



Measuring Industry Productivity Across Time and Space and Cross Country Convergence

Robert Inklaar (University of Groningen, Netherlands)
W. Erwin Diewert (University of British Columbia, Canada)

Paper prepared for the 34th IARIW General Conference

Dresden, Germany, August 21-27, 2016

Session 6C: Explaining Productivity Trends I

Time: Thursday, August 25, 2016 [Afternoon]

Measuring Industry Productivity Across Time and Space and Cross Country Convergence

Robert Inklaar and W. Erwin Diewert¹
Discussion Paper 15-05,
School of Economics,
University of British Columbia,
Vancouver, Canada, V6T 1Z1.

September 1, 2015.

Abstract

The paper introduces a new method for simultaneously comparing industry productivity levels across countries and over time. The new method is similar to the method for making multilateral comparisons of Caves, Christensen and Diewert (1982b) but their method can only compare gross outputs across production units and not compare real value added of production units across time and space. The present paper uses the translog GDP methodology for measuring productivity levels across time that was pioneered by Diewert and Morrison (1986) and adapts it to the multilateral context. The new method is illustrated using an industry level data set and shows that productivity dispersion across 38 countries between 1995 and 2011 has decreased faster in the traded sector than in the non-traded sector. In both sectors, there is little evidence of decreasing distance to the productivity frontier.

Key Words

Productivity, index numbers, Purchasing Power Parities, multilateral comparisons, convergence, value added functions, efficiency, world production frontier, Törnqvist indexes, superlative indexes, translog functions.

Journal of Economic Literature Classification Numbers

C43, C82, D24, E01, E23, E31, F14, O47

1. Introduction

¹ Inklaar: Faculty of Economics and Business, University of Groningen, the Netherlands; Email: r.c.inklaar@rug.nl. Diewert: University of British Columbia and the University of New South Wales; Email: erwin.diewert@ubc.ca. Prepared for the special issue of the *Journal of Econometrics* on "Innovations in Measurement in Economics and Econometrics". The authors would like to thank Kevin Fox, Marcel Timmer, two anonymous referees and the participants at the International Comparison of Income, Prices and Production conference at UC Davis in May 2014 for helpful comments and discussion as well as the Global Office of the International Comparison Program for making detailed price data available. Diewert thanks the SSHRC of Canada for financial support. None of the above are responsible for opinions expressed in the paper

Determining how fast productivity is converging across countries is a question of enduring interest, and for good reasons.² Convergence tells us if lower-income countries are catching up to higher income countries. Furthermore, it can help shed light on the circumstances under which countries would benefit from an ‘advantage of backwardness’, which is helpful information for designing development policies.³

A sectoral perspective on convergence is particularly valuable as it can provide clearer policy targets. For instance, if – as found by Rodrik (2013) – convergence in manufacturing is unconditional; i.e. it occurs regardless of country circumstances, then it could be helpful to gear policies towards building and strengthening this sector. Alternatively, if the finding for OECD countries by Bernard and Jones (1996) of convergence in services but not in manufacturing would hold more broadly, the argument for support of the manufacturing sector would be much weaker.

Despite the interest in the results, the methods used in compiling the productivity measures used in these studies are not well suited for analyzing productivity convergence. Obviously, convergence is a topic that requires a simultaneous comparison of productivity levels across countries and over time.⁴ Instead, the typical analysis of convergence uses measures that are comparable across countries in a single year, combined with national growth rates that are comparable only over time.

A major contribution of this paper is to propose a new method for measuring industry productivity levels that are comparable across both countries and over time. The proposed approach resolves the comparability problem through an extension of the work of Caves, Christensen and Diewert (1982b, CCD henceforth), who showed how to compare productivity across countries at a point in time. Their approach was based on the use of distance functions to construct output and input aggregates. Unfortunately, their approach cannot be used to construct value added output aggregates since distance functions are in general not well defined when there are intermediate inputs in the output aggregate. Thus in section 2, we will use the GDP function or value added function approach pioneered by Diewert and Morrison (1986) as a basic building block in our new approach to replace the distance function approach used by CCD.

Section 2 shows how outputs, inputs and productivity levels for an industry (or sector of an economy) can be compared across countries and time in a consistent manner. In section 3, we extend the analysis of section 2 to show how consistent across time and space measures of “world” productivity at time t , Γ_t , can be constructed. We also define the relative efficiency of the industry (or production unit) in country k at time t , Γ_{kt} , with the most efficient production unit across all countries and time periods prior to time t , $\Gamma_{t,max}$.

² For a recent study and overview, see Barro (2012).

³ See e.g. Aghion, Akcigit and Howitt (2014).

⁴ See Hill (2004) and Diewert and Fox (2015) for more general discussions of consistency of price indexes across countries and over time. See also the discussion in Lichtenberg (1994) on σ -convergence, a more direct and robust concept than β -convergence.

Section 4 defines two measures of industry convergence. The first measure, E_t , is the ratio of actual world productivity at time t , Γ_t , to the maximum possible value of world productivity at time t , $\Gamma_{t,max}$. If all countries have converged to the maximum possible level of productivity at time t , then E_t will equal unity. Thus if E_t increases over time, this indicates a movement towards productivity convergence. The second measure of convergence at time t , σ_t defined by (31) below, is a straightforward input weighted average of the dispersion of the country productivity levels at time t , Γ_{kt} , relative to the world average productivity level at time t , Γ_t . If all country productivity levels are the same in period t , it turns out that σ_t will equal 0. Thus if σ_t declines over time, productivity levels across countries are converging towards the mean level of productivity.

Section 5 gives a brief description of the data used in this study. The dataset covers 38 economies across two sectors of each economy for the period 1995 to 2011. The two sectors are the *traded sector* and the *nontraded sector*. A third sector is the *market sector* for each economy, which is an aggregate of the traded and nontraded sectors. This setting is of interest as these 38 economies include most advanced economies as well as major emerging economies, like China and India. Moreover, the period since 1995 has seen rapid growth across many of these emerging economies, raising the question whether aggregate productivity levels converged and, if so, which sectors contributed most. There is also interest in determining whether the global financial crisis affected convergence. The data are constructed mainly using the World Input-Output Database⁵; see section 5 and Appendix A for additional details.⁶

In section 6, we show that convergence of productivity levels towards the mean has indeed been strong over this period, with the weighted standard deviation of market sector productivity levels (the dispersion measure) decreasing by 23 percent over the sample period. Based on the literature on the Harrod-Balassa-Samuelson (HBS) model, productivity dispersion should be larger and productivity growth should be faster in the traded sector than in the non-traded sector.⁷ We confirm that dispersion in the traded sector is about 50 percent greater than in the aggregate market economy and a new finding is that aggregate convergence is almost entirely due to convergence in the traded sector of the economy.⁸ However, we find that there is no evidence that countries are converging towards the productivity frontier over our sample period. We also find that

⁵ See immer, Dietzenbacher, Los, Stehrer and de Vries (2015) for an overview of this database.

⁶ We draw on the World Bank's PPPs for 1996, 2005 and 2011 as a starting point for developing PPPs for our industry data. A full set of industry PPPs covering the years 1995-2011 is required for our purposes so the World Bank PPPs for the three benchmark years are interpolated using the method that makes use of national growth rates that was suggested by Diewert and Fox (2015). Our full set of PPPs does not make use of country exchange rates.

⁷ See Asea and Cordon (1994) for an overview of the model, Hsieh and Klenow (2007) and Herrendorf and Valentinyi (2012) on productivity dispersion and de Gregorio, Giovannini and Wolf (1994) and Ricci, Milesi-Ferretti and Lee (2013) on relative productivity growth. We find that realized "world" productivity growth over 1995-2011 was 1.3% per year for the traded sector and 0.6% per year for the nontraded sector.

⁸ When we decomposed the traded sector into additional sectors, we found that the manufacturing sector is the main contributor to convergence, confirming a result of Rodrik (2013).

the global financial crisis did not decrease the rate of growth of the productivity frontier but it did decrease realized “world” productivity growth substantially from an average of 1.11% per year over the years 1995-2007 to 0.55% per year over the years 2007-2011.

Section 7 concludes. Appendix A describes the data in more detail, Appendix B provides more details on country productivity levels and Appendix C lists our data.

2. An Economic Approach to the Measurement of Productivity over Time and Space

In order to study whether poorer countries are converging towards the productivity frontier, it is necessary to measure output and input levels across countries in such a way that the output and input levels are comparable across time and space. It is also useful to have measures that are invariant to the choice of a single country that acts as a basis for comparison across all countries and time periods. Finally, it is useful to have a methodology that is based on an economic approach to production theory. Such an approach was developed by CCD but their approach has a significant limitation. Their approach relies on the distance function methodology for aggregating inputs and outputs that can be traced back to Malmquist (1983) and further developed by Caves, Christensen and Diewert (1982a). The problem is that this distance function methodology does not allow us to compare real GDP or real value added across countries: the methodology requires a strict separation of outputs and inputs. Net output aggregates based on distance function techniques do not work if the output aggregate includes intermediate inputs or imports. In this section, we show how this problem can be addressed in a production theory framework by using the methodology that was developed by Diewert and Morrison (1986).⁹ Our suggested methodology also draws on the techniques used by CCD.

We give a brief explanation of the methodology developed by Diewert and Morrison (1986) that allows one to compare real outputs, inputs and productivity levels across two time periods or two production units in the same industry.¹⁰ Consider a set of production units that produce a vector of M net outputs,¹¹ $y \equiv [y_1, \dots, y_M]$, using a nonnegative vector of N primary inputs, $x \equiv [x_1, \dots, x_N]$. Let the feasible set of net outputs and primary inputs for production unit k be denoted by S^i for $i = 1, \dots, I$. It is assumed that each S^i is a closed convex cone in \mathbb{R}^{M+N} so that production is subject to constant returns to scale for each production unit.¹² For each strictly positive net output price vector $p \equiv [p_1, \dots, p_M] \gg 0_M$

⁹ A similar methodology was independently developed by Kohli (1992). The DMK bilateral methodology was applied in a multilateral context by Shiu (2003). Her methodology is similar to ours except that we use the *averaging approach* to obtaining multilateral comparisons that are invariant to the choice of a base country that was pioneered by Gini (1931) whereas Shiu used the *similarity linking approach* that was pioneered by Hill (1999) (2004).

¹⁰ We interpret the “same industry” to mean that the production units being compared produce the same list of outputs and use the same list of inputs.

¹¹ If $y_m > 0$, then net output m is an output and y_m denotes the production of this commodity; if $y_m < 0$, then net output m is an intermediate input and y_m denotes the negative of the amount of this input that is used by the production unit.

¹² There are some additional regularity conditions on these production possibilities sets that are listed in Diewert and Morrison and in Diewert (1973).

and each strictly positive primary input vector $x \gg 0_N$, define the *value added function* or *GDP function* for production unit i , $g^i(p,x)$, as follows:

$$(1) g^i(p,x) \equiv \max_y \{ \sum_{m=1}^M p_m y_m : (y,x) \in S^i \} ; i = 1, \dots, I.$$

These value added functions g^i provide a dual representation of the technology sets S^i under our assumptions on the technology sets.¹³ Finally, Diewert and Morrison assumed specific functional forms for the value added functions g^i defined by (1): they assumed that each value added function has a translog functional form with some restrictions on the parameters that define these functional forms.¹⁴ Armed with these assumptions, Diewert and Morrison (1986; 661-665) were able to construct output, input and productivity levels between any two production units using the economic approach to index number theory and Törnqvist-Theil (1967; 136-137) output price and input quantity indexes.¹⁵

We can now address our specific problem which is to develop a methodology that can construct aggregate output, input and productivity levels for a panel data set on comparable production units in different countries. We assume that the data set is organized in the following manner. There are four sets of basic data.¹⁶ (i) The *value of net output* m in country k in domestic currency during period t is v_{ktm} for $m = 1, \dots, M$; $k = 1, \dots, K$ and $t = 1, \dots, T$. Thus there are M net output commodities (if $v_{ktm} < 0$, then commodity m is used as an input by country k in period t), K countries and T time periods. (ii) The *price or PPP* (in domestic currency) for net output m in country k for time period t is $p_{ktm} > 0$ for $m = 1, \dots, M$; $k = 1, \dots, K$ and $t = 1, \dots, T$. These output prices or Purchasing Power Parities are prices that use *the same unit of measurement* for the same commodity across countries. (iii) The *value of primary input* n in country k in domestic currency during period t is $V_{ktn} > 0$ for $n = 1, \dots, N$; $k = 1, \dots, K$ and $t = 1, \dots, T$. (iv) The *price or PPP* (in domestic currency) for primary input n in country k for time period t is $w_{ktn} > 0$ for $n = 1, \dots, N$; $k = 1, \dots, K$ and $t = 1, \dots, T$. These input prices or Purchasing Power Parities are prices that use *the same unit of measurement* for the same input across countries.

Given the above primary data sets, we can construct implicit output and input quantities for each country and each time period. Thus define the *implicit quantity* (or volume) y_{ktm}

¹³ Note that working with the dual functions implies that the production units are competitive price takers, an assumption that is somewhat questionable. However, this is a common assumption when working with the economic approach to index number theory.

¹⁴ The logarithm of g^i is assumed to have the following functional form: $\ln g^i(p,x) \equiv \alpha_0^i + \sum_{m=1}^M \alpha_m^i \ln p_m + .5 \sum_{m=1}^M \sum_{k=1}^M \alpha_{mk} \ln p_m \ln p_k + \sum_{n=1}^N \beta_n^i \ln x_n + .5 \sum_{n=1}^N \sum_{j=1}^N \beta_{nj} \ln x_n \ln x_j + \sum_{n=1}^N \sum_{j=1}^N \gamma_{mn} \ln p_m \ln x_n$. Additional restrictions on the parameters that impose the constant returns to scale property are listed in Diewert (1974; 139). Note that the α_0^i , α_m^i and β_n^i parameters depend on i and so these parameters can be quite different across the I production units. The translog functional form for a single output is due to Christensen, Jorgenson and Lau (1971). Diewert (1974; 139) generalized this single output functional form to the GDP or value added function context.

¹⁵ We will adapt their bilateral results to the present multilateral context; see equations (5), (6), (14) and (21) below for the Diewert and Morrison bilateral results that we will use here.

¹⁶ Note that the four data sets do not involve exchange rates!

of net output m in country k and time period t as $y_{ktm} \equiv v_{ktm}/p_{ktm}$ for $m = 1, \dots, M$; $k = 1, \dots, K$ and $t = 1, \dots, T$. Define the *implicit quantity* (or volume) x_{ktn} of primary input n in country k and time period t as $x_{ktn} \equiv V_{ktn}/w_{ktn}$ for $n = 1, \dots, N$; $k = 1, \dots, K$ and $t = 1, \dots, T$. Define the *total value added* in domestic currency for country k in period t , v_{kt} , and the *total value of primary inputs* for country k in period t , V_{kt} , by summing over net outputs and inputs in the obvious way; i.e., we have¹⁷

$$(2) v_{kt} \equiv \sum_{m=1}^M v_{ktm}; V_{kt} \equiv \sum_{n=1}^N V_{ktn}; k = 1, \dots, K; t = 1, \dots, T.$$

In what follows, we will make use of the *value added output shares* s_{ktm} and the *primary input cost shares* S_{ktn} defined as follows:

$$(3) s_{ktm} \equiv v_{ktm}/v_{kt}; m = 1, \dots, M; k = 1, \dots, K; t = 1, \dots, T;$$

$$(4) S_{ktn} \equiv V_{ktn}/V_{kt}; n = 1, \dots, N; k = 1, \dots, K; t = 1, \dots, T.$$

Define the (strictly positive) *net output price vector for country k in period t* as $p_{kt} \equiv [p_{kt1}, \dots, p_{ktM}]$ and the corresponding *net output quantity vector* as $y_{kt} \equiv [y_{kt1}, \dots, y_{ktM}]$ for $k = 1, \dots, K$ and $t = 1, \dots, T$. Then under our assumptions on technology and behavior, Diewert and Morrison (1968; 665) showed that the aggregate price of real value added in country k in period t relative to the aggregate price of real value added in country j in period s , $P_{kt/js}$, is equal to the Törnqvist-Theil output price index $P_T(p_{js}, p_{kt}, y_{js}, y_{kt})$; i.e., we have:¹⁸

$$(5) P_{kt/js} \equiv P_T(p_{js}, p_{kt}, y_{js}, y_{kt}); \\ \equiv \exp[\sum_{m=1}^M (1/2)(s_{jms} + s_{ktm}) \ln(p_{ktm}/p_{jms})]; k, j = 1, \dots, K \text{ and } t, s = 1, \dots, T.$$

Diewert and Morrison (1986; 665) also indicated that the corresponding implicit quantity index, $Y_{kt/js}$, provides a good estimator of the ratio of real value added in country k in period t relative to the real value added of country j in period s ; i.e., we have:

$$(6) Y_{kt/js} \equiv [v_{kt}/v_{js}]/P_T(p_{js}, p_{kt}, y_{js}, y_{kt}); k, j = 1, \dots, K \text{ and } t, s = 1, \dots, T.$$

Obviously, we could pick a country and a time period (say period 1 and country 1) and treat this production unit as a numeraire unit and measure the GDP output prices and quantities of other observations relative to this numeraire unit. This would lead to the sequence of aggregate prices and quantities for all countries equal to $P_{kt/11}$ and $Y_{kt/11}$ respectively for $k = 1, \dots, K$ and $t = 1, \dots, T$. However, we could just as easily pick country 2 in period 1 as the numeraire country and this would lead to the sequence of country PPPs and real value added equal to $P_{kt/21}$ and $Y_{kt/21}$ respectively for $k = 1, \dots, K$ and $t = 1, \dots, T$. Unfortunately, in general, the $P_{kt/21}$ will not be proportional to the $P_{kt/11}$ and the $Y_{kt/21}$ will not be proportional to the $Y_{kt/11}$; i.e., the results will depend on the choice of the numeraire country. Caves, Christensen and Diewert (1982b) solved this numeraire

¹⁷ We assume that $v_{kt} = V_{kt}$ for $k = 1, \dots, K$ and $t = 1, \dots, T$ so that our data are consistent with the constant returns to scale assumption that is required in order to implement the Diewert-Morrison measurement methodology.

¹⁸ $P_{kt/js}$ can also be interpreted as the ratio of GDP PPPs; i.e., $P_{kt/js}$ is equal to the GDP PPP for country k in period t divided by the GDP PPP for country j in period s .

dependence problem by averaging over all possible choices of the numeraire observation.¹⁹ We will follow their strategy but we use the Diewert Morrison indexes as the basic bilateral building blocks rather than the CCD choice of index number formula which did not allow for negative net outputs. Thus define the *geometric mean of all the PPP parities* for country k in time period t relative to all possible choices j,s of the base country, P_{kt^*} , as follows:

$$(7) P_{kt^*} \equiv [\prod_{j=1}^K \prod_{s=1}^T P_{kt/js}]^{1/KT}; k = 1, \dots, K; t = 1, \dots, T.$$

It turns out that the base invariant PPPs, P_{kt^*} , can be written in a very simple form. First define the M *sample average value added shares* $s_{\bullet\bullet m}$ and the *sample arithmetic average of the log output prices* $\ln p_{\bullet\bullet m}$ over all countries and all time periods as follows:

$$(8) s_{\bullet\bullet m} \equiv (1/KT) \sum_{k=1}^K \sum_{t=1}^T s_{ktm}; \ln p_{\bullet\bullet m} \equiv (1/KT) \sum_{k=1}^K \sum_{t=1}^T \ln p_{ktm}; m = 1, \dots, M.$$

Now take logarithms of both sides of (7) and use definitions (5) in order to obtain the following expression for $\ln P_{kt^*}$:

$$(9) \ln P_{kt^*} = (1/KT) [\sum_{k=1}^K \sum_{t=1}^T \sum_{m=1}^M (1/2)(s_{j_{sm}} + s_{ktm}) \ln(p_{ktm}/p_{j_{sm}})] \\ = \ln P_{kt^{**}} + \alpha$$

where α and the logarithm of an alternative PPP for country k in period t , $P_{kt^{**}}$, are defined as follows:

$$(10) \alpha \equiv \sum_{m=1}^M (1/2) s_{\bullet\bullet m} \ln p_{\bullet\bullet m} - (1/KT) \sum_{k=1}^K \sum_{t=1}^T \sum_{m=1}^M (1/2) s_{j_{sm}} \ln p_{j_{sm}};$$

$$(11) \ln P_{kt^{**}} \equiv \sum_{m=1}^M (1/2)(s_{\bullet\bullet m} + s_{ktm}) \ln(p_{ktm}/p_{\bullet\bullet m}).$$

Note that α does not depend on k or t ; i.e., it is a constant with respect to the choice of k and t . Note further that $P_{kt^{**}}$ is the Törnqvist-Theil output price index for country k in period t relative to an artificial “world” country that has net output shares equal to the sample average net output shares $s_{\bullet\bullet m}$ and has log prices equal to the sample average log prices, $\ln p_{\bullet\bullet m}$, for $m = 1, \dots, M$.²⁰ It is much easier numerically to compute $\ln P_{kt^{**}}$ defined by (11) (a single summation) than it is to compute $\ln P_{kt^*}$ defined by the first equation in (9) (a triple summation).

It is usually convenient to pick out the biggest country in period 1 (say country 1) and form a set of normalized aggregate output PPPs that compare the PPPs defined by (9) or (11) to the PPP for country 1 in period 1. Thus we define our final set of *value added output deflators*, P_{kt} , as follows:

¹⁹ This averaging strategy was used by Gini (1931), Eltetö and Köves (1964) and Szulc (1964) in the literature on making international comparisons at a single point in time. These authors used the Fisher index as their bilateral index number formula but the basic idea is the same. Their method is known as the EKS or GEKS method for making multilateral comparisons.

²⁰ Our decomposition (9) is completely analogous to a similar decomposition obtained by Caves, Christensen and Diewert (1982b; 78).

$$(12) P_{kt} \equiv P_{kt}^*/P_{11}^* ; \quad k = 1, \dots, K; t = 1, \dots, T \\ = P_{kt}^{**}/P_{11}^{**} ; \quad k = 1, \dots, K; t = 1, \dots, T$$

where we used the fact that $P_{kt}^* = e^\alpha P_{kt}^{**}$ for $k = 1, \dots, K$ and $t = 1, \dots, T$ to derive the second set of equations in (12). Thus our final set of net output PPPs is the same whether we use the country PPPs defined by (9) or by (11).

Our final set of *real value added estimates* Y_{kt} that are comparable across time and space is defined by deflating each country's nominal value added by the final set of PPPs defined by (12):²¹

$$(13) Y_{kt} \equiv [v_{kt}/P_{kt}] ; \quad k = 1, \dots, K; t = 1, \dots, T.$$

We turn our attention to the problems associated with measuring real primary input across countries. Define the (strictly positive) *input quantity vector for country k in period t* as $x_{kt} \equiv [x_{kt1}, \dots, x_{ktN}]$ and the corresponding *input price vector* as $w_{kt} \equiv [w_{kt1}, \dots, w_{ktN}]$ for $k = 1, \dots, K$ and $t = 1, \dots, T$. Then under our assumptions on technology and behavior, Diewert and Morrison (1968; 665) showed that the aggregate quantity of primary input in country k in period t relative to the aggregate quantity of primary input in country j in period s, X_{kt/j_s} , is equal to the Törnqvist-Theil input quantity index $Q_T(w_{js}, w_{kt}, x_{js}, x_{kt})$; i.e., we have:²²

$$(14) X_{kt/j_s} \equiv Q_T(w_{js}, w_{kt}, x_{js}, x_{kt}) \\ \equiv \exp[\sum_{n=1}^N (1/2)(S_{jsn} + S_{ktn}) \ln(x_{ktn}/x_{jsn})] ; \quad k, j = 1, \dots, K \text{ and } t, s = 1, \dots, T.$$

As was the case with the construction of output aggregates, there are KT different choices of a base country and so we follow the same strategy of taking a geometric average of these alternative choices of a base observation. Thus define X_{kt}^* as follows:

$$(15) X_{kt}^* \equiv [\prod_{j=1}^K \prod_{t=1}^T X_{kt/j_s}]^{1/KT} ; \quad k = 1, \dots, K; t = 1, \dots, T.$$

It turns out that the base invariant quantity indexes, X_{kt}^* , can be written in a very simple form. First define the N *sample average input cost shares* $S_{\bullet\bullet n}$ and the *sample arithmetic average of the log input quantities* $\ln x_{\bullet\bullet n}$ over all countries and all time periods as follows:

$$(16) S_{\bullet\bullet n} \equiv (1/KT) \sum_{k=1}^K \sum_{t=1}^T S_{ktn} ; \quad \ln x_{\bullet\bullet n} \equiv (1/KT) \sum_{k=1}^K \sum_{t=1}^T \ln x_{ktn} ; \quad n = 1, \dots, N.$$

Now take logarithms of both sides of (15) and use definitions (14) in order to obtain the following expression for $\ln X_{kt}^*$:

$$(17) \ln X_{kt}^* = (1/KT) [\sum_{k=1}^K \sum_{t=1}^T \sum_{n=1}^N (1/2)(S_{jsn} + S_{ktn}) \ln(x_{ktn}/x_{jsn})]$$

²¹ Note that equations (12) and (13) imply that $P_{11} = 1$ and $Y_{11} = v_{11}$.

²² P_{kt/j_s} can also be interpreted as the ratio of GDP PPPs; i.e., P_{kt/j_s} is equal to the GDP PPP for country k in period t divided by the GDP PPP for country j in period s.

$$= \ln X_{kt^{**}} + \beta$$

where β and the logarithm of an alternative input index for country k in period t , $X_{kt^{**}}$, are defined as follows:

$$(18) \beta \equiv \sum_{n=1}^N (1/2) S_{\bullet\bullet n} \ln x_{\bullet\bullet n} - (1/KT) \sum_{k=1}^K \sum_{t=1}^T \sum_{n=1}^N (1/2) s_{jns} \ln x_{jns};$$

$$(19) \ln X_{kt^{**}} \equiv \sum_{n=1}^N (1/2) (S_{\bullet\bullet n} + S_{ktn}) \ln(x_{ktn}/x_{\bullet\bullet n}).$$

Note that β does not depend on k or t ; i.e., it is a constant. Note further that $X_{kt^{**}}$ is the Törnqvist-Theil input quantity index for country k in period t relative to an artificial “world” country that has primary input cost shares equal to the sample average primary input cost shares $S_{\bullet\bullet n}$ and has log input quantities equal to the sample average log input quantities, $\ln x_{\bullet\bullet n}$, for $n = 1, \dots, N$. As above, it is much easier numerically to compute $\ln X_{kt^{**}}$ defined by (19) (a single summation) than it is to compute $\ln X_{kt^*}$ defined by the first equation in (17) (a triple summation).

It is usually convenient to pick out the biggest country in period 1 (say country 1) and form a set of normalized aggregate primary input quantities or volumes that compare the input quantities defined by (17) or (19) to the input quantity for country 1 in period 1. We also want the real quantity of primary input for country 1 in period 1 to equal the corresponding nominal value of input (which in turn is equal to nominal value added of country 1 in period 1). Thus we define our final set of *input quantity aggregates*, X_{kt} , as follows:²³

$$(20) X_{kt} \equiv V_{11} X_{kt^*}/X_{11^*}; \quad k = 1, \dots, K; t = 1, \dots, T$$

$$= V_{11} X_{kt^{**}}/X_{11^{**}}; \quad k = 1, \dots, K; t = 1, \dots, T$$

where we used the fact that $X_{kt^*} = e^\beta X_{kt^{**}}$ for $k = 1, \dots, K$ and $t = 1, \dots, T$ to derive the second set of equations in (20). Thus our final set of primary input aggregates is the same whether we use the country input indexes defined by (17) or by (19).

Diewert and Morrison (1986; 663) showed that under their assumptions, a theoretical productivity index²⁴ between the production unit k at period t relative to the production unit j at period s , $\Gamma_{kt/js}$, was equal to the output ratio $Y_{kt/js}$ defined by (6) divided by the input ratio $X_{kt/js}$ defined by (14); i.e., we have

$$(21) \Gamma_{kt/js} \equiv Y_{kt/js} / X_{kt/js}; \quad k, j = 1, \dots, K \text{ and } t, s = 1, \dots, T.$$

As before, the bilateral TFP indexes defined by (21) are not transitive and so they are made transitive by defining the ratio of the productivity of country k in period t to the geometric mean of all country TFP levels over all years, Γ_{kt^*} , as follows:²⁵

²³ Note that our normalizations will imply that $Y_{11} = X_{11} = v_{11} = V_{11}$ and that $\Gamma_{11} = 1$.

²⁴ Index number methods for computing the total factor productivity of production units can be traced back to Jorgenson and Griliches (1967).

²⁵ $Y_{kt^*} \equiv v_{kt} / \{P_{kt^*} [\prod_{j=1}^K \prod_{s=1}^T v_{js}]^{1/KT}\}$

$$(22) \Gamma_{kt^*} \equiv [\prod_{j=1}^K \prod_{s=1}^T \Gamma_{kt/js}]^{1/KT} = Y_{kt^*}/X_{kt^*}; k = 1, \dots, K; t = 1, \dots, T,$$

where the last equation in (22) follows from definitions (6), (7), (13), (14) and (15). The Γ_{kt^*} are analogues to the *translog multilateral productivity indexes* defined by Caves, Christensen and Diewert (1982b; 81). Again, for ease of interpretation, we replace the productivity levels defined by (22) by the following *normalized productivity levels* Γ_{kt} :

$$(23) \Gamma_{kt} \equiv [Y_{kt^*}/X_{kt^*}]/[Y_{11^*}/X_{11^*}] = Y_{kt}/X_{kt} \quad k = 1, \dots, K; t = 1, \dots, T$$

where Y_{kt} is defined by (13) and X_{kt} is defined by (20). Thus the KT normalized Total Factor Productivity level for production unit k in time period t , Γ_{kt} , defined by (23) is equal to the corresponding normalized output level Y_{kt} divided by the corresponding normalized input level X_{kt} . The Y_{kt} are comparable across time and space as are the X_{kt} .

This completes our exposition of our methodology for making cross country comparisons of output, input and productivity using the economic approach to index number theory when the output aggregate contains intermediate inputs. However, both our new approach and the approach of CCD do not allow for technical and allocative inefficiency; i.e., both approaches assume that each production unit operates on the production frontier. During recessions, this assumption is unlikely to be satisfied. Under these conditions, our index number measures of technical progress will also include the effects of technical and allocative inefficiency. In order to allow for the effects of inefficiency in a pragmatic way, in the following section, we will use the output and input aggregates defined using the above methodology to form estimates of “world” productivity and to estimate the “world” production frontier at each point in time.

3. The Measurement of World Productivity and Country Efficiency Levels

We now consider how to measure the level of “world” productivity²⁶ in each time period t . We define the world productivity level at time period t as the ratio of world output to world input. Thus it is necessary to define world output and input for each time period.

In theory, the multilateral output indexes Y_{kt} defined by (13) are comparable across countries and time periods.²⁷ Hence, it is meaningful to add them up to obtain aggregate measures of real output. Thus define *world output* at time t , Y_t , as follows:

²⁶ “World” productivity here means the productivity of the aggregate of the productivity levels of the K countries in the sample for each time period t .

²⁷ It is important to note that these output indexes can be defined using just domestic prices and quantities that are measured in comparable units so that in particular, these indexes do not depend on exchange rates, which are often subject to big changes over short time periods. Of course the accuracy of these output indexes does depend on the quality of the PPPs that have been used to deflate national expenditures on a commodity class into comparable across countries quantities or volumes.

$$(24) Y_t \equiv \sum_{k=1}^K Y_{kt} ; t = 1, \dots, T,$$

where the Y_{kt} are defined by (13). In a similar fashion, *world input* for time period t , X_t , is defined as the sum of the country k multilateral input aggregates X_{kt} defined by (20) for each time period t :

$$(25) X_t \equiv \sum_{k=1}^K X_{kt} ; t = 1, \dots, T.$$

Define the *country k share of world real input during period t* , ω_{kt} , as follows:²⁸

$$(26) \omega_{kt} \equiv X_{kt} / \sum_{j=1}^K X_{jt} ; k = 1, \dots, K ; t = 1, \dots, T.$$

Finally, the level of *world productivity* at time t , Γ_t , is defined as the ratio of world output to input at time t . Using definitions (23)-(26), it is straightforward to show that Γ_t is equal to a real input share weighted average of the multilateral productivity indexes Γ_{kt} over all countries k for time period t ; i.e., we have:

$$(27) \Gamma_t \equiv Y_t / X_t = \sum_{k=1}^K \omega_{kt} \Gamma_{kt} ; t = 1, \dots, T.$$

It is useful to define the *efficiency* of each country relative to the best practice frontier that exists in the world economy at each point in time. At each time period t , define the *maximum productivity level* across all production units and all time periods including time period t and the periods prior to it, $\Gamma_{t,\max}$, as follows:

$$(28) \Gamma_{t,\max} \equiv \max_{s,k} \{ \Gamma_{ks} : s \leq t, k = 1, \dots, K \}.$$

The *relative efficiency of country k in time period t* is defined as follows:

$$(29) E_{kt} \equiv \Gamma_{kt} / \Gamma_{t,\max} ; t = 1, \dots, T ; k = 1, \dots, K.$$

The E_{kt} satisfy the bounds $0 < E_{kt} \leq 1$; if $E_{kt} = 1$, then production unit k is efficient at time period t . This type of measure of efficiency can be traced back to Debreu (1951) and Farrell (1957), but has also more recent applications as the ‘distance to the productivity frontier’ in Schumpeterian growth theory.²⁹

4. Measures of Productivity Convergence

To assess the degree of industry productivity convergence, we will consider two measures. The first measure is *world efficiency at time t* , E_t , defined as follows:

$$(30) E_t \equiv \Gamma_t / \Gamma_{t,\max} ; t = 1, \dots, T.$$

²⁸ Note that the definitions of X_t , X_{kt} and ω_{kt} do not depend on exchange rates.

²⁹ See Aghion, Akcigit and Howitt (2014).

Thus E_t is the ratio of actual world productivity Γ_t defined by (27) to the maximum possible value of world productivity if every country was at the maximum possible productivity level at time t , $\Gamma_{t,\max}$ defined by (28). If all production in the world took place using frontier productivity levels, world efficiency would be equal to 1. The actual degree of world efficiency thus tells us how efficiently the global stock of primary inputs is used to produce worldwide value added. Note that $1 - E_t$ is the fraction of world output at time t that is wasted due to the inability of each country to achieve the maximum possible level of productivity at time t .

Our second measure which will be used to assess the degree of industry productivity convergence is the following *input weighted measure of productivity dispersion* at time t :

$$(31) \sigma_t \equiv [\sum_{k=1}^K \omega_{kt} \{\ln(\Gamma_{kt}/\Gamma_t)\}^2]^{1/2}; t = 1, \dots, T.$$

Note that Γ_{kt}/Γ_t is the ratio of the productivity level of country k in period t to the world average level of productivity in period t . Thus if all country productivity levels are the same in period t , each Γ_{kt} will equal Γ_t and σ_t will equal to 0; i.e., there will be complete productivity convergence in period t under these conditions and σ_t will equal to its lower bound of 0. The measure of productivity convergence defined by (31) can be seen as the productivity counterpart to measures of cross-country income inequality.³⁰

5. Data

To illustrate the general method proposed in the previous section and more specifically assess the degree of productivity convergence using equations (30) and (31), we assemble a dataset covering 38 economies between 1995 and 2011 across two main sectors of each economy. These are the *traded sector*, covering industries in agriculture, mining and manufacturing and the *non-traded sector*, covering utilities, construction and (market) services. The *market sector* is a third sector, which combines the traded and non-traded sectors.³¹

Recall that our method for computing productivity levels across time and space requires four sets of data, namely the value of net outputs and of primary inputs (the v_{ktn} and V_{ktn}) and prices (PPPs) corresponding to those net outputs and primary inputs (the p_{ktn} and w_{ktn}). In Appendix 1 to this paper, we detail the construction of these four sets of data and we provide the basic data in Appendix 3. We note here that the value of net output and of factor inputs are drawn from the harmonized national supply and use tables and socio-economic accounts of the World Input-Output Database (WIOD); see Timmer, Dietzenbacher, Los, Stehrer and de Vries (2015) for details. The PPP data on net outputs are mostly from the International Comparison Program, see e.g. World Bank (2014) and

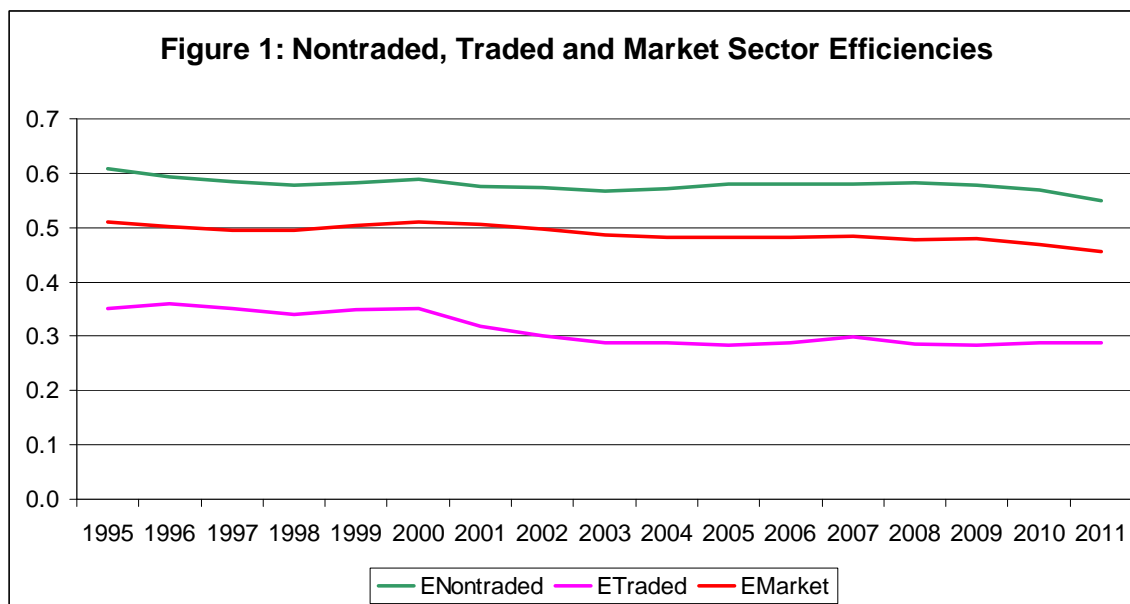
³⁰ See Milanovic (2012). Convergence of productivity levels using the dispersion measure defined by (31) is known as σ -convergence in the literature; see Lichtenberg (1994) and Barro (2012).

³¹ Excluded from the data set are the government, health and education sectors, as there are no data about relative prices of outputs for these sectors. We also exclude the real estate industry, since this industry mostly consists of (imputed) rents of residential buildings (and hence input will equal output for this industry).

Feenstra, Inklaar and Timmer (2015). The PPP data on factor inputs are primarily based on WIOD. In terms of country coverage, WIOD includes data for many advanced economies (e.g. the US, the countries of the EU, Japan) and major emerging economies, such as Brazil, China and India.

