer to annual average, ILO figures refer to fourth quarter of each year.
- Growth rate for 2000-2001 from ILO, which is based on 4^{th} quarter, was implausible high. Instead estimate based on first three quarters has been used, based on data from National Statistics Office in PIDS-database.
- ILO data for period 1999-2001 are based on 1995 population census projections. Data for 1988-1998 are based on 1980 census. Growth rate for 1998-1999 based on 1980 census has been used to resolve the break. This data was derived from National Statistics Office in PIDS-database. The difference between the level of employment for 1999 based on 1980 and 1995 census was about 4.5%.
- For 1971-2000, hotels and restaurants were included in community etc. services in the original sources. This has been reallocated to Wholesale and Retail using average shares for period 2001-2002 from Bureau of Labor and Employment Statistics.

Singapore

Gross Domestic Product in Constant Prices
Sources:
-1960-1989 growth rate from Singapore Statistics, National Accounts, various issues
-1990-1998 growth rate from ADB, Key Indicators 2006
-1999 growth rate from Singapore Statistics
-2000-2001 from ADB, Key Indicators 2006
-2002-2005 from Singapore Statistics

Notes:
- Estimates given at 2000 basic prices
- Sectoral estimates for 2000 and 2001 in the ADB Key Indicators 2006 do not provide detail for agriculture and mining (aggregate for both is presented), trade, and financial services (aggregate for both is presented). The current price sectoral shares from unrevised Singapore statistics for 2000 and 2001 are used to break down these aggregates.
- Government services is included in community and other services

Gross Domestic Product by Industry in Current Prices
Sources:
- 1960 from Department of Statistics, "Singapore National Accounts", Singapore, 1975,
- 1970-1988 growth rate from Department of Statistics, "Singapore National Accounts", Singapore, 1987 and Department of Statistics, "Yearbook of Statistics Singapore', 1991, linked in 1990
-1989-1999 growth rate from ADB, Key Indicators 2006
-2000-2001 from ADB, Key Indicators 2006
-2002-2005 from Singapore Statistics

Notes:
- Estimates given at basic prices
- Government services is included in community and other services
- Sectoral estimates for 2000 and 2001 in the ADB Key Indicators 2006 do not provide detail for agriculture and mining (aggregate for both is presented), trade, and financial services (aggregate for both is presented). The current price sectoral shares from unrevised Singapore statistics for 2000 and 2001 are used to break down these aggregates.

Number of Persons Employed by Industry
Sources:
- 1971 and 1972 growth rate from Yearbook of Statistics, Singapore 1972/73, Department of Statistics, linked in 1970 to
- 1970 and 1973-1981 growth rate from Department of Statistics, "Economic and Social Statistics Singapore, 1960-1982" Singapore, linked in 1981 to
- 1981-1989 growth rate from Department of Statistics, "Yearbook of Statistics Singapore", various issues.
1990, 1995, 2000, 2005 from Population Census (Published in Yearbook of Statistics of Singapore, 2006).
- 1990-2004 from ILO, Labour statistics.
.
Notes:
- Community etc. services include government services and employment not allocated by industry.
- Years between censuses are interpolated with the growth rate from the labour force survey (as publicly available from ILO).

South Korea

Gross Domestic Product in Constant Prices
Sources:
- 1953-1970 in 1985 prices from D. Pilat, "The Economics of Catch Up: the Experience of Japan and Korea, Groningen Growth and Development Centre, 1993". linked in 1970
- 1970-2005 in 1995 prices from Bank of Korea, “National Accounts”

Notes:
- Figures given are at 1995 Market Prices.
- Figures for 1953-70 based upon the old 1953 SNA and therefore not completely comparable
- Government services is included in community and other services

Gross Domestic Product by Industry in Current Prices
Sources:
- 1953-1970 trend from D. Pilat, "The Economics of Catch Up: the Experience of Japan and Korea, Groningen Growth and Development Centre, 1993". linked in 1970
- 1970-2005 from Bank of Korea, “National Accounts”

Notes:
- imputation for owner occupied dwellings based on shares in current prices
- Figures are at market prices.
- Figures for 1953-70 based upon the old 1953 SNA and therefore not completely comparable
- Government services is included in community and other services
- imputation for owner occupied dwellings based on shares derived from benchmark input-output tables 1970-1995, Bank of Korea. Intermediate years intrapolated.

Number of Persons Employed by Industry
Sources:
- 1963-86 from Pilat 1994, "The Economics of Rapid Growth: the Experience of Japan and Korea”, originally from EPB, Annual Report on the Economically Active Population Survey, Seoul, various issues.
- 1987-1999 EPB, “Annual Report on the Economically Active Population Survey”, Seoul, various issues.
- 2000-2005 from Bank of Korea, “National Accounts”

Notes:
- Government services included Community etc. services

Taiwan

Gross Domestic Product in Constant Prices
Sources:
- 1961-1980 growth rate from Directorate-General of Budget, Accounting and Statistics, "Statistical Abstract of National Income in Taiwan Area of the Republic of China, March 2000", complemented with DGBAS, "National Income in Taiwan Area," 1994 and 1999.
- 1981-2005 from National Statistics Taiwan

Notes:
- Figures given are at 2001 Market Prices.
- Community, social and personal services include other private producer of services
- Total GDP includes all industries plus GDP less imputed bank service charges plus import duties plus value added tax (existing since 1986).
- For 1961-88, community, social and personal services estimated by applying growth rates in 1991 prices from DGBAS , "National Income in Taiwan Area, 1994".