6. Results

Figure 1 shows convergence results based on the world efficiency measure E_t defined by equation (30) for the traded, non-traded and market sectors. All three sectors show declining efficiency, which means that the world average set of primary inputs is used less efficiently in 2011 than in 1995. In 1995, market sector efficiency was 51 percent of the productivity level of the country with the maximum market sector productivity level, which was the US over this period. By 2011, world efficiency had decreased to 46 percent. This change is partially due to a compositional shift. In 1995 the US accounted for 15 percent of world factor inputs (ω_{kt} from equation (26)) but in 2011 this share had declined to 10 percent. Conversely, China's share increased from 27 to 32 percent and India's from 9 to 16 percent. Since the US defines the productivity frontier for the market sector, while China and India have efficiency levels lower than world efficiency, this drags down world efficiency. Indeed, a counterfactual world efficiency level that combines productivity levels in 2011 with factor input shares from 1995 (i.e. $E_{2011}^* = \sum_{k=1}^K \omega_{k1995} \Gamma_{k2011} / \Gamma_{2011, \max}$) is equal to 50.5 percent, barely lower than the 51 percent in 1995.



That said, 21 of the 38 countries show a decline in efficiency levels and these are predominantly the countries with higher efficiency levels. In other words, US productivity levels have increased relative to other advanced economies in Europe and elsewhere since 1995, a fact that has also been documented before (e.g. Timmer, Inklaar, O'Mahony and van Ark, 2010).³²

³² Table B10 in Appendix B shows that the 38 country efficiency levels.

More generally, in recent years, there has been a considerable amount of discussion on whether the world economy is facing secular stagnation in the rate of technological progress.³³ Our study may provide some results that relevant for this topic.³⁴ Over the period 1995-2011, we found that the “world” market sector total factor productivity frontier, $\Gamma_{t,max}$ defined by (28), expanded at 1.68% per year, which is a satisfactory rate.³⁵ On the other hand, realized “world” market sector TFP, Γ_t defined by (27), expanded at only 0.97% per year over the years 1995-2011 so that on average, world production moved further from the best practice production frontier over this period.³⁶ However, the above aggregate results disguise the fact that the movements in the production frontier for the two subsectors have been quite different over the sample period. For the nontraded (or service) sector over the years 1995-2011, we found that total factor productivity frontier, $\Gamma_{t,max}$, expanded at 1.25% per year³⁷ while the corresponding growth rate for the traded (or goods producing) sector was 2.58% per year.³⁸ On the other hand, realized nontraded sector TFP, Γ_t , expanded at only 0.61% per year³⁹ while realized traded sector TFP expanded at 1.33% per year over the years 1995-2011.⁴⁰ Thus realized world average TFP growth in both sectors was only about one half the rate of expansion in maximum possible TFP.

Another notable feature of Figure 1 is that world efficiency in the nontraded sector is higher (between 0.61 and 0.55) than in the market sector or the traded sector (between 0.35 and 0.28). This is consistent with the Harrod-Balassa-Samuelson hypothesis that productivity differences in the non-traded sector are smaller than in the traded sector⁴¹ and is in line with earlier results of Hsieh and Klenow (2007) and Herrendorf and Valentinyi (2012). The downward trend in world efficiency is very similar in the traded

³³ See the discussion and references in Gordon (2012) (2014) and in Mokyr, Vickers and Ziebarth (2015). Gordon’s discussion focuses on the US but since the US is frequently on the productivity frontier, his discussion is relevant on whether the world production frontier is facing a productivity slowdown.

³⁴ The limited time span of our sample of countries and the many measurement difficulties associated with making international comparisons should be kept in mind.

³⁵ The corresponding maximum possible rates of TFP growth for the market sector over the years 1995-2007 and 2007-2011 were 1.55% and a surprising 2.05% per year respectively. See Table B2 in Appendix B for a listing of these aggregate results along with actual productivity growth rates for the individual countries in our sample.

³⁶ The corresponding rates of realized TFP growth for the market sector over the years 1995-2007 and 2007-2011 were 1.11% and a disappointing 0.55% per year respectively.

³⁷ The corresponding maximum possible rates of TFP growth for the nontraded sector over the years 1995-2007 and 2007-2011 were 0.81% and 2.57% per year respectively.

³⁸ The corresponding maximum possible rates of TFP growth for the traded sector over the years 1995-2007 and 2007-2011 were 3.46% and 1.00% per year respectively.

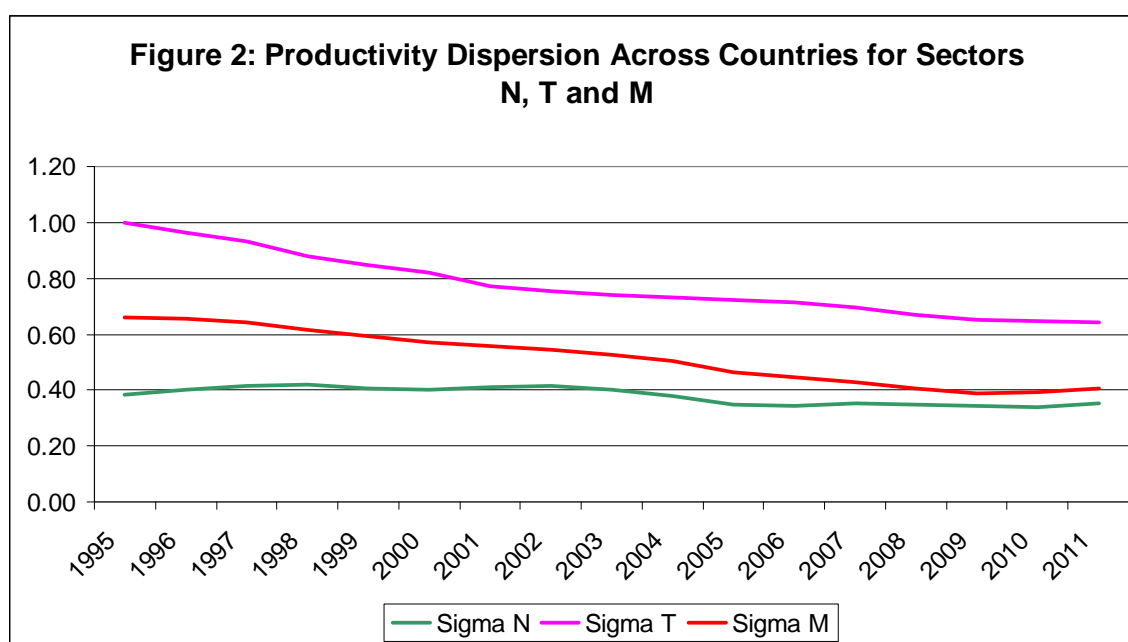
³⁹ The corresponding actual rates of world TFP growth for the nontraded sector over the years 1995-2007 and 2007-2011 were 0.40% and 1.23% per year respectively. Thus there appears to have been no productivity slowdown in the nontraded sector in the aftermath of the financial crisis. This is a surprising result.

⁴⁰ The corresponding actual rates of world TFP growth for the traded sector over the years 1995-2007 and 2007-2011 were 2.09% and -0.92% per year respectively. Thus the world productivity slowdown due to the effects of the great recession were entirely concentrated in the goods producing sectors of the world economy!

⁴¹ See Asea and Corden (1994).

and the non-traded sector, declining by approximately five percentage points over the period, again mostly due to compositional shifts. In the nontraded sector, the US also defines the productivity frontier, but in the traded sector, a number of European countries (Sweden, Denmark and Ireland) alternate in defining the productivity frontier.⁴²

The results for the second measure of convergence, the weighted productivity dispersion measure σ_t defined by (31), are shown in Figure 2. There is a pronounced downward trend in this dispersion measure for the market sector, declining from 0.66 in 1995 to 0.41 in 2011. The dispersion in the traded sector is larger than in the market and non-traded sectors but the traded sector also shows a more rapid decline in dispersion, from 1.00 to 0.64. In comparison, productivity dispersion in the non-traded sector changes much less, from 0.38 to 0.35.⁴³ This evidence extends the literature on the Harrod-Balassa-Samuelson theory, which has found larger dispersion and faster productivity growth in the traded sector than in the non-traded sector.⁴⁴ This pattern also holds if an unweighted measure of productivity dispersion is used.



7. Conclusion

Measuring the pace of productivity convergence across countries requires measures of relative productivity that are comparable across both countries and over time. Extending the theory of cross-country productivity comparisons, this paper has proposed a new

⁴² See Appendix B for the detailed country results.

⁴³ The test by Carree and Klomp (1997) can be used to compare dispersion in the two periods. Their T^3 test indicates that convergence in the market sector and the traded sector is significant at the 5 percent level.

⁴⁴ See Hsieh and Klenow (2007), Herrendorf and Valentinyi (2012), de Gregorio, Giovannini and Wolf (1994) and Ricci, Milesi-Ferretti and J. Lee (2013).

method for constructing relative productivity levels that are well-suited for convergence analysis.

We illustrated the new method by constructing relative aggregate and sectoral productivity levels for a set of 38 economies over the period 1995 to 2011. Some of our findings are as follows:

- Dispersion of country productivity levels decreased over the sample period.
- But the convergence of productivity levels to the average level of productivity was accompanied by a decline in the average level of productivity relative to the maximum possible level of productivity.
- The rate of growth of the maximum possible productivity level for the market sector grew at about 1.7% per year over the sample period but actual “world” productivity grew at only about 1.0% per year.
- The productivity frontier for the traded sector expanded at about 2.6% per year while the productivity frontier for the nontraded sector expanded at only 1.25% per year. Actual TFP growth for the traded sector was 1.3% per year and 0.6% per year for the nontraded sector.
- The global financial crisis was associated with a market sector slowdown in actual world TFP growth from a 1.1% per year growth rate over 1995-2007 to a 0.55% per year over 2007-2011. However, the productivity slowdown was entirely concentrated in the traded sector.
- The productivity frontier for the nontraded sector expanded at 2.6% per year over 2007-2011. Since the nontraded sector is roughly twice as big as the traded sector, this rapid expansion in the nontraded production frontier offers some hope for future improvements in global productivity growth.

Obviously, it would be very useful if the WIOD data base could be extended beyond 2011. Hopefully, the World Bank, the OECD and the IMF will work together with national statistical agencies to develop productivity accounts at the national level with some industry detail along with the production of timely industry level PPPs.

Appendix A: Data Construction

Recall from the main text that our method for comparing industry productivity across countries and over time requires four sets of data for each sector, time period and country; (i) the value of net output, (ii) prices of net output, (iii) the value of factor inputs, and (iv) the prices of factor inputs. In this Appendix, we discuss the sources and methods used in compiling the two ‘values’ series, (i) and (iii), and then the two ‘prices’ series, (ii) and (iv). In Appendix 3, we provide the ‘value’ and ‘price’ series for the traded and the non-traded sector for 38 countries and 17 years for gross output, intermediate inputs, labor input of high, medium, and low skilled workers, and the input of fixed reproducible capital inputs. Given these data and the methods outlined in the paper, the results in the paper can be replicated. In Appendix 2, we list and chart the productivity levels Γ_{kt} for each country and time period for the traded, nontraded and market sectors.

Note that estimating the net output of the traded (non-traded) sector involves applying equation (11) to two net outputs (gross output and intermediate inputs of the traded (non-traded) sector), while estimating the net output of the market sector involves four net outputs, namely the gross outputs and intermediate inputs of the traded sector and of the non-traded sector. Similarly, estimating factor inputs for the market sector involves applying (19) to 6 types of labor and 2 types of capital used in the traded sector and the non-traded sectors.

We will first describe how the values for the various inputs and outputs were constructed and then describe how the prices (or PPPs) for the values were constructed.

Our main source of value data is the World Input-Output Database (WIOD).⁴⁵ The full WIOD dataset covers 35 industries in 40 economies over the period 1995-2011. From those 40 economies, we exclude Luxembourg, since its small economy with its very large and difficult to measure financial sector causes it to rank as the most productive economy, ahead of more broadly based economies like the United States. We also exclude Indonesia because we cannot estimate reliable capital input prices given the available data (see below). This leaves us with 38 economies.

We rely on WIOD's harmonized Supply and Use Tables (SUTs) for data on gross output and intermediate inputs at current national prices. We sum across all industries in agriculture, mining and manufacturing for data for the traded sector and across all industries in utilities, construction and market services for data on the non-traded sector. The government, health care, education sectors are omitted because there is no reliable data on output prices for those industries. The real estate industry is also omitted because its output consists primarily of the (imputed) rents of residential buildings and thus output prices and quantities are essentially set equal to input prices and quantities for this sector, which is less informative of country productivity.

The value data for factor inputs is derived from WIOD's Socio-Economic Accounts (SEA). These accounts provide information by industry on labor compensation of workers across three different levels of educational attainment, or 'skill'. The part of industry value added that is not used to compensate labor is assumed to be capital income. Ideally, this capital income would be further split by type of asset, such as buildings, machinery and land, as in Jorgenson and Griliches (1967), but the data required for such a split are, alas, missing.

One challenge in these data is that labor compensation includes an estimate of the labor income of self-employed workers. The SEA assumes self-employed workers earn the same average wage as employees. As shown in Feenstra, Inklaar and Timmer (2015), this assumption can easily lead to an overestimation of the labor share in value added. A more practical problem is that in the SEA, capital income can turn negative, even at the more aggregate level of the traded and non-traded sector. This problem is particularly important in the traded sector as it includes agriculture, the industry where self-employed

⁴⁵ See Timmer, Dietzenbacher, Los, Stehrer and de Vries (2015).

workers are prevalent. We therefore reduce the assumed average wage of self-employed workers to 60 percent of the average wage of employees and to 30 percent in agriculture to ensure capital income at the sectoral level is positive in all countries and years.

We turn now to the problems associated with the construction of the price data. Recall that the required price (or PPP) data should be simultaneously comparable across countries and over time. To construct such price data, we follow the general approach used in the most recent version of the Penn World Table⁴⁶ and rely on the multiple benchmark estimates of cross-country relative prices from the International Comparison Program (ICP); specifically, we rely on the ICP data for 1996, 2005 and 2011.⁴⁷

The ICP surveys prices of consumption and investment products in most countries around the world.⁴⁸ From the SUTs of WIOD, we have information about the commodity composition of gross output (from the Supply Tables) and intermediate inputs (from the Use Tables) for the traded and the non-traded sectors. We match the ICP products to the SUT commodities using the same procedure that was followed in Inklaar and Timmer (2014). Also following Inklaar and Timmer (2014), we correct for the fact that ICP measures purchaser prices while for productivity purposes we are interested in producer prices. This correction involves adjusting for differences in tax and distribution margins across countries.

A further drawback is that ICP only measures prices of final consumption and investment products, omitting prices of products that are only used as intermediate inputs. To partly remedy this shortcoming, we supplement the ICP prices with prices of agricultural products from the FAO, as in Rao (1993). For other intermediate products, we use the prices of products further down the processing chain, so, for example, using the prices of ceramics and metal products to approximate prices of mining production. When these are unavailable, as, for example, for business services, we follow ICP procedures and apply the overall consumption price level. These imperfect approximations are one reason for not providing more detailed productivity estimates than for the traded and the non-traded sectors.

The ICP data provides us with only three sets of relative prices, in 1996, 2005 and 2011, while we require a full panel for the 1995-2011 period.⁴⁹ The problems associated with [fi](#)interpolating PPPs between ICP rounds is discussed in more detail by Diewert and Fox (2015), who proposed a method for interpolating between the benchmark observations.⁵⁰ We follow that method here. In addition, we extrapolate prices from the earliest benchmark observation to 1995 using changes in relative industry output and intermediate input prices from WIOD's SEA data. This leads to a panel of cross-country relative prices or PPPs for each product group where the US prices are equal to 1 in every

⁴⁶ See Feenstra, Inklaar and Timmer (2015).

⁴⁷ See the World Bank (2008) for the results of the 2005 round. This round of comparisons probably had some biases, so we use the bias adjustments proposed by Inklaar and Rao (2014).

⁴⁸ See the World Bank (2014).

⁴⁹ In addition, China, India, Taiwan, Cyprus and Malta were not part of the 1996 round of the ICP.

⁵⁰ Their method relies only on national value data and PPPs for each value cell; i.e., their method makes no use of exchange rates.

year. Multiplying these prices by US deflators for the product group (set at 1995=1) provides the panel of detailed PPPs that can be used in the next stage of aggregation.

We now explain how the gross output value aggregate for the industries in the traded sector for each country and the corresponding PPP were defined for each country and time period. We adapt the algebra that was explained in section 2 of the main text. Suppose that there are M commodity by industry value cells in the traded sector that we wish to aggregate into gross output. Denote the value of gross output produced by country k in year t for cell m by v_{ktm} and denote the corresponding PPP by p_{ktm} for $k = 1, \dots, 38$; $t = 1, \dots, 17$ and $m = 1, \dots, M$. The *gross output value aggregate* for the *traded sector* for country k in year t , v_{kt} , is simply the sum of output values over the commodity cells in the traded sector for the given year i.e., $v_{kt} \equiv \sum_{m=1}^M v_{ktm}$ (recall equations (2) in section 2). The corresponding *gross output aggregate PPP* for the traded sector in country k for year t is P_{kt} defined by (12) in section 2 of the main text. A similar methodology can be applied to form *gross output value aggregates* and the *corresponding PPPs* for the *non-traded sector*, except that M , the number of commodity and industry cells will be different in the non-traded sector. Finally value aggregates (and the corresponding PPPs) for *intermediate inputs* in the *traded* and *non-traded sectors* may be formed in an analogous manner. These traded and nontraded sector value gross output and intermediate input aggregates and their corresponding aggregate PPPs are listed in Appendix 3 for the 17 years 1995-2011 and for 38 of the 40 countries in the WIOD data base.

We turn now to a discussion on how value aggregates and the corresponding PPPs were constructed for primary inputs. As discussed above, WIOD's SEA allow us to distinguish four primary inputs, labor input by three skill types and capital. Computing the price of labor input that is comparable across countries and over time is straightforward, namely we simply divide labour compensation for the type of labor by total hours worked by the type of labour for the country and sector under consideration.⁵¹ Thus let V_{kt1} , V_{kt2} and V_{kt3} be the *value of labor compensation* for *highly skilled labor*, *medium skilled labor* and *less skilled labor* respectively in country k and year t for the *non-traded sector* and let x_{kt1} , x_{kt2} and x_{kt3} be the corresponding *number of hours worked*. Similarly, let V_{kt5} , V_{kt6} and V_{kt7} be the *value of labor compensation* for *highly skilled labor*, *medium skilled labor* and *less skilled labor* respectively in country k and year t for the *traded sector* and let x_{kt5} , x_{kt6} and x_{kt7} be the corresponding *number of hours worked*. The PPPs for these value aggregates can be defined as $w_{ktn} \equiv V_{ktn}/x_{ktn}$ for $k = 1, \dots, 38$; $t = 1, \dots, 17$ and $n = 1, 2, 3, 5, 6, 7$. These V_{ktn} and w_{ktn} are listed in Appendix 3.

Estimating the price of capital input is more challenging. Following Jorgenson and Griliches (1967), it would be best to separately distinguish inputs of different capital assets and estimate a rental price for each asset. Since we assume competitive markets, following Diewert and Morrison (1986), this rental price should include an estimate of a balancing rate of return, i.e. the rate of return on capital that equates the cost of capital to observed capital income. However, the only information on industry capital inputs that is

⁵¹ There is an implicit assumption that the quality of each type of labor is constant across countries, an assumption that is only approximately correct.

available is on total fixed reproducible assets, so we cannot distinguish important asset categories like land, natural resources, inventories and intellectual property. A first best solution is thus not feasible. As a second-best solution, we implement a solution similar to the method proposed by Denison (1962). From WIOD's SEA, we use data on reproducible capital stocks and we convert these to stocks that are comparable across countries and over time using the capital stock PPPs from PWT version 8.1.⁵² Denote the comparable capital stock in the non-traded and traded industries in year for country k as x_{kt4} and x_{kt8} respectively and denote the *gross operating surplus* of the *non-traded* and *traded industries* as V_{kt4} and V_{kt8} respectively.⁵³ Then the PPPs for capital input for the non-traded and traded industries are equal to $w_{kt4} \equiv V_{kt4}/x_{kt4}$ and $w_{kt8} \equiv V_{kt4}/x_{kt4}$ respectively. V_{kt4} , V_{kt8} , w_{kt4} and w_{kt8} are listed in Appendix C.⁵⁴

It can be seen that our measures for capital input will be biased since capital income includes income from all assets, including land, inventories and natural resources, but these assets are not included in the measures of the capital stock. Where omitted assets are potentially large and covered assets are small, this bias could be substantial. For this reason, we ended up dropping Indonesia from our dataset: as a middle-income income country, it has a relatively low stock of fixed reproducible assets but as a major producer of natural resources, the value of its natural capital is likely large.

Appendix B: Country Productivity Levels, Growth Rates and Efficiency Levels

Results for the Nontraded Sector

In the Tables below, in order to save space, countries are sometimes identified by a number. The correspondence of the numbers with the countries is as follows: 1=USA (United States); 2=AUS (Australia); 3=AUT (Austria); 4=BEL (Belgium); 5=BGR (Bulgaria); 6=BRA (Brazil); 7=CAN (Canada); 8=CHN (China); 9=CYP (Cyprus); 10=CZE (Czech Republic); 11=DEU (Germany); 12=DNK (Denmark); 13=ESP (Spain); 14=EST (Estonia); 15=FIN (Finland); 16=FRA (France); 17=GBR (Great Britain); 18=GRC (Greece); 19=HUN (Hungary); 20=IND (India); 21=IRL (Ireland); 22=ITA (Italy); 23=JPN (Japan); 24=KOR (Republic of Korea); 25=LTU (Lithuania); 26=LVA (Latvia); 27=MEX (Mexico); 28=MLT (Malta); 29=NLD (Netherlands); 30=POL (Poland); 31=PRT (Portugal); 32=Rou (Romania); 33=RUS (Russian Federation); 34=SVK (Slovakia); 35=SVN (Slovenia); 36=SWE (Sweden); 37=TUR (Turkey); 38=TWN (Taiwan).

As was explained in Appendix A, we constructed value data and the corresponding PPPs for the *Nontraded Sector* (basically an aggregate of market oriented service industries) for 38 countries over the years 1995-2011. The value aggregates for each country k in

⁵² See Feenstra, Inklaar and Timmer (2015).

⁵³ The Gross Operating Surplus for country k in year t for a sector is equal to sector value added less the value of labour input for that year and country.

⁵⁴ We normalized the w_{ktn} and x_{ktn} so that the PPP for each type of labor and capital for the U.S. in 1995 equalled one.

year t are denoted by v_{kt1} (gross output), v_{kt2} (minus the value of intermediate inputs), V_{kt1} (highly skilled labor), V_{kt2} (moderately skilled labor), V_{kt3} (less skilled labor) and V_{kt4} (the value of capital services); see Table C1 in Appendix C for a listing of these data. The corresponding PPPs for these 6 value aggregates are p_{kt1} , p_{kt2} , w_{kt1} , w_{kt2} , w_{kt3} , w_{kt4} and are listed in Table C2 in Appendix C.

The algebra explained in section 2 of the main text is used to construct real value added output aggregates Y_{kt} and real input aggregates X_{kt} for country k and year t ; see equations (13) and (20). The comparable across time and space productivity level for country k in year t for the nontraded sector is $\Gamma_{kt} = Y_{kt}/X_{kt}$; see equations (23). These productivity levels are listed in the first 38 rows of Table B1 below.

Table B1: Nontraded Sector Productivity Levels Γ_{kt} for 38 Countries, World Productivity at Year t Γ_t and Maximum Possible Productivity Level at Year t , $\Gamma_{t,max}$

k	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11
1	1.00	1.03	1.04	1.04	1.04	1.04	1.03	1.05	1.06	1.06	1.05	1.08	1.10	1.10	1.11	1.18	1.22
2	0.69	0.72	0.69	0.65	0.67	0.70	0.69	0.67	0.69	0.66	0.65	0.67	0.70	0.67	0.65	0.65	0.63
3	0.64	0.65	0.65	0.66	0.67	0.68	0.67	0.70	0.69	0.67	0.67	0.68	0.70	0.69	0.69	0.74	0.77
4	0.81	0.80	0.81	0.83	0.84	0.80	0.82	0.83	0.83	0.81	0.74	0.79	0.79	0.78	0.76	0.73	0.75
5	0.48	0.46	0.41	0.46	0.49	0.55	0.57	0.58	0.59	0.65	0.64	0.56	0.60	0.57	0.53	0.51	0.51
6	0.49	0.50	0.49	0.48	0.48	0.45	0.42	0.41	0.40	0.40	0.40	0.41	0.40	0.42	0.43	0.45	0.44
7	0.71	0.71	0.71	0.67	0.65	0.67	0.66	0.66	0.63	0.62	0.60	0.58	0.56	0.54	0.56	0.59	0.57
8	0.34	0.33	0.33	0.32	0.33	0.34	0.33	0.33	0.35	0.38	0.45	0.48	0.50	0.52	0.55	0.55	0.53
9	0.40	0.40	0.42	0.44	0.46	0.47	0.46	0.47	0.49	0.51	0.51	0.52	0.52	0.53	0.52	0.51	0.54
10	0.35	0.40	0.39	0.42	0.42	0.43	0.48	0.50	0.51	0.50	0.53	0.53	0.53	0.51	0.48	0.51	0.53
11	0.73	0.74	0.74	0.74	0.76	0.76	0.75	0.76	0.74	0.72	0.71	0.73	0.75	0.75	0.76	0.80	0.82
12	0.65	0.68	0.68	0.66	0.69	0.69	0.66	0.67	0.66	0.65	0.66	0.68	0.72	0.70	0.68	0.73	0.74
13	0.66	0.65	0.66	0.67	0.67	0.69	0.72	0.72	0.70	0.69	0.68	0.64	0.61	0.62	0.62	0.66	0.70
14	0.31	0.37	0.39	0.39	0.41	0.44	0.49	0.51	0.54	0.57	0.56	0.55	0.53	0.49	0.43	0.43	0.42
15	0.52	0.55	0.57	0.58	0.59	0.61	0.60	0.60	0.59	0.59	0.58	0.61	0.66	0.63	0.59	0.64	0.68
16	0.86	0.86	0.88	0.90	0.87	0.90	0.87	0.87	0.88	0.82	0.79	0.78	0.78	0.78	0.76	0.80	0.85
17	0.77	0.80	0.80	0.81	0.82	0.82	0.84	0.87	0.90	0.92	0.91	0.94	0.98	0.95	0.92	0.92	0.94
18	0.49	0.51	0.53	0.53	0.56	0.59	0.64	0.63	0.65	0.66	0.65	0.63	0.63	0.61	0.55	0.53	0.48
19	0.33	0.34	0.35	0.37	0.41	0.45	0.48	0.52	0.51	0.53	0.54	0.58	0.55	0.50	0.47	0.52	0.57
20	0.53	0.52	0.51	0.49	0.51	0.52	0.51	0.52	0.51	0.54	0.56	0.60	0.63	0.64	0.66	0.68	0.68
21	0.55	0.61	0.67	0.70	0.72	0.77	0.78	0.79	0.85	0.87	0.89	0.84	0.79	0.76	0.74	0.78	0.82
22	0.38	0.39	0.39	0.39	0.40	0.41	0.42	0.42	0.40	0.41	0.41	0.40	0.39	0.39	0.40	0.44	0.45
23	0.57	0.56	0.55	0.53	0.52	0.51	0.48	0.47	0.45	0.44	0.42	0.41	0.40	0.39	0.39	0.43	0.42
24	0.42	0.43	0.43	0.37	0.40	0.40	0.39	0.40	0.39	0.36	0.35	0.34	0.33	0.32	0.30	0.31	0.30
25	0.46	0.40	0.44	0.44	0.46	0.49	0.51	0.55	0.60	0.63	0.67	0.64	0.64	0.60	0.52	0.49	0.49
26	0.33	0.34	0.41	0.37	0.36	0.35	0.37	0.45	0.51	0.51	0.57	0.59	0.62	0.54	0.47	0.43	0.49
27	0.56	0.57	0.57	0.56	0.56	0.61	0.61	0.64	0.63	0.63	0.62	0.64	0.66	0.65	0.57	0.63	0.66
28	0.68	0.66	0.64	0.60	0.62	0.61	0.68	0.64	0.59	0.61	0.65	0.62	0.61	0.62	0.60	0.58	0.57
29	0.71	0.72	0.75	0.77	0.79	0.84	0.87	0.88	0.89	0.89	0.90	0.90	0.92	0.91	0.88	0.91	0.93
30	0.43	0.41	0.43	0.45	0.47	0.52	0.52	0.54	0.57	0.61	0.63	0.65	0.67	0.68	0.68	0.71	0.76
31	0.52	0.52	0.54	0.59	0.58	0.59	0.60	0.53	0.49	0.55	0.57	0.54	0.52	0.47	0.47	0.47	0.47
32	0.56	0.55	0.55	0.50	0.49	0.50	0.48	0.55	0.54	0.59	0.60	0.64	0.67	0.67	0.59	0.53	0.51
33	0.42	0.43	0.35	0.38	0.41	0.42	0.46	0.51	0.56	0.56	0.59	0.63	0.65	0.67	0.64	0.69	0.74
34	0.44	0.43	0.45	0.46	0.47	0.53	0.53	0.61	0.59	0.59	0.57	0.57	0.55	0.53	0.52	0.55	0.56
35	0.50	0.50	0.50	0.51	0.54	0.54	0.55	0.57	0.57	0.55	0.55	0.57	0.60	0.58	0.58	0.57	0.58
36	0.64	0.66	0.67	0.68	0.67	0.68	0.68	0.68	0.68	0.72	0.73	0.73	0.73	0.73	0.71	0.75	0.79
37	0.51	0.52	0.51	0.49	0.46	0.46	0.44	0.53	0.54	0.55	0.58	0.56	0.54	0.52	0.54	0.59	0.60
38	0.75	0.78	0.81	0.83	0.86	0.87	0.86	0.90	0.90	0.91	0.91	0.88	0.98	0.97	0.99	1.13	1.13
Γ_m	1.00	1.03	1.04	1.04	1.04	1.04	1.04	1.05	1.06	1.06	1.06	1.08	1.10	1.10	1.11	1.18	1.22
Γ_t	0.61	0.61	0.61	0.60	0.61	0.61	0.60	0.60	0.60	0.60	0.61	0.63	0.64	0.64	0.64	0.67	0.67

The row that has $k=1$ gives the productivity levels of the nontraded (or market services) sector of the US over the 17 years 1995-2011. Note that the US productivity level in 1995 is set equal to 1 and the productivity levels of other countries in other years are in theory comparable to this level. Country 24 (Korea) had the lowest level of productivity in 2009 (equal to 30% of the US level in 1995) and the US in 2011 had the highest level (equal to 1.22 times the 1995 US level). There is a tremendous dispersion in productivity levels across countries. The last row in the above Table is the *world productivity level* Γ_t defined by (27) in the main text. It can be seen that this level remains approximately constant over the years 1995-2005 at a level that is equal to about 60% of the US level in 1995. It then gradually increases over the years 2006-2011 to end up at 67% of the US level in 1995. The penultimate row in the above Table is $\Gamma_m \equiv \Gamma_{t,\max}$ which is the *maximum possible productivity level* that has been attained by any country up to and including year t ; see (28) in the main text. It can be seen that the maximum productivity level increased gradually from 1.00 in 1995 to 1.06 in 2005 and then increased substantially to 1.22 in 2011. It can also be seen that the US was the country that determined the productivity frontier; i.e., $\Gamma_{t,\max}$ was equal to the US level in year t , Γ_{1t} , except for the year 2001 when the US level fell to 1.03. For 2001, the maximum level of productivity was set equal to the US level in 2000. Viewing the above results, we see that the news is good in that the “world” average level of productivity in the nontraded sector increased about 10% over the sample period but the news is not so good in that the productivity frontier increased 22% over the sample period so that on average, countries failed to keep up to the expanding production possibilities set for the nontraded sector.

It is useful to summarize the results in the above table by computing geometric rates of productivity growth. Thus define the *country k growth factor* for the nontraded sector over the entire sample period as $G_{Nk\ 95-11} \equiv (\Gamma_{k\ 2011}/\Gamma_{k\ 1995})^{1/16}$. Define the corresponding *growth factors* over the years 1995-2007 and 2007-2011 as $G_{Nk\ 95-07} \equiv (\Gamma_{k\ 2007}/\Gamma_{k\ 1995})^{1/12}$ and $G_{Nk\ 07-11} \equiv (\Gamma_{k\ 2011}/\Gamma_{k\ 2007})^{1/4}$ respectively. These growth factors for the 38 countries are listed in the Nontraded Sector columns of Table B2 below. To get the corresponding *geometric productivity growth rates* over the various sample periods, subtract 1 from the growth factors. Thus the average rate of productivity growth for the US nontraded sector was 1.25% per year for the period 1995-2011, 0.81% per year for the period 1995-2007 and 2.57% per year for the years 2007-2011. This rate of productivity growth for the US nontraded (or market services) sector in the aftermath of the global financial crisis is rather remarkable!⁵⁵

Table B2: Country Geometric Average Growth Factors For 3 Sectors and 3 Time Periods

Country	k	Nontraded Sector			Traded Sector			Market Sector		
		$G_{N\ 95-11}$	$G_{N\ 95-07}$	$G_{N\ 07-11}$	$G_{T\ 95-11}$	$G_{T\ 95-07}$	$G_{T\ 07-11}$	$G_{M\ 95-11}$	$G_{M\ 95-07}$	$G_{M\ 07-11}$
USA	1	1.0125	1.0081	1.0257	1.0269	1.0337	1.0067	1.0168	1.0155	1.0205
AUS	2	0.9948	1.0007	0.9772	1.0388	1.0432	1.0257	1.0089	1.0136	0.9950
AUT	3	1.0115	1.0077	1.0228	1.0202	1.0376	0.9698	1.0141	1.0172	1.0050
BEL	4	0.9952	0.9984	0.9859	0.9998	1.0020	0.9930	0.9953	0.9983	0.9864

⁵⁵ The possibility of measurement error should be kept in mind.

BGR	5	1.0038	1.0189	0.9600	1.0240	1.0498	0.9504	1.0181	1.0374	0.9623
BRA	6	0.9936	0.9826	1.0272	0.9990	0.9837	1.0461	0.9956	0.9830	1.0344
CAN	7	0.9860	0.9799	1.0042	1.0180	1.0298	0.9835	0.9967	0.9962	0.9983
CHN	8	1.0285	1.0326	1.0163	1.0668	1.0842	1.0162	1.0506	1.0610	1.0199
CYP	9	1.0191	1.0232	1.0070	1.0014	1.0047	0.9914	1.0159	1.0202	1.0031
CZE	10	1.0255	1.0350	0.9976	1.0576	1.0749	1.0073	1.0368	1.0491	1.0008
DEU	11	1.0073	1.0024	1.0224	1.0195	1.0329	0.9802	1.0113	1.0129	1.0066
DNK	12	1.0084	1.0087	1.0076	1.0248	1.0345	0.9964	1.0127	1.0160	1.0030
ESP	13	1.0040	0.9936	1.0357	1.0069	1.0112	0.9944	1.0048	0.9987	1.0235
EST	14	1.0196	1.0463	0.9437	1.0265	1.0501	0.9588	1.0236	1.0497	0.9491
FIN	15	1.0168	1.0193	1.0094	1.0210	1.0460	0.9496	1.0174	1.0284	0.9853
FRA	16	0.9992	0.9923	1.0199	1.0109	1.0236	0.9738	1.0023	1.0012	1.0055
GRB	17	1.0126	1.0198	0.9914	1.0133	1.0391	0.9398	1.0122	1.0244	0.9764
GRC	18	0.9978	1.0205	0.9326	1.0034	1.0065	0.9942	1.0005	1.0189	0.9474
HUN	19	1.0343	1.0425	1.0100	1.0675	1.0927	0.9954	1.0466	1.0598	1.0082
IND	20	1.0157	1.0150	1.0179	0.9942	0.9901	1.0068	1.0102	1.0081	1.0165
IRL	21	1.0250	1.0298	1.0110	1.0470	1.0621	1.0030	1.0316	1.0375	1.0139
ITA	22	1.0100	1.0026	1.0327	1.0077	1.0108	0.9986	1.0081	1.0042	1.0198
JPN	23	0.9812	0.9716	1.0108	0.9970	0.9995	0.9896	0.9857	0.9803	1.0022
KOR	24	0.9800	0.9809	0.9773	0.9958	0.9991	0.9861	0.9864	0.9871	0.9844
LTU	25	1.0041	1.0274	0.9375	1.0298	1.0585	0.9482	1.0144	1.0400	0.9413
LVA	26	1.0255	1.0538	0.9450	1.0357	1.0501	0.9936	1.0330	1.0591	0.9584
MEX	27	1.0098	1.0128	1.0010	1.0288	1.0372	1.0040	1.0169	1.0219	1.0023
MLT	28	0.9887	0.9909	0.9822	0.9904	0.9836	1.0112	0.9898	0.9895	0.9907
NLD	29	1.0175	1.0222	1.0033	1.0168	1.0269	0.9870	1.0164	1.0225	0.9982
POL	30	1.0371	1.0391	1.0312	1.0601	1.0814	0.9988	1.0479	1.0569	1.0215
PRT	31	0.9933	0.9997	0.9747	1.0011	1.0106	0.9731	0.9969	1.0043	0.9749
ROU	32	0.9934	1.0148	0.9319	1.0584	1.0718	1.0192	1.0254	1.0471	0.9629
RUS	33	1.0359	1.0369	1.0328	1.0969	1.1103	1.0578	1.0573	1.0625	1.0419
SVK	34	1.0154	1.0182	1.0072	1.0409	1.0641	0.9745	1.0262	1.0358	0.9978
SVN	35	1.0099	1.0157	0.9928	1.0494	1.0650	1.0041	1.0248	1.0343	0.9969
SWE	36	1.0129	1.0112	1.0178	1.0206	1.0309	0.9901	1.0135	1.0161	1.0058
TUR	37	1.0104	1.0043	1.0289	1.0224	1.0325	0.9928	1.0166	1.0170	1.0153
TWN	38	1.0261	1.0225	1.0369	1.0002	1.0152	0.9564	1.0185	1.0214	1.0101
Max	G _m	1.0125	1.0081	1.0257	1.0258	1.0346	1.0000	1.0168	1.0155	1.0205
Ave	G	1.0061	1.0040	1.0123	1.0133	1.0209	0.9908	1.0097	1.0111	1.0055

Define the *growth factor* $G_{Nm\ 95-11}$ for the *maximum level of productivity* over the sample period as $G_{Nm\ 95-11} \equiv (\Gamma_{2011,max}/\Gamma_{1995,max})^{1/16}$. Define the corresponding *growth factors* over the years 1995-2007 and 2007-2011 as $G_{Nm\ 95-07} \equiv (\Gamma_{2007,max}/\Gamma_{1995,max})^{1/12}$ and $G_{Nm\ 07-11} \equiv (\Gamma_{2011,max}/\Gamma_{2007,max})^{1/4}$ respectively. These growth factors are listed in the second row from the bottom of the Nontraded Sector columns of Table B2. It can be seen that these growth factors are essentially equal to the corresponding growth factors for the US nontraded sector. Finally, define the *growth factor* $G_{N\ 95-11}$ for the *world average level of productivity* over the sample period as $G_{N\ 95-11} \equiv (\Gamma_{2011}/\Gamma_{1995})^{1/16}$ where Γ_t is the world level of productivity in year t listed in the last row of Table B1.⁵⁶ Define the corresponding *world average growth factors* over the years 1995-2007 and 2007-2011 as $G_{N\ 95-07} \equiv (\Gamma_{2007}/\Gamma_{1995})^{1/12}$ and $G_{N\ 07-11} \equiv (\Gamma_{2011}/\Gamma_{2007})^{1/4}$ respectively. These growth factors are listed in the last row of Table B2. It can be seen that maximum level of productivity for the nontraded sector grew at the geometric rate of 0.81% per year over the years 1995-2007 and at 2.57% per year over 2007-2011. The corresponding world average

⁵⁶ As was shown by equation (27) in the main text, Γ_t is equal to real input share weighted average of the country productivity indexes Γ_{kt} over all countries k for time period t .

productivity growth rates over these two periods was 0.40% per year and 1.23% per year respectively—about one half of the maximum possible rates. What is of interest here is that the production frontier for the nontraded sector expanded outward at a much higher rate in the aftermath of the great recession than it did in the earlier 1995-2007 period.

Countries which had productivity growth rates above 2% per year over the entire sample period were: Poland (3.71%), Russia (3.59%), Hungary (3.43%), China (2.85%), Taiwan (2.61%), Czech Republic (2.55%), Latvia (2.55%) and Ireland (2.50%). Countries which had negative productivity growth rates over the sample period were: Australia, Belgium, Brazil, Canada, France, Greece, Japan, Korea, Malta, Portugal and Romania.

In section 3 of the main text, we defined the *relative efficiency of production unit k in year t* as $E_{kt} \equiv \Gamma_{kt} / \Gamma_{t,max}$; i.e., as the productivity of country k in year Γ_{kt} divided by the maximum possible level of productivity for year t, $\Gamma_{t,max}$. These relative efficiencies for the nontraded sector of the 38 countries are listed in Table B3 below. Definition (30) in section 4 defined the *efficiency of world average level of productivity at year t relative to the best available level*, E_t , as Γ_t divided by $\Gamma_{t,max}$. These average levels of efficiency E_t for the nontraded sector are listed in the last row of Table B3.

Table B3: Nontraded Sector Efficiency Levels E_{kt} for 38 Countries and World Efficiency at Year t E_t

k	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11
1	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2	0.69	0.70	0.66	0.62	0.65	0.67	0.66	0.64	0.65	0.63	0.61	0.61	0.63	0.61	0.58	0.55	0.52
3	0.64	0.63	0.63	0.64	0.65	0.65	0.65	0.67	0.66	0.63	0.63	0.63	0.64	0.63	0.62	0.63	0.63
4	0.81	0.77	0.78	0.80	0.81	0.77	0.79	0.79	0.78	0.77	0.70	0.73	0.72	0.71	0.68	0.62	0.61
5	0.48	0.45	0.40	0.44	0.47	0.53	0.55	0.55	0.56	0.61	0.60	0.52	0.55	0.51	0.47	0.43	0.42
6	0.49	0.48	0.48	0.46	0.46	0.43	0.41	0.39	0.38	0.38	0.37	0.38	0.36	0.38	0.38	0.39	0.36
7	0.71	0.68	0.68	0.65	0.63	0.64	0.64	0.63	0.60	0.58	0.57	0.53	0.51	0.49	0.51	0.50	0.47
8	0.34	0.32	0.31	0.31	0.32	0.33	0.32	0.32	0.33	0.36	0.42	0.44	0.45	0.47	0.49	0.47	0.43
9	0.40	0.39	0.40	0.43	0.44	0.45	0.44	0.45	0.46	0.48	0.48	0.48	0.47	0.48	0.47	0.43	0.44
10	0.35	0.38	0.38	0.41	0.40	0.41	0.47	0.47	0.48	0.48	0.50	0.49	0.48	0.46	0.43	0.43	0.43
11	0.73	0.72	0.72	0.72	0.73	0.73	0.72	0.72	0.70	0.68	0.68	0.68	0.68	0.68	0.69	0.68	0.67
12	0.65	0.66	0.65	0.63	0.66	0.66	0.63	0.64	0.62	0.61	0.62	0.63	0.65	0.64	0.61	0.62	0.61
13	0.66	0.63	0.64	0.65	0.65	0.67	0.69	0.68	0.66	0.65	0.64	0.59	0.55	0.56	0.55	0.56	0.58
14	0.31	0.35	0.38	0.37	0.39	0.42	0.48	0.49	0.51	0.54	0.53	0.51	0.49	0.44	0.39	0.37	0.35
15	0.52	0.53	0.55	0.56	0.56	0.58	0.58	0.57	0.56	0.56	0.55	0.56	0.60	0.58	0.53	0.55	0.56
16	0.86	0.83	0.85	0.87	0.84	0.87	0.84	0.83	0.83	0.78	0.74	0.72	0.71	0.70	0.68	0.68	0.69
17	0.77	0.77	0.78	0.78	0.79	0.79	0.80	0.83	0.85	0.87	0.86	0.87	0.89	0.86	0.83	0.78	0.77
18	0.49	0.49	0.51	0.51	0.54	0.57	0.61	0.61	0.61	0.63	0.62	0.58	0.57	0.56	0.49	0.45	0.39
19	0.33	0.33	0.33	0.36	0.40	0.43	0.46	0.50	0.49	0.50	0.51	0.54	0.50	0.45	0.43	0.44	0.47
20	0.53	0.51	0.49	0.47	0.49	0.50	0.49	0.50	0.49	0.51	0.53	0.55	0.57	0.58	0.59	0.58	0.55
21	0.55	0.59	0.65	0.68	0.70	0.74	0.75	0.75	0.80	0.82	0.84	0.77	0.71	0.69	0.67	0.67	0.67
22	0.38	0.37	0.38	0.38	0.38	0.40	0.40	0.40	0.38	0.39	0.38	0.37	0.36	0.36	0.36	0.37	0.37
23	0.57	0.55	0.53	0.51	0.50	0.49	0.47	0.45	0.43	0.41	0.40	0.38	0.37	0.35	0.35	0.36	0.35
24	0.42	0.42	0.41	0.36	0.38	0.39	0.38	0.38	0.37	0.34	0.34	0.31	0.30	0.29	0.27	0.26	0.25
25	0.46	0.39	0.42	0.42	0.44	0.47	0.49	0.53	0.56	0.59	0.63	0.59	0.58	0.55	0.47	0.42	0.40
26	0.33	0.33	0.39	0.36	0.35	0.33	0.36	0.43	0.49	0.49	0.54	0.54	0.56	0.49	0.42	0.37	0.40
27	0.56	0.55	0.55	0.54	0.54	0.58	0.58	0.61	0.59	0.60	0.59	0.59	0.60	0.59	0.52	0.53	0.54
28	0.68	0.64	0.62	0.58	0.59	0.58	0.65	0.61	0.56	0.58	0.61	0.57	0.55	0.56	0.54	0.49	0.46
29	0.71	0.70	0.73	0.74	0.76	0.81	0.83	0.85	0.84	0.84	0.85	0.83	0.84	0.82	0.79	0.78	0.77
30	0.43	0.40	0.41	0.43	0.45	0.50	0.50	0.51	0.54	0.58	0.60	0.60	0.61	0.61	0.61	0.61	0.63
31	0.52	0.50	0.52	0.57	0.56	0.57	0.58	0.51	0.47	0.52	0.54	0.50	0.47	0.43	0.43	0.40	0.39
32	0.56	0.53	0.53	0.48	0.47	0.48	0.46	0.53	0.51	0.56	0.57	0.59	0.61	0.61	0.53	0.45	0.42
33	0.42	0.42	0.34	0.37	0.40	0.40	0.44	0.49	0.53	0.53	0.56	0.58	0.59	0.60	0.57	0.59	0.61
34	0.44	0.41	0.43	0.44	0.45	0.51	0.51	0.58	0.56	0.56	0.54	0.52	0.50	0.48	0.47	0.47	0.46

35	0.50	0.48	0.48	0.49	0.51	0.52	0.53	0.54	0.54	0.52	0.52	0.53	0.54	0.52	0.52	0.49	0.48
36	0.64	0.63	0.65	0.65	0.64	0.65	0.65	0.65	0.65	0.68	0.69	0.68	0.67	0.66	0.64	0.64	0.65
37	0.51	0.50	0.49	0.47	0.44	0.44	0.42	0.50	0.51	0.52	0.55	0.52	0.49	0.47	0.49	0.50	0.49
38	0.75	0.75	0.78	0.80	0.82	0.84	0.83	0.86	0.85	0.86	0.86	0.81	0.89	0.88	0.89	0.96	0.92
E	0.61	0.59	0.58	0.58	0.58	0.59	0.58	0.57	0.57	0.57	0.58	0.58	0.58	0.58	0.57	0.55	

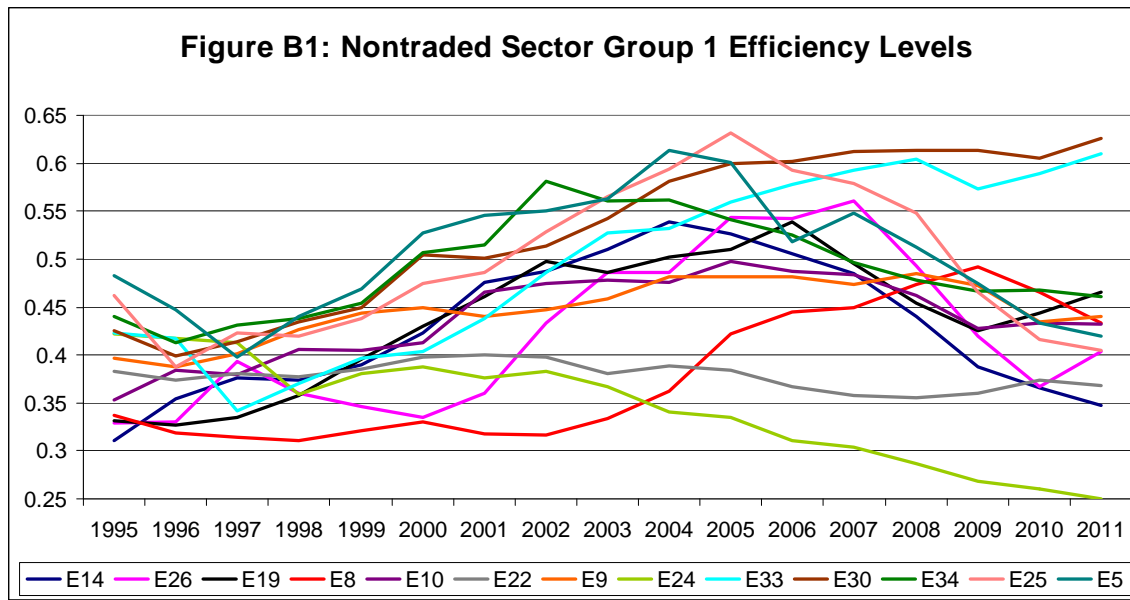
From the above table, it can be seen that the US was on the world efficiency frontier for all years except 2001, when it did not attain the efficiency level that was achieved in a prior year.⁵⁷ The last row of Table B3 shows that world efficiency E_t for the nontraded sector declined fairly steadily from 0.61 in 1995 to 0.55 in 2011. Thus although the *dispersion* of the country efficiency levels declined over the sample period (thus providing evidence of country productivity convergence *towards* average levels of productivity), it can be seen that on average, countries were moving *away* from the productivity frontier (thus providing evidence of a lack of convergence towards the productivity frontier).

In order to illustrate the lack of convergence towards the productivity frontier, we divided up the 38 countries into 3 groups. Group 1 consisted of the 13 countries that had the lowest efficiency levels in 1995, Group 2 consisted of the 12 countries that had intermediate efficiency levels in 1995 and Group 3 consisted of the 13 countries that had the highest efficiency levels in 1995.

The Group 1 countries were as follows:⁵⁸ 14 (Estonia), 26 (Latvia), 19 (Hungary), 8 (China), 10 (Czech Republic), 22 (Italy), 9 (Cyprus), 24 (Korea), 33 (Russia), 30 (Poland), 34 (Slovakia), 25 (Lithuania) and 5 (Bulgaria). The efficiency levels for these 13 countries is charted in Figure B1 below.

⁵⁷ This statement is not quite accurate. The efficiency score for the US was below 1 for the years 1999, 2000, 2001, 2005 and 2008. The scores for these years to 4 decimal places was 0.9958, 0.9975, 0.9936, 0.9969 and 0.9993 respectively. When these efficiency levels were rounded up to 2 decimal places, they become ones except that the 2001 number, 0.9936 was rounded down to 0.99.

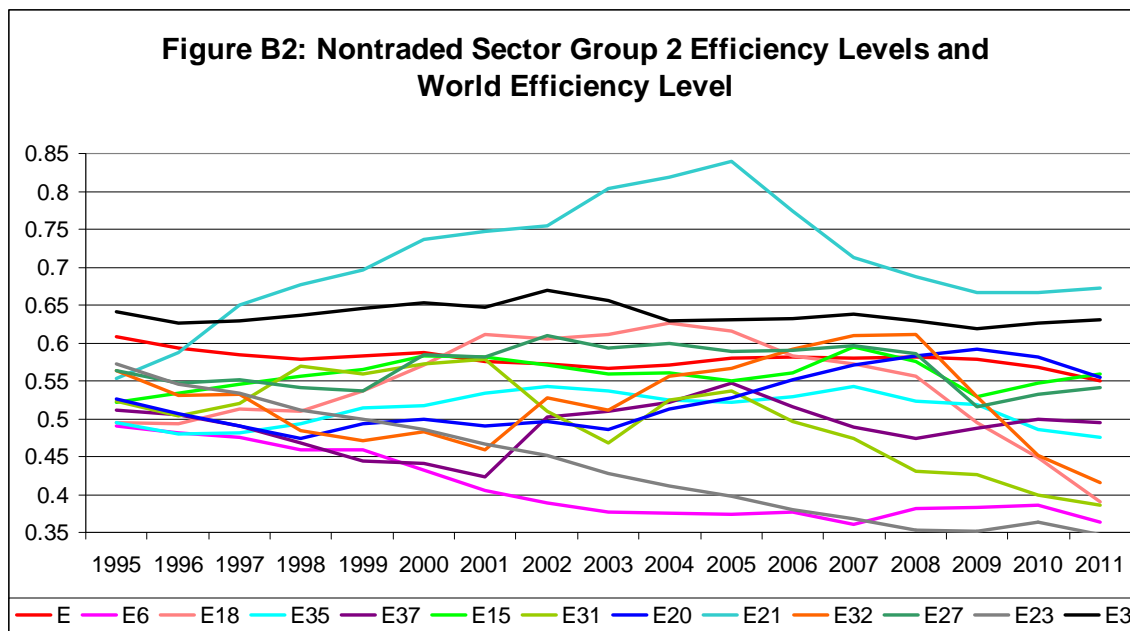
⁵⁸ The lowest efficiency country is listed first, the next lowest second and so on.



From Figure 1B, it can be seen that there was a general tendency for the low efficiency countries to improve their efficiency until 2005-2006 when efficiency levels for most countries fell sharply. However, the majority of low efficiency countries increased their efficiency scores over the entire sample period. Note that the efficiency of China was flat from 1995-2002 and then increased sharply until 2009 and then fell off a bit in the last two years. In general, it appears that the global financial crisis led to large decreases in the efficiency levels of the group of countries that had low levels of productivity in 1995.⁵⁹

The Group 2 countries were as follows: 3 (Austria), 6 (Brazil), 15 (Finland), 18 (Greece), 20 (India), 21 (Ireland), 23 (Japan), 27 (Mexico), 31 (Portugal), 32 (Romania), 35 (Slovenia) and 37 (Turkey). The efficiency levels for these 12 countries is charted in Figure B2 below along with the world average efficiency levels E_t .

⁵⁹ The arithmetic average of the Group 1 efficiency levels started at 39.2% in 1995, increased to 51.0% in 2005 and then decreased to finish up at 43.6% in 2011. See Table B4 below.

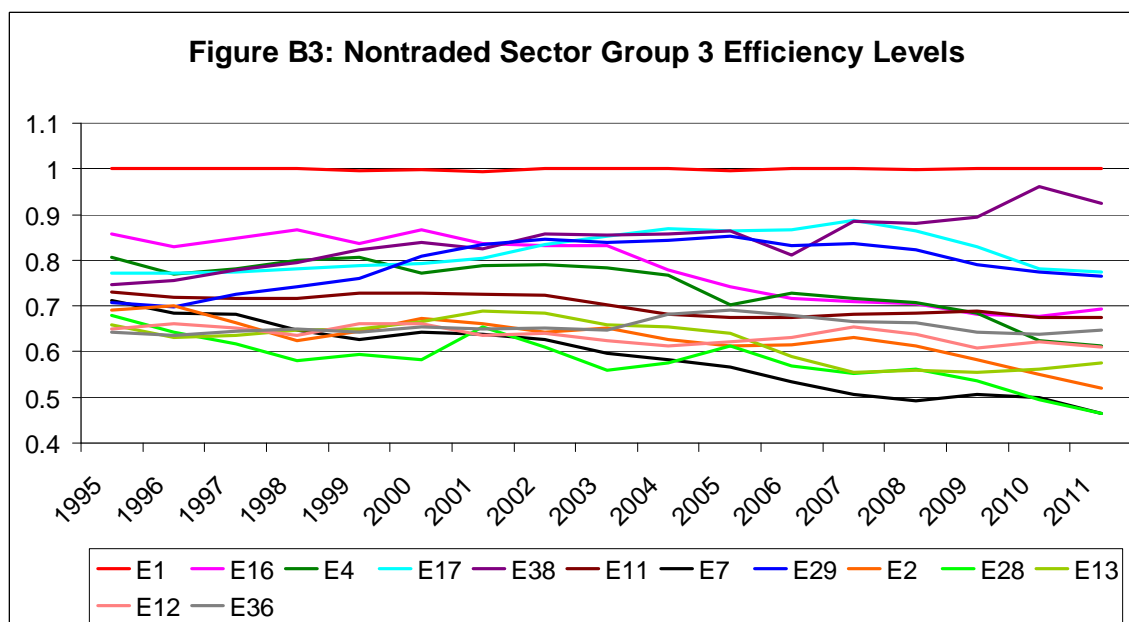


The red line in Figure B2 plots the world average efficiency; it declines from 0.61 to 0.55 over the sample period. For the 12 countries in Group 2 (the medium efficiency group in 1995), it can be seen that dispersion increased markedly and there was a downward drift in efficiency levels.⁶⁰ The efficiency level of India increased from 0.53 in 1995 to 0.59 in 2009 but then declined to finish at 0.55 in 2011. The other big country in this group, Japan, experienced a very large decline in efficiency from 0.57 in 1995 to 0.35 in 2011. Another outlier country is Ireland: its efficiency increased from 0.55 in 1995 to 0.84 in 2005 and then decreased to finish up at 0.67 in 2011. The final outlier country is Brazil, which started at 0.49 and finished at 0.36. Again, it appears that the global financial crisis led to large decreases in the efficiency levels of the group of countries that had medium levels of productivity in 1995.

The Group 3 countries were as follows:⁶¹ 1 (USA), 16 (France), 4 (Belgium), 17 (Great Britain), 38 (Taiwan), 11 (Germany), 7 (Canada), 29 (Netherlands), 2 (Australia), 28 (Malta), 13 (Spain), 12 (Denmark) and 36 (Sweden). The efficiency levels for these 13 countries is charted in Figure B3 below.

⁶⁰ The arithmetic average of the Group 2 efficiency levels started at 53.8% in 1995, increased to 55.8% in 2005 and then decreased to finish up at 48.6% in 2011.

⁶¹ The highest efficiency country is listed first, the next lowest second and so on.



The red line in Figure B3 plots the US efficiency level, which is very close to one in all years. It can be seen that the dispersion in the high productivity countries increased over time and there was a downward trend in their efficiency levels.⁶² Thus there was a tendency for the high productivity and efficiency countries to revert to the overall mean levels of performance. The efficiency level of Taiwan increased from 0.75 in 1995 to 0.96 in 2010 before falling to 0.92 in 2011. The two countries which experienced the largest decreases in efficiency were Malta (0.68 in 1995 to 0.46 in 2011) and Canada (0.71 in 1995 to 0.47 in 2011).

We summarize the efficiency results for the nontraded sector in Table B4. E_t is the weighted average world efficiency defined by (30), $E_{Ave,t} \equiv \sum_{k=1}^{38} E_{kt}/38$ is the arithmetic average of the 38 country efficiency levels E_{kt} for year t and $E_{Low,t}$, $E_{Med,t}$ and $E_{High,t}$ are the arithmetic averages of the country efficiency levels for year t for the low, medium and high group countries (Groups 1,2 and 3 respectively) defined above.

Table B4: Nontraded Sector Efficiencies E_t , Average Efficiencies E_{Ave} and Low, Medium and High Subgroup Efficiencies

Year t	E_t	$E_{Ave,t}$	$E_{Low,t}$	$E_{Med,t}$	$E_{High,t}$
1995	0.6087	0.5580	0.3919	0.5379	0.7425
1996	0.5932	0.5472	0.3812	0.5281	0.7307
1997	0.5847	0.5510	0.3846	0.5344	0.7326
1998	0.5783	0.5510	0.3903	0.5314	0.7298
1999	0.5833	0.5593	0.4057	0.5350	0.7354
2000	0.5877	0.5743	0.4296	0.5465	0.7448
2001	0.5751	0.5799	0.4447	0.5437	0.7486
2002	0.5729	0.5911	0.4689	0.5524	0.7491

⁶² The arithmetic average of the Group 3 efficiency levels started at 74.3% in 1995, increased slightly to 74.9% in 2002 and then decreased substantially to finish up at 67.1% in 2011.

2003	0.5664	0.5894	0.4814	0.5449	0.7386
2004	0.5707	0.5959	0.4968	0.5549	0.7329
2005	0.5800	0.5993	0.5101	0.5581	0.7266
2006	0.5807	0.5874	0.4995	0.5483	0.7113
2007	0.5797	0.5854	0.4952	0.5439	0.7140
2008	0.5813	0.5733	0.4773	0.5324	0.7071
2009	0.5787	0.5515	0.4497	0.5095	0.6920
2010	0.5686	0.5396	0.4350	0.4990	0.6815
2011	0.5501	0.5321	0.4357	0.4857	0.6712

Results for the Traded Sector

We constructed value data and the corresponding PPPs for the *Traded Sector* (basically an aggregate of market oriented goods producing industries) for 38 countries over the years 1995-2011.⁶³ The value aggregates for each country k in year t are denoted by v_{kt3} (gross output), v_{kt4} (minus the value of intermediate inputs), V_{kt5} (highly skilled labor), V_{kt6} (moderately skilled labor), V_{kt7} (less skilled labor) and V_{kt8} (the value of capital services); see Table C3 in Appendix C for a listing of these data. The corresponding PPPs for these 6 value aggregates are p_{kt3} , p_{kt4} , w_{kt5} , w_{kt6} , w_{kt7} , w_{kt8} and are listed in Table C4 in Appendix C.

The algebra explained in section 2 of the main text is used to construct real value added output aggregates Y_{kt} and real input aggregates X_{kt} for country k and year t ; see equations (13) and (20). The comparable across time and space productivity level for country k in year t for the traded sector is $\Gamma_{kt} = Y_{kt}/X_{kt}$; see equations (23). These productivity levels are listed in the first 38 rows of Table B5 below.

Table B5: Traded Sector Productivity Levels Γ_{kt} for 38 Countries, World Productivity at Year t Γ_t and Maximum Possible Productivity Level at Year t , $\Gamma_{t,max}$

k	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11
1	1.00	1.05	1.10	1.14	1.18	1.18	1.20	1.28	1.35	1.39	1.41	1.44	1.49	1.39	1.45	1.52	1.53
2	0.76	0.76	0.79	0.84	0.86	0.92	0.97	0.99	1.05	1.02	1.07	1.14	1.26	1.22	1.20	1.36	1.40
3	0.69	0.70	0.73	0.76	0.81	0.85	0.87	0.91	0.91	0.88	0.92	0.99	1.07	1.01	0.98	0.99	0.95
4	1.13	1.14	1.18	1.20	1.20	1.23	1.26	1.33	1.32	1.28	1.18	1.19	1.16	1.10	1.22	1.15	1.12
5	0.13	0.10	0.17	0.15	0.16	0.17	0.19	0.20	0.23	0.22	0.21	0.24	0.23	0.24	0.21	0.19	0.19
6	0.29	0.28	0.28	0.28	0.28	0.27	0.27	0.28	0.25	0.25	0.24	0.25	0.24	0.23	0.23	0.25	0.29
7	0.76	0.77	0.77	0.77	0.81	0.89	0.88	0.89	0.91	0.92	0.95	0.99	1.08	1.09	1.13	0.99	1.01
8	0.11	0.12	0.13	0.15	0.16	0.17	0.19	0.21	0.22	0.23	0.23	0.25	0.29	0.29	0.31	0.31	0.30
9	0.32	0.33	0.35	0.36	0.38	0.40	0.39	0.40	0.40	0.37	0.38	0.35	0.34	0.34	0.33	0.33	0.33
10	0.27	0.27	0.30	0.32	0.37	0.39	0.42	0.43	0.45	0.50	0.54	0.58	0.63	0.66	0.67	0.65	0.65
11	1.09	1.11	1.15	1.20	1.24	1.27	1.31	1.33	1.33	1.36	1.40	1.53	1.61	1.57	1.46	1.54	1.49
12	1.02	1.06	1.15	1.17	1.28	1.36	1.34	1.42	1.40	1.39	1.44	1.50	1.53	1.39	1.37	1.54	1.51
13	0.68	0.68	0.71	0.75	0.78	0.79	0.87	0.88	0.86	0.83	0.82	0.80	0.77	0.74	0.75	0.75	0.75
14	0.21	0.23	0.28	0.30	0.29	0.33	0.35	0.35	0.35	0.38	0.36	0.37	0.37	0.34	0.30	0.32	0.31
15	0.68	0.70	0.73	0.83	0.86	0.92	0.95	1.00	1.03	1.01	1.01	1.06	1.17	1.06	0.89	1.00	0.95
16	0.84	0.87	0.91	0.96	1.15	1.15	1.20	1.23	1.28	1.19	1.17	1.18	1.11	1.04	1.07	1.00	1.00
17	0.97	1.02	1.02	1.06	1.14	1.22	1.26	1.32	1.35	1.42	1.40	1.49	1.54	1.52	1.42	1.31	1.20
18	0.36	0.38	0.38	0.41	0.42	0.43	0.45	0.46	0.45	0.44	0.47	0.42	0.39	0.35	0.39	0.40	0.38
19	0.31	0.34	0.39	0.44	0.48	0.49	0.52	0.58	0.64	0.73	0.79	0.82	0.91	0.88	0.76	0.80	0.89
20	0.25	0.30	0.28	0.30	0.30	0.27	0.28	0.25	0.25	0.23	0.23	0.22	0.22	0.21	0.21	0.23	0.23

⁶³ The value added generated by the nontraded sector in most countries is approximately twice as big as the value added generated by the corresponding traded sector.

21	0.77	0.84	0.94	1.09	1.22	1.34	1.53	1.66	1.74	1.70	1.70	1.57	1.58	1.51	1.73	1.54	1.60
22	0.62	0.64	0.67	0.70	0.71	0.72	0.74	0.75	0.72	0.73	0.70	0.70	0.70	0.67	0.66	0.69	0.70
23	0.92	0.94	0.95	0.95	0.93	0.96	0.93	0.94	0.95	0.93	0.91	0.89	0.92	0.82	0.83	0.86	0.88
24	0.79	0.80	0.78	0.60	0.75	0.81	0.79	0.82	0.77	0.73	0.69	0.71	0.78	0.71	0.67	0.73	0.74
25	0.25	0.28	0.28	0.27	0.26	0.30	0.32	0.35	0.36	0.40	0.46	0.48	0.49	0.50	0.43	0.42	0.40
26	0.16	0.16	0.17	0.14	0.17	0.21	0.24	0.28	0.27	0.28	0.27	0.26	0.28	0.27	0.25	0.25	0.28
27	0.44	0.48	0.49	0.49	0.51	0.55	0.56	0.62	0.59	0.58	0.57	0.63	0.68	0.66	0.57	0.64	0.69
28	0.58	0.58	0.55	0.56	0.53	0.61	0.56	0.55	0.53	0.47	0.49	0.48	0.47	0.58	0.51	0.52	0.49
29	1.12	1.16	1.18	1.25	1.28	1.33	1.43	1.47	1.50	1.48	1.48	1.55	1.54	1.53	1.57	1.51	1.46
30	0.17	0.19	0.20	0.21	0.21	0.24	0.29	0.29	0.32	0.34	0.34	0.40	0.44	0.45	0.49	0.45	0.44
31	0.40	0.43	0.47	0.46	0.47	0.48	0.51	0.55	0.50	0.50	0.48	0.48	0.46	0.44	0.40	0.42	0.41
32	0.10	0.11	0.15	0.13	0.15	0.16	0.19	0.22	0.22	0.27	0.23	0.23	0.23	0.23	0.24	0.24	0.25
33	0.13	0.13	0.12	0.14	0.19	0.21	0.23	0.27	0.30	0.37	0.39	0.43	0.45	0.47	0.47	0.50	0.56
34	0.23	0.23	0.23	0.26	0.28	0.24	0.27	0.30	0.33	0.37	0.39	0.43	0.47	0.49	0.42	0.44	0.43
35	0.25	0.29	0.33	0.35	0.36	0.40	0.43	0.48	0.50	0.48	0.47	0.50	0.54	0.49	0.50	0.53	0.55
36	1.16	1.19	1.24	1.32	1.34	1.35	1.35	1.43	1.50	1.58	1.59	1.69	1.67	1.54	1.40	1.58	1.60
37	0.24	0.25	0.28	0.29	0.30	0.34	0.36	0.44	0.42	0.39	0.39	0.35	0.35	0.35	0.36	0.35	0.34
38	0.41	0.42	0.41	0.42	0.45	0.42	0.40	0.40	0.41	0.43	0.44	0.46	0.49	0.49	0.45	0.46	0.41
Γ_m	1.16	1.19	1.24	1.32	1.34	1.36	1.53	1.66	1.74	1.74	1.74	1.74	1.74	1.74	1.74	1.74	1.74
Γ_t	0.41	0.43	0.44	0.45	0.47	0.48	0.49	0.50	0.50	0.50	0.49	0.50	0.52	0.50	0.49	0.50	0.50

The row that has $k=1$ gives the productivity levels of the traded (or market goods) sector of the US over the 17 years 1995-2011. Note that the US productivity level in 1995 is set equal to 1 and the productivity levels of other countries in other years are in theory comparable to this level. Country 5 (Bulgaria) had the lowest level of productivity in 1996 (equal to 10% of the US level in 1995) and country 21 (Ireland) in 2003 had the highest level (equal to 1.74 times the 1995 US level). The last row in the above Table lists the *world productivity level* Γ_t defined by (27) in the main text. It can be seen that this level increases from 41% of the US level in 1995 to 50% of the US level in 2002, increases to 52% in 2007 and then falls back to 50% in 2011. Thus there is a substantial 22% increase in world productivity in the traded sector over the sample period but not much of an increase since 2002. The penultimate row in the above Table is $\Gamma_m \equiv \Gamma_{t,\max}$ which is the *maximum possible productivity level* that has been attained by any country up to and including year t ; see (28) in the main text. It can be seen that the maximum productivity level increased substantially from 1.16 in 1995 to 1.74 in 2003 (a 50% increase) and then remained constant over the years 2003-2011. The countries that determined the productivity frontier changed over time. Country 36 (Sweden) was on the production frontier for the years 1995-1999, country 12 (Denmark for 2000 and Ireland for 2001-2003). For the years 2004-2011, no country attained Ireland's 2003 level so the frontier remained constant for those years. Viewing the above results, we see that the news is good in that the "world" average level of productivity in the traded sector increased about 22% over the sample period but the news is not so good in that the productivity frontier increased 50% over the sample period so that on average, countries failed to keep up to the expanding production possibilities set for the traded sector.

Again, it is useful to summarize the results in the above table by computing geometric rates of productivity growth. Thus define the *country k growth factor* for the traded sector over the entire sample period as $G_{TK\ 95-11} \equiv (\Gamma_k\ 2011/\Gamma_k\ 1995)^{1/16}$. Define the corresponding *growth factors* over the years 1995-2007 and 2007-2011 as $G_{TK\ 95-07} \equiv (\Gamma_k\ 2007/\Gamma_k\ 1995)^{1/12}$ and $G_{TK\ 07-11} \equiv (\Gamma_k\ 2011/\Gamma_k\ 2007)^{1/4}$ respectively. These growth factors for the 38 countries are listed in the Traded Sector columns of Table B2 above. To get the corresponding *geometric productivity growth rates* over the various sample periods, subtract 1 from the

growth factors. Thus the average rate of productivity growth for the US traded sector was 2.69% per year for the period 1995-2011, 3.37% per year for the period 1995-2007 and 0.67% per year for the years 2007-2011. Countries which had productivity growth rates for the traded sector over the entire sample period that exceeded 3% per year are: 2 (Australia, 3.88%), 8 (China, 6.68%), 10 (Czech Republic, 5.76%), 19 (Hungary, 6.75%), 21 (Ireland, 4.70%), 26 (Latvia, 3.57%), 30 (Poland, 6.01%), 32 (Romania, 5.84%), 33 (Russia, 9.69%), 34 (Slovakia, 4.09%) and 35 (Slovenia, 4.96%). Countries which had negative productivity growth rates over the entire sample period were: 4 (Belgium), 6 (Brazil), 20 (India), 23 (Japan), 24 (Korea) and 28 (Malta).

Define the *growth factor* $G_{T_{\max} 95-11}$ for the *maximum level of productivity* for the traded sector over the sample period as $G_{T_{\max} 95-11} \equiv (\Gamma_{2011,\max}/\Gamma_{1995,\max})^{1/16}$. Define the corresponding *growth factors* over the years 1995-2007 and 2007-2011 as $G_{T_{\max} 95-07} \equiv (\Gamma_{2007,\max}/\Gamma_{1995,\max})^{1/12}$ and $G_{T_{\max} 07-11} \equiv (\Gamma_{2011,\max}/\Gamma_{2007,\max})^{1/4}$ respectively. These growth factors are listed in the second row from the bottom of the Traded Sector columns of Table B2. Finally, define the *growth factor* $G_T 95-11$ for the *world average level of productivity* over the sample period as $G_T 95-11 \equiv (\Gamma_{2011}/\Gamma_{1995})^{1/16}$ where Γ_t is the world level of productivity for the traded sector in year t listed in the last row of Table B4. Define the corresponding *world average growth factors* over the years 1995-2007 and 2007-2011 as $G_T 95-07 \equiv (\Gamma_{2007}/\Gamma_{1995})^{1/12}$ and $G_T 07-11 \equiv (\Gamma_{2011}/\Gamma_{2007})^{1/4}$ respectively. These growth factors are listed in the last row of Table B2 in the Traded Sector columns.

The maximum possible level of productivity for the Traded sector grew at the geometric rate of 2.58% per year over the entire sample period, 3.46% per year over the years 1995-2007 and at 0.0% per year over 2007-2011. The corresponding world average productivity growth rate for the traded sector over the entire sample period was 1.33% per year and over the two subperiods was 2.09% per year and -0.92% per year respectively. Thus as was the case for the nontraded sector, the productivity frontier grew much faster than world average performance. But recall that the production frontier for the nontraded sector expanded outward at a much higher rate in the aftermath of the great recession than it did in the earlier 1995-2007 period, whereas the production frontier for the traded sector did not expand at all after the global financial crisis.

Recall that the *relative efficiency of production unit k in year t* was defined by equation (29) as $E_{kt} \equiv \Gamma_{kt}/\Gamma_{t,\max}$. These relative efficiencies for the traded sector of the 38 countries are listed in Table B6 below. The average levels of efficiency $E_t \equiv \Gamma_t/\Gamma_{t,\max}$ for the traded sector are listed in the last row of Table B6. The Γ_{kt} , $\Gamma_{t,\max}$ and Γ_t for the traded sector are listed in Table B5 above.