Gross Domestic Product by Industry in Current Prices
Sources:
- 1951-1980 from Directorate-General of Budget, Accounting and Statistics, "Statistical Abstract of National Income in Taiwan Area of the Republic of China, March 2000", complemented with DGBAS, "National Income in Taiwan Area," 1994 and 1999.
- 1981-2005 from National Statistics Taiwan

Notes:
- Figures are given at Market Prices.
- Community, social and personal services include other private producer of services. Taken from DGBAS, "National Income in Taiwan Area," 1994 and 1999.
- Total GDP includes all industries plus GDP less imputed bank service charges plus import duties plus value added tax (existing since 1986).

Number of Persons Employed by Industry
Sources:
- 1963-1965 trends from Directorate-General of Budget, Accounting and Statistics, "Statistical Yearbook of the Republic of China, 1982" applied to 1965
- 1965-1977 from Directorate-General of Budget, Accounting and Statistics, Statistical Yearbook of the Republic of China, 1993 and 1999
- 1978-1998 from Directorate-General of Budget, Accounting and Statistics, "Monthly Bulletin of Manpower Statistics, Taiwan Area", various issues.
- 1999-2005 from National Statistics Taiwan

Notes:
- For the years 1963-1977 separate figures for Community services and Government services are not given. We assumed identical labour productivity growth rates in both sectors and controlled for combined employment.

Thailand

Gross Domestic Product in Constant Prices
Sources:
- 1946-1950 trend in 1972 prices from Vanderveen, 1987, 'Postwar Economic Growth and Structural Change in Thailand', linked in 1951
- 1951-1959 trend in 1956 prices from NESDB, National Income of Thailand, 1951-63, linked in 1960
- 1960-1969 trend in 1962 prices from NESDB, National Income of Thailand, 1960-75, linked in 1970
- 1970-1979 trend in 1972 prices from NESDB, National Income of Thailand, 1970-90, linked in 1980
- 1980-1995 from NESDB, National Income of Thailand, 1980-96
- 1996-2005 growth rates from ADB, key indicators 2006

Notes:
- Estimates at 1988 Market Prices.
- The figures after 1970 were based on a different industrial classification in which simple agricultural processing products had been taken away from the manufacturing sector and put under the agricultural sector. We retain the industrial classification used for the post-1970 figures. (NB This is in contrast with Office of the National Economic and Social Development Board, *National Income of Thailand, 1951-1996*, 1999, in which this break is not resolved).
- Ownership of dwellings is included in FIRE.
- In the National accounts, hotels and restaurants are included in services. This industry is reallocated to trade. Since ADB Key Indicators does not provide detailed estimates of value added in hotels and restaurants, we used historical national income estimates and extrapolated the sectoral estimates with growth rates from the ADB Key indicators.

Gross Domestic Product by Industry in Current Prices
Sources:
- 1951-1959 trend from NESDB, National Income of Thailand, 1951-63, applied to 1960
- 1960-1969 trend from NESDB, National Income of Thailand, 1960-75, applied to 1970
- 1970-1979 trend from NESDB, National Income of Thailand, 1970-90, applied to 1980
- 1980-1995 from NESDB, National Income of Thailand, 1980-96
- 1996-2005 ADB, key indicators 2006

Notes:
- Figures at current prices differ between the various issues in overlapping years. Therefore we applied growth rates to the earliest year of the most recent publication.
- The figures after 1970 were based on a different industrial classification in which simple agricultural processing products had been taken away from the manufacturing sector and put under the agricultural sector. We retain the industrial classification used for the post-1970 figures. (NB This is in contrast with Office of the National Economic and Social Development Board, *National Income of Thailand, 1951-1996*, 1999, in which this break is not resolved).
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Number of Persons Employed by Industry
Sources:

- 1960-77 trend from N. Vanderveen, 1987, 'Postwar Economic Growth and Structural Change in Thailand', mimeo University of Groningen, linked in 1977 to
- 1977-1997 trend from NSO, Labour Force Survey, various issues, linked in 1997 to
- 1998-2005 from NSO, Labour Force Survey

Notes:
- The labour force survey is held more than once in most years. We take the average of the Februari (first round) and the August survey (third round) to take account for the seasonal inactive labour force. For years for which only August round results are available (1980, 1982 and 1990) we estimated the Februari round by applying the February/August proportions from the year before.
- For Finance, insurance and real estate, the trend (1960-1997)f rom wholesale and retail trade has been applied. This is because this sector is included in trade in the data before 1998.
- For Government services, the trend (1960-1997) from Community, social and personal services has been applied. This is because this sector is included in services in the data before 1998.