Table B6: Traded Sector Efficiency Levels E_{kt} for 38 Countries and World Efficiency at Year t E_t

k	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11
1	0.86	0.88	0.89	0.86	0.88	0.87	0.78	0.77	0.77	0.80	0.81	0.83	0.86	0.80	0.83	0.87	0.88
2	0.66	0.64	0.64	0.63	0.64	0.68	0.63	0.60	0.60	0.59	0.62	0.65	0.72	0.70	0.69	0.78	0.80
3	0.59	0.59	0.59	0.58	0.60	0.63	0.57	0.55	0.52	0.51	0.53	0.57	0.62	0.58	0.56	0.57	0.55
4	0.97	0.96	0.95	0.91	0.89	0.90	0.82	0.80	0.76	0.74	0.68	0.68	0.66	0.63	0.70	0.66	0.65
5	0.11	0.08	0.14	0.11	0.12	0.13	0.12	0.12	0.13	0.13	0.12	0.14	0.13	0.14	0.12	0.11	0.11

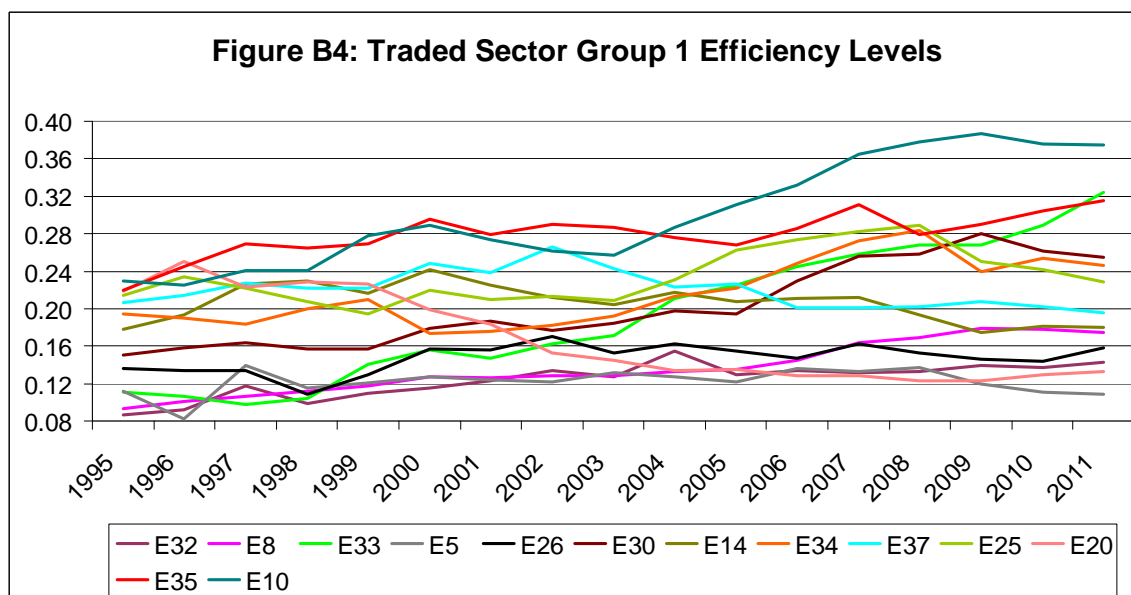
6	0.25	0.24	0.22	0.21	0.21	0.20	0.18	0.17	0.15	0.15	0.14	0.14	0.14	0.13	0.13	0.14	0.16
7	0.66	0.65	0.62	0.59	0.60	0.66	0.57	0.53	0.53	0.53	0.54	0.57	0.62	0.63	0.65	0.57	0.58
8	0.09	0.10	0.11	0.11	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.15	0.16	0.17	0.18	0.18	0.17
9	0.28	0.28	0.28	0.27	0.28	0.30	0.25	0.24	0.23	0.21	0.22	0.20	0.20	0.20	0.19	0.19	0.19
10	0.23	0.23	0.24	0.24	0.28	0.29	0.27	0.26	0.26	0.29	0.31	0.33	0.36	0.38	0.39	0.38	0.38
11	0.94	0.94	0.93	0.91	0.92	0.93	0.85	0.80	0.77	0.78	0.80	0.88	0.92	0.90	0.84	0.88	0.85
12	0.88	0.89	0.92	0.89	0.95	1.00	0.88	0.86	0.80	0.80	0.83	0.86	0.88	0.80	0.79	0.89	0.87
13	0.58	0.58	0.58	0.57	0.58	0.58	0.57	0.53	0.49	0.47	0.47	0.46	0.44	0.43	0.43	0.43	0.43
14	0.18	0.19	0.23	0.23	0.22	0.24	0.23	0.21	0.20	0.22	0.21	0.21	0.21	0.19	0.17	0.18	0.18
15	0.59	0.59	0.59	0.63	0.64	0.68	0.62	0.60	0.59	0.58	0.58	0.61	0.67	0.61	0.51	0.57	0.55
16	0.73	0.73	0.73	0.73	0.86	0.85	0.79	0.74	0.73	0.68	0.67	0.68	0.64	0.60	0.61	0.57	0.58
17	0.84	0.86	0.82	0.80	0.85	0.90	0.82	0.80	0.78	0.81	0.81	0.86	0.89	0.88	0.82	0.75	0.69
18	0.31	0.32	0.30	0.31	0.31	0.32	0.29	0.28	0.26	0.26	0.27	0.24	0.22	0.20	0.22	0.23	0.22
19	0.27	0.29	0.31	0.33	0.36	0.36	0.34	0.35	0.37	0.42	0.45	0.47	0.52	0.50	0.44	0.46	0.51
20	0.22	0.25	0.22	0.23	0.23	0.20	0.18	0.15	0.14	0.13	0.13	0.13	0.13	0.12	0.12	0.13	0.13
21	0.66	0.70	0.76	0.82	0.91	0.99	1.00	1.00	1.00	0.98	0.98	0.90	0.91	0.87	0.99	0.88	0.92
22	0.53	0.54	0.54	0.53	0.53	0.53	0.48	0.45	0.42	0.42	0.40	0.40	0.40	0.39	0.38	0.40	0.40
23	0.80	0.79	0.76	0.72	0.69	0.71	0.61	0.57	0.54	0.54	0.53	0.51	0.53	0.47	0.48	0.50	0.51
24	0.68	0.67	0.63	0.46	0.56	0.59	0.51	0.49	0.44	0.42	0.40	0.41	0.45	0.41	0.39	0.42	0.43
25	0.21	0.23	0.22	0.21	0.19	0.22	0.21	0.21	0.21	0.23	0.26	0.27	0.28	0.29	0.25	0.24	0.23
26	0.14	0.13	0.13	0.11	0.13	0.16	0.16	0.17	0.15	0.16	0.15	0.15	0.16	0.15	0.15	0.14	0.16
27	0.38	0.41	0.39	0.37	0.38	0.40	0.37	0.37	0.34	0.33	0.33	0.36	0.39	0.38	0.33	0.37	0.40
28	0.50	0.49	0.44	0.43	0.39	0.45	0.37	0.33	0.30	0.27	0.28	0.28	0.27	0.33	0.29	0.30	0.28
29	0.97	0.97	0.95	0.94	0.95	0.98	0.93	0.88	0.86	0.85	0.85	0.89	0.89	0.88	0.90	0.87	0.84
30	0.15	0.16	0.16	0.16	0.16	0.18	0.19	0.18	0.18	0.20	0.19	0.23	0.26	0.26	0.28	0.26	0.25
31	0.35	0.36	0.38	0.35	0.35	0.36	0.33	0.33	0.29	0.29	0.27	0.27	0.26	0.25	0.23	0.24	0.24
32	0.09	0.09	0.12	0.10	0.11	0.12	0.12	0.13	0.13	0.15	0.13	0.13	0.13	0.13	0.14	0.14	0.14
33	0.11	0.11	0.10	0.10	0.14	0.16	0.15	0.16	0.17	0.21	0.23	0.24	0.26	0.27	0.27	0.29	0.32
34	0.19	0.19	0.18	0.20	0.21	0.17	0.18	0.18	0.19	0.21	0.22	0.25	0.27	0.28	0.24	0.25	0.25
35	0.22	0.24	0.27	0.26	0.27	0.30	0.28	0.29	0.29	0.28	0.27	0.29	0.31	0.28	0.29	0.30	0.32
36	1.00	1.00	1.00	1.00	1.00	0.99	0.88	0.86	0.86	0.91	0.92	0.97	0.96	0.89	0.80	0.91	0.92
37	0.21	0.21	0.23	0.22	0.22	0.25	0.24	0.27	0.24	0.22	0.23	0.20	0.20	0.20	0.21	0.20	0.20
38	0.36	0.35	0.33	0.32	0.33	0.31	0.26	0.24	0.23	0.25	0.25	0.26	0.28	0.28	0.26	0.26	0.24
E	0.35	0.36	0.35	0.34	0.35	0.35	0.32	0.30	0.29	0.29	0.28	0.29	0.30	0.29	0.28	0.29	0.29

The world average efficiency for the traded sector E_t started at a 35% level (compared to the maximum possible efficiency at time t) in 1995 and declined to 29% in 2003 and essentially stayed at this level until the end of the sample period. Sweden was on the efficiency frontier for the years 1995-1999, Denmark for 2000, Ireland for the years 2001-2003 and then every country fell below the efficiency frontier for the years 2004-2011. Recall that world efficiency E_t for the nontraded sector declined fairly steadily from 0.61 in 1995 to 0.55 in 2011. Thus for both sectors, on average, countries moved away from the efficiency frontier.

In order to illustrate the lack of convergence towards the productivity frontier for the traded sectors, we again divided up the 38 countries into 3 groups. Group 1 consisted of the 13 countries that had the lowest traded sector efficiency levels in 1995, Group 2 consisted of the 12 countries that had intermediate efficiency levels in 1995 and Group 3 consisted of the 13 countries that had the highest efficiency levels in 1995.

The Group 1 countries were as follows:⁶⁴ 32 (Romania), 8 (China), 33 (Russia), 5 (Bulgaria), 26 (Latvia), 30 (Poland), 14 (Estonia), 34 (Slovakia), 37 (Turkey), 25 (Lithuania), 20 (India), 35 (Slovenia) and 10 (Czech Republic). The efficiency levels for these 13 countries are charted in Figure B4 below.

⁶⁴ The lowest efficiency country is listed first, the next lowest second and so on.



From Figure 1B, it can be seen that there was a general tendency for the low efficiency countries to improve their efficiency until 2005-2006 when efficiency levels for most countries levelled out. However, the majority of low efficiency countries increased their efficiency scores over the entire sample period.⁶⁵ The best performing country in this group was the Czech Republic, whose efficiency level rose from 23.0% in 1995 to 37.5% in 2011. Note that the efficiency of China was flat from 1995-2002 and then increased sharply until 2009 and then fell off a bit in the last two years. In general, it appears that the global financial crisis led to large decreases in the efficiency levels of the group of countries that had low levels of productivity in 1995.

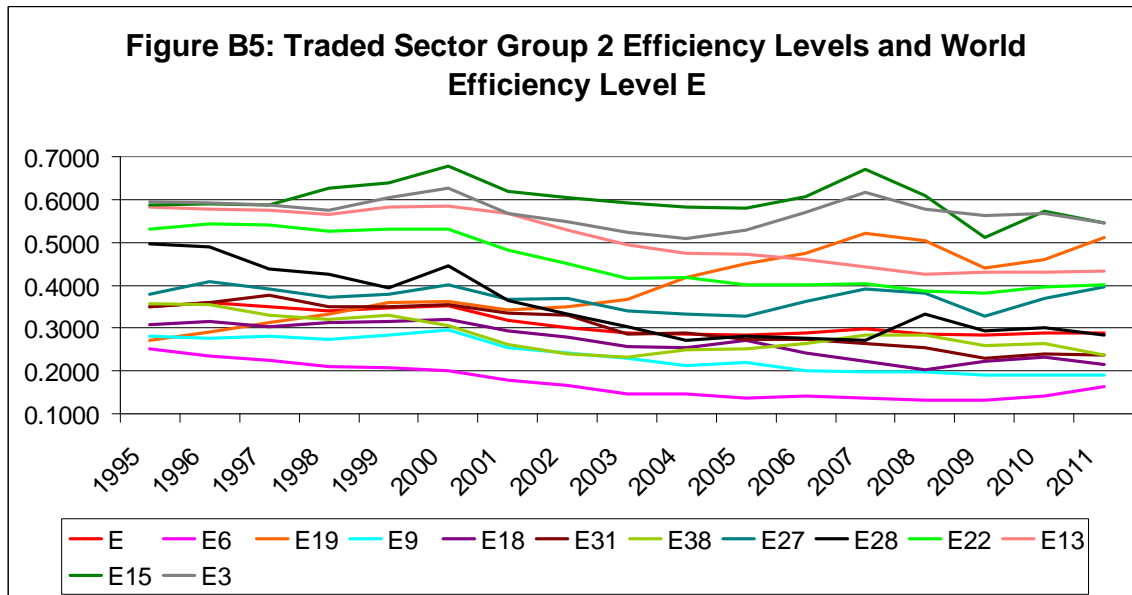
The Group 2 countries (medium levels of efficiency in 1995) were as follows: 6 (Brazil), 19 (Hungary), 9 (Cyprus), 18 (Greece), 31 (Portugal), 38 (Taiwan), 27 (Mexico), 28 (Malta), 22 (Italy), 13 (Spain), 15 (Finland), 3 (Austria). The efficiency levels for these 12 countries is charted in Figure B5 below along with the world average efficiency levels E_t .

The general tendency for the countries that had intermediate levels of efficiency in 1995 was to move away from the efficiency frontier.⁶⁶ Weighted world efficiency for all countries, E_t , fell from 35.0% in 1995 to 28.8% in 2003 and then remained essentially constant for the remainder of the sample period. The efficiency decline for country 6 (Brazil) was substantial: efficiency fell from 25.1% in 1995 to 13.2% in 2009 and then recovered somewhat to finish at 16.4% in 2011. Other countries that had major efficiency declines were 9, 18, 31, 38 and 28 (Cyprus, Greece, Portugal, Taiwan and Malta). On the other hand, country 19 (Hungary) had a great improvement in efficiency from 27.1% in

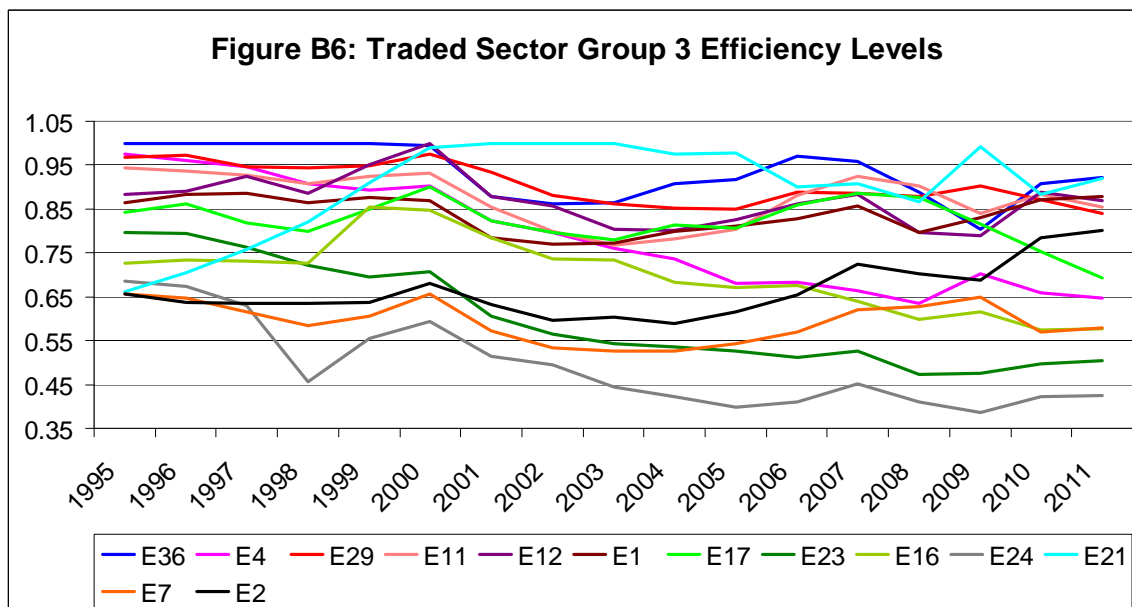
⁶⁵ The arithmetic average of the Group 1 efficiency levels started at 16.5% in 1995, increased to 22.1% in 2007 and then decreased slightly to finish up at 21.8% in 2011. See Table B7 below.

⁶⁶ The arithmetic average of the Group 2 efficiency levels started at 41.6% in 1995, increased marginally to 42.5% in 2000 and then decreased substantially to finish up at 34.7% in 2011.

1995 to 52.2% in 2007 but then efficiency fell to 44.0% in 2009 before recovering to finish at 51.2% in 2011.



The Group 3 countries (high levels of efficiency in 1995) were as follows: 36 (Sweden), 4 (Belgium), 29 (Netherlands), 11 (Germany), 12 (Denmark), 1 (US), 17 (UK), 23 (Japan), 16 (France), 24 (Korea), 21 (Ireland), 7 (Canada) and 2 (Australia). The efficiency levels for these 12 countries are charted in Figure B6 below.



From Figure B6, it can be seen that in general, countries that had the highest efficiency levels in 1995 experienced a substantial fall in their levels over the sample period.⁶⁷ Korea (24) dropped from 68.5% to 42.6%, Japan (23) dropped from 79.7% to 50.6% and Belgium (4) dropped from 97.5% to 64.5% over the sample period. The two countries with the biggest percentage increases in their efficiency levels over the sample period were Ireland (4) where efficiency increased from 66.2% to 91.9% and Australia (2) where efficiency increased from 65.6% to 80.2% over the sample period.

The time series of world efficiency levels E_t (which is a weighted average of the 38 country levels of efficiency for year t) can be compared with the simple arithmetic average of the country levels of efficiency for year t , $E_{Ave,t}$ in Table B7 below. As was noted in the main text, since the efficiency levels for China are relatively low and since China has a relatively large weight, the weighted world efficiency levels for the traded sector (the E_t) are considerably below their equally weighted counterparts, the $E_{Ave,t}$. However, the declining pattern of world efficiency levels shows up in both series. Table B7 also lists the arithmetic averages of the efficiency levels of the low, medium and high efficiency countries discussed above.

Table B7: Traded Sector Efficiencies E_t , Average Efficiencies E_{Ave} and Low, Medium and High Subgroup Efficiencies

Year t	E_t	$E_{Ave,t}$	$E_{Low,t}$	$E_{Med,t}$	$E_{High,t}$
1995	0.3504	0.4683	0.1653	0.4158	0.8198
1996	0.3591	0.4724	0.1712	0.4192	0.8227
1997	0.3503	0.4706	0.1808	0.4122	0.8143
1998	0.3404	0.4587	0.1760	0.4077	0.7883
1999	0.3484	0.4756	0.1841	0.4147	0.8233
2000	0.3513	0.4916	0.1945	0.4254	0.8498
2001	0.3183	0.4517	0.1882	0.3863	0.7756
2002	0.3008	0.4369	0.1900	0.3703	0.7453
2003	0.2880	0.4232	0.1870	0.3493	0.7276
2004	0.2871	0.4249	0.1974	0.3466	0.7248
2005	0.2828	0.4266	0.1994	0.3496	0.7250
2006	0.2878	0.4391	0.2090	0.3561	0.7457
2007	0.2986	0.4534	0.2214	0.3683	0.7639
2008	0.2865	0.4371	0.2203	0.3576	0.7272
2009	0.2840	0.4283	0.2156	0.3319	0.7300
2010	0.2878	0.4353	0.2161	0.3475	0.7355
2011	0.2877	0.4344	0.2180	0.3468	0.7317

Results for the Market Sector

The data for the market sectors for each economy has already been described above. In order to construct output and input aggregates, we aggregated over the value aggregates for the nontraded and traded sectors using the same algebra as was explained in section 2

⁶⁷ The arithmetic average of the Group 3 efficiency levels started at 82.0% in 1995, increased to 85.0% in 2000 and then decreased substantially to 72.5% in 2004, increased to 76.4% in 2007 and then decreased to finish up at 73.2% in 2011. See Table B7.

of the main text. Thus we aggregated over the 4 value aggregates, $v_{kt1}-v_{kt4}$ to form the country output aggregates and over the 8 value aggregates, $V_{kt1}-V_{kt8}$ to form the country input aggregates. Denote the market sector real value added output aggregates for country k and year t by Y_{kt} and the corresponding real input aggregates by X_{kt} . The comparable across time and space productivity level for country k in year t for the market sector is $\Gamma_{kt} = Y_{kt}/X_{kt}$. These productivity levels are listed in the first 38 rows of Table B5 below.

Table B8: Market Sector Productivity Levels Γ_{kt} for 38 Countries, World Productivity at Year t Γ_t and Maximum Possible Productivity Level at Year t , $\Gamma_{t,max}$

k	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11
1	1.00	1.04	1.06	1.07	1.08	1.08	1.08	1.11	1.13	1.15	1.15	1.18	1.20	1.18	1.20	1.27	1.31
2	0.71	0.73	0.72	0.70	0.72	0.76	0.76	0.76	0.78	0.76	0.76	0.79	0.83	0.81	0.78	0.82	0.82
3	0.66	0.66	0.68	0.69	0.71	0.73	0.73	0.76	0.76	0.73	0.74	0.77	0.80	0.78	0.76	0.81	0.82
4	0.90	0.89	0.91	0.93	0.94	0.92	0.93	0.95	0.95	0.93	0.85	0.88	0.88	0.86	0.86	0.83	0.83
5	0.27	0.24	0.27	0.28	0.31	0.34	0.37	0.38	0.41	0.43	0.42	0.41	0.42	0.41	0.38	0.36	0.36
6	0.41	0.41	0.41	0.40	0.40	0.38	0.36	0.36	0.34	0.34	0.33	0.34	0.33	0.34	0.34	0.37	0.38
7	0.73	0.72	0.72	0.70	0.70	0.74	0.73	0.73	0.71	0.70	0.70	0.69	0.69	0.68	0.71	0.70	0.69
8	0.18	0.19	0.20	0.21	0.22	0.24	0.25	0.26	0.27	0.29	0.32	0.34	0.37	0.38	0.41	0.41	0.40
9	0.37	0.38	0.40	0.42	0.44	0.45	0.44	0.45	0.46	0.47	0.47	0.47	0.47	0.48	0.47	0.46	0.48
10	0.32	0.34	0.35	0.38	0.40	0.41	0.46	0.47	0.48	0.50	0.53	0.54	0.57	0.56	0.53	0.55	0.57
11	0.84	0.85	0.86	0.87	0.89	0.90	0.91	0.91	0.90	0.89	0.89	0.94	0.98	0.96	0.94	0.98	1.00
12	0.75	0.79	0.80	0.79	0.84	0.86	0.83	0.85	0.83	0.82	0.84	0.87	0.91	0.87	0.84	0.92	0.92
13	0.66	0.66	0.68	0.69	0.71	0.72	0.76	0.76	0.74	0.73	0.72	0.68	0.65	0.65	0.65	0.68	0.72
14	0.27	0.31	0.35	0.36	0.36	0.40	0.44	0.45	0.47	0.50	0.49	0.48	0.48	0.44	0.39	0.39	0.39
15	0.58	0.60	0.62	0.66	0.67	0.71	0.71	0.72	0.72	0.72	0.71	0.74	0.80	0.76	0.67	0.74	0.76
16	0.85	0.86	0.89	0.92	0.95	0.97	0.96	0.96	0.98	0.91	0.88	0.87	0.86	0.84	0.83	0.84	0.88
17	0.83	0.86	0.87	0.88	0.91	0.93	0.95	0.99	1.01	1.04	1.03	1.07	1.11	1.09	1.04	1.01	1.01
18	0.44	0.46	0.48	0.49	0.51	0.54	0.58	0.58	0.58	0.59	0.60	0.57	0.56	0.53	0.50	0.49	0.45
19	0.32	0.34	0.36	0.39	0.44	0.46	0.49	0.54	0.55	0.59	0.61	0.66	0.65	0.61	0.55	0.61	0.67
20	0.39	0.41	0.40	0.41	0.42	0.40	0.40	0.39	0.39	0.39	0.40	0.41	0.42	0.42	0.43	0.45	0.45
21	0.63	0.69	0.77	0.84	0.90	0.95	1.01	1.06	1.10	1.09	1.10	1.02	0.98	0.94	0.98	0.99	1.04
22	0.45	0.46	0.47	0.48	0.49	0.50	0.50	0.50	0.49	0.49	0.48	0.47	0.47	0.46	0.46	0.50	0.51
23	0.67	0.67	0.66	0.64	0.63	0.62	0.60	0.59	0.57	0.56	0.54	0.53	0.53	0.49	0.49	0.53	0.53
24	0.54	0.54	0.53	0.45	0.50	0.53	0.51	0.52	0.50	0.47	0.45	0.44	0.46	0.43	0.40	0.43	0.43
25	0.37	0.35	0.37	0.37	0.38	0.42	0.43	0.48	0.51	0.54	0.59	0.58	0.59	0.57	0.49	0.47	0.46
26	0.25	0.26	0.30	0.28	0.29	0.30	0.33	0.40	0.43	0.43	0.47	0.47	0.50	0.45	0.40	0.37	0.42
27	0.51	0.53	0.54	0.53	0.54	0.58	0.59	0.63	0.61	0.61	0.60	0.63	0.66	0.65	0.57	0.63	0.67
28	0.64	0.63	0.61	0.59	0.59	0.60	0.64	0.61	0.57	0.56	0.60	0.57	0.56	0.60	0.57	0.56	0.54
29	0.82	0.84	0.87	0.89	0.91	0.97	1.01	1.03	1.03	1.04	1.04	1.06	1.07	1.06	1.04	1.06	1.07
30	0.30	0.31	0.33	0.35	0.36	0.41	0.43	0.44	0.47	0.50	0.51	0.55	0.59	0.59	0.61	0.62	0.64
31	0.48	0.48	0.51	0.54	0.54	0.56	0.57	0.54	0.49	0.54	0.54	0.52	0.50	0.47	0.45	0.46	0.45
32	0.26	0.26	0.30	0.28	0.30	0.31	0.32	0.37	0.37	0.42	0.40	0.43	0.45	0.45	0.42	0.39	0.39
33	0.28	0.28	0.24	0.27	0.31	0.33	0.36	0.41	0.45	0.48	0.51	0.54	0.57	0.59	0.57	0.62	0.67
34	0.34	0.33	0.35	0.38	0.39	0.39	0.41	0.47	0.48	0.50	0.50	0.52	0.52	0.51	0.48	0.51	0.52
35	0.38	0.41	0.43	0.44	0.46	0.48	0.50	0.53	0.54	0.53	0.52	0.54	0.58	0.54	0.55	0.56	0.57
36	0.79	0.80	0.83	0.85	0.85	0.86	0.85	0.87	0.89	0.93	0.94	0.96	0.96	0.92	0.87	0.94	0.98
37	0.38	0.39	0.41	0.40	0.39	0.41	0.41	0.49	0.49	0.49	0.50	0.47	0.46	0.45	0.47	0.49	0.49
38	0.60	0.62	0.63	0.65	0.68	0.67	0.66	0.68	0.68	0.70	0.71	0.70	0.77	0.77	0.76	0.82	0.80
Γ_m	1.00	1.04	1.06	1.07	1.08	1.08	1.08	1.11	1.13	1.15	1.15	1.18	1.20	1.20	1.20	1.27	1.31
Γ_t	0.51	0.52	0.52	0.53	0.54	0.55	0.55	0.55	0.55	0.55	0.55	0.57	0.58	0.58	0.58	0.59	0.59

The row that has $k=1$ gives the productivity levels of the market sector of the US over the 17 years 1995-2011. Note that the US productivity level in 1995 is set equal to 1 and the productivity levels of other countries in other years are in theory comparable to this level. China (country 8) had the lowest productivity level in 1995 (equal to 0.18) and the US (1) had the highest level over all years and countries in 2011 (equal to 1.31). The last row in the above Table lists the *world productivity level* Γ_t defined by (27) in the main text. It

can be seen that this level increases from 51% of the US level in 1995 to 59% of the US level in 2012. Thus there is a substantial 16% increase in world productivity in the market sector over the sample period but not much of an increase since 2007. The penultimate row in the above Table is $\Gamma_m \equiv \Gamma_{t,\max}$ which is the *maximum possible productivity level* that has been attained by any country up to and including year t ; see (28) in the main text. It can be seen that the maximum productivity level increased substantially from 1.00 in 1995 to 1.31 in 2011 (a 31% increase). The US determined the productivity frontier for all years but note that since US productivity fell in 2008 and 2009⁶⁸ below the 2007 level, the US level for 2007 determined the productivity frontier for the years 2007-2009. Viewing the above results, we see that the news is good in that the “world” average level of productivity in the market sector increased about 16% over the sample period but the news is not so good in that the productivity frontier increased by 31% over the sample period so that on average, countries failed to keep up to the expanding production possibilities set for the market sector.

Again, it is useful to summarize the results in the above table by computing geometric rates of productivity growth. Thus define the *country k growth factor* for the market sector over the entire sample period as $G_{Mk\ 95-11} \equiv (\Gamma_{k\ 2011}/\Gamma_{k\ 1995})^{1/16}$. Define the corresponding *growth factors* over the years 1995-2007 and 2007-2011 as $G_{Mk\ 95-07} \equiv (\Gamma_{k\ 2007}/\Gamma_{k\ 1995})^{1/12}$ and $G_{Mk\ 07-11} \equiv (\Gamma_{k\ 2011}/\Gamma_{k\ 2007})^{1/4}$ respectively. These growth factors for the 38 countries are listed in the Market Sector columns of Table B2 above. The average rate of productivity growth for the US market sector was 1.68% per year for the period 1995-2011, 1.55% per year for the period 1995-2007 and 2.05% per year for the years 2007-2011. Countries which had productivity growth rates for the market sector over the entire sample period that exceeded 2.5% per year are: 33 (Russia, 5.73%), 8 (China, 5.06%), 30 (Poland, 4.79%), 10 (Czech Republic, 3.68%), 26 (Latvia, 3.30%), 21 (Ireland, 3.16%), 34 (Slovakia, 2.62%) and 32 (Romania, 5.84%). Countries which had negative market sector productivity growth rates over the entire sample period were: 4 (Belgium), 6 (Brazil), 7 (Canada), 23 (Japan), 24 (Korea), 28 (Malta) and 31 (Portugal).

Define the *growth factor* $G_{Mm\ 95-11}$ for the *maximum level of productivity* for the market sector over the sample period as $G_{Mm\max\ 95-11} \equiv (\Gamma_{2011,\max}/\Gamma_{1995,\max})^{1/16}$. Define the corresponding *growth factors* over the years 1995-2007 and 2007-2011 as $G_{Mm\max\ 95-07} \equiv (\Gamma_{2007,\max}/\Gamma_{1995,\max})^{1/12}$ and $G_{Mm\max\ 07-11} \equiv (\Gamma_{2011,\max}/\Gamma_{2007,\max})^{1/4}$ respectively. These growth factors are listed in the second row from the bottom of the Market Sector columns of Table B2. Finally, define the *growth factor* $G_M\ 95-11$ for the *world average level of productivity* over the sample period as $G_M\ 95-11 \equiv (\Gamma_{2011}/\Gamma_{1995})^{1/16}$ where Γ_t is the world level of productivity for the market sector in year t listed in the last row of Table B8. Define the corresponding *world average growth factors* over the years 1995-2007 and 2007-2011 as $G_M\ 95-07 \equiv (\Gamma_{2007}/\Gamma_{1995})^{1/12}$ and $G_M\ 07-11 \equiv (\Gamma_{2011}/\Gamma_{2007})^{1/4}$ respectively. These growth factors are listed in the last row of Table B2 in the Traded Sector columns.

⁶⁸ The US efficiency levels for 2007-2009 to 4 decimal places were 1.000, 0.9793 and 0.9984. In Table B8, 0.9984 was rounded up to 1.00.

The world average efficiency for the market sector E_t started at a 51% level (compared to the maximum possible efficiency at time t) in 1995 and declined to 46% in 2011. The US was on the efficiency frontier for the market sector as a whole for all years except 2008 and 2009 when the US productivity level for those years fell below the US productivity level for 2007. Thus the US efficiency level fell below 1 for 2008 and 2009.

As usual we divided up the 38 countries according to their efficiency levels in 1995. The 13 low efficiency countries were (lowest first): China, Latvia, Romania, Estonia, Bulgaria, Russia, Poland, Czech Republic, Hungary, Slovakia, Lithuania, Cyprus and Turkey. The 12 medium efficiency countries were (lowest first): Slovenia, India, Brazil, Greece, Italy, Portugal, Mexico, Korea, Finland, Taiwan, Ireland, Malta. The 13 highest efficiency countries were (highest first): USA, Belgium, France, Germany, UK, Netherlands, Sweden, Denmark, Canada, Australia, Japan, Spain and Austria. The arithmetic average of the efficiencies for each of the above groups is listed in Table B10 below. The average efficiency of the low efficiency countries improved from 30% in 1995 to 51% in 2011, a marked improvement. On the other hand, the average efficiency of the medium efficiency countries fell from 50% to 45% over the sample period and the average efficiency of the high efficiency countries fell from 78% to 68%. These results explain why efficiency dispersion fell over the sample period. The overall arithmetic average efficiency $E_{Ave,t}$ fell from 53.0% in 1995 to 50.6% in 2011 whereas the weighted average “world” efficiency E_t fell from 51.0% to 45.6%, a much bigger drop, which is explained by the fact that the share of world input used by lower productivity countries grew over the sample period.

Table B10: Traded Sector Efficiencies E_t , Average Efficiencies E_{Ave} and Low, Medium and High Subgroup Efficiencies

Year t	E_t	$E_{Ave,t}$	$E_{Low,t}$	$E_{Med,t}$	$E_{High,t}$
1995	0.5100	0.5303	0.3006	0.5032	0.7849
1996	0.5022	0.5225	0.2956	0.5012	0.7692
1997	0.4961	0.5274	0.3088	0.5045	0.7673
1998	0.4954	0.5287	0.3143	0.5045	0.7657
1999	0.5037	0.5406	0.3280	0.5181	0.7739
2000	0.5093	0.5565	0.3473	0.5327	0.7878
2001	0.5057	0.5661	0.3653	0.5420	0.7891
2002	0.4974	0.5683	0.3891	0.5332	0.7800
2003	0.4862	0.5606	0.3968	0.5154	0.7661
2004	0.4823	0.5593	0.4126	0.5115	0.7500
2005	0.4828	0.5596	0.4231	0.5099	0.7418
2006	0.4820	0.5528	0.4229	0.4932	0.7376
2007	0.4837	0.5516	0.4242	0.4920	0.7342
2008	0.4781	0.5382	0.4153	0.4794	0.7153
2009	0.4793	0.5224	0.3952	0.4642	0.7034
2010	0.4685	0.5116	0.3795	0.4603	0.6912
2011	0.4558	0.5057	0.3804	0.4504	0.6820

The results of our research indicate that on average, countries did not move closer to the productivity frontier over the period 1995-2011. It appears that there is plenty of scope

for most countries to improve substantially their productivity performances. How this improvement can be achieved is a difficult question.⁶⁹

Appendix C: Value and PPP Data for 38 Countries 1995-2011

Table C1: Non-Traded Sector; Value Data; in Billions of National Currency Units

k = 1; USA; t = 1-17 corresponds to 1995-2011

k	t	V_{kt1}	$-V_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
1	1	6244727	2412785	803854	1359079	169131	1499878
1	2	6728759	2618024	898053	1421061	178302	1613319
1	3	7233030	2804745	990777	1491935	213666	1731907
1	4	7843938	3103502	1094654	1625929	192791	1827062
1	5	8501333	3412242	1204057	1725581	213724	1945729
1	6	9260981	3799609	1395447	1820955	230068	2014902
1	7	9438595	3760666	1476623	1895396	237893	2068017
1	8	9516599	3669922	1486055	1903592	253358	2203672
1	9	9996001	3911237	1509971	1998331	267526	2308936
1	10	10687354	4238593	1654022	2058445	265378	2470916
1	11	11576285	4667720	1760054	2180200	273677	2694634
1	12	12340778	4975350	1919911	2261489	290119	2893909
1	13	12922515	5240285	1981953	2396181	301752	3002344
1	14	13112318	5407119	2026543	2395356	274191	3009109
1	15	12305031	4815602	2055731	2294916	258071	2880711
1	16	12790062	5012676	2126766	2351386	263201	3036033
1	17	13273974	5197539	2220906	2453186	275319	3127024

k = 2; Australia; Non-Traded Sector; Value Data

k	t	V_{kt1}	$-V_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
2	1	537888	300137	26624	60233	70615	80279
2	2	561128	310009	30072	63425	74573	83049
2	3	599299	332326	34222	65603	76742	90406
2	4	651826	366571	39271	69311	80535	96138
2	5	693068	387210	43910	73521	85106	103321
2	6	719054	400079	49764	76962	89034	103215
2	7	763724	420773	53890	80161	92222	116678
2	8	817175	449129	57616	83617	93501	133312
2	9	883003	482327	62923	89542	98190	150021
2	10	946738	518680	68197	100436	103315	156110
2	11	1000502	548285	73853	110705	106455	161204
2	12	1092842	597372	81708	123258	117766	172738
2	13	1191889	651855	89386	136153	129319	185176
2	14	1305510	712849	99000	148963	141132	203566
2	15	1370406	750027	104506	156592	148065	211216
2	16	1444549	789388	111032	164709	155917	223503

⁶⁹ Of course, our estimates of relative productivity performance are far from being definitive. In Appendix A, the reader will have noted many substantial weaknesses in our empirical estimates of values and PPPs. Moreover, our theoretical framework assumes constant returns to scale in production, competitive price taking behavior and production possibilities sets that are freely available across countries. These assumptions are only rough approximations to reality.

2	17	1501660	821093	115706	171386	162171	231304
---	----	---------	--------	--------	--------	--------	--------

k = 3; Austria; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
3	1	140846	60159	7450	35897	7781	29559
3	2	146410	63366	7434	37794	7407	30409
3	3	151772	66637	7915	38512	7453	31255
3	4	159385	70419	8986	39294	7852	32834
3	5	165930	74360	9982	40411	8051	33126
3	6	177397	81115	11033	41548	8306	35395
3	7	186099	86748	11695	42199	8165	37292
3	8	192390	88975	11977	43254	8364	39820
3	9	201351	95728	12017	42290	10835	40481
3	10	211135	101512	16506	42368	7794	42955
3	11	225152	111382	15806	45164	8239	44561
3	12	243136	123048	16583	47220	8744	47541
3	13	258022	130763	18573	48961	8782	50943
3	14	275287	142269	21550	51371	7933	52164
3	15	268083	138474	22386	50712	7627	48884
3	16	278694	143684	23181	51778	7774	52277
3	17	294468	152442	24137	54197	8142	55550

k = 4; Belgium; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
4	1	194733	104387	10936	27312	20022	32076
4	2	202239	110934	11622	28355	19370	31958
4	3	215715	120085	12678	30043	19486	33423
4	4	230339	129831	13585	31475	19444	36004
4	5	245609	140390	14786	33522	20329	36582
4	6	259493	148423	16030	36586	19832	38622
4	7	273636	157537	17636	39322	19959	39182
4	8	277866	157640	18065	41187	20294	40680
4	9	282504	156892	17747	40200	22891	44774
4	10	299754	166660	20761	43473	19071	49789
4	11	320472	181303	21374	46649	17893	53253
4	12	340983	193899	23894	48467	18487	56236
4	13	361651	205308	25077	52750	18882	59634
4	14	383076	220244	29139	54791	19029	59873
4	15	369460	209846	30383	54345	18077	56809
4	16	392818	226119	31029	55254	18398	62018
4	17	414335	241061	32736	57783	19238	63517

k = 5; Bulgaria; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
5	1	646	338	17	26	96	169
5	2	1348	694	30	48	168	408
5	3	10871	6115	260	433	1580	2483
5	4	15076	8056	379	641	2358	3642
5	5	17272	9389	407	760	2477	4239
5	6	20562	11306	391	808	2508	5549
5	7	23898	13094	500	1058	2937	6309

5	8	26111	14381	586	1107	3160	6877
5	9	28358	16075	567	951	3860	6905
5	10	33440	19683	935	1408	3523	7891
5	11	40111	24099	1127	1644	3845	9396
5	12	47637	29372	1336	1882	4246	10801
5	13	55351	34171	1890	2107	5151	12032
5	14	64720	39981	2525	2582	5907	13725
5	15	67105	41482	2838	3182	6270	13333
5	16	69256	42812	2894	3318	6751	13481
	17	73925	45698	2960	3429	7224	14614

k = 6; Brazil; Non-Traded Sector; Value Data

k	t	V_{kt1}	$-V_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
6	1	478591	188339	41649	44302	47987	156314
6	2	560423	222492	50179	52595	56034	179123
6	3	628648	251922	53411	55335	58103	209877
6	4	675045	275935	57992	58453	59777	222888
6	5	728032	304170	61770	60741	60792	240559
6	6	820492	353488	69114	69593	68871	259426
6	7	902208	391460	76764	77320	74436	282228
6	8	1020414	438696	85369	86353	80830	329166
6	9	1152030	493266	95636	97147	87335	378646
6	10	1289879	540769	107875	108942	95383	436910
6	11	1459602	598763	122741	126070	106338	505690
6	12	1623084	664501	144113	148404	118075	547991
6	13	1841861	744101	210561	212867	163064	511268
6	14	2090203	868781	238904	243546	180103	558869
6	15	2291102	948028	267140	274344	197142	604448
6	16	2618299	1085996	302576	312530	227801	689396
6	17	2870099	1189786	331218	344206	251992	752897

k = 7; Canada; Non-Traded Sector; Value Data

k	t	V_{kt1}	$-V_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
7	1	560213	234062	40442	164300	7513	113896
7	2	594983	254960	44593	168359	7127	119944
7	3	650896	280817	51264	181857	7445	129513
7	4	689070	297841	57826	191711	7246	134446
7	5	745134	330411	62732	204051	7258	140682
7	6	817500	368917	70450	222168	7201	148764
7	7	868282	390632	78449	229739	6822	162640
7	8	905887	404170	82788	237860	7239	173830
7	9	953647	424060	86554	247711	6935	188387
7	10	1021834	457046	94544	261475	7313	201456
7	11	1091526	485282	103090	276919	6648	219587
7	12	1174890	520086	113835	296764	7694	236511
7	13	1234130	544529	121878	310046	7562	250115
7	14	1301805	574389	128232	330400	7722	261062
7	15	1238747	546566	127989	314723	6883	242586
7	16	1288231	566299	133530	327543	7123	253736
7	17	1365713	601153	140999	347176	7571	268814

k = 8; China; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
8	1	4466021	2513286	56272	499089	389854	1007520
8	2	5198657	2924026	71084	593295	440029	1170223
8	3	5861597	3278048	88495	683392	471187	1340475
8	4	6573736	3703326	104623	751827	490017	1523943
8	5	7225389	4082110	121965	813444	496200	1711670
8	6	8110279	4589181	145088	900935	515113	1959962
8	7	9145241	5178916	174202	1000550	534199	2257374
8	8	10224545	5803387	205030	1096515	549329	2570284
8	9	11665904	6704744	262832	1145851	566061	2986416
8	10	13928405	8102399	290550	1219939	672833	3642684
8	11	16454683	9704944	369689	1315824	713409	4350817
8	12	19068904	11269182	462689	1414052	752876	5170105
8	13	23995950	14175575	555524	1609102	931892	6723857
8	14	28787133	17005390	715993	1887857	1116209	8061684
8	15	32252510	19109231	800008	2119479	1264458	8959334
8	16	38115738	22591675	938722	2504161	1491839	10589341
8	17	45123026	26802006	1102236	2957077	1774146	12487561

k = 9; Cyprus; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
9	1	5620	2033	845	664	500	1578
9	2	5929	2172	894	705	506	1652
9	3	6370	2375	885	772	579	1759
9	4	6933	2552	850	838	655	2038
9	5	7588	2807	881	936	685	2279
9	6	8422	3203	959	1053	701	2506
9	7	9170	3537	1102	1163	740	2628
9	8	9305	3675	1217	1252	756	2405
9	9	9647	3876	1200	1252	990	2329
9	10	10459	4156	1416	1419	923	2545
9	11	11305	4606	1485	1591	924	2699
9	12	12468	5209	1625	1659	897	3078
9	13	14155	6075	1790	1857	868	3565
9	14	15792	7135	1980	1948	919	3810
9	15	15207	6751	1959	1874	980	3643
9	16	15640	6944	2073	1998	1061	3564
9	17	16026	7115	2080	2028	1092	3711

k = 10; Czech Republic; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
10	1	1603524	962686	52155	193079	11653	383951
10	2	1835921	1094264	78550	289997	17498	355612
10	3	1975118	1184063	87825	321880	19380	361970
10	4	2147086	1239058	94392	343687	20692	449257
10	5	2210876	1293074	101435	350558	20662	445147
10	6	2378736	1420052	112433	375654	20996	449601
10	7	2561823	1521526	125362	404582	20421	489932
10	8	2720465	1569352	140610	433663	20297	556543
10	9	2977950	1769865	138625	466030	33497	569933

10	10	3158642	1907894	169640	489446	21640	570022
10	11	3253850	1928007	180395	516491	22385	606572
10	12	3643211	2170485	196883	558431	26700	690712
10	13	4027730	2409962	220748	610456	31490	755074
10	14	4240108	2505429	249419	653609	33425	798226
10	15	4048952	2343687	260441	630085	33055	781684
10	16	4089926	2371385	264324	633171	33320	787726
10	17	3993853	2305931	261388	625326	32706	768502

k = 11; Germany; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
11	1	1380600	595630	144102	317713	45653	277502
11	2	1406320	607730	149351	320313	45643	283283
11	3	1443800	628150	152973	320365	45563	296749
11	4	1483890	648310	162933	321562	45697	305388
11	5	1562070	701610	167036	329891	51797	311736
11	6	1609710	740730	175587	340514	56433	296446
11	7	1644260	755910	183096	342258	58845	304151
11	8	1629090	732190	190554	337290	58683	310373
11	9	1658380	751580	198577	332392	59183	316648
11	10	1701030	768610	202342	340825	51021	338232
11	11	1757260	812030	198814	335885	60836	349695
11	12	1830300	860210	209990	335573	59182	365345
11	13	1900990	899490	211619	352576	61805	375500
11	14	1964530	929500	233061	365412	60556	376001
11	15	1918320	886419	243841	371255	60477	356328
11	16	2028732	956026	252798	381256	62098	376554
11	17	2087013	983788	266967	398800	64906	372552

k = 12; Denmark; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
12	1	769449	367338	57344	158006	46414	140347
12	2	812140	388527	62398	168668	47996	144551
12	3	869823	423536	66442	177818	49207	152820
12	4	907985	447225	74019	188447	50003	148291
12	5	963473	480773	80954	197917	51564	152265
12	6	1055373	542045	89170	207165	52826	164167
12	7	1118438	588964	97313	216421	53520	162220
12	8	1149109	602208	104609	224655	54302	163335
12	9	1176811	608772	117721	217368	59644	173306
12	10	1231092	633764	124000	222389	61258	189681
12	11	1351519	724771	133234	233238	67606	192670
12	12	1487078	823957	149139	247097	70575	196310
12	13	1587798	890563	148080	251622	107505	190028
12	14	1664226	934629	167425	258215	110299	193658
12	15	1498061	823455	159110	252125	111735	151636
12	16	1585681	872216	154746	246155	108757	203807
12	17	1663251	939719	157175	248435	111513	206409

k = 13; Spain; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
---	---	-----------	------------	-----------	-----------	-----------	-----------

13	1	404329	196797	31783	22702	69512	83535
13	2	423363	206618	35866	25447	69915	85517
13	3	449483	218139	39771	28063	73847	89663
13	4	483854	234335	44462	30604	77612	96841
13	5	527930	256315	50363	34332	81657	105263
13	6	582213	283598	57256	40097	89328	111934
13	7	641307	312044	66771	42292	92849	127351
13	8	717665	359990	72268	45702	97860	141845
13	9	780994	397124	69492	45775	113987	154616
13	10	847754	432941	83482	54538	105714	171079
13	11	948367	497533	93474	62651	106859	187850
13	12	1058529	567786	100366	69702	115735	204940
13	13	1127059	594703	109329	76078	124492	222457
13	14	1184201	623126	119443	79335	128610	233687
13	15	1178429	614921	122218	77830	118744	244716
13	16	1116165	576855	118558	74156	111236	235360
13	17	1122483	578655	116859	72977	108227	245765

k = 14; Estonia; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
14	1	2630	1538	372	316	41	363
14	2	3425	1977	464	401	49	534
14	3	4413	2598	549	505	66	695
14	4	5178	3030	588	592	83	885
14	5	5503	3155	570	631	78	1069
14	6	6521	3826	639	743	85	1228
14	7	7513	4444	739	807	93	1430
14	8	8440	4934	822	887	94	1703
14	9	9298	5282	876	1054	174	1912
14	10	10513	6001	1045	1201	139	2127
14	11	12130	6873	1270	1297	145	2545
14	12	14638	8187	1567	1638	235	3011
14	13	17591	9996	1775	2252	345	3223
14	14	17815	9996	1943	2525	466	2885
14	15	14414	7997	1769	2109	352	2187
14	16	15001	8323	1701	2034	349	2594
14	17	16707	9270	1787	2093	353	3204

k = 15; Finland; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
15	1	65637	31416	7482	8656	6336	11747
15	2	69825	34042	7945	9300	6404	12134
15	3	76352	37631	8536	10152	6658	13375
15	4	84398	41849	9306	11229	6990	15024
15	5	89412	44471	10080	12014	7099	15748
15	6	99137	50283	11014	12964	7243	17633
15	7	104312	51920	11660	14005	7386	19341
15	8	108663	54563	12181	14647	7368	19904
15	9	112000	58098	12246	15053	7908	18695
15	10	119297	61384	13648	15972	7283	21010
15	11	125768	66093	14680	17116	7372	20507
15	12	135722	73081	15629	18161	7386	21465

15	13	146204	77129	17199	19225	7990	24661
15	14	156650	84181	19391	20705	8675	23698
15	15	147055	78616	19752	20416	7960	20311
15	16	153081	82777	20266	20834	8115	21089
15	17	163263	88863	21534	22004	8559	22303

k = 16; France; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
16	1	1026745	494929	106441	139308	99427	186640
16	2	1044119	502549	114434	140887	97240	189009
16	3	1073954	515832	118850	145868	95909	197495
16	4	1122663	538889	128924	152774	94813	207263
16	5	1099720	522895	134046	156266	91450	195063
16	6	1212214	595951	150097	165069	94984	206113
16	7	1288262	641711	162767	172306	97020	214458
16	8	1339086	660373	168925	182242	101470	226076
16	9	1383256	677670	160478	181658	125819	237631
16	10	1450994	717818	183110	199699	105749	244618
16	11	1529323	768131	193544	207969	107519	252160
16	12	1632990	828996	206924	217985	112776	266309
16	13	1721389	877113	221233	226871	112930	283242
16	14	1788228	907862	235062	236297	111978	297029
16	15	1714952	846404	247620	229604	108919	282405
16	16	1765557	866989	254974	236226	112140	295228
16	17	1813931	890213	271004	248582	117830	286302

k = 17; Great Britain; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
17	1	636124	308274	49902	87756	58207	131985
17	2	692378	340328	54955	93392	58879	144824
17	3	754175	373785	62177	104443	57276	156494
17	4	830386	412294	73883	113079	58725	172405
17	5	889923	445513	82188	120871	62552	178799
17	6	945736	475824	96067	128528	65757	179560
17	7	1005523	506420	105386	136057	71460	186200
17	8	1071698	526068	111224	144239	73449	216718
17	9	1139245	552292	116127	160165	72177	238484
17	10	1209350	580669	122262	173969	72763	259687
17	11	1286247	625062	131070	183122	74914	272079
17	12	1372538	667237	142028	191090	78564	293619
17	13	1462125	709261	159649	200013	83461	309741
17	14	1524324	739447	170728	198490	84555	331104
17	15	1473072	710349	176007	200628	81598	304490
17	16	1526287	735316	182467	207561	84681	316262
17	17	1570588	755020	188371	213229	87244	326724

k = 18; Greece; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
18	1	70091	30436	4141	6121	7742	21651
18	2	77421	33212	4814	7117	8140	24138
18	3	86052	36552	5569	8597	8733	26601

18	4	94942	40422	6486	10243	9244	28547
18	5	102955	43904	7062	12592	9504	29893
18	6	112477	48306	7615	14277	9435	32844
18	7	121641	50821	8287	14763	9935	37835
18	8	133222	57241	10140	16590	11095	38156
18	9	145347	59823	10819	17795	13102	43808
18	10	157380	64155	12031	20422	11458	49314
18	11	164416	67222	12875	22032	12071	50216
18	12	180364	74567	14230	22046	14239	55282
18	13	194967	81017	16074	24022	15302	58552
18	14	199509	81926	18492	24654	16344	58093
18	15	188305	74095	19025	24990	16457	53738
18	16	184790	72712	19935	25677	17087	49379
18	17	174848	68800	19108	23679	15951	47310

k = 19; Hungary; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
19	1	4656190	2498361	352962	834190	130171	840506
19	2	5892362	3126324	445840	1031895	159642	1128661
19	3	7243140	3814130	553138	1269355	194330	1412187
19	4	8530970	4448328	663943	1462531	223576	1732592
19	5	9629179	5081542	807011	1524236	176761	2039629
19	6	11060276	5929058	959652	1841095	263315	2067156
19	7	12950450	6872719	1054718	2074818	291869	2656326
19	8	14635860	7642306	1253778	2316079	319521	3104176
19	9	15633821	8270527	1270486	2542867	546689	3003252
19	10	17256578	9115654	1786113	2761077	349986	3243748
19	11	18849313	10171207	2004617	2925736	372791	3374962
19	12	20734931	11197042	2211888	3147804	374043	3804154
19	13	22019336	11697221	2407264	3429130	392608	4093113
19	14	23614734	12770791	2670031	3415683	384357	4373872
19	15	22881398	12319841	2706308	3312765	352931	4189553
19	16	23262322	12594285	2745876	3329046	352117	4240998
19	17	23469788	12700821	2737202	3334661	353485	4343619

k = 20; India; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
20	1	7704928	3454511	416940	786466	783995	2263016
20	2	8882014	3943143	458084	903123	869030	2708634
20	3	10352005	4622129	554202	1103105	1031948	3040621
20	4	12079380	5408596	657903	1308685	1179218	3524978
20	5	13650609	6094160	728388	1469848	1273112	4085101
20	6	14979936	6719313	886963	1582646	1334596	4456418
20	7	16550004	7340731	1034590	1702467	1424835	5047381
20	8	18637868	8325176	1208544	1833984	1541816	5728348
20	9	21203155	9422698	1462392	2067391	1763172	6487502
20	10	25204113	11427983	1751887	2383591	2110735	7529917
20	11	29341454	13394635	2008426	2747236	2486025	8705132
20	12	34537325	15761595	2326014	3193954	2874899	10380863
20	13	39962092	18244552	2615420	3651716	3325578	12124826
20	14	46036887	20929668	2996300	4200241	3818545	14092133
20	15	52301843	23724606	3480671	4874870	4437670	15784026

20	16	61630572	27780318	4125516	5720594	5194527	18809617
20	17	72586421	32489943	4934862	6737180	6050145	22374291

k = 21; Ireland; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
21	1	41624	22059	3124	4931	4244	7266
21	2	47583	25205	3776	5713	4177	8712
21	3	55154	29309	4387	6754	4740	9964
21	4	66474	35680	5355	8344	5395	11700
21	5	74708	40420	6211	9900	5941	12236
21	6	92501	50242	7227	11438	6800	16794
21	7	108093	60395	8591	12575	7296	19236
21	8	113277	61756	9645	13201	7489	21186
21	9	127615	68645	10960	14012	7679	26319
21	10	143602	78841	12518	15036	8308	28899
21	11	172237	95676	14877	16552	9784	35348
21	12	195623	109850	18373	17997	9356	40047
21	13	211095	119580	20351	19211	10858	41095
21	14	193577	108909	21711	20060	9862	33035
21	15	162566	91201	19874	17246	7450	26795
21	16	151532	84577	18551	16509	7297	24598
21	17	151793	84722	18448	15997	6954	25672

k = 22; Italy; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
22	1	801713	396646	25508	90323	128908	160328
22	2	854983	423372	29822	99929	128169	173691
22	3	904091	458448	34615	108237	125197	177594
22	4	951187	487670	39108	113781	117944	192684
22	5	1007451	526146	43069	123164	117658	197414
22	6	1098047	585178	50265	132564	115118	214922
22	7	1177888	629674	52807	136335	125556	233516
22	8	1218340	651277	56994	145588	128605	235876
22	9	1261521	673722	56135	146937	142542	242185
22	10	1314657	704878	56548	172594	128127	252510
22	11	1365695	737735	62325	182219	132043	251373
22	12	1427996	786781	66803	191473	133808	249131
22	13	1491574	817750	68030	203725	140147	261922
22	14	1535031	844025	85315	203008	146547	256136
22	15	1463054	781209	85020	212663	147797	236365
22	16	1489355	803357	86290	214516	148735	236457
22	17	1525510	822182	89405	219927	151373	242623

k = 23; Japan; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
23	1	439233530	187212150	45500000	97800000	18300000	90421380
23	2	447297670	190234220	46300000	97200000	17000000	96563450
23	3	457225270	194206100	48300000	98600000	16300000	99819170
23	4	445585120	188438940	48900000	96700000	14600000	96946180
23	5	442017150	187642570	48800000	93300000	13900000	98374580
23	6	444833820	190484340	51300000	93900000	12200000	96949480

23	7	442201770	190812590	52700000	91400000	10900000	96389180
23	8	435816440	188108490	53100000	87000000	9779323	97828627
23	9	430453390	185753510	53500000	86500000	8492780	96207100
23	10	433560610	186778200	53800000	84600000	8115802	100266608
23	11	439957540	191319830	56100000	85500000	7901602	99136108
23	12	446072640	195558760	57700000	87800000	8045744	96968136
23	13	450988190	199982640	58100000	88300000	8074818	96530732
23	14	449474580	203974950	56300000	86300000	7900646	94998984
23	15	409403200	181675360	51400000	79600000	7385475	89342365
23	16	412416520	183216960	51500000	79900000	7394957	90404603
23	17	410924520	182346960	51400000	79700000	7352618	90124942

k = 24; Republic of Korea; Non-Traded Sector; Value Data

k	t	V_{kt1}	$-V_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
24	1	322203720	151925360	50000000	53700000	18200000	48378360
24	2	370014980	177794870	62600000	60100000	18300000	51220110
24	3	411183360	201793140	68100000	64100000	19400000	57790220
24	4	408355780	206497480	68600000	59800000	16600000	56858300
24	5	435069130	214879970	74800000	61000000	16700000	67689160
24	6	471528070	234792140	80000000	65600000	16400000	74735930
24	7	518901850	257537970	94600000	67100000	15200000	84463880
24	8	579915290	285308680	110000000	69400000	14300000	100906610
24	9	622987180	306304780	119000000	78200000	15100000	104382400
24	10	662458080	331537130	127000000	80900000	14000000	109020950
24	11	697906330	351605470	138000000	79300000	14600000	114400860
24	12	741204570	377606550	143000000	82100000	15100000	123398020
24	13	812100030	420926360	151000000	86000000	15800000	138373670
24	14	892583960	489040080	157000000	89500000	16300000	140743880
24	15	905307110	485560070	161000000	92000000	16700000	150047040
24	16	983735240	530754230	173000000	98300000	17700000	163981010
24	17	1016374100	546499000	179000000	102000000	18400000	170475100

k = 25; Lithuania; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
25	1	21076	10388	2078	2522	295	5793
25	2	26267	12709	3242	3771	412	6133
25	3	29827	13519	3148	4224	525	8411
25	4	34060	15429	3474	4955	646	9556
25	5	32375	14053	3116	4880	553	9773
25	6	32981	13238	2917	4798	497	11531
25	7	36339	14818	3207	4864	496	12954
25	8	41542	17484	3836	5579	532	14111
25	9	45675	18535	4198	6129	765	16048
25	10	49311	19711	5223	6788	572	17017
25	11	57612	23350	6605	8125	608	18924
25	12	68463	28656	8042	10463	885	20417
25	13	84845	35877	10244	12665	1436	24623
25	14	98181	43148	12974	15011	1609	25439
25	15	75503	31315	10552	11311	1021	21304
25	16	78099	32392	10403	11085	1017	23202
25	17	87089	36121	11720	11857	1072	26319

k = 26; Latvia; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
26	1	2223	1142	223	276	44	538
26	2	2822	1379	312	413	58	660
26	3	3324	1641	317	406	64	896
26	4	3875	1975	338	459	78	1025
26	5	4292	2177	360	538	84	1133
26	6	5104	2721	374	576	84	1349
26	7	5589	2930	392	617	88	1562
26	8	6069	3080	424	637	85	1843
26	9	6752	3463	393	792	148	1956
26	10	8344	4478	555	908	117	2286
26	11	10326	5509	727	1254	181	2655
26	12	13694	7706	928	1724	275	3061
26	13	17500	9638	1388	2452	435	3587
26	14	19373	10679	1880	2666	492	3656
26	15	14861	8031	1524	1801	238	3267
26	16	14483	7827	1470	1731	240	3215
26	17	16100	8701	1559	1836	254	3750

k = 27; Mexico; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
27	1	1402373	503358	75724	138690	73350	611251
27	2	1882636	672891	95767	185541	87350	841087
27	3	2373014	861864	124534	245995	111275	1029346
27	4	2881593	1042779	155224	300942	141561	1241087
27	5	3508574	1260320	186594	361536	172273	1527851
27	6	4262656	1526002	219160	432938	201832	1882724
27	7	4468796	1607586	234497	488522	205843	1932348
27	8	4877960	1714399	251690	535700	216040	2160131
27	9	5376416	1906244	264260	573424	224635	2407853
27	10	6114849	2143530	288284	632454	239643	2810938
27	11	6743543	2370810	310484	708133	242435	3111681
27	12	7553478	2692219	294387	847862	237273	3481737
27	13	8251736	2925778	316284	925152	251162	3833360
27	14	9008582	3241875	334553	1011306	259040	4161808
27	15	8680477	3097239	327244	976640	250994	4028360
27	16	9558310	3385918	359808	1069007	276059	4467518
27	17	10474521	3716000	391625	1169915	302334	4894647

k = 28; Malta; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
28	1	2504	1134	92	128	434	716
28	2	2634	1200	103	147	464	720
28	3	2818	1265	102	157	504	790
28	4	2981	1333	99	165	545	839
28	5	3133	1406	109	187	564	867
28	6	3451	1617	118	207	586	923
28	7	3564	1681	123	231	611	918
28	8	3678	1717	139	237	627	958
28	9	3843	1869	137	200	726	911

28	10	4343	2274	206	284	669	910
28	11	5001	2748	240	302	662	1049
28	12	5703	3303	282	331	681	1106
28	13	6326	3689	330	324	708	1275
28	14	6971	4009	389	330	741	1502
28	15	7040	4105	448	388	701	1398
28	16	7493	4369	447	394	738	1545
28	17	7811	4554	451	397	749	1660

k = 29; Netherlands; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
29	1	269395	134754	20041	45845	26843	41912
29	2	290372	147644	22743	48723	26805	44457
29	3	315258	160620	27149	50953	27173	49363
29	4	340876	174087	30050	54041	29604	53094
29	5	371520	190183	40433	55429	26957	58518
29	6	409243	213463	37373	59422	35931	63054
29	7	438613	228986	39821	63982	38428	67396
29	8	449677	229197	44018	66913	36515	73034
29	9	452612	227601	46405	62079	41473	75054
29	10	463541	234028	54079	65496	34259	75679
29	11	488050	246883	57041	65960	33992	84174
29	12	516172	264671	60693	69079	35613	86116
29	13	547700	281270	64454	74539	37469	89968
29	14	577038	302190	72580	72295	40414	89559
29	15	564467	290857	72742	72600	39953	88315
29	16	567557	287998	72274	72725	40101	94459
29	17	577551	293506	74439	74680	41161	93765

k = 30; Poland; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
30	1	269291	130857	13445	50402	4229	70358
30	2	347632	168837	18072	68333	5719	86671
30	3	435554	210610	23871	87646	7228	106199
30	4	531672	257278	30245	108477	9007	126665
30	5	612965	304843	33125	118768	9815	146414
30	6	715210	357675	33632	116815	9856	197232
30	7	765605	386608	39005	118744	9761	211487
30	8	785770	396448	41598	114560	7815	225349
30	9	796559	401458	43460	109948	10755	230938
30	10	858293	432553	52102	108751	6601	258286
30	11	919955	463896	57467	111205	6373	281014
30	12	1014526	520601	63157	118584	6922	305262
30	13	1152671	603343	72256	130090	8011	338971
30	14	1270168	671863	80099	148453	9440	360313
30	15	1317408	676092	88768	151962	9589	390997
30	16	1382029	702184	94521	162946	10325	412053
30	17	1469323	746274	100939	175208	11136	435766

k = 31; Portugal; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
---	---	-----------	------------	-----------	-----------	-----------	-----------

31	1	73609	37408	3376	4265	13808	14752
31	2	78925	40914	3697	4770	14512	15032
31	3	87931	45869	3688	5173	16407	16794
31	4	96703	50917	3599	5543	18670	17974
31	5	103152	54152	3922	6205	19911	18962
31	6	113376	59947	4216	6914	21617	20682
31	7	122307	64959	4409	7506	22587	22846
31	8	125978	66316	4873	7873	23153	23763
31	9	127632	66655	4473	6384	26037	24083
31	10	135285	71078	6653	8579	22939	26036
31	11	141196	75882	7363	9472	23324	25155
31	12	151770	80716	8804	10597	24083	27570
31	13	165288	87358	10317	10400	25430	31783
31	14	169055	89149	12042	10450	25600	31814
31	15	163626	85841	12420	11387	23283	30695
31	16	167671	87963	12932	11843	24244	30689
31	17	165959	87065	12967	11856	24388	29683

k = 32; Romania; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
32	1	5396	2635	184	243	815	1519
32	2	8437	4301	283	393	1284	2176
32	3	18652	9364	554	811	2628	5295
32	4	26987	12658	875	1351	4802	7301
32	5	43206	21660	1075	1813	5635	13023
32	6	61402	29792	1837	3326	10001	16446
32	7	88789	45573	2896	5189	15634	19497
32	8	117953	61062	3715	6104	18469	28603
32	9	155643	83113	3727	5569	23851	39383
32	10	193851	102284	7076	9261	24793	50437
32	11	231532	120343	9093	11821	29785	60490
32	12	291587	152024	11308	14171	32836	81248
32	13	367616	188194	15711	16166	41146	106399
32	14	475141	245477	22631	21464	55107	130462
32	15	449111	231131	21178	21966	47365	127471
32	16	468309	241011	22413	24016	48803	132066
32	17	518486	266835	30631	35935	78391	106694

k = 33; Russia; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
33	1	1268911	493802	81206	302821	20567	370515
33	2	1746037	701094	111378	423495	28432	481638
33	3	2009245	798580	128910	481452	32277	568026
33	4	2147374	848321	133241	485407	32359	648046
33	5	3679531	1394227	253322	859299	54910	1117773
33	6	5543789	2073520	394265	1320249	79645	1676110
33	7	7220684	2877881	522813	1653233	89706	2077051
33	8	8873630	3575888	663613	1945791	96584	2591754
33	9	10802073	4485762	857622	2362065	109752	2986872
33	10	13589560	5830523	1122662	3026193	129795	3480387
33	11	16783723	7394819	1409843	3500866	144090	4334105
33	12	21507498	9711464	1797640	4315901	175297	5507196

33	13	27230095	12261798	2348004	5606194	227287	6786812
33	14	34202593	15446574	3010478	7142340	287314	8315887
33	15	33692240	15548382	2982436	6785928	271477	8104017
33	16	38749839	17726397	3254144	7619491	305140	9844667
33	17	44738222	20336305	3774383	8877356	355234	11394944

k = 34; Slovakia; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
34	1	19253	11284	512	2013	141	5303
34	2	22954	14084	621	2369	161	5719
34	3	27141	16332	758	2893	194	6964
34	4	29083	17381	861	3211	212	7418
34	5	30851	18614	944	3426	187	7680
34	6	34326	21173	1165	3885	156	7947
34	7	37132	22944	1164	4205	165	8654
34	8	41279	25128	1306	4592	154	10099
34	9	43917	26066	1388	4768	269	11426
34	10	46437	25925	1741	5240	174	13357
34	11	50878	28217	2185	5709	162	14605
34	12	57607	31602	2442	6143	171	17249
34	13	64170	34848	2702	7233	220	19167
34	14	74321	41681	2988	7582	312	21758
34	15	70027	38167	3043	7383	280	21154
34	16	73315	39959	3146	7793	294	22123
34	17	77011	41974	3349	8247	301	23140

k = 35; Slovenia; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
35	1	8588	4632	811	1822	165	1158
35	2	10182	5580	927	2078	189	1408
35	3	11579	6264	1035	2326	212	1742
35	4	12654	6768	1144	2531	233	1978
35	5	14570	7840	1233	2971	227	2299
35	6	15926	8531	1495	3174	261	2465
35	7	17573	9294	1581	3605	351	2742
35	8	19978	10588	1859	4030	373	3128
35	9	21978	11645	2271	4131	360	3571
35	10	24108	12774	2577	4456	360	3941
35	11	26125	13908	2847	4610	380	4380
35	12	29397	15888	3184	4977	429	4919
35	13	34699	19260	3660	5525	550	5704
35	14	38566	21565	4053	6242	656	6050
35	15	35454	19429	4057	6161	616	5191
35	16	35505	19457	4072	6356	648	4972
35	17	36068	19766	4121	6303	636	5242

k = 36; Sweden; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
36	1	1321750	650452	83082	256759	106079	225378
36	2	1378609	673072	91024	280403	106855	227255
36	3	1464796	714584	96691	295754	106804	250963

36	4	1547147	760487	106183	317634	107516	255327
36	5	1648626	805095	120945	323754	112754	286078
36	6	1775605	882124	148798	365007	109877	269799
36	7	1892955	940857	168165	389592	112454	281887
36	8	1933371	951797	173718	399274	112356	296226
36	9	1982648	958705	171883	403577	123145	325338
36	10	2119501	1018439	188421	424674	113186	374781
36	11	2261552	1102212	206538	436588	117638	398576
36	12	2429305	1197525	228636	450961	118428	433755
36	13	2628819	1310360	251964	486892	131154	448449
36	14	2786927	1402903	284255	484966	129154	485649
36	15	2698980	1350796	298149	456865	141378	451792
36	16	2902981	1450754	313249	484661	150275	504042
36	17	3104420	1554340	330999	511766	158887	548428

k = 37; Turkey; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
37	1	7026	2584	235	260	489	3458
37	2	13859	5171	532	581	1018	6557
37	3	27890	10507	1207	1124	2198	12854
37	4	50501	18930	1965	2162	3880	23564
37	5	79593	31725	4285	3995	6763	32825
37	6	128187	53946	5522	5750	9905	53064
37	7	196700	86453	8290	8109	12989	80859
37	8	281633	130104	9934	10054	16084	115457
37	9	357024	164891	12918	12638	19113	147464
37	10	440507	202955	14890	15840	25844	180978
37	11	506685	233759	17818	19822	30076	205210
37	12	602016	277542	21552	23197	34155	245570
37	13	685131	316154	25526	27435	38123	277893
37	14	783568	361804	29945	32404	43027	316388
37	15	758706	349601	30659	31423	38795	308228
37	16	860967	398124	34101	35696	44818	348228
37	17	1024863	474480	39458	42694	54555	413676

k = 38; Taiwan; Non-Traded Sector; Value Data

k	t	v_{kt1}	$-v_{kt2}$	V_{kt1}	V_{kt2}	V_{kt3}	V_{kt4}
38	1	5438738	2295434	620464	685369	656826	1180645
38	2	5904356	2428854	688856	759740	708615	1318291
38	3	6516885	2641212	764056	829392	746111	1536114
38	4	7084219	2869493	819481	894875	789713	1710657
38	5	7417649	2939997	849663	931542	800709	1895738
38	6	7869965	3163367	909134	995480	835067	1966917
38	7	7713065	3044077	901277	979771	796977	1990963
38	8	8051306	3207785	903617	999950	798375	2141579
38	9	8269553	3350619	959929	1028800	792749	2137456
38	10	9012160	3784158	1016684	1080407	811594	2319317
38	11	9456150	3968576	1093183	1117672	856008	2420711
38	12	9958029	4210579	1237036	1162891	847952	2499571
38	13	10570605	4485899	1335470	1211001	816494	2721741
38	14	10757249	4695791	1412721	1191381	782034	2675322
38	15	10096052	4259668	1430957	1208627	678085	2518715

38	16	11040744	4728927	1551827	1308188	735741	2716061
38	17	11232589	4737472	1601112	1348315	757859	2787831

Table C2: Non-Traded Sector; PPP Data Relative to the USA in 1995; in National Currency Units

k	t	P _{kt1}	P _{kt2}	W _{kt1}	W _{kt2}	W _{kt3}	W _{kt4}
USA	1995	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
USA	1996	1.0195	1.0242	1.0627	1.0260	1.0255	1.0651
USA	1997	1.0568	1.0495	1.1170	1.0544	1.1429	1.1277
USA	1998	1.0839	1.0590	1.1911	1.1060	1.0644	1.1741
USA	1999	1.1220	1.0852	1.2458	1.1604	1.0900	1.2150
USA	2000	1.1696	1.1380	1.3809	1.2108	1.1503	1.2125
USA	2001	1.2093	1.1605	1.4826	1.2686	1.2146	1.2308
USA	2002	1.2444	1.1795	1.5084	1.3122	1.2299	1.3514
USA	2003	1.2928	1.2248	1.5929	1.3658	1.2687	1.4316
USA	2004	1.3526	1.2831	1.6633	1.3924	1.2956	1.5323
USA	2005	1.4298	1.3549	1.7295	1.4593	1.3193	1.6465
USA	2006	1.4706	1.4071	1.8002	1.4897	1.3702	1.7595
USA	2007	1.4982	1.4459	1.8169	1.5571	1.4829	1.7951
USA	2008	1.5364	1.5188	1.8464	1.5951	1.4727	1.7605
USA	2009	1.5117	1.4673	1.9425	1.6365	1.5425	1.6936
USA	2010	1.5142	1.4813	2.0329	1.7108	1.6067	1.8058
USA	2011	1.5239	1.5159	2.0863	1.7629	1.6594	1.8565
AUS	1995	1.3510	1.3258	1.1351	1.1980	1.3049	0.7419
AUS	1996	1.3617	1.3440	1.2071	1.2657	1.3918	0.7601
AUS	1997	1.4258	1.3565	1.2553	1.2834	1.4211	0.8069
AUS	1998	1.4967	1.3781	1.3249	1.3117	1.4595	0.8256
AUS	1999	1.5357	1.4340	1.3732	1.3417	1.5089	0.8826
AUS	2000	1.5723	1.4952	1.4322	1.3923	1.5734	0.9125
AUS	2001	1.6563	1.5324	1.5117	1.4513	1.6347	1.0151
AUS	2002	1.7607	1.6014	1.4581	1.4656	1.6649	1.1853
AUS	2003	1.8547	1.6712	1.4951	1.5195	1.7425	1.3826
AUS	2004	1.9824	1.7984	1.5814	1.5715	1.8073	1.3693
AUS	2005	2.0756	1.8904	1.6760	1.6309	1.8834	1.3304
AUS	2006	2.1607	1.9783	1.8037	1.7632	2.0403	1.3782
AUS	2007	2.2303	2.0260	1.9178	1.8861	2.1741	1.5433
AUS	2008	2.3055	2.1044	1.9320	1.8931	2.1842	1.5191
AUS	2009	2.3622	2.1603	1.9313	1.8931	2.1854	1.4390
AUS	2010	2.4424	2.2240	1.9955	1.9652	2.2782	1.5008
AUS	2011	2.4411	2.1881	2.0324	2.0071	2.3246	1.4449
AUT	1995	1.0613	0.9617	1.0623	1.0653	1.0330	0.4510
AUT	1996	1.0681	0.9664	1.0645	1.0697	1.0254	0.4689
AUT	1997	1.0740	0.9708	1.0516	1.0712	1.0267	0.4892
AUT	1998	1.0950	0.9846	1.0594	1.0884	1.0377	0.5301
AUT	1999	1.1094	0.9990	1.0730	1.1005	1.0581	0.5523
AUT	2000	1.1415	1.0430	1.0815	1.1206	1.0814	0.5802
AUT	2001	1.1838	1.0787	1.0868	1.1289	1.0794	0.6248
AUT	2002	1.2032	1.0974	1.1265	1.1449	1.1041	0.7005
AUT	2003	1.2342	1.1313	1.0647	1.1135	1.4509	0.7043
AUT	2004	1.2728	1.1690	1.1126	1.1384	1.1304	0.7085
AUT	2005	1.3136	1.2190	1.1437	1.1846	1.1619	0.7187
AUT	2006	1.3183	1.2351	1.2136	1.2256	1.1840	0.7165

AUT	2007	1.3263	1.2410	1.3087	1.2675	1.1173	0.7492
AUT	2008	1.3458	1.2663	1.4673	1.2779	1.0548	0.7064
AUT	2009	1.3149	1.2182	1.4959	1.3112	1.0836	0.6435
AUT	2010	1.3051	1.2392	1.5510	1.3499	1.1183	0.6805
AUT	2011	1.3104	1.2696	1.5722	1.3767	1.1420	0.7088
BEL	1995	0.9570	0.8872	1.1101	1.2362	1.5765	0.4758
BEL	1996	0.9688	0.8964	1.1091	1.2480	1.5904	0.4710
BEL	1997	0.9886	0.9238	1.1260	1.2743	1.6239	0.4905
BEL	1998	0.9973	0.9418	1.1306	1.2886	1.6449	0.5197
BEL	1999	1.0211	0.9775	1.1637	1.3198	1.7232	0.5126
BEL	2000	1.0801	1.0342	1.1851	1.3546	1.7104	0.5145
BEL	2001	1.0992	1.0664	1.2404	1.4118	1.7762	0.5013
BEL	2002	1.1435	1.1073	1.2635	1.4728	1.8818	0.5373
BEL	2003	1.1745	1.1470	1.1816	1.4388	2.1768	0.5674
BEL	2004	1.2220	1.2053	1.3017	1.5040	1.9183	0.5825
BEL	2005	1.3242	1.2902	1.3224	1.5279	1.9525	0.5856
BEL	2006	1.2944	1.3097	1.3842	1.5651	2.0036	0.5491
BEL	2007	1.3016	1.3252	1.4298	1.6412	1.9952	0.5276
BEL	2008	1.3197	1.3511	1.4519	1.6946	2.1067	0.4873
BEL	2009	1.2819	1.2758	1.4467	1.7340	2.1740	0.4406
BEL	2010	1.3029	1.3054	1.4472	1.7448	2.1916	0.4225
BEL	2011	1.3217	1.3435	1.4786	1.7832	2.2401	0.4206
BGR	1995	0.0234	0.0266	0.0067	0.0056	0.0055	0.0188
BGR	1996	0.0534	0.0599	0.0112	0.0095	0.0096	0.0465
BGR	1997	0.4646	0.5397	0.1130	0.0926	0.0936	0.3127
BGR	1998	0.6182	0.7118	0.1863	0.1455	0.1406	0.4593
BGR	1999	0.6662	0.7729	0.1950	0.1598	0.1488	0.5369
BGR	2000	0.7171	0.8347	0.1941	0.1632	0.1557	0.6743
BGR	2001	0.7722	0.9085	0.2318	0.1973	0.1797	0.7175
BGR	2002	0.8032	0.9524	0.2515	0.2096	0.1912	0.7321
BGR	2003	0.8155	0.9797	0.1978	0.1627	0.2283	0.8465
BGR	2004	0.8395	1.0501	0.2609	0.2212	0.1978	0.8452
BGR	2005	0.8815	1.1021	0.2909	0.2327	0.2107	0.8057
BGR	2006	0.9518	1.1400	0.3011	0.2408	0.2203	0.7666
BGR	2007	0.9696	1.2030	0.3588	0.2657	0.2572	0.7510
BGR	2008	1.0187	1.2285	0.4175	0.2955	0.2860	0.7031
BGR	2009	1.0578	1.2640	0.4425	0.3203	0.3099	0.6436
BGR	2010	1.0654	1.2588	0.4749	0.3516	0.3447	0.5767
BGR	2011	1.0965	1.2852	0.4888	0.3609	0.3642	0.6044
BRA	1995	0.6564	0.6954	0.2227	0.1318	0.0833	0.7748
BRA	1996	0.7510	0.8075	0.2670	0.1505	0.0986	0.8776
BRA	1997	0.8306	0.8929	0.2726	0.1471	0.1000	1.0039
BRA	1998	0.9033	0.9627	0.2881	0.1465	0.1021	1.0931
BRA	1999	1.0012	1.0777	0.2925	0.1418	0.1020	1.2989
BRA	2000	1.1180	1.2247	0.3063	0.1474	0.1113	1.3531
BRA	2001	1.2677	1.3811	0.3282	0.1538	0.1197	1.4560
BRA	2002	1.4540	1.5760	0.3442	0.1580	0.1260	1.6888
BRA	2003	1.6950	1.9019	0.3688	0.1682	0.1400	1.8784
BRA	2004	1.8697	2.0969	0.3908	0.1764	0.1533	2.0884
BRA	2005	2.0773	2.3040	0.4228	0.1911	0.1722	2.3621
BRA	2006	2.1094	2.3408	0.4506	0.2086	0.1900	2.4716
BRA	2007	2.1604	2.3666	0.6092	0.2847	0.2679	2.2005
BRA	2008	2.2086	2.4682	0.6451	0.3113	0.2988	2.2913

BRA	2009	2.2943	2.4740	0.6777	0.3363	0.3369	2.5372
BRA	2010	2.3412	2.5191	0.7126	0.3584	0.3614	2.8456
BRA	2011	2.4007	2.4942	0.7272	0.3699	0.3730	2.9583
CAN	1995	1.1379	1.1375	0.7278	0.9296	1.0517	0.6651
CAN	1996	1.1575	1.1586	0.7638	0.9273	1.0403	0.6670
CAN	1997	1.2040	1.1866	0.8372	0.9747	1.1449	0.6864
CAN	1998	1.2481	1.2044	0.8732	0.9969	1.1535	0.6670
CAN	1999	1.3008	1.2621	0.9127	1.0237	1.1716	0.6398
CAN	2000	1.3696	1.3634	0.9692	1.0920	1.2236	0.6559
CAN	2001	1.4364	1.4147	1.0179	1.1146	1.2295	0.7124
CAN	2002	1.4942	1.4563	1.0508	1.1327	1.2907	0.7600
CAN	2003	1.5695	1.5241	1.0520	1.1623	1.2697	0.7674
CAN	2004	1.6540	1.6165	1.0842	1.1926	1.2990	0.7777
CAN	2005	1.7512	1.6838	1.1149	1.2569	1.3423	0.8070
CAN	2006	1.8446	1.7266	1.1697	1.3233	1.4684	0.8210
CAN	2007	1.9154	1.7556	1.1932	1.3433	1.4837	0.8439
CAN	2008	2.0144	1.8392	1.2103	1.3882	1.5353	0.8577
CAN	2009	1.9112	1.7370	1.2486	1.4298	1.5547	0.7888
CAN	2010	1.9550	1.8484	1.2963	1.4792	1.6015	0.8101
CAN	2011	2.0596	1.9340	1.3434	1.5293	1.6543	0.8138
CHN	1995	2.3767	3.1646	0.1093	0.1513	0.2214	2.3543
CHN	1996	2.5444	3.3543	0.1263	0.1705	0.2452	2.3579
CHN	1997	2.6352	3.3885	0.1462	0.1895	0.2619	2.3645
CHN	1998	2.6912	3.3297	0.1626	0.2049	0.2764	2.3822
CHN	1999	2.6987	3.2792	0.1838	0.2227	0.2877	2.3917
CHN	2000	2.7776	3.3865	0.1955	0.2317	0.2923	2.5102
CHN	2001	2.8475	3.3902	0.1886	0.2193	0.2760	2.6435
CHN	2002	2.8751	3.3520	0.1919	0.2182	0.2717	2.7722
CHN	2003	2.9227	3.4269	0.2126	0.2231	0.2663	2.9742
CHN	2004	3.0533	3.6093	0.2210	0.2411	0.2920	3.2829
CHN	2005	2.9945	3.7107	0.2419	0.2646	0.3076	3.3534
CHN	2006	3.1659	3.9665	0.2906	0.3085	0.3352	3.5662
CHN	2007	3.6045	4.3850	0.3564	0.3479	0.3869	4.2890
CHN	2008	3.9515	4.8624	0.4324	0.3984	0.4360	4.8507
CHN	2009	4.0964	4.9436	0.4674	0.4330	0.4786	5.5006
CHN	2010	4.4967	5.4899	0.5229	0.4824	0.5371	5.8214
CHN	2011	4.9872	6.1407	0.5748	0.5200	0.5597	6.0856
CYP	1995	0.8826	0.7905	0.3188	0.3484	0.4444	0.4441
CYP	1996	0.8993	0.8185	0.3274	0.3584	0.4601	0.4445
CYP	1997	0.9185	0.8404	0.3445	0.3795	0.4868	0.4697
CYP	1998	0.9410	0.8589	0.3573	0.3965	0.5072	0.5412
CYP	1999	0.9669	0.8830	0.3633	0.4117	0.5284	0.6014
CYP	2000	0.9920	0.8951	0.3877	0.4266	0.5384	0.6378
CYP	2001	1.0276	0.9342	0.3966	0.4511	0.5542	0.6233
CYP	2002	1.0026	0.9136	0.4209	0.4786	0.5787	0.5792
CYP	2003	1.0176	0.9532	0.4102	0.4720	0.6887	0.5986
CYP	2004	1.0344	1.0032	0.4692	0.5193	0.6271	0.6017
CYP	2005	1.0506	1.0150	0.4855	0.5350	0.6301	0.6046
CYP	2006	1.0537	1.0347	0.4920	0.5333	0.6390	0.6169
CYP	2007	1.0764	1.0540	0.4916	0.5624	0.6532	0.6325
CYP	2008	1.0950	1.0988	0.5088	0.5858	0.7084	0.6213
CYP	2009	1.0873	1.1098	0.5076	0.5827	0.6958	0.5738
CYP	2010	1.0804	1.0738	0.5353	0.6111	0.7343	0.5228

CYP	2011	1.0782	1.0925	0.5462	0.6218	0.7578	0.5468
CZE	1995	12.4380	12.5676	3.6374	2.8820	3.1122	5.7938
CZE	1996	13.1300	13.5428	5.4769	4.3253	4.6774	5.3770
CZE	1997	14.3726	14.7961	6.0654	4.7431	5.1206	5.7874
CZE	1998	15.5714	15.7202	6.5187	5.0968	5.4880	7.6851
CZE	1999	16.3398	16.3888	6.7776	5.2553	5.6445	8.3041
CZE	2000	17.2603	17.6506	7.2397	5.6238	6.0993	8.5804
CZE	2001	17.7089	18.2808	8.1591	6.3327	6.7152	9.9393
CZE	2002	18.2623	18.5357	8.8338	6.7179	7.0328	10.7899
CZE	2003	18.5412	19.0091	8.5704	7.2700	11.8124	10.2791
CZE	2004	19.1963	20.0756	9.9653	7.5477	8.1970	9.8705
CZE	2005	19.3474	20.5660	10.1358	7.8529	8.5921	10.1637
CZE	2006	20.1615	21.0273	10.8642	8.4118	9.1863	10.9128
CZE	2007	20.7709	21.5216	11.6374	8.9706	10.3636	11.1602
CZE	2008	21.9460	22.5602	11.7121	9.3916	11.3476	11.0528
CZE	2009	22.0262	21.8964	11.4788	9.1107	11.0440	10.8129
CZE	2010	21.8784	22.2117	11.6947	9.2723	11.2176	11.5189
CZE	2011	21.3154	22.1735	11.8584	9.3448	11.2859	10.8923
DEU	1995	1.0874	1.0187	1.0267	1.0127	0.8609	0.6612
DEU	1996	1.0884	1.0185	1.0711	1.0260	0.8510	0.6727
DEU	1997	1.1136	1.0395	1.0949	1.0350	0.8492	0.7094
DEU	1998	1.1304	1.0541	1.0876	1.0377	0.8655	0.7403
DEU	1999	1.1436	1.0677	1.0868	1.0643	0.9226	0.7717
DEU	2000	1.1589	1.1025	1.1335	1.0964	0.9433	0.7191
DEU	2001	1.1939	1.1376	1.1442	1.1208	0.9768	0.7430
DEU	2002	1.2220	1.1549	1.1860	1.1250	1.0081	0.7878
DEU	2003	1.2556	1.1842	1.1873	1.1424	1.0531	0.7931
DEU	2004	1.2878	1.2189	1.1441	1.1597	0.9631	0.8017
DEU	2005	1.3226	1.2614	1.1402	1.1678	1.0554	0.8155
DEU	2006	1.3087	1.2571	1.2250	1.1444	1.0152	0.8215
DEU	2007	1.2902	1.2471	1.2192	1.1523	1.0909	0.8216
DEU	2008	1.2873	1.2538	1.2664	1.1552	1.0686	0.7844
DEU	2009	1.2715	1.2215	1.2623	1.1906	1.0783	0.7853
DEU	2010	1.2697	1.2419	1.2671	1.1960	1.0843	0.8254
DEU	2011	1.2477	1.2418	1.3074	1.2298	1.1138	0.7802
DNK	1995	8.5965	7.3673	6.9883	9.1785	9.6978	4.3109
DNK	1996	8.6589	7.5505	7.1502	9.5626	10.1156	4.4850
DNK	1997	9.0692	7.8511	7.1964	9.6816	10.3466	4.9255
DNK	1998	9.3669	7.9944	7.6049	9.8603	10.4116	4.9433
DNK	1999	9.6555	8.4190	7.7887	10.0563	10.5425	5.4447
DNK	2000	10.1754	9.1912	8.0880	10.1653	10.5362	5.6347
DNK	2001	10.6843	9.5501	8.4217	10.5309	10.7728	5.5792
DNK	2002	11.0492	9.7834	8.6636	10.9691	11.2885	6.0642
DNK	2003	11.4360	10.1058	9.0232	11.5645	11.0895	6.0951
DNK	2004	11.8982	10.5016	9.2814	11.8813	11.2284	6.2909
DNK	2005	12.3957	11.1938	9.5745	12.5069	11.6891	6.4420
DNK	2006	12.3127	11.3067	9.8988	13.0590	11.8685	6.2668
DNK	2007	12.2113	11.4006	10.6393	13.7218	14.1141	5.7844
DNK	2008	12.4433	11.7980	11.0354	13.7980	14.6826	5.1842
DNK	2009	11.9985	11.1201	11.3909	14.2024	14.9895	3.8869
DNK	2010	12.0287	11.4056	11.7420	14.5296	15.3487	4.9073
DNK	2011	12.0191	11.5255	11.9147	14.7144	15.5823	4.8608
ESP	1995	0.8034	0.7660	0.5798	0.6621	0.7222	0.5113

ESP	1996	0.8282	0.7917	0.5878	0.6718	0.7511	0.5137
ESP	1997	0.8469	0.8094	0.6012	0.6869	0.7732	0.5349
ESP	1998	0.8666	0.8321	0.6058	0.6942	0.7856	0.5752
ESP	1999	0.8889	0.8376	0.6121	0.7064	0.8017	0.6264
ESP	2000	0.9162	0.8788	0.6252	0.7390	0.8557	0.6441
ESP	2001	0.9564	0.9144	0.6442	0.7561	0.8766	0.7509
ESP	2002	1.0003	0.9534	0.6709	0.7772	0.9097	0.8012
ESP	2003	1.0397	0.9997	0.6234	0.7315	1.0403	0.8048
ESP	2004	1.0758	1.0425	0.6930	0.8109	0.9560	0.7968
ESP	2005	1.1190	1.0900	0.7126	0.8338	0.9889	0.7921
ESP	2006	1.1465	1.1136	0.7359	0.8680	1.0371	0.6937
ESP	2007	1.1662	1.1353	0.7621	0.9016	1.1011	0.6128
ESP	2008	1.1962	1.1807	0.8120	0.9294	1.1731	0.6025
ESP	2009	1.2192	1.1869	0.8338	0.9627	1.2185	0.6231
ESP	2010	1.1461	1.1637	0.8207	0.9406	1.1858	0.5934
ESP	2011	1.1273	1.1717	0.8255	0.9506	1.1997	0.6187
EST	1995	0.3430	0.3194	0.0728	0.0672	0.0760	0.2548
EST	1996	0.4207	0.4030	0.0914	0.0840	0.0947	0.3919
EST	1997	0.4729	0.4531	0.1104	0.0995	0.1081	0.4652
EST	1998	0.5166	0.4806	0.1282	0.1150	0.1258	0.4862
EST	1999	0.5495	0.5037	0.1341	0.1202	0.1296	0.5610
EST	2000	0.5736	0.5414	0.1568	0.1357	0.1443	0.5837
EST	2001	0.5979	0.5942	0.1707	0.1585	0.1692	0.6083
EST	2002	0.6265	0.6024	0.1793	0.1679	0.1800	0.7098
EST	2003	0.6469	0.6465	0.2032	0.1953	0.3007	0.6412
EST	2004	0.6578	0.6807	0.2435	0.2339	0.2501	0.5859
EST	2005	0.6906	0.7236	0.2430	0.2396	0.2694	0.5764
EST	2006	0.7248	0.7507	0.2847	0.2722	0.3210	0.5521
EST	2007	0.7588	0.8006	0.3258	0.3491	0.4432	0.4295
EST	2008	0.8176	0.8705	0.3549	0.4005	0.5580	0.3311
EST	2009	0.8022	0.8498	0.3514	0.3947	0.5388	0.2410
EST	2010	0.7887	0.8346	0.3492	0.4034	0.5626	0.2343
EST	2011	0.7918	0.8381	0.3412	0.3784	0.5165	0.2520
FIN	1995	1.0132	0.9448	0.6590	0.8121	1.1942	0.3305
FIN	1996	1.0151	0.9467	0.6667	0.8256	1.2096	0.3728
FIN	1997	1.0532	0.9795	0.6818	0.8426	1.2247	0.4319
FIN	1998	1.1042	1.0086	0.7403	0.8925	1.2417	0.4986
FIN	1999	1.1345	1.0283	0.7762	0.9066	1.2440	0.5466
FIN	2000	1.2096	1.1312	0.8307	0.9434	1.2770	0.6085
FIN	2001	1.2671	1.1617	0.8670	1.0016	1.3397	0.6598
FIN	2002	1.3153	1.1908	0.8877	1.0189	1.3616	0.7081
FIN	2003	1.3329	1.2151	0.8619	1.0355	1.5326	0.6704
FIN	2004	1.3748	1.2597	0.9471	1.0598	1.4343	0.7014
FIN	2005	1.4191	1.3143	0.9899	1.0949	1.4926	0.6588
FIN	2006	1.4192	1.3506	1.0274	1.1215	1.5278	0.6550
FIN	2007	1.4266	1.3680	1.0875	1.1359	1.6268	0.7533
FIN	2008	1.4598	1.3937	1.1689	1.2098	1.7781	0.6496
FIN	2009	1.4390	1.3302	1.1901	1.2349	1.8165	0.5260
FIN	2010	1.4061	1.3466	1.2080	1.2484	1.8339	0.5615
FIN	2011	1.4072	1.3758	1.2563	1.2991	1.9078	0.5750
FRA	1995	1.0513	0.9916	1.1857	1.1150	1.3239	0.7364
FRA	1996	1.0636	0.9971	1.2213	1.1272	1.3067	0.7539
FRA	1997	1.0816	1.0191	1.1997	1.1532	1.3310	0.8168

FRA	1998	1.1010	1.0454	1.2070	1.1646	1.3543	0.8781
FRA	1999	1.1119	1.0564	1.1366	1.1510	1.3311	0.8424
FRA	2000	1.1325	1.1015	1.1950	1.1851	1.4210	0.8539
FRA	2001	1.1683	1.1008	1.2401	1.2024	1.4395	0.8868
FRA	2002	1.2193	1.1376	1.2837	1.2615	1.5497	0.9368
FRA	2003	1.2672	1.1820	1.2129	1.2576	1.9415	1.0098
FRA	2004	1.3106	1.2347	1.3114	1.3424	1.6436	0.8876
FRA	2005	1.3568	1.2928	1.3243	1.3873	1.7095	0.8022
FRA	2006	1.3583	1.2807	1.3652	1.4625	1.8148	0.7468
FRA	2007	1.3543	1.3045	1.3915	1.4719	1.7903	0.7127
FRA	2008	1.3682	1.3136	1.4022	1.4893	1.8147	0.7111
FRA	2009	1.3685	1.2896	1.4395	1.5049	1.8472	0.6707
FRA	2010	1.3546	1.3103	1.4723	1.5461	1.8985	0.6748
FRA	2011	1.3320	1.3255	1.5381	1.6150	1.9803	0.6383
GBR	1995	0.6758	0.6402	0.4978	0.5072	0.6097	0.6217
GBR	1996	0.6880	0.6501	0.5340	0.5195	0.6308	0.6687
GBR	1997	0.7126	0.6671	0.5453	0.5407	0.6450	0.7216
GBR	1998	0.7468	0.6872	0.5885	0.5761	0.6780	0.7893
GBR	1999	0.7726	0.7045	0.6098	0.6092	0.7300	0.8296
GBR	2000	0.7992	0.7324	0.6594	0.6429	0.7823	0.8263
GBR	2001	0.8340	0.7652	0.6852	0.6808	0.8202	0.8853
GBR	2002	0.8824	0.8031	0.7024	0.7102	0.8769	1.0689
GBR	2003	0.9273	0.8433	0.7468	0.7517	0.9239	1.1913
GBR	2004	0.9490	0.8584	0.7775	0.7869	0.9639	1.2499
GBR	2005	0.9884	0.9214	0.7990	0.8123	1.0019	1.2222
GBR	2006	1.0173	0.9668	0.8262	0.8486	1.0557	1.2534
GBR	2007	1.0242	0.9853	0.8608	0.9002	1.1090	1.2749
GBR	2008	1.0458	1.0114	0.9013	0.9039	1.1369	1.2113
GBR	2009	1.0510	1.0307	0.9008	0.9503	1.1901	1.0523
GBR	2010	1.0481	1.0555	0.9013	0.9509	1.1897	0.9775
GBR	2011	1.0445	1.0849	0.9009	0.9505	1.1891	0.9632
GRC	1995	0.6419	0.5957	0.2353	0.2108	0.3212	0.5109
GRC	1996	0.6951	0.6435	0.2729	0.2458	0.3529	0.5589
GRC	1997	0.7366	0.6807	0.3042	0.2835	0.3963	0.6052
GRC	1998	0.7722	0.7138	0.3174	0.3073	0.4150	0.6309
GRC	1999	0.7923	0.7471	0.3467	0.3486	0.4431	0.6453
GRC	2000	0.8121	0.7929	0.3644	0.3750	0.4532	0.6808
GRC	2001	0.8391	0.8172	0.4009	0.3824	0.4677	0.7960
GRC	2002	0.8663	0.8466	0.4453	0.4170	0.5199	0.7705
GRC	2003	0.9025	0.8770	0.4553	0.4252	0.6187	0.8201
GRC	2004	0.9275	0.9185	0.4806	0.4564	0.5723	0.8513
GRC	2005	0.9592	0.9635	0.4918	0.4797	0.6012	0.8291
GRC	2006	0.9869	1.0068	0.4631	0.4901	0.6282	0.7942
GRC	2007	1.0163	1.0478	0.5099	0.5324	0.6647	0.7616
GRC	2008	1.0559	1.1077	0.5595	0.5508	0.7449	0.7005
GRC	2009	1.0636	1.0735	0.5485	0.5200	0.6992	0.6366
GRC	2010	1.0849	1.0954	0.5366	0.5082	0.6631	0.6306
GRC	2011	1.1059	1.1178	0.4903	0.4674	0.6186	0.5795
HUN	1995	65.5967	61.3502	31.8132	20.9063	24.1259	22.7302
HUN	1996	83.0803	75.3219	40.9101	25.8320	29.7928	33.2363
HUN	1997	102.7287	92.9869	48.2038	30.7811	35.1653	46.2482
HUN	1998	116.5971	104.1715	56.1661	35.6819	40.5319	61.0738
HUN	1999	125.0022	115.2674	57.1054	34.9291	39.6212	82.1050

HUN	2000	134.2703	130.0179	69.4539	41.6560	47.1390	85.5699
HUN	2001	150.1583	145.3471	76.1110	47.1318	54.2461	109.3946
HUN	2002	164.7392	159.3895	85.6914	52.9177	61.8529	138.4817
HUN	2003	170.7678	166.9425	82.2550	57.1723	109.8668	126.0087
HUN	2004	180.0396	178.4054	101.3469	62.1310	70.6555	138.1525
HUN	2005	182.7026	183.2714	107.2199	64.8363	73.6866	135.2296
HUN	2006	183.9708	185.8638	114.3441	68.9222	77.5677	147.2368
HUN	2007	194.0459	190.3810	124.1144	73.4731	85.3214	138.9321
HUN	2008	203.3154	194.8173	130.8095	76.3939	87.7952	125.2279
HUN	2009	206.8623	200.6085	133.0526	76.1016	85.6596	109.7127
HUN	2010	201.4161	204.0804	135.8700	75.9753	85.4866	115.2853
HUN	2011	193.9640	204.3846	136.2533	78.0471	88.0201	113.4137
IND	1995	7.9510	12.0618	1.0689	0.6956	0.6247	12.6450
IND	1996	8.6179	12.7176	1.1113	0.7474	0.6751	13.8887
IND	1997	9.2997	13.4035	1.2745	0.8613	0.7881	14.3697
IND	1998	10.1781	14.2695	1.4392	0.9648	0.8863	15.2036
IND	1999	10.4913	14.7353	1.5163	1.0264	0.9445	15.9048
IND	2000	10.7956	15.7994	1.6387	1.0449	0.9459	15.4041
IND	2001	11.1715	16.2871	1.6948	1.0559	0.9561	15.4605
IND	2002	11.5331	17.0303	1.8131	1.1023	1.0112	15.4194
IND	2003	12.0083	17.7551	1.8645	1.1415	1.0963	15.7598
IND	2004	12.7948	19.0565	2.0466	1.2842	1.2867	17.4146
IND	2005	13.2035	19.8092	2.2927	1.4429	1.4675	17.1713
IND	2006	13.7879	20.9750	2.6258	1.6685	1.6728	17.8286
IND	2007	14.3112	21.9468	2.8575	1.8750	1.8944	18.7220
IND	2008	15.2806	23.7970	3.1461	2.0907	2.1036	19.4306
IND	2009	15.9502	24.5511	3.5217	2.3595	2.3745	20.5108
IND	2010	16.9975	26.0698	3.8438	2.6301	2.6260	22.8962
IND	2011	18.5354	27.8851	4.2876	2.9712	2.9191	24.5094
IRL	1995	0.8536	0.8054	0.5255	0.6212	0.7758	0.3922
IRL	1996	0.8722	0.8267	0.5511	0.6547	0.7836	0.4876
IRL	1997	0.9070	0.8690	0.6045	0.7147	0.8455	0.5924
IRL	1998	0.9925	0.9549	0.6433	0.7519	0.8676	0.7548
IRL	1999	1.0495	1.0151	0.6884	0.8101	0.9172	0.8277
IRL	2000	1.1651	1.1046	0.7428	0.8753	0.9816	1.1564
IRL	2001	1.2554	1.1875	0.8133	0.9390	1.0449	1.3038
IRL	2002	1.3194	1.2490	0.8400	0.9917	1.0904	1.4173
IRL	2003	1.4005	1.3062	0.8800	1.0333	1.1601	1.8420
IRL	2004	1.4291	1.3299	0.9150	1.0792	1.2060	1.9384
IRL	2005	1.5025	1.3828	0.9877	1.0997	1.3738	2.1767
IRL	2006	1.5876	1.4506	1.1244	1.1401	1.3126	2.0696
IRL	2007	1.5696	1.4535	1.1536	1.1736	1.5463	1.5955
IRL	2008	1.5225	1.4673	1.1302	1.2305	1.5479	1.2071
IRL	2009	1.4398	1.4106	1.1046	1.1990	1.4630	0.9958
IRL	2010	1.3148	1.3574	1.0795	1.1794	1.4518	0.8114
IRL	2011	1.2919	1.3580	1.0924	1.1754	1.4301	0.8326
ITA	1995	0.8753	0.8189	0.6615	0.7034	0.9213	0.1430
ITA	1996	0.9055	0.8438	0.6972	0.7330	0.9129	0.1557
ITA	1997	0.9324	0.8746	0.7363	0.7683	0.9258	0.1630
ITA	1998	0.9603	0.8986	0.7474	0.7674	0.8832	0.1824
ITA	1999	0.9884	0.9303	0.7395	0.7853	0.9019	0.1948
ITA	2000	1.0356	0.9995	0.8047	0.7857	0.9050	0.2172
ITA	2001	1.0784	1.0355	0.7772	0.8358	0.9350	0.2384

ITA	2002	1.1112	1.0638	0.7926	0.8634	0.9553	0.2451
ITA	2003	1.1546	1.1071	0.7428	0.8138	1.0716	0.2476
ITA	2004	1.1895	1.1620	0.7972	0.9032	0.9900	0.2503
ITA	2005	1.2281	1.2275	0.7863	0.9504	1.0284	0.2326
ITA	2006	1.2367	1.2428	0.7760	0.9759	1.0378	0.2114
ITA	2007	1.2363	1.2375	0.7335	1.0086	1.0967	0.2052
ITA	2008	1.2604	1.2714	0.8236	1.0011	1.1913	0.1875
ITA	2009	1.2355	1.2436	0.8668	1.0251	1.2244	0.1704
ITA	2010	1.2114	1.2480	0.8739	1.0373	1.2403	0.1895
ITA	2011	1.2023	1.2396	0.8906	1.0566	1.2630	0.1902
JPN	1995	182.5855	161.0369	120.7556	123.1908	158.1336	103.5972
JPN	1996	182.4207	160.5517	117.4488	120.9189	153.3989	104.0686
JPN	1997	188.0516	164.7838	118.9296	124.0185	159.0216	104.4092
JPN	1998	190.3360	165.5100	119.3956	122.9075	158.0479	99.2099
JPN	1999	191.8861	165.8047	117.2363	122.6874	158.3786	98.5109
JPN	2000	195.2623	168.8875	116.7744	123.4776	161.2615	94.9391
JPN	2001	197.5186	170.4074	115.8696	121.6124	157.7558	90.3372
JPN	2002	198.7677	170.6628	116.7756	118.4524	150.9596	90.0128
JPN	2003	201.4339	172.1950	113.4861	118.4444	152.7731	84.2700
JPN	2004	205.5206	176.2181	112.6295	117.6416	148.4304	81.9509
JPN	2005	209.8072	181.3467	117.2466	122.2860	149.7776	74.5288
JPN	2006	209.2020	181.2833	118.9428	124.5598	151.5790	67.5579
JPN	2007	208.4497	179.9532	119.4799	125.1396	152.3818	64.4841
JPN	2008	211.8596	184.1467	119.0780	124.6394	151.8951	60.6061
JPN	2009	202.3107	171.9638	118.6347	124.8171	152.4259	57.9292
JPN	2010	193.1608	168.8492	118.2142	125.7010	154.6216	60.0030
JPN	2011	191.6219	165.8152	117.7929	125.5867	154.0356	58.8484
KOR	1995	556.3775	596.3978	238.3300	239.8911	316.9879	177.4631
KOR	1996	580.2827	616.8690	264.1154	269.0771	344.3707	178.3904
KOR	1997	619.4820	658.2888	271.9255	282.6487	360.7763	195.1856
KOR	1998	696.2712	744.9565	278.8281	283.7215	357.6684	180.6796
KOR	1999	701.5960	740.9462	279.6676	285.6010	381.1257	222.5417
KOR	2000	726.3045	772.3126	286.7231	295.8311	371.1236	244.2063
KOR	2001	777.9046	817.9562	306.9296	301.5695	362.0801	265.2547
KOR	2002	805.2626	840.1162	309.5991	318.0279	380.6833	301.9741
KOR	2003	857.2850	889.8590	340.0242	358.3573	422.3197	276.7654
KOR	2004	911.9713	963.0759	334.7803	350.1157	408.8063	264.6760
KOR	2005	944.9720	1011.9240	357.5990	360.5305	457.8404	247.4149
KOR	2006	973.2969	1021.0750	365.1656	366.4655	460.7585	239.8703
KOR	2007	1012.8700	1036.6980	389.9181	390.8924	486.4982	254.8059
KOR	2008	1108.4050	1160.4670	403.6915	404.0490	501.0867	246.0722
KOR	2009	1145.5990	1150.2910	416.0479	416.5415	514.5031	250.6437
KOR	2010	1190.6320	1198.7680	440.8552	443.2354	543.1131	267.3467
KOR	2011	1204.7010	1219.6950	442.8758	447.1653	547.9238	266.0361
LTU	1995	1.5435	1.5086	0.2474	0.2471	0.3285	2.1321
LTU	1996	1.8814	1.8142	0.3849	0.3611	0.4623	1.8618
LTU	1997	2.0327	2.0087	0.3779	0.3776	0.5163	2.2117
LTU	1998	2.1126	2.0254	0.4677	0.4406	0.5877	2.1090
LTU	1999	2.0580	1.9786	0.4807	0.4419	0.5677	2.0770
LTU	2000	2.1193	2.1419	0.4563	0.4158	0.5260	2.3243
LTU	2001	2.0953	2.0708	0.4748	0.4451	0.5598	2.2680
LTU	2002	2.0773	2.0307	0.5320	0.5058	0.6356	2.4614
LTU	2003	2.0322	1.9958	0.5222	0.5470	0.8890	2.5178

LTU	2004	2.0313	2.0675	0.5988	0.5662	0.7156	2.5413
LTU	2005	2.1074	2.2103	0.6719	0.6398	0.8067	2.6753
LTU	2006	2.2422	2.3653	0.7674	0.7631	1.0007	2.4502
LTU	2007	2.4243	2.5331	0.8681	0.8856	1.3659	2.5022
LTU	2008	2.6032	2.7291	1.0053	1.0075	1.5121	2.2783
LTU	2009	2.4832	2.5094	0.8621	0.8633	1.2948	1.8442
LTU	2010	2.4941	2.5370	0.8605	0.8795	1.3332	1.5865
LTU	2011	2.5898	2.6533	1.0242	0.9544	1.4660	1.5068
LVA	1995	0.2641	0.2433	0.0532	0.0449	0.0582	0.1994
LVA	1996	0.3139	0.2781	0.0749	0.0677	0.0809	0.2275
LVA	1997	0.3333	0.2995	0.0816	0.0648	0.0825	0.3319
LVA	1998	0.3537	0.3184	0.0845	0.0649	0.0844	0.3096
LVA	1999	0.3666	0.3241	0.0907	0.0695	0.0899	0.2974
LVA	2000	0.3991	0.3508	0.0934	0.0708	0.0917	0.3191
LVA	2001	0.3948	0.3539	0.0908	0.0764	0.0978	0.3217
LVA	2002	0.3940	0.3610	0.0946	0.0801	0.1021	0.4042
LVA	2003	0.3925	0.3892	0.0989	0.0916	0.1539	0.3983
LVA	2004	0.4253	0.4278	0.1190	0.1028	0.1285	0.4146
LVA	2005	0.4490	0.4692	0.1474	0.1348	0.1903	0.4265
LVA	2006	0.4997	0.5313	0.1884	0.1712	0.2461	0.4262
LVA	2007	0.5680	0.6177	0.2489	0.2316	0.3256	0.4423
LVA	2008	0.6325	0.6807	0.3133	0.2617	0.3747	0.3565
LVA	2009	0.5926	0.6319	0.2530	0.2140	0.2963	0.2861
LVA	2010	0.5674	0.5772	0.2531	0.2138	0.2999	0.2463
LVA	2011	0.5820	0.5960	0.2884	0.2567	0.3562	0.2827
MEX	1995	3.3100	3.5339	0.7565	0.7898	0.3427	4.1941
MEX	1996	4.1607	4.3414	0.9040	0.9582	0.4029	5.4963
MEX	1997	4.7604	4.9946	1.0977	1.1735	0.4999	6.1711
MEX	1998	5.4781	5.7592	1.3384	1.3691	0.6014	6.7756
MEX	1999	6.3430	6.5641	1.5334	1.5382	0.6962	7.9693
MEX	2000	7.0296	7.2738	1.6877	1.7153	0.7878	10.0585
MEX	2001	7.4005	7.6530	1.7425	1.7827	0.8155	10.8421
MEX	2002	7.9742	8.2812	1.8210	1.8579	0.8394	12.9067
MEX	2003	8.5162	8.9145	1.8492	1.8751	0.8648	13.4305
MEX	2004	9.1403	9.8315	1.9355	1.9115	0.9165	14.1705
MEX	2005	9.6348	10.5219	1.8680	1.9026	0.9582	14.6007
MEX	2006	10.0750	11.0655	1.9547	2.0473	0.9252	15.4848
MEX	2007	10.5157	11.4672	2.0634	2.1785	0.9554	16.8595
MEX	2008	11.2012	12.3908	2.0454	2.2200	0.9254	17.7509
MEX	2009	11.5876	12.4166	2.0630	2.2287	0.9193	16.0017
MEX	2010	12.0670	12.6617	2.2494	2.4230	1.0010	19.2338
MEX	2011	12.6648	13.2100	2.4046	2.6138	1.0774	21.7993
MLT	1995	0.6772	0.6839	0.3890	0.3476	0.3539	0.6628
MLT	1996	0.6846	0.6914	0.4185	0.3762	0.3826	0.6057
MLT	1997	0.6991	0.7015	0.4521	0.4115	0.4084	0.5444
MLT	1998	0.7115	0.7149	0.4776	0.4386	0.4292	0.4696
MLT	1999	0.7124	0.7191	0.5088	0.4691	0.4434	0.4624
MLT	2000	0.7360	0.7420	0.5494	0.4919	0.4598	0.4507
MLT	2001	0.7458	0.7584	0.6487	0.6059	0.5632	0.4687
MLT	2002	0.7603	0.7712	0.5868	0.5353	0.4917	0.4935
MLT	2003	0.7924	0.8032	0.5030	0.4413	0.5993	0.4710
MLT	2004	0.8116	0.8207	0.6601	0.5935	0.5463	0.4525
MLT	2005	0.8149	0.8273	0.6882	0.5735	0.5319	0.5198

MLT	2006	0.8275	0.8429	0.6933	0.5791	0.5464	0.4626
MLT	2007	0.8386	0.8630	0.7076	0.5455	0.5260	0.4645
MLT	2008	0.8472	0.8824	0.7118	0.5029	0.5177	0.4926
MLT	2009	0.8565	0.8926	0.7377	0.5262	0.5127	0.4445
MLT	2010	0.8830	0.9267	0.7258	0.5226	0.5265	0.4434
MLT	2011	0.8936	0.9466	0.6786	0.4877	0.4898	0.4554
NLD	1995	0.9697	0.8906	0.7799	0.9913	1.1330	0.5206
NLD	1996	0.9835	0.9071	0.7809	1.0072	1.1344	0.5569
NLD	1997	1.0098	0.9382	0.8309	1.0338	1.1543	0.6269
NLD	1998	1.0327	0.9479	0.8946	1.0749	1.2024	0.6766
NLD	1999	1.0648	0.9796	0.9222	1.0976	1.2129	0.7603
NLD	2000	1.1170	1.0566	1.0256	1.1905	1.3074	0.8207
NLD	2001	1.1793	1.1100	1.1015	1.2588	1.3764	0.9409
NLD	2002	1.2420	1.1523	1.1714	1.3151	1.4185	1.0927
NLD	2003	1.2826	1.1976	1.1285	1.2648	1.7423	1.1363
NLD	2004	1.3004	1.2272	1.2447	1.3558	1.4900	1.1238
NLD	2005	1.3377	1.2895	1.2605	1.3569	1.5080	1.1756
NLD	2006	1.3432	1.3106	1.2936	1.3899	1.5442	1.1009
NLD	2007	1.3379	1.3075	1.2910	1.4553	1.6014	1.0955
NLD	2008	1.3612	1.3429	1.3760	1.4338	1.6698	1.0360
NLD	2009	1.3708	1.3068	1.3985	1.4641	1.6995	1.0243
NLD	2010	1.3435	1.3172	1.4082	1.4769	1.7128	0.9953
NLD	2011	1.3431	1.3440	1.4300	1.4917	1.7252	0.9769
POL	1995	1.4760	1.4038	0.5011	0.4151	0.4669	1.0188
POL	1996	1.7981	1.6241	0.6623	0.5556	0.6248	1.1848
POL	1997	2.0599	1.8749	0.8013	0.6670	0.7361	1.3904
POL	1998	2.2676	2.0845	0.9336	0.7764	0.8663	1.5809
POL	1999	2.3883	2.2137	0.9996	0.8338	0.9315	1.7163
POL	2000	2.5758	2.4308	1.0718	0.8870	1.0057	2.1695
POL	2001	2.6733	2.5090	1.1339	0.9098	0.9917	2.2469
POL	2002	2.7175	2.5921	1.1695	0.9166	0.9782	2.2931
POL	2003	2.7197	2.6772	1.0816	0.9245	1.4901	2.3824
POL	2004	2.7370	2.8113	1.1452	0.9187	0.9798	2.5250
POL	2005	2.7856	2.8878	1.1460	0.9343	1.0108	2.6434
POL	2006	2.7907	2.8216	1.1591	0.9476	1.0190	2.8914
POL	2007	2.8391	2.8143	1.2052	0.9713	1.0391	3.2460
POL	2008	2.8845	2.8279	1.3103	1.0558	1.1771	3.2277
POL	2009	2.9884	2.9113	1.3223	1.0907	1.2271	3.4178
POL	2010	2.9604	2.9564	1.3829	1.1498	1.2987	3.3404
POL	2011	2.9401	3.0482	1.4582	1.2242	1.3947	3.3203
PRT	1995	0.7131	0.6996	0.5162	0.4224	0.3729	0.4069
PRT	1996	0.7412	0.7172	0.5501	0.4528	0.3953	0.4156
PRT	1997	0.7746	0.7359	0.6044	0.5008	0.4333	0.4674
PRT	1998	0.8008	0.8116	0.6515	0.5361	0.4639	0.4961
PRT	1999	0.8221	0.8086	0.6772	0.5487	0.4786	0.5204
PRT	2000	0.8443	0.8411	0.7099	0.5667	0.5087	0.5310
PRT	2001	0.8802	0.8690	0.6931	0.5908	0.5214	0.5950
PRT	2002	0.9139	0.8369	0.6995	0.6008	0.5339	0.5713
PRT	2003	0.9401	0.8752	0.5615	0.4609	0.6224	0.5433
PRT	2004	0.9659	0.9613	0.7049	0.6022	0.5427	0.5601
PRT	2005	0.9747	1.0199	0.7488	0.6150	0.5616	0.5047
PRT	2006	0.9976	1.0771	0.7456	0.6108	0.5858	0.4157
PRT	2007	1.0104	1.0752	0.8016	0.6049	0.6091	0.3976

PRT	2008	1.0139	1.0666	0.8320	0.5995	0.6271	0.3155
PRT	2009	1.0096	1.0638	0.8414	0.6278	0.6381	0.2930
PRT	2010	0.9992	1.0487	0.8531	0.6414	0.6550	0.2750
PRT	2011	0.9850	1.0317	0.8552	0.6496	0.6687	0.2604
ROU	1995	0.0674	0.0749	0.0226	0.0199	0.0198	0.0640
ROU	1996	0.0972	0.1105	0.0317	0.0281	0.0292	0.0860
ROU	1997	0.2261	0.2528	0.0743	0.0629	0.0605	0.2092
ROU	1998	0.3414	0.3616	0.1236	0.1085	0.1131	0.2742
ROU	1999	0.5329	0.5597	0.1601	0.1336	0.1250	0.4656
ROU	2000	0.7343	0.8017	0.2648	0.2287	0.2230	0.5684
ROU	2001	1.0048	1.1021	0.4154	0.3499	0.3479	0.6486
ROU	2002	1.2367	1.3951	0.4573	0.3973	0.4003	1.0486
ROU	2003	1.5180	1.7139	0.3761	0.3381	0.5407	1.3621
ROU	2004	1.7502	2.0564	0.5647	0.5138	0.5290	1.5887
ROU	2005	1.9541	2.3280	0.7093	0.6243	0.6535	1.6367
ROU	2006	2.0605	2.4720	0.7989	0.6917	0.6998	1.7754
ROU	2007	2.2055	2.6449	1.0306	0.7846	0.8080	1.8898
ROU	2008	2.4439	2.9429	1.3052	0.9845	1.0834	1.8312
ROU	2009	2.4344	2.8842	1.1323	0.8836	0.9456	1.6195
ROU	2010	2.4815	2.9290	1.0591	0.7926	0.7980	1.5614
ROU	2011	2.5778	3.0407	1.3215	1.0363	1.1096	1.2363
RUS	1995	1.9298	1.8331	0.5653	0.4553	0.4618	1.6198
RUS	1996	2.7602	2.6750	0.7962	0.6444	0.6448	2.4237
RUS	1997	3.4833	3.2867	0.9229	0.6893	0.6915	2.4509
RUS	1998	3.4386	3.1243	0.9784	0.7037	0.7007	2.8323
RUS	1999	5.6226	5.0113	1.8138	1.2316	1.1945	5.0974
RUS	2000	7.9289	7.1204	2.7274	1.8691	1.8287	6.7950
RUS	2001	9.6998	8.6923	3.3688	2.2370	2.1363	10.1833
RUS	2002	11.1722	10.0245	4.0156	2.5570	2.3905	14.3632
RUS	2003	12.0549	11.4072	4.9519	3.0018	2.8503	15.6255
RUS	2004	13.7836	13.2215	6.2099	3.7245	3.5830	16.5538
RUS	2005	15.8174	16.1350	7.4433	4.2200	4.0413	18.2599
RUS	2006	17.4500	17.5059	9.2425	5.1222	4.8522	20.5380
RUS	2007	19.3038	19.0639	11.7245	6.4569	6.1217	22.3425
RUS	2008	21.8509	21.3569	14.5952	8.0693	7.6096	24.1239
RUS	2009	22.2673	21.0754	14.6780	7.8620	7.3611	24.7253
RUS	2010	23.3439	21.8455	15.7709	8.6544	8.1234	29.7575
RUS	2011	25.0387	23.7211	18.2348	10.1135	9.4950	32.9567
SVK	1995	0.4928	0.5040	0.1046	0.0941	0.1058	0.3858
SVK	1996	0.4975	0.4962	0.1200	0.1044	0.1162	0.3653
SVK	1997	0.5468	0.5237	0.1482	0.1296	0.1426	0.4364
SVK	1998	0.5778	0.5547	0.1627	0.1438	0.1578	0.4600
SVK	1999	0.6072	0.5891	0.1824	0.1522	0.1659	0.4936
SVK	2000	0.6499	0.6905	0.2149	0.1712	0.1741	0.4981
SVK	2001	0.6933	0.7388	0.2282	0.1848	0.1875	0.5349
SVK	2002	0.7152	0.7681	0.2316	0.2041	0.2099	0.6441
SVK	2003	0.7807	0.8293	0.2360	0.2139	0.3731	0.6891
SVK	2004	0.8265	0.8781	0.2762	0.2273	0.2422	0.7297
SVK	2005	0.8344	0.9016	0.2976	0.2337	0.2340	0.6460
SVK	2006	0.8713	0.9226	0.3124	0.2436	0.2383	0.6821
SVK	2007	0.8900	0.9225	0.3339	0.2734	0.2708	0.6477
SVK	2008	0.9191	0.9242	0.3425	0.2688	0.3637	0.6676
SVK	2009	0.9003	0.9044	0.3321	0.2603	0.3542	0.6389

SVK	2010	0.8868	0.8954	0.3385	0.2697	0.3623	0.6690
SVK	2011	0.8837	0.8985	0.3475	0.2788	0.3710	0.6671
SVN	1995	0.3849	0.3817	0.2992	0.2297	0.2170	0.1226
SVN	1996	0.4337	0.4235	0.3384	0.2600	0.2472	0.1456
SVN	1997	0.4881	0.4691	0.3887	0.2976	0.2810	0.1736
SVN	1998	0.5208	0.5066	0.4217	0.3213	0.3050	0.1888
SVN	1999	0.5538	0.5475	0.4443	0.3561	0.3307	0.2067
SVN	2000	0.5994	0.6145	0.5062	0.3731	0.3521	0.2050
SVN	2001	0.6527	0.6712	0.5874	0.4221	0.3900	0.2272
SVN	2002	0.7055	0.7210	0.5990	0.4544	0.4366	0.2687
SVN	2003	0.7528	0.7662	0.6118	0.4789	0.4560	0.2993
SVN	2004	0.7952	0.8158	0.6609	0.5165	0.4797	0.2829
SVN	2005	0.8303	0.8623	0.6913	0.5393	0.5019	0.2850
SVN	2006	0.8568	0.8959	0.6950	0.5705	0.5317	0.3126
SVN	2007	0.8905	0.9252	0.7330	0.6042	0.6177	0.3558
SVN	2008	0.9348	0.9730	0.7838	0.6452	0.6623	0.3283
SVN	2009	0.9562	0.9784	0.7561	0.6297	0.6285	0.3712
SVN	2010	0.9455	0.9685	0.7628	0.6372	0.6357	0.3397
SVN	2011	0.9549	0.9812	0.7857	0.6545	0.6471	0.3489
SWE	1995	9.9636	9.3067	8.1361	9.1367	11.3591	4.4091
SWE	1996	10.1595	9.4101	8.6564	9.7400	11.8062	4.4707
SWE	1997	10.6026	9.8032	9.0599	10.2024	12.1688	5.0136
SWE	1998	10.7814	9.8449	9.3368	10.5789	12.5841	5.1984
SWE	1999	11.1947	10.1862	9.5789	10.4991	12.5070	5.7135
SWE	2000	11.5853	10.7600	10.3224	11.3477	13.7071	5.2177
SWE	2001	12.2468	11.2437	10.6734	11.9812	14.5351	5.6181
SWE	2002	12.6759	11.5037	11.1368	12.4956	15.0806	6.1077
SWE	2003	13.2084	11.8816	10.9117	12.8149	17.1970	6.7546
SWE	2004	13.7288	12.4475	11.5740	13.2315	16.3403	8.2124
SWE	2005	14.2658	13.0435	11.8524	13.5782	16.9372	8.9185
SWE	2006	14.2494	13.2068	11.9453	13.8091	17.4144	8.5668
SWE	2007	14.2549	13.3285	12.2464	14.2858	18.9030	7.8206
SWE	2008	14.5803	13.7670	12.6708	14.2446	19.4801	7.9610
SWE	2009	14.4606	13.4110	13.0992	14.4847	19.6617	7.3035
SWE	2010	14.1894	13.3128	12.9408	14.4595	19.6253	7.8647
SWE	2011	14.0978	13.2894	13.3581	14.8727	20.1554	8.3112
TUR	1995	0.0264	0.0282	0.0087	0.0065	0.0051	0.0202
TUR	1996	0.0470	0.0488	0.0178	0.0134	0.0105	0.0363
TUR	1997	0.0895	0.0915	0.0356	0.0257	0.0218	0.0665
TUR	1998	0.1614	0.1593	0.0642	0.0468	0.0400	0.1157
TUR	1999	0.2631	0.2704	0.1304	0.0855	0.0684	0.1561
TUR	2000	0.3802	0.3931	0.1579	0.1085	0.0912	0.2392
TUR	2001	0.6169	0.6231	0.2265	0.1537	0.1300	0.4032
TUR	2002	0.8108	0.8403	0.2517	0.1804	0.1657	0.7101
TUR	2003	0.9965	1.0684	0.3015	0.2153	0.1999	0.8679
TUR	2004	1.1386	1.2382	0.3696	0.2736	0.2590	0.9546
TUR	2005	1.2153	1.3805	0.3916	0.3013	0.2810	1.0351
TUR	2006	1.2789	1.4880	0.4538	0.3505	0.3282	0.9198
TUR	2007	1.3267	1.5350	0.5044	0.3967	0.3664	0.8643
TUR	2008	1.4585	1.6564	0.5692	0.4606	0.4221	0.9040
TUR	2009	1.4678	1.6848	0.4944	0.4237	0.3806	1.0263
TUR	2010	1.4724	1.7185	0.5393	0.4672	0.4275	1.0766
TUR	2011	1.5502	1.8233	0.5935	0.5251	0.4855	1.1238

TWN	1995	20.4524	24.7885	9.9156	10.5041	11.8303	18.5292
TWN	1996	21.0604	25.0217	11.0370	11.7412	13.3820	19.6705
TWN	1997	21.8025	25.4188	12.1470	12.6437	14.3695	21.4684
TWN	1998	22.2260	25.8328	13.0197	13.6215	15.6446	21.4764
TWN	1999	21.7403	24.9534	13.1987	13.8400	15.9548	22.0773
TWN	2000	21.3967	24.3976	13.6463	14.2823	16.4833	21.5651
TWN	2001	21.3728	24.1538	14.1142	14.7906	17.1296	20.1266
TWN	2002	21.0402	23.7508	13.9173	14.8019	17.2493	21.3926
TWN	2003	20.8001	23.4695	14.3266	15.0834	17.5045	20.6060
TWN	2004	20.8494	23.3349	14.3757	15.2170	17.6459	20.9832
TWN	2005	20.6537	23.1803	14.2542	15.8093	18.4901	20.1632
TWN	2006	21.1165	23.2486	14.6921	16.0737	18.8768	19.5080
TWN	2007	20.7976	24.2536	14.9746	16.1812	19.2221	20.9463
TWN	2008	20.5378	23.6745	14.4791	16.0629	19.4164	20.7901
TWN	2009	20.7461	25.5078	14.2369	16.3472	19.0062	20.0563
TWN	2010	20.4912	26.7448	15.1382	17.4111	20.3157	21.3954
TWN	2011	19.9303	25.0534	15.3216	17.6859	20.5778	21.2223

Table C3: Traded Sector; Value Data; in Billions of National Currency Units

$k = 1$; USA; $t = 1-17$ corresponds to 1995-2011

k	t	V_{kt3}	$-V_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
1	1	3888907	2567220	242848	441907	78684	558248
1	2	4050138	2658712	237843	465878	74379	613326
1	3	4286078	2820065	253043	481987	81901	649082
1	4	4324696	2805348	275454	506401	78563	658930
1	5	4468453	2899548	289971	535897	81159	661878
1	6	4688169	3063951	319094	538832	76769	689523
1	7	4461202	2893102	317954	513740	74160	662246
1	8	4389296	2809253	321123	519348	71659	667913
1	9	4570872	2926843	330497	527519	77881	708132
1	10	4948488	3136180	372249	518348	70241	851470
1	11	5446413	3531004	394714	526860	69563	924272
1	12	5769655	3750678	434860	555470	74329	954318
1	13	6177340	4069387	428754	574936	71270	1032993
1	14	6421138	4282282	449787	563594	71438	1054037
1	15	5337023	3359925	412673	499888	59755	1004782
1	16	5749528	3637964	436242	519770	61941	1093611
1	17	6271731	3956706	475810	568238	67889	1203088

$k = 2$; Australia; Traded Sector; Value Data

k	t	V_{kt3}	$-V_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
2	1	292723	181607	6538	22535	26446	55597
2	2	304538	191680	6838	23122	26526	56372
2	3	313798	194581	7289	24070	26672	61186
2	4	322022	200963	7746	24939	26788	61586
2	5	335518	209181	8100	25359	26255	66623
2	6	369835	230818	8857	26911	26774	76475
2	7	387981	241588	9482	27873	26415	82623
2	8	394391	246753	10949	29632	27770	79287
2	9	406626	251922	11783	29946	27828	85147

2	10	450953	281282	12565	32601	28626	95879
2	11	488972	297536	13449	35579	29388	113020
2	12	524047	320706	14390	38077	31387	119487
2	13	553472	337824	15395	40719	33684	125850
2	14	595936	362899	16541	43729	36289	136478
2	15	645994	381427	17475	46208	38295	162589
2	16	714744	409510	18841	49742	41713	194938
2	17	725153	412291	18988	50101	42196	201577

k = 3; Austria; Traded Sector; Value Data

k	t	V_{kt3}	$-V_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
3	1	91635	56055	2838	15978	4357	12407
3	2	93349	57497	3126	15787	4189	12750
3	3	97380	60044	2988	16325	4031	13992
3	4	100644	62232	3064	17112	4048	14188
3	5	103734	63795	4155	16467	4069	15248
3	6	113469	70571	4248	17111	4116	17423
3	7	119444	75623	4252	17614	4104	17851
3	8	121205	77431	4570	17611	3954	17639
3	9	121719	77943	4396	16891	5096	17393
3	10	130395	84965	5787	17339	3544	18760
3	11	138145	90689	6138	17968	3527	19823
3	12	151352	100067	6478	18605	3719	22483
3	13	164635	109032	6368	20057	4020	25158
3	14	172556	117505	6312	22297	4217	22225
3	15	149369	101188	6521	21775	3758	16127
3	16	164525	113798	6474	21600	3725	18928
3	17	183652	127397	7125	23802	4126	21202

k = 4; Belgium; Traded Sector; Value Data

k	t	V_{kt3}	$-V_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
4	1	144274	103170	3743	11020	11533	14808
4	2	144471	103214	3847	11572	11065	14773
4	3	154150	110581	3985	12222	10878	16484
4	4	157779	113429	4083	12768	10734	16765
4	5	160138	116221	4230	13285	10757	15645
4	6	184236	137484	4355	14181	10370	17846
4	7	186649	140245	4555	15174	10377	16298
4	8	179124	132351	4594	15556	10063	16560
4	9	177132	131039	4018	14889	11091	16095
4	10	191483	143009	5070	16614	8702	18088
4	11	196632	147805	5395	16696	8355	18381
4	12	217182	167049	5312	17796	8174	18851
4	13	229549	177895	5721	18922	7695	19316
4	14	236222	186425	6417	19210	7406	16764
4	15	192920	148047	5943	18846	7167	12917
4	16	217864	168592	5920	18780	7147	17425
4	17	239948	189328	6028	19135	7289	18168

k = 5; Bulgaria; Traded Sector; Value Data

k	t	V_{kt3}	$-V_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
---	---	-----------	------------	-----------	-----------	-----------	-----------

5	1	1023	695	12	21	135	160
5	2	2132	1507	20	38	240	327
5	3	22011	14726	171	311	2253	4550
5	4	22774	14801	204	352	2972	4445
5	5	21493	14097	197	373	2560	4266
5	6	24331	16481	220	395	2599	4636
5	7	26310	17829	233	428	2693	5127
5	8	26564	17858	270	434	2770	5232
5	9	29348	20158	234	259	3047	5650
5	10	34071	24217	311	511	2888	6144
5	11	39015	28658	376	546	3125	6310
5	12	47257	35315	390	673	3392	7487
5	13	56573	42744	437	829	4141	8422
5	14	59551	44630	602	914	4625	8780
5	15	57573	43590	578	934	4456	8015
5	16	59418	44987	622	1004	4717	8088
	17	63424	48020	669	1084	4967	8684

k = 6; Brazil; Traded Sector; Value Data

k	t	V_{kt3}	$-V_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
6	1	443526	288240	17019	20553	34429	83285
6	2	509761	337270	20159	24567	39620	88145
6	3	558428	368260	21436	26423	41153	101156
6	4	560754	370528	21941	27306	41053	99926
6	5	631754	422307	22933	29095	42729	114690
6	6	770880	521434	27967	35664	49624	136191
6	7	856418	581499	29513	38083	51376	155947
6	8	992772	673540	32008	41772	54871	190581
6	9	1267215	868392	38727	52623	65658	241815
6	10	1503793	1036379	46474	65780	76534	278626
6	11	1615991	1132164	52421	77477	84043	269886
6	12	1714185	1190368	57428	87261	87712	291416
6	13	1904068	1333513	78258	121322	105304	265671
6	14	2240621	1575787	88879	140176	113117	322662
6	15	2100859	1427298	93600	151328	115237	313396
6	16	2396034	1631133	107305	172910	130054	354632
6	17	2482395	1673505	111227	176781	135366	385516

k = 7; Canada; Traded Sector; Value Data

k	t	V_{kt3}	$-V_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
7	1	513520	326040	11828	70934	6022	98696
7	2	537518	341625	12850	73770	5801	103472
7	3	564501	363709	14473	75648	5561	105110
7	4	573235	369879	15647	79103	5254	103352
7	5	637721	406279	17367	82732	5232	126111
7	6	757181	481897	19417	89057	5032	161778
7	7	742998	476049	20095	91094	4893	150867
7	8	743108	478439	21205	92881	4580	146003
7	9	767099	486259	22067	95957	4619	158197
7	10	820345	515041	23911	101610	4732	175051
7	11	867417	540428	26980	104128	4762	191119
7	12	877013	547425	29890	105552	4413	189733

7	13	890509	555081	30521	108352	4058	192497
7	14	939341	585519	33053	112251	3826	204692
7	15	893841	557157	31599	99925	3448	201712
7	16	1071048	699463	39244	123708	4295	204338
7	17	1136585	740206	41861	131850	4548	218120

k = 8; China; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
8	1	10343236	6767574	24461	431813	1604955	1514433
8	2	12181542	7978332	30698	521442	1856957	1794113
8	3	13289267	8732795	36509	589589	1950045	1980329
8	4	13710804	9035988	40282	616593	1955782	2062159
8	5	14261575	9442315	45110	653615	1937271	2183264
8	6	15704062	10469422	53896	738376	1987298	2455070
8	7	17079210	11447969	62246	809696	2066140	2693159
8	8	18530696	12488583	72500	887480	2130240	2951893
8	9	22188786	15360481	94384	964401	2365616	3403904
8	10	26985927	18906977	121274	1076331	2876246	4005099
8	11	32788387	23514164	157863	1223168	3160276	4732916
8	12	40977026	30062111	209619	1410339	3548359	5746598
8	13	51537819	38384745	221023	1655076	4268729	7008246
8	14	60729200	45232269	282287	1986119	4969803	8258722
8	15	63091041	46978119	293087	2063446	5180731	8575658
8	16	74751777	55735791	348265	2444346	6038724	10184651
8	17	87730993	65404484	408617	2868815	7098858	11950219

k = 9; Cyprus; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
9	1	2846	1725	121	185	237	578
9	2	2902	1783	118	191	242	568
9	3	2947	1834	112	181	260	560
9	4	2992	1802	106	170	281	633
9	5	3106	1875	113	194	267	657
9	6	3339	2078	128	194	264	675
9	7	3499	2177	124	197	267	734
9	8	3599	2245	131	207	273	743
9	9	3611	2237	135	207	297	735
9	10	3632	2198	146	261	276	751
9	11	3708	2257	136	288	288	739
9	12	3772	2389	129	317	297	640
9	13	4039	2635	149	334	295	626
9	14	4473	2968	141	411	318	635
9	15	4367	2926	156	417	309	559
9	16	4491	3009	151	400	304	627
9	17	4602	3084	152	401	307	658

k = 10; Czech Republic; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
10	1	1463651	1046331	19434	141143	15435	241308
10	2	1658634	1158115	30412	220476	24011	225620
10	3	1894882	1347031	33018	238704	25953	250176

10	4	2070787	1499523	35289	254930	27665	253380
10	5	2080354	1481372	35952	255799	27570	279661
10	6	2356625	1718252	38340	266719	28584	304730
10	7	2633284	1956985	43756	289790	29198	313555
10	8	2598546	1926758	45296	304700	30932	290860
10	9	2634486	1956929	39636	311447	42650	283824
10	10	3063615	2268080	56478	333920	29483	375654
10	11	3281336	2459014	59745	355023	27309	380245
10	12	3719600	2842257	69800	375870	28427	403246
10	13	4127438	3166931	73998	406037	33452	447020
10	14	4134882	3172570	76842	427443	35589	422438
10	15	3401841	2540292	77317	389313	28531	366388
10	16	3831610	2947357	77068	388241	28443	390501
10	17	4183657	3216788	83419	420321	30664	432465

k = 11; Germany; Traded Sector; Value Data

k	t	V_{kt3}	$-V_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
11	1	1105360	695750	86773	184742	44728	93367
11	2	1102020	697150	88716	183118	42428	90608
11	3	1147780	730750	90191	182812	41536	102491
11	4	1194960	763570	95297	184346	41432	110315
11	5	1222480	790520	93552	187704	42349	108355
11	6	1337400	882720	98423	195624	44746	115887
11	7	1369910	905010	101612	197882	45183	120223
11	8	1332770	873020	105442	193208	43093	118007
11	9	1347480	888500	112892	183230	43132	119726
11	10	1418360	940230	115834	186435	37924	137937
11	11	1478610	998480	116200	181587	38414	143929
11	12	1609610	1097180	115634	189676	39710	167410
11	13	1740460	1196260	120481	194157	37897	191665
11	14	1768630	1238080	127452	200532	35748	166818
11	15	1412570	982170	128058	180274	30528	91540
11	16	1622499	1127768	126497	177981	30166	160087
11	17	1829207	1272500	137613	193305	32778	193011

k = 12; Denmark; Traded Sector; Value Data

k	t	V_{kt3}	$-V_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
12	1	507387	318398	19949	66177	29644	73219
12	2	521238	327115	21315	68208	29435	75165
12	3	538599	330861	22694	70922	29898	84224
12	4	536672	332897	24601	73602	29916	75656
12	5	551856	340580	25838	75071	29396	80971
12	6	622962	380569	26722	76849	29386	109436
12	7	641490	396747	28950	80268	29634	105891
12	8	634038	391920	30060	80725	28989	102344
12	9	616766	382151	36266	74577	28574	95198
12	10	639215	397802	36586	74247	28368	102212
12	11	694134	439320	39181	72020	32014	111599
12	12	740891	470196	41117	75743	30960	122875
12	13	786145	510170	40761	74014	42557	118643
12	14	820637	541765	45084	80233	38276	115279
12	15	683678	446878	44943	72844	37672	81341

12	16	724129	466610	41751	67555	34965	113248
12	17	771724	507935	41938	67788	35173	118890

k = 13; Spain; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
13	1	309412	206078	11869	8148	36037	47280
13	2	329161	218158	13901	9156	36256	51690
13	3	349692	232741	15657	10611	37894	52789
13	4	367507	245630	17573	11515	38077	54712
13	5	383548	259012	18113	12430	39134	54859
13	6	424599	291722	20719	13316	39368	59474
13	7	450931	310638	22066	14201	41191	62835
13	8	463045	319641	23843	14573	40817	64171
13	9	477473	328623	22927	13820	45573	66530
13	10	505677	352813	26781	16949	40612	68522
13	11	534202	377060	28697	18898	39908	69639
13	12	571792	409003	31202	20074	39957	71556
13	13	609237	438144	32889	21107	41510	75587
13	14	621862	448710	33042	23416	42350	74344
13	15	539205	387332	30784	20114	37023	63952
13	16	564451	408316	29821	19544	36317	70453
13	17	586457	426721	28603	18742	34917	77474

k = 14; Estonia; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
14	1	2433	1733	121	269	43	267
14	2	2737	1875	142	334	53	333
14	3	3630	2576	168	387	69	430
14	4	4065	2953	176	395	81	460
14	5	3870	2788	163	397	68	454
14	6	5078	3776	213	450	75	564
14	7	5786	4290	230	505	85	676
14	8	6232	4618	263	561	93	697
14	9	6484	4682	256	597	155	794
14	10	7276	5365	334	658	125	794
14	11	8369	6223	375	742	136	893
14	12	9450	6963	428	842	176	1041
14	13	9765	6866	471	1010	217	1201
14	14	9865	6976	492	1095	259	1043
14	15	7448	5270	429	890	175	684
14	16	7752	5485	372	774	151	970
14	17	8633	6109	377	787	153	1207

k = 15; Finland; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
15	1	73769	48434	3528	5916	3982	11909
15	2	75258	50394	3756	6169	3876	11063
15	3	82678	55623	4019	6591	3927	12518
15	4	88333	58332	4442	7154	4051	14354
15	5	91982	60961	5028	7347	3957	14689
15	6	108211	73453	5299	7946	4084	17429

15	7	106560	70530	5744	8548	4228	17510
15	8	104749	68873	5845	8537	4023	17471
15	9	102705	67676	5543	8718	4162	16606
15	10	108440	72818	6315	8970	3525	16812
15	11	115001	78859	6731	9248	3551	16612
15	12	128215	89602	7214	9539	3715	18145
15	13	140864	97561	7899	9759	3597	22048
15	14	145070	103664	8064	10027	3559	19756
15	15	113178	81632	7909	8930	3088	11619
15	16	122591	88466	7821	8867	3080	14357
15	17	134144	98685	8016	9079	3152	15212

k = 16; France; Traded Sector; Value Data

k	t	V_{kt3}	$-V_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
16	1	618994	427208	28015	51429	39690	72652
16	2	613079	422796	30191	51665	38421	70006
16	3	639371	441550	30488	53095	38863	75375
16	4	668399	461552	31330	53508	38281	83728
16	5	771983	536728	36362	60052	41658	97183
16	6	845522	600126	37715	62821	40914	103946
16	7	865003	617303	39867	64163	40215	103455
16	8	846157	601948	39737	67571	39166	97735
16	9	827715	588068	36495	63797	46076	93279
16	10	856343	615169	42622	67549	38029	92974
16	11	882201	639676	45048	69240	35807	92430
16	12	916504	676518	47364	68933	35878	87811
16	13	959535	707583	51928	70781	34085	95158
16	14	977889	731080	55626	71541	33080	86562
16	15	937529	722418	55579	68349	30405	60778
16	16	1002607	779941	54414	66892	29757	71603
16	17	1018293	793616	56219	68997	30697	68764

k = 17; Great Britain; Traded Sector; Value Data

k	t	V_{kt3}	$-V_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
17	1	433915	266480	24973	41747	32589	68126
17	2	452153	276012	25363	41788	33061	75929
17	3	458995	280026	28648	45807	29664	74850
17	4	452260	274544	32201	48869	30196	66450
17	5	451768	273496	34596	50443	28346	64887
17	6	468684	284390	37801	49956	27623	68914
17	7	463934	282264	38214	48666	28126	66664
17	8	456581	278730	40117	48913	25947	62874
17	9	456404	280007	41254	50306	23587	61250
17	10	467924	288257	40677	52781	23014	63195
17	11	475849	292049	44325	54844	23630	61001
17	12	491997	300341	47324	56854	22892	64586
17	13	504241	307747	50224	53991	24480	67799
17	14	500780	303408	50035	54248	23916	69173
17	15	459532	279921	49170	57452	22367	50622
17	16	501246	307438	53316	62273	24216	54003
17	17	541042	334140	56974	66558	25896	57474

k = 18; Greece; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
18	1	44699	27355	785	1657	4378	10524
18	2	47978	29591	908	1938	4571	10970
18	3	48654	30213	1002	2234	4477	10728
18	4	50502	30581	1101	2564	4420	11836
18	5	52357	31784	1135	2952	4414	12072
18	6	58060	36052	1270	3166	4502	13070
18	7	62133	39611	1270	3231	4719	13302
18	8	62375	39202	1525	3932	5132	12584
18	9	64444	40467	1398	3948	6029	12602
18	10	66462	41996	1908	4524	5101	12933
18	11	71200	45008	1935	4951	5398	13908
18	12	73600	47889	2158	4602	6153	12798
18	13	76325	50157	2454	5060	6425	12229
18	14	84147	55763	2382	5862	6767	13373
18	15	74037	44879	2157	5524	6673	14804
18	16	72655	44041	2024	5184	6259	15147
18	17	68746	41672	1974	5038	6005	14057

k = 19; Hungary; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
19	1	5031938	3588636	153244	523953	157566	608539
19	2	6379098	4590835	182187	624439	186148	795489
19	3	8266103	5963022	224296	768670	228488	1081627
19	4	10180472	7466583	256209	880043	260125	1317512
19	5	11599551	8742070	289479	983956	237924	1346122
19	6	14090682	10827284	317865	1160131	326583	1458819
19	7	15337509	11666513	353815	1272517	364085	1680579
19	8	15399079	11475589	356319	1379104	368569	1819498
19	9	16744042	12511531	329500	1281187	563446	2058378
19	10	18269103	13416083	475687	1514761	365706	2496866
19	11	19434732	14412257	522370	1589783	369247	2541075
19	12	22280302	16748052	537840	1697084	360384	2936942
19	13	23507781	17793190	596747	1825456	387886	2904502
19	14	24769457	18796896	683910	1895139	383260	3010252
19	15	21296457	15981390	634269	1753880	302948	2623970
19	16	24972340	18800537	660474	1827803	317405	3366121
19	17	29277895	21671670	759885	2102675	367753	4375912

k = 20; India; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
20	1	13691602	8428846	168818	559845	994290	3539803
20	2	15338274	9163935	163930	584074	1036848	4389487
20	3	16789422	10247212	177503	661144	1127464	4576099
20	4	18390525	11062162	190730	714979	1154774	5267880
20	5	19555365	11706527	201013	781790	1209206	5656829
20	6	21211470	12977956	280011	867082	1271931	5814490
20	7	22546975	13800484	339748	901710	1352289	6152744
20	8	24299631	15235563	385268	899512	1365536	6413752
20	9	27607088	17457285	452215	930792	1422781	7344015

20	10	31266880	20043740	512931	964285	1490768	8255156
20	11	35314630	22478890	582401	1075683	1618186	9559470
20	12	42339880	27474060	672225	1248757	1841775	11103063
20	13	48586581	31534209	760371	1409856	2067704	12814441
20	14	54011248	35166919	870606	1590322	2316237	14067164
20	15	60864483	39613107	1014914	1840476	2703537	15692449
20	16	70602793	45770876	1184070	2127539	3116558	18403750
20	17	78812944	50886360	1320496	2383756	3511592	20710740

k = 21; Ireland; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
21	1	48901	30869	1054	2891	2649	11438
21	2	53260	34154	1220	3207	2553	12126
21	3	62524	40220	1384	3655	2538	14727
21	4	70015	43064	1706	4014	2671	18560
21	5	83056	52024	1997	4264	2747	22024
21	6	102405	68282	2283	4610	3005	24225
21	7	107991	71310	2449	4760	3147	26325
21	8	110784	69752	2683	4724	2994	30631
21	9	110446	71616	2972	4756	2964	28138
21	10	111840	74378	3340	4721	3012	26389
21	11	116652	80522	3748	4787	3191	24404
21	12	121886	84879	4373	4942	2900	24792
21	13	130845	91081	4565	4997	3096	27106
21	14	124299	86557	5503	4988	3198	24053
21	15	121458	84252	5094	4163	2488	25461
21	16	132078	91319	5148	4201	2507	28903
21	17	132306	91477	4949	3995	2309	29576

k = 22; Italy; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
22	1	684799	462384	8969	38556	84282	90608
22	2	693496	461557	10155	43406	83610	94768
22	3	730752	491004	11453	48689	82659	96947
22	4	757905	511063	12398	52512	78306	103626
22	5	778178	530677	14722	53347	77001	102431
22	6	847358	589315	15564	58701	73561	110217
22	7	866419	602711	13903	58976	79194	111635
22	8	876652	609901	13956	63157	79324	110314
22	9	878928	614460	12916	57872	89465	104215
22	10	913161	641484	13906	74414	76534	106823
22	11	935854	665422	15893	77252	75367	101920
22	12	994634	714555	17335	81762	75686	105296
22	13	1059217	763195	19032	85803	77275	113912
22	14	1061880	772723	22190	86258	78963	101746
22	15	866500	615949	19961	82002	71209	77379
22	16	944281	684846	19874	81843	71280	86438
22	17	977030	709610	21169	87252	75836	83163

k = 23; Japan; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
---	---	-----------	------------	-----------	-----------	-----------	-----------

23	1	324567880	204177950	13700000	37000000	12800000	56889930
23	2	329812320	207188130	14100000	36800000	12100000	59624190
23	3	340214240	216867770	14300000	37900000	11500000	59646470
23	4	319738240	201279680	14500000	36600000	10100000	57258560
23	5	304562890	190126470	14400000	35900000	9088326	55048094
23	6	314641340	199569670	14200000	36100000	8575791	56195879
23	7	300900050	193953570	14400000	35300000	7402100	49844380
23	8	289320900	185269410	14400000	33700000	6605061	49346429
23	9	293019060	187533250	13900000	33600000	5850056	52135754
23	10	306710500	198562090	14100000	33600000	5789360	54659050
23	11	321086560	210859330	14100000	33600000	5664789	56862441
23	12	338351030	228418320	14200000	33800000	5684886	56247824
23	13	356523660	243489850	14600000	34600000	5806573	58027237
23	14	358181650	254860320	13600000	32500000	5485187	51736143
23	15	275859830	189628330	11200000	26800000	4495287	43736213
23	16	307721820	211752760	12600000	30000000	5018330	48350730
23	17	300765930	206925660	12300000	29300000	4904200	47336070

k = 24; Republic of Korea; Traded Sector; Value Data

k	t	V_{kt3}	$-V_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
24	1	426948740	301554120	19000000	34000000	16600000	55794620
24	2	470437630	335742020	22100000	39400000	17100000	56095610
24	3	507151990	364281010	23100000	40500000	15800000	63470980
24	4	539232170	393649820	24000000	36300000	12900000	72382350
24	5	597197560	435307870	25600000	38800000	13400000	84089690
24	6	668862850	488211370	29000000	45300000	14200000	92151480
24	7	684628190	501955640	33200000	48200000	13100000	88172550
24	8	735509240	538956970	39000000	51200000	12400000	93952270
24	9	782204690	577229830	43300000	52600000	12700000	96374860
24	10	918215000	680792100	48900000	59900000	12400000	116222900
24	11	990554610	746681420	55500000	63400000	11300000	113673190
24	12	1054325500	802975330	58200000	66800000	11800000	114550170
24	13	1149873700	881221330	62400000	71900000	12600000	121752370
24	14	1381389300	1095025700	66500000	77100000	13600000	129163600
24	15	1393880300	1098466600	69600000	80400000	14000000	131413700
24	16	1641917100	1293064900	82100000	94500000	16200000	156052200
24	17	1784392300	1405452600	89200000	103000000	17600000	169139700

k = 25; Lithuania; Traded Sector; Value Data

k	t	V_{kt3}	$-V_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
25	1	22053	14721	657	2064	293	4318
25	2	26895	17573	754	2556	374	5638
25	3	28867	18311	896	2954	471	6235
25	4	29556	18726	984	3188	573	6085
25	5	26598	16739	1033	3461	519	4846
25	6	29760	19052	1098	3251	489	5870
25	7	32344	21026	1090	3415	533	6280
25	8	32161	20699	1103	3438	498	6423
25	9	35084	22417	1298	3936	638	6795
25	10	41365	26584	1514	4573	689	8005
25	11	49435	32381	1841	5115	724	9374
25	12	55191	36608	2132	5751	737	9963

25	13	61084	40753	2384	6338	1055	10554
25	14	73891	51664	2809	6903	1039	11476
25	15	53046	36529	2159	5177	862	8319
25	16	54870	37785	1920	4587	764	9814
25	17	61187	42135	1954	4692	781	11625

k = 26; Latvia; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
26	1	1739	1052	64	219	56	348
26	2	1963	1226	68	244	61	364
26	3	2321	1503	90	316	87	325
26	4	2405	1692	88	302	94	229
26	5	2120	1433	78	286	77	246
26	6	2359	1574	91	288	74	332
26	7	2645	1773	87	293	78	414
26	8	2910	1949	92	313	82	474
26	9	3454	2442	80	349	110	473
26	10	4006	2816	118	383	84	605
26	11	4803	3448	120	489	120	626
26	12	5803	4265	170	572	146	650
26	13	6941	4934	254	701	193	859
26	14	6911	4846	376	736	195	758
26	15	5364	3748	250	555	138	673
26	16	5228	3653	198	436	108	833
26	17	5811	4060	208	460	114	969

k = 27; Mexico; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
27	1	1652749	1007816	30583	79847	47365	487138
27	2	2335340	1404239	39172	104704	60619	726606
27	3	2855857	1701505	49216	143076	70473	891587
27	4	3418083	2043645	60805	181738	84541	1047354
27	5	3969358	2368298	72884	220416	101706	1206054
27	6	4576565	2756144	87323	265703	125278	1342117
27	7	4557839	2703340	92890	296484	128228	1336897
27	8	4745904	2811286	95174	305895	132290	1401259
27	9	5108247	3052223	97621	316760	135784	1505859
27	10	5973006	3550887	101776	344814	132816	1842713
27	11	6490096	3939074	105381	368182	133027	1944432
27	12	7425072	4414827	110955	391261	134977	2373052
27	13	8035711	4731593	116080	412162	132657	2643219
27	14	8826637	5163818	119094	426323	133675	2983727
27	15	8143905	4896861	107819	396753	130904	2611568
27	16	9153031	5453989	119769	453216	144675	2981382
27	17	10349802	6053078	134531	506798	158165	3497230

k = 28; Malta; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
28	1	2314	1661	27	52	292	282
28	2	2174	1502	26	54	297	295
28	3	2123	1452	24	49	308	290

28	4	2432	1696	23	47	343	323
28	5	2586	1842	28	59	344	313
28	6	3241	2360	33	62	349	437
28	7	2710	1939	31	64	356	320
28	8	2804	1949	33	70	385	367
28	9	2839	1974	27	40	409	389
28	10	2733	1969	39	67	337	321
28	11	2654	1863	45	69	341	336
28	12	2936	2115	43	78	351	349
28	13	3001	2127	41	80	354	399
28	14	2898	1984	92	149	616	57
28	15	2487	1689	75	126	489	108
28	16	2647	1798	73	122	474	180
28	17	2760	1875	75	125	487	198

k = 29; Netherlands; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
29	1	192705	127627	5055	15701	12658	31664
29	2	200532	134608	5709	16101	12116	31998
29	3	213272	144467	6809	16494	11744	33758
29	4	215433	146366	6971	17330	12238	32528
29	5	220330	150968	7285	18119	12479	31479
29	6	249880	172831	7767	17588	14402	37292
29	7	254647	174612	7957	18450	14865	38763
29	8	248083	169250	9206	19697	13663	36267
29	9	248150	167557	9596	17718	15534	37745
29	10	261956	178639	12188	19032	11967	40130
29	11	279665	192380	12301	19120	11260	44604
29	12	303469	210277	12498	19499	11656	49539
29	13	325908	228125	12214	20772	12236	52561
29	14	350916	246996	13180	20792	13278	56670
29	15	293248	205152	13179	20377	13169	41371
29	16	332468	236340	13028	20177	13041	49882
29	17	367925	264888	13626	21090	13631	54690

k = 30; Poland; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
30	1	283288	185675	6851	52798	11174	26790
30	2	342186	227679	8767	65743	13196	26801
30	3	404972	270245	10791	79901	15667	28368
30	4	448722	300048	12413	92345	18542	25374
30	5	473412	317318	12883	97840	20900	24471
30	6	540552	369183	12846	91704	16787	50032
30	7	546950	379095	12623	86165	14999	54068
30	8	545097	379667	13470	80321	13076	58563
30	9	598932	419157	13814	77908	15342	72711
30	10	731337	512027	19176	82514	10825	106795
30	11	748197	526628	19974	86190	10732	104673
30	12	833042	595721	21476	89222	10133	116490
30	13	946198	683711	25111	96596	10515	130265
30	14	998720	722186	28502	109714	12095	126223
30	15	973390	682109	29708	104010	11414	146149

30	16	1051259	767508	29405	102115	11223	141008
30	17	1197494	878267	30848	106308	11638	170433

k = 31; Portugal; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
31	1	59880	41400	682	1311	8041	8446
31	2	62960	43168	719	1468	8689	8916
31	3	66673	46136	704	1425	9535	8873
31	4	68670	47305	666	1334	10283	9082
31	5	70156	47960	793	1646	10262	9495
31	6	75742	53039	917	1744	10472	9570
31	7	77725	54372	897	1832	10863	9761
31	8	77106	53522	926	1880	11041	9737
31	9	76565	53355	773	1087	11874	9476
31	10	78986	55557	1176	2016	10639	9598
31	11	80166	57165	1332	2056	10646	8967
31	12	86553	61561	1284	2315	11095	10298
31	13	90910	65325	1240	2399	11404	10542
31	14	90752	65210	1530	2453	11381	10178
31	15	85313	61188	1514	2527	10797	9287
31	16	87423	62701	1454	2427	10486	10355
31	17	86530	62061	1394	2326	10292	10457

k = 32; Romania; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
32	1	8944	5520	101	176	1219	1928
32	2	14442	9262	144	269	1847	2920
32	3	30367	19126	236	433	3407	7165
32	4	36461	22497	375	661	6103	6825
32	5	50838	31973	482	893	6991	10499
32	6	72848	45361	825	1490	11239	13933
32	7	109026	65108	1330	2520	18997	21071
32	8	135164	81717	1750	2977	23153	25567
32	9	167628	101627	1834	2115	30877	31175
32	10	221490	135102	2847	4709	29604	49228
32	11	232296	142965	3940	5737	38314	41340
32	12	271271	167248	4128	7103	43730	49062
32	13	305659	189058	4602	8763	51724	51512
32	14	371037	228899	7499	11440	66405	56794
32	15	364609	221802	6711	10851	57346	67899
32	16	380194	231283	6245	10170	61747	70749
32	17	420931	256065	7898	12830	68477	75661

k = 33; Russia; Non-Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
33	1	1186575	712479	30846	197068	21720	224462
33	2	1566826	944441	40142	261761	29819	290663
33	3	1694136	1025189	41618	274283	31555	321491
33	4	1769947	1071428	44621	292406	33103	328389
33	5	3664993	2144542	97800	623961	70825	727865
33	6	5532007	3256401	144126	897138	97368	1136974

33	7	6745719	4208327	171445	1018077	104513	1243357
33	8	7604077	4670213	224364	1293920	133513	1282067
33	9	9300592	5906278	274164	1498821	135869	1485460
33	10	12125394	7287715	339940	1831598	145155	2520986
33	11	15544697	9172257	465342	2378018	177838	3351242
33	12	18753679	11088906	569659	2921584	219073	3954457
33	13	23165564	14018406	685112	3498152	261043	4702851
33	14	28191835	17167476	754429	3892746	294736	6082448
33	15	25250803	15394950	664405	3470848	264702	5455898
33	16	30264738	18597711	767419	3914588	290775	6694245
33	17	38333971	23409995	977299	4962141	367417	8617119

k = 34; Slovakia; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
34	1	19804	13960	254	1716	213	3661
34	2	21315	15035	283	1914	235	3848
34	3	22695	16393	321	2175	264	3542
34	4	25616	18751	338	2297	279	3951
34	5	26440	18861	296	2399	234	4650
34	6	31276	22952	319	2629	227	5149
34	7	34041	24620	408	2724	218	6071
34	8	35760	26272	301	2967	204	6016
34	9	40880	30475	359	3136	331	6579
34	10	43231	31680	483	3364	194	7510
34	11	46761	34343	601	3530	203	8084
34	12	55245	41272	705	3978	224	9066
34	13	62963	47153	746	4429	224	10411
34	14	65942	48970	827	4850	235	11060
34	15	52545	38743	780	4450	181	8391
34	16	55012	40562	698	3986	170	9596
34	17	57786	42607	731	4174	173	10101

k = 35; Slovenia; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
35	1	8358	5621	350	1358	516	513
35	2	9425	6297	375	1458	553	742
35	3	10720	7095	399	1549	585	1092
35	4	11864	7872	432	1675	628	1257
35	5	12316	8014	542	1744	610	1406
35	6	15071	10277	681	1865	669	1579
35	7	16774	11447	478	2288	800	1761
35	8	18103	12242	650	2372	806	2033
35	9	19056	12785	815	2412	809	2235
35	10	20818	14194	935	2582	797	2310
35	11	21955	15126	1009	2710	798	2312
35	12	23907	16671	1010	2914	766	2546
35	13	26742	18734	1046	3131	863	2968
35	14	27252	19061	1169	3255	862	2905
35	15	22171	15231	1201	2924	734	2081
35	16	22203	15253	1187	2886	719	2158
35	17	22555	15495	1148	2789	689	2434

k = 36; Sweden; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
36	1	1155085	749573	29505	130874	67318	177815
36	2	1141251	744667	32694	140762	69467	153661
36	3	1222834	807083	34338	147648	69849	163916
36	4	1282283	844651	36620	156725	70313	173974
36	5	1350644	896013	39213	156541	69099	189778
36	6	1505764	1022418	46425	173256	66483	197182
36	7	1527374	1053856	51142	183703	66245	172428
36	8	1510521	1024916	54426	184105	65192	181882
36	9	1519397	1022623	50884	185694	70585	189611
36	10	1610334	1091471	57439	190135	64063	207226
36	11	1706562	1182176	61519	195295	61306	206266
36	12	1858771	1295343	64860	194517	60736	243315
36	13	1991199	1389335	71085	207828	64330	258621
36	14	2021304	1454025	66447	216780	65964	218088
36	15	1679339	1197887	66635	192186	68064	154567
36	16	1983835	1414830	62592	180655	64227	261531
36	17	2146698	1537966	65745	189521	67357	286109

k = 37; Turkey; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
37	1	9035	4958	61	126	608	3282
37	2	16006	8528	130	255	1155	5938
37	3	31829	17694	332	627	2435	10741
37	4	56165	31247	585	1129	4495	18709
37	5	82998	50563	1169	1970	7004	22292
37	6	136837	87356	1859	3110	10716	33796
37	7	194569	129026	2732	4408	13754	44649
37	8	294284	195535	3689	6038	19476	69546
37	9	381595	254058	5085	8218	24227	90007
37	10	459429	306342	5543	10562	30186	106796
37	11	531944	354502	7496	13433	35978	120535
37	12	607049	408211	8707	15664	39539	134928
37	13	654811	441809	10209	17847	41901	143045
37	14	716918	481646	11549	20142	45687	157894
37	15	689941	457914	11175	19507	44038	157307
37	16	820391	545312	13212	23141	52219	186507
37	17	999305	668403	16264	28419	62871	223348

k = 38; Taiwan; Traded Sector; Value Data

k	t	v_{kt3}	$-v_{kt4}$	V_{kt5}	V_{kt6}	V_{kt7}	V_{kt8}
38	1	7560298	5448092	181277	308434	664940	957555
38	2	7840675	5541788	203510	336633	689977	1068767
38	3	8327001	5910599	220328	354872	687335	1153867
38	4	8573757	6015775	233026	367026	677369	1280561
38	5	8859781	6263698	246459	379968	667823	1301833
38	6	9756305	7133993	253247	382024	634426	1352615
38	7	8876641	6416215	257071	381213	601087	1221055
38	8	9587270	6931723	257930	375751	562500	1459366
38	9	10418291	7717953	266776	386618	557585	1489359

38	10	12168865	9326062	284114	409352	567184	1582153
38	11	12527300	9643691	299880	436410	596788	1550531
38	12	13562966	10585714	322706	466976	626333	1561237
38	13	15160658	11883998	342265	501290	651566	1781539
38	14	15099219	12155970	362936	491626	641210	1447477
38	15	12658083	9715950	387200	458267	492022	1604644
38	16	16277054	12758379	467857	557108	597883	1895827
38	17	15553150	12239722	438362	527871	572855	1774340

Table C4: Traded Sector; PPP Data Relative to the USA in 1995; in National Currency Units

k	t	P _{kt3}	P _{kt4}	W _{kt5}	W _{kt6}	W _{kt7}	W _{kt8}
USA	1995	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
USA	1996	1.0089	1.0132	0.9887	1.0372	1.0125	1.0916
USA	1997	1.0171	1.0287	1.0172	1.0728	1.0545	1.1487
USA	1998	1.0162	1.0290	1.0752	1.1113	1.0943	1.1754
USA	1999	1.0227	1.0351	1.1447	1.1838	1.1099	1.1973
USA	2000	1.0593	1.0779	1.2258	1.1697	1.1052	1.2455
USA	2001	1.0652	1.0977	1.2494	1.1963	1.1203	1.2068
USA	2002	1.0599	1.0933	1.3181	1.2989	1.1418	1.2793
USA	2003	1.1053	1.1490	1.4073	1.3847	1.2636	1.3941
USA	2004	1.1743	1.2173	1.4989	1.3842	1.2223	1.7075
USA	2005	1.2460	1.3007	1.5744	1.4157	1.2578	1.8535
USA	2006	1.2794	1.3380	1.7009	1.4757	1.3098	1.9135
USA	2007	1.3189	1.3829	1.7170	1.5389	1.3340	2.0755
USA	2008	1.4186	1.4757	1.8176	1.5583	1.3762	2.0723
USA	2009	1.3103	1.3667	1.7258	1.5538	1.3472	1.9851
USA	2010	1.3473	1.4006	1.8657	1.6500	1.4242	2.1859
USA	2011	1.4345	1.4851	1.9941	1.7629	1.5314	2.4003
AUS	1995	1.4282	1.3820	1.0340	1.3376	1.3146	1.1221
AUS	1996	1.4330	1.3872	1.0056	1.3254	1.3171	1.1299
AUS	1997	1.4339	1.3961	1.0164	1.3557	1.3387	1.1933
AUS	1998	1.3998	1.3675	1.0472	1.4152	1.4149	1.2103
AUS	1999	1.4358	1.4010	1.0235	1.3946	1.3972	1.3690
AUS	2000	1.4753	1.4494	1.0445	1.4364	1.4551	1.5969
AUS	2001	1.4937	1.4655	1.0760	1.4780	1.4754	1.7689
AUS	2002	1.5316	1.5123	1.2016	1.5779	1.6116	1.7471
AUS	2003	1.6000	1.5921	1.3120	1.6509	1.6729	1.9815
AUS	2004	1.7640	1.7546	1.4015	1.7123	1.7520	2.1944
AUS	2005	1.8549	1.8629	1.5346	1.8293	1.8828	2.3988
AUS	2006	1.8821	1.9024	1.6448	1.9613	2.0140	2.5439
AUS	2007	1.8952	1.9267	1.7512	2.0868	2.1476	2.8896
AUS	2008	1.9585	1.9988	1.7438	2.0759	2.1314	2.8812
AUS	2009	2.0549	2.0608	1.7690	2.1062	2.1607	3.2005
AUS	2010	2.0728	2.1010	1.8839	2.2393	2.3222	3.7820
AUS	2011	2.0297	2.0736	1.9169	2.2812	2.4134	3.6383
AUT	1995	0.9999	0.9912	0.8325	0.8602	0.6862	0.5705
AUT	1996	0.9921	0.9841	0.8130	0.8550	0.6927	0.5955
AUT	1997	1.0073	1.0021	0.7466	0.8781	0.7169	0.6619
AUT	1998	1.0117	1.0109	0.7452	0.9335	0.7305	0.6844
AUT	1999	1.0174	1.0194	0.9215	0.9563	0.7240	0.7563
AUT	2000	1.0480	1.0539	0.9647	0.9995	0.7288	0.8550

AUT	2001	1.0745	1.0867	0.9090	1.0351	0.7594	0.8944
AUT	2002	1.0728	1.0943	0.8722	1.0440	0.8047	0.9431
AUT	2003	1.1138	1.1464	0.8664	0.9963	1.0895	0.9324
AUT	2004	1.1578	1.1934	0.9036	1.0065	0.9104	0.9718
AUT	2005	1.1931	1.2455	0.9430	1.0621	0.9144	1.0181
AUT	2006	1.1859	1.2448	0.9855	1.1415	0.9108	1.0910
AUT	2007	1.1874	1.2447	0.9910	1.2312	1.0163	1.2103
AUT	2008	1.2073	1.2721	0.9505	1.3033	1.0272	0.9846
AUT	2009	1.1383	1.1915	1.0477	1.4110	1.1345	0.6945
AUT	2010	1.1827	1.2318	1.0595	1.4286	1.1609	0.8060
AUT	2011	1.2466	1.2878	1.0449	1.4056	1.1248	0.8851
BEL	1995	0.9611	0.9456	1.2656	1.4740	1.9087	0.6786
BEL	1996	0.9600	0.9450	1.2895	1.5094	1.9569	0.6698
BEL	1997	0.9822	0.9693	1.3224	1.5562	2.0169	0.7448
BEL	1998	0.9961	0.9904	1.3404	1.5869	2.0546	0.7541
BEL	1999	1.0045	1.0036	1.3935	1.6372	2.1142	0.6934
BEL	2000	1.0368	1.0425	1.3876	1.6529	2.1142	0.7708
BEL	2001	1.0526	1.0769	1.4232	1.7197	2.2157	0.6896
BEL	2002	1.0733	1.1115	1.4631	1.7935	2.3058	0.7347
BEL	2003	1.1050	1.1602	1.3586	1.7258	2.6898	0.6847
BEL	2004	1.1626	1.2246	1.5281	1.8714	2.3624	0.7230
BEL	2005	1.2463	1.3132	1.5718	1.8918	2.3737	0.6969
BEL	2006	1.2537	1.3230	1.6028	1.9502	2.4628	0.6559
BEL	2007	1.2656	1.3247	1.6700	2.0491	2.4697	0.6235
BEL	2008	1.2922	1.3519	1.6214	2.1305	2.6370	0.5032
BEL	2009	1.1318	1.1945	1.6831	2.2387	2.7410	0.3774
BEL	2010	1.1843	1.2385	1.7043	2.2701	2.7858	0.4471
BEL	2011	1.2410	1.2985	1.7307	2.3090	2.8407	0.4531
BGR	1995	0.0684	0.0592	0.0105	0.0081	0.0053	0.0231
BGR	1996	0.1472	0.1181	0.0176	0.0141	0.0092	0.0490
BGR	1997	1.1002	0.8653	0.1677	0.1333	0.0880	0.7350
BGR	1998	1.3048	1.0079	0.2214	0.1745	0.1177	0.7163
BGR	1999	1.2930	1.0351	0.2314	0.1805	0.1115	0.6990
BGR	2000	1.3385	1.1000	0.2273	0.1916	0.1161	0.7462
BGR	2001	1.3966	1.1761	0.2450	0.2125	0.1240	0.7999
BGR	2002	1.3789	1.1857	0.2567	0.2072	0.1271	0.7938
BGR	2003	1.4155	1.2438	0.1633	0.1272	0.1398	1.0228
BGR	2004	1.5493	1.3802	0.2312	0.2099	0.1310	1.0107
BGR	2005	1.5658	1.4123	0.2386	0.2220	0.1413	0.8807
BGR	2006	1.6117	1.5032	0.2366	0.2455	0.1532	0.9090
BGR	2007	1.8112	1.7023	0.2521	0.2869	0.1864	0.9380
BGR	2008	1.8832	1.8164	0.2906	0.3355	0.2194	0.8454
BGR	2009	1.9693	1.8921	0.2649	0.3343	0.2196	0.7528
BGR	2010	1.9093	1.7694	0.3003	0.3788	0.2448	0.6732
BGR	2011	1.9453	1.7358	0.3452	0.4347	0.2875	0.6989
BRA	1995	0.9909	0.8798	0.3325	0.1854	0.0662	0.9831
BRA	1996	1.0754	0.9618	0.3997	0.2143	0.0802	0.9131
BRA	1997	1.1541	1.0439	0.4287	0.2221	0.0852	0.9182
BRA	1998	1.1787	1.0852	0.4556	0.2279	0.0898	0.8473
BRA	1999	1.2752	1.1788	0.4545	0.2205	0.0904	0.9693
BRA	2000	1.4837	1.3799	0.5288	0.2507	0.1088	1.0375
BRA	2001	1.5932	1.5018	0.5679	0.2626	0.1179	1.0632
BRA	2002	1.7695	1.6883	0.5932	0.2685	0.1242	1.1792

BRA	2003	2.2205	2.0981	0.6966	0.3111	0.1476	1.3716
BRA	2004	2.5089	2.4102	0.7678	0.3418	0.1641	1.4849
BRA	2005	2.7134	2.6393	0.8240	0.3682	0.1831	1.3582
BRA	2006	2.6947	2.6092	0.8382	0.3923	0.2018	1.4013
BRA	2007	2.7779	2.6719	1.0280	0.5038	0.2533	1.1829
BRA	2008	3.0565	2.9039	1.0610	0.5401	0.2820	1.2987
BRA	2009	2.9444	2.7384	1.0747	0.5657	0.3020	1.2418
BRA	2010	3.0097	2.7751	1.2382	0.6476	0.3409	1.3818
BRA	2011	2.9333	2.7671	1.3760	0.7089	0.3697	1.4299
CAN	1995	1.2956	1.2432	0.8595	1.1561	1.0859	1.0671
CAN	1996	1.3053	1.2513	0.9075	1.1780	1.0866	1.0817
CAN	1997	1.3341	1.2852	0.9790	1.1805	1.1164	1.0767
CAN	1998	1.3366	1.2868	1.0209	1.2460	1.1260	1.0454
CAN	1999	1.3938	1.3344	1.0918	1.2814	1.1475	1.2494
CAN	2000	1.4993	1.4419	1.1231	1.3453	1.2101	1.6086
CAN	2001	1.5441	1.4889	1.1760	1.4153	1.3171	1.5335
CAN	2002	1.5680	1.5139	1.2125	1.4596	1.2628	1.5768
CAN	2003	1.6222	1.5826	1.2297	1.5119	1.3153	1.6587
CAN	2004	1.7334	1.6948	1.2905	1.5789	1.3665	1.8022
CAN	2005	1.7762	1.7482	1.3451	1.6599	1.3895	1.8804
CAN	2006	1.7354	1.7355	1.4493	1.7335	1.3941	1.7641
CAN	2007	1.6863	1.7182	1.4425	1.8152	1.5198	1.7467
CAN	2008	1.7603	1.8000	1.5207	1.8977	1.5701	1.8174
CAN	2009	1.6204	1.6688	1.4164	1.6518	1.3119	1.8184
CAN	2010	1.8114	1.8124	1.5232	1.7748	1.3877	1.8088
CAN	2011	1.8789	1.8990	1.6151	1.8789	1.4639	1.8307
CHN	1995	4.1903	3.3280	0.2051	0.2629	0.2359	2.5949
CHN	1996	4.4179	3.5232	0.2361	0.3045	0.2775	2.9934
CHN	1997	4.4077	3.5434	0.2589	0.3330	0.2939	3.1953
CHN	1998	4.1561	3.4040	0.2842	0.3504	0.2973	3.2039
CHN	1999	4.0701	3.3647	0.2945	0.3667	0.2949	3.2574
CHN	2000	4.2120	3.5297	0.3326	0.4081	0.3006	3.5741
CHN	2001	4.1165	3.4955	0.3770	0.4415	0.3076	3.7911
CHN	2002	4.0185	3.4414	0.4147	0.4729	0.3096	4.0249
CHN	2003	4.1915	3.5782	0.4604	0.5048	0.3376	4.4890
CHN	2004	4.5004	3.8491	0.4859	0.5304	0.4083	4.9911
CHN	2005	4.7082	4.0042	0.5307	0.5731	0.4552	5.2495
CHN	2006	5.0261	4.3332	0.5620	0.6190	0.5091	5.9152
CHN	2007	5.4821	4.8381	0.6168	0.6825	0.6114	6.8963
CHN	2008	6.2303	5.5560	0.6722	0.7627	0.7077	7.9061
CHN	2009	6.2168	5.5336	0.6797	0.7783	0.7469	8.6076
CHN	2010	6.9334	6.1937	0.7381	0.8650	0.8680	9.1533
CHN	2011	8.0128	7.1788	0.8895	1.0609	1.0744	9.5209
CYP	1995	1.0321	0.9526	0.2631	0.2330	0.2783	0.6406
CYP	1996	1.0460	0.9778	0.2688	0.2503	0.2932	0.6142
CYP	1997	1.0619	1.0121	0.2747	0.2578	0.3070	0.6436
CYP	1998	1.1036	1.0453	0.2796	0.2602	0.3150	0.7414
CYP	1999	1.1134	1.0595	0.3149	0.2814	0.3065	0.7862
CYP	2000	1.1108	1.0736	0.2988	0.3006	0.3104	0.8031
CYP	2001	1.1591	1.1014	0.2898	0.3259	0.3182	0.8362
CYP	2002	1.1594	1.0955	0.2954	0.3300	0.3486	0.8690
CYP	2003	1.2321	1.1745	0.2795	0.3237	0.3746	0.9452
CYP	2004	1.3348	1.2557	0.3265	0.3849	0.3530	0.9122

CYP	2005	1.3475	1.2928	0.3349	0.4030	0.3952	0.8673
CYP	2006	1.3566	1.3101	0.3476	0.4320	0.4093	0.6757
CYP	2007	1.3428	1.2943	0.3374	0.4209	0.4526	0.6338
CYP	2008	1.4212	1.3955	0.3269	0.4893	0.5252	0.5705
CYP	2009	1.4213	1.4043	0.3453	0.5272	0.5043	0.4842
CYP	2010	1.3728	1.3425	0.3319	0.5019	0.4927	0.5060
CYP	2011	1.4157	1.3781	0.3417	0.5150	0.5090	0.5338
CZE	1995	16.8975	14.2895	3.4794	3.1566	3.1014	12.8997
CZE	1996	18.0446	14.8166	5.3330	4.8386	4.7586	12.0030
CZE	1997	19.2060	16.1854	5.8424	5.2929	5.2217	14.1172
CZE	1998	20.0632	17.1259	6.3884	5.7917	5.7167	15.3837
CZE	1999	20.0110	17.3400	6.6977	6.1072	6.0614	18.1862
CZE	2000	21.1600	18.6188	7.0270	6.4535	6.6236	19.9231
CZE	2001	21.5612	19.0554	8.1316	7.1538	7.2736	21.0160
CZE	2002	20.7297	18.4107	8.2317	7.7454	8.3889	19.0100
CZE	2003	21.0165	18.8995	7.6773	8.1025	12.9014	17.5659
CZE	2004	22.2913	20.3027	9.5862	8.7104	9.3878	21.8329
CZE	2005	22.5408	21.1288	10.2011	8.9973	9.8583	21.7965
CZE	2006	21.6745	20.5047	10.6224	9.4190	10.3281	20.8635
CZE	2007	21.2214	20.1991	11.6423	10.0691	11.6995	21.5008
CZE	2008	20.7962	20.2502	11.4630	10.4586	12.2665	19.0351
CZE	2009	18.9515	18.3681	11.3144	10.7254	12.5318	16.4930
CZE	2010	19.9557	19.2196	10.8949	10.3158	12.0758	18.5824
CZE	2011	20.6219	19.7328	11.2279	10.5963	12.4262	19.9466
DEU	1995	1.0279	1.0385	1.1898	1.2902	1.4240	0.7333
DEU	1996	1.0150	1.0178	1.2497	1.3564	1.4670	0.7126
DEU	1997	1.0356	1.0424	1.2698	1.3800	1.4802	0.8231
DEU	1998	1.0456	1.0605	1.2686	1.3998	1.4958	0.9003
DEU	1999	1.0469	1.0704	1.2973	1.4472	1.5081	0.9021
DEU	2000	1.0839	1.1066	1.3801	1.5248	1.5556	0.9616
DEU	2001	1.1057	1.1397	1.4221	1.5670	1.6163	0.9993
DEU	2002	1.1053	1.1477	1.4754	1.5787	1.6486	0.9763
DEU	2003	1.1326	1.1852	1.5106	1.5692	1.7408	0.9960
DEU	2004	1.1673	1.2343	1.5314	1.5996	1.5819	1.1090
DEU	2005	1.1933	1.2800	1.5966	1.6120	1.5475	1.1472
DEU	2006	1.1757	1.2681	1.6511	1.6940	1.6171	1.2871
DEU	2007	1.1665	1.2563	1.7157	1.6771	1.6408	1.4245
DEU	2008	1.1698	1.2675	1.7850	1.7470	1.6426	1.1821
DEU	2009	1.0838	1.1688	1.8212	1.7742	1.6280	0.6853
DEU	2010	1.1349	1.2113	1.7518	1.7066	1.5670	1.1919
DEU	2011	1.1993	1.2535	1.8061	1.7596	1.6155	1.3730
DNK	1995	6.5776	6.2045	6.4287	8.6844	9.2759	6.6324
DNK	1996	6.6378	6.2675	6.6023	9.0291	9.7637	6.9301
DNK	1997	6.7133	6.3811	6.7556	9.3917	10.3763	8.0238
DNK	1998	6.6778	6.4097	6.9839	9.5760	10.6594	7.5105
DNK	1999	6.8965	6.7543	7.1240	9.8289	11.0274	8.8905
DNK	2000	7.3798	7.2496	7.2978	9.9910	11.3115	11.7696
DNK	2001	7.5690	7.4619	7.6644	10.3793	11.9107	11.2956
DNK	2002	7.5785	7.5236	7.9523	10.7103	12.3237	11.9727
DNK	2003	7.8288	7.8915	8.4510	11.2314	13.0497	10.8727
DNK	2004	8.2456	8.4007	8.6857	11.6021	13.5964	11.2104
DNK	2005	8.8326	9.0532	8.9023	12.1720	15.1247	12.7140
DNK	2006	8.8851	9.0677	9.2756	13.0611	14.7829	13.8347

DNK	2007	8.9747	9.1374	9.7364	14.2152	15.8903	13.4651
DNK	2008	9.4414	9.6123	9.1813	15.4665	15.9381	11.5060
DNK	2009	8.3943	8.6083	9.2678	15.4299	16.0459	7.7738
DNK	2010	8.2536	8.5401	9.4811	15.7812	16.3896	10.1666
DNK	2011	8.5181	8.7939	9.5491	15.9190	16.4121	10.4388
ESP	1995	0.9289	0.8943	0.6189	0.7295	0.6823	0.6914
ESP	1996	0.9518	0.9084	0.6281	0.7426	0.7032	0.7617
ESP	1997	0.9545	0.9143	0.6425	0.7751	0.7394	0.7876
ESP	1998	0.9503	0.9196	0.6247	0.7817	0.7437	0.8241
ESP	1999	0.9311	0.9085	0.6142	0.7854	0.7639	0.8313
ESP	2000	0.9664	0.9400	0.6109	0.7931	0.7772	0.9262
ESP	2001	0.9921	0.9770	0.6470	0.8262	0.8170	1.0671
ESP	2002	1.0105	1.0004	0.6517	0.8468	0.8293	1.0911
ESP	2003	1.0658	1.0592	0.5957	0.7874	0.9626	1.1106
ESP	2004	1.1160	1.1138	0.6859	0.9103	0.8954	1.0467
ESP	2005	1.1495	1.1579	0.7145	0.9359	0.9295	1.0125
ESP	2006	1.1437	1.1559	0.7404	0.9594	0.9836	0.8853
ESP	2007	1.1614	1.1820	0.7710	0.9979	1.0629	0.7637
ESP	2008	1.2053	1.2240	0.7736	1.1346	1.1287	0.7030
ESP	2009	1.1487	1.1810	0.8018	1.1482	1.1261	0.5973
ESP	2010	1.1667	1.1898	0.8090	1.1561	1.1332	0.6515
ESP	2011	1.1921	1.2168	0.7981	1.1379	1.1124	0.7153
EST	1995	0.5561	0.5076	0.0563	0.0570	0.0630	0.4305
EST	1996	0.6848	0.6248	0.0717	0.0751	0.0828	0.6186
EST	1997	0.7411	0.6824	0.0921	0.0959	0.1068	0.7962
EST	1998	0.7128	0.6630	0.1008	0.1044	0.1187	0.7346
EST	1999	0.7363	0.6781	0.1088	0.1103	0.1169	0.7060
EST	2000	0.7734	0.7190	0.1190	0.1311	0.1354	0.8028
EST	2001	0.8360	0.7908	0.1217	0.1451	0.1472	0.8565
EST	2002	0.8506	0.7955	0.1410	0.1669	0.1792	0.8523
EST	2003	0.9021	0.8454	0.1395	0.1796	0.2554	0.8395
EST	2004	0.9228	0.9218	0.1592	0.1932	0.2129	0.7182
EST	2005	0.9609	0.9397	0.1788	0.2218	0.2479	0.6686
EST	2006	0.9742	0.9289	0.2126	0.2602	0.3152	0.6646
EST	2007	1.0769	1.0145	0.2336	0.3188	0.4316	0.7006
EST	2008	1.1271	1.0747	0.2376	0.3462	0.5165	0.5329
EST	2009	1.0683	1.0281	0.2464	0.3578	0.4974	0.3346
EST	2010	1.0510	1.0094	0.2388	0.3467	0.4839	0.3884
EST	2011	1.0745	1.0333	0.2272	0.3314	0.4602	0.4211
FIN	1995	1.1328	1.0907	0.6212	0.7605	1.0505	0.9099
FIN	1996	1.1143	1.0672	0.6434	0.7913	1.0942	0.9077
FIN	1997	1.1545	1.1050	0.6563	0.8293	1.1464	1.0322
FIN	1998	1.1657	1.1326	0.7096	0.9004	1.1989	1.2067
FIN	1999	1.1606	1.1246	0.7920	0.8974	1.1684	1.2809
FIN	2000	1.2261	1.1959	0.8298	0.9576	1.2256	1.5131
FIN	2001	1.2379	1.2196	0.8631	1.0418	1.3498	1.4525
FIN	2002	1.2323	1.2320	0.8836	1.0638	1.3623	1.5021
FIN	2003	1.2558	1.2738	0.8674	1.0970	1.5057	1.4819
FIN	2004	1.3148	1.3462	0.9512	1.1390	1.3865	1.4738
FIN	2005	1.3585	1.3994	0.9987	1.1836	1.4457	1.4353
FIN	2006	1.3574	1.3966	1.0480	1.2101	1.5280	1.5214
FIN	2007	1.3730	1.4145	1.1017	1.2209	1.5724	1.8675
FIN	2008	1.3866	1.4260	1.1256	1.2577	1.5921	1.5017

FIN	2009	1.2712	1.2938	1.1175	1.2550	1.6352	0.8344
FIN	2010	1.2756	1.3124	1.1191	1.2597	1.6466	1.0599
FIN	2011	1.3442	1.3714	1.1345	1.2817	1.6798	1.0874
FRA	1995	1.0962	1.0732	0.9954	0.9845	1.1188	0.8739
FRA	1996	1.0733	1.0550	1.0658	0.9792	1.1287	0.8560
FRA	1997	1.0959	1.0799	1.0530	1.0083	1.2046	0.9526
FRA	1998	1.1085	1.0955	1.0853	1.0136	1.2402	1.0820
FRA	1999	1.0894	1.0850	1.2069	1.1379	1.4134	1.3007
FRA	2000	1.1258	1.1188	1.2586	1.1806	1.4601	1.3555
FRA	2001	1.1252	1.1315	1.2610	1.1990	1.5122	1.3668
FRA	2002	1.1341	1.1447	1.2797	1.2847	1.5976	1.3254
FRA	2003	1.1643	1.1963	1.1325	1.2334	2.0246	1.3390
FRA	2004	1.2038	1.2418	1.2568	1.3609	1.6860	1.1815
FRA	2005	1.2326	1.2926	1.2729	1.3933	1.7258	1.0578
FRA	2006	1.2109	1.2769	1.3005	1.4418	1.7926	0.9279
FRA	2007	1.2454	1.2973	1.3450	1.4747	1.7995	0.9317
FRA	2008	1.2680	1.3125	1.3690	1.4893	1.8612	0.8064
FRA	2009	1.2076	1.2618	1.4695	1.5673	1.9775	0.5617
FRA	2010	1.2542	1.2857	1.4712	1.5584	1.9671	0.6368
FRA	2011	1.2773	1.3139	1.5328	1.6239	2.0498	0.5965
GBR	1995	0.7432	0.7187	0.7345	0.8092	0.8890	0.7412
GBR	1996	0.7446	0.7163	0.7509	0.7964	0.9089	0.8523
GBR	1997	0.7582	0.7290	0.7688	0.8134	0.8995	0.8664
GBR	1998	0.7527	0.7289	0.8091	0.8717	0.9476	0.8135
GBR	1999	0.7495	0.7304	0.8511	0.9292	0.9919	0.8734
GBR	2000	0.7631	0.7494	0.8880	0.9724	1.0392	0.9824
GBR	2001	0.7799	0.7668	0.9111	0.9953	1.1145	1.0433
GBR	2002	0.7849	0.7808	0.9463	1.0466	1.1515	1.0687
GBR	2003	0.8109	0.8164	0.9964	1.0924	1.2089	1.0810
GBR	2004	0.8225	0.8269	1.0621	1.1566	1.2550	1.1581
GBR	2005	0.8818	0.9012	1.1621	1.2471	1.3597	1.1036
GBR	2006	0.8949	0.9270	1.2066	1.3349	1.4285	1.1679
GBR	2007	0.9024	0.9381	1.2086	1.3660	1.4867	1.2442
GBR	2008	0.9064	0.9492	1.2857	1.3957	1.5480	1.1283
GBR	2009	0.8994	0.9430	1.3570	1.5126	1.5613	0.7800
GBR	2010	0.9355	0.9660	1.3618	1.5184	1.5703	0.7442
GBR	2011	0.9956	1.0127	1.3596	1.5158	1.5661	0.7554
GRC	1995	0.9707	0.8623	0.2434	0.2318	0.1867	0.8623
GRC	1996	1.0010	0.9012	0.2740	0.2652	0.2007	0.8904
GRC	1997	1.0323	0.9388	0.2966	0.2905	0.2126	0.8682
GRC	1998	1.0343	0.9535	0.3033	0.3033	0.2200	0.9454
GRC	1999	1.0496	0.9735	0.3163	0.3141	0.2207	0.9783
GRC	2000	1.0761	0.9902	0.3562	0.3424	0.2318	1.0329
GRC	2001	1.0889	1.0066	0.3428	0.3473	0.2517	1.0896
GRC	2002	1.0993	1.0197	0.4022	0.4005	0.2892	1.0473
GRC	2003	1.1624	1.0828	0.3752	0.3969	0.3541	1.0260
GRC	2004	1.2140	1.1401	0.4245	0.4314	0.3483	1.0045
GRC	2005	1.2621	1.2118	0.4484	0.4697	0.3716	1.0493
GRC	2006	1.2811	1.2307	0.4296	0.4676	0.4019	0.8517
GRC	2007	1.3464	1.2886	0.4437	0.4995	0.4394	0.7421
GRC	2008	1.4435	1.3559	0.3922	0.5088	0.4779	0.7527
GRC	2009	1.3703	1.3054	0.3778	0.4858	0.4411	0.8269
GRC	2010	1.3686	1.3097	0.3639	0.4669	0.4200	0.9120

GRC	2011	1.3829	1.3266	0.3530	0.4582	0.4221	0.8118
HUN	1995	59.8141	51.7621	24.5600	18.3114	17.1235	38.0372
HUN	1996	68.9132	59.7286	28.7699	21.5406	19.8180	52.6630
HUN	1997	86.3154	75.9562	35.4037	26.3729	24.4873	79.1790
HUN	1998	97.1344	87.6475	39.8578	29.6333	27.7599	101.5600
HUN	1999	100.4138	93.4715	43.3981	31.0005	27.9063	110.0654
HUN	2000	112.2905	104.1942	53.8418	38.5487	35.1924	119.0402
HUN	2001	119.7088	111.5890	59.6915	44.0769	40.9327	128.4089
HUN	2002	124.7163	117.4671	61.1276	46.7952	44.1693	154.2552
HUN	2003	131.9341	125.6089	53.8260	46.9271	77.8338	168.9040
HUN	2004	139.1785	135.4975	73.7958	56.7459	55.7684	199.4917
HUN	2005	142.4536	140.8139	78.4922	61.6077	60.3467	208.7981
HUN	2006	143.0143	140.6245	84.3022	65.1930	63.1268	219.8116
HUN	2007	138.3746	138.9468	91.6282	70.6033	70.4045	206.7764
HUN	2008	137.7804	138.9320	93.2822	74.7770	69.3085	180.7665
HUN	2009	139.4902	141.1236	88.5977	71.9687	66.4530	144.1213
HUN	2010	152.4552	152.4574	90.8700	73.6218	67.3848	191.9180
HUN	2011	156.3553	154.9957	97.5873	79.1213	71.7697	239.6417
IND	1995	10.7452	10.1618	0.5551	0.3033	0.1890	19.3384
IND	1996	10.7802	10.3726	0.4996	0.2944	0.1929	21.5745
IND	1997	11.4287	11.0205	0.5169	0.3195	0.2113	20.7084
IND	1998	11.6192	11.2853	0.5369	0.3334	0.2182	21.9179
IND	1999	12.1131	11.8952	0.5567	0.3597	0.2360	21.9222
IND	2000	13.1060	12.7996	0.6729	0.3737	0.2408	21.0532
IND	2001	12.9216	12.8435	0.7226	0.3688	0.2514	20.4864
IND	2002	13.8127	13.5081	0.7644	0.3716	0.2673	19.6462
IND	2003	14.5482	14.0536	0.7983	0.3579	0.2661	20.7968
IND	2004	16.5614	15.9401	0.8325	0.3572	0.2762	21.7629
IND	2005	17.3154	16.8035	0.9383	0.3890	0.2912	21.2780
IND	2006	18.7320	17.9530	1.0850	0.4509	0.3309	21.1721
IND	2007	20.0845	19.1626	1.2533	0.5288	0.3896	21.5928
IND	2008	22.1859	21.1246	1.4253	0.5969	0.4390	22.3619
IND	2009	23.3094	21.9153	1.6584	0.6927	0.5156	23.2379
IND	2010	24.9670	23.5847	1.8926	0.7895	0.5965	25.5289
IND	2011	26.2979	25.0818	2.0828	0.8799	0.6808	25.8535
IRL	1995	1.0544	0.9878	0.4180	0.5686	0.5870	1.5596
IRL	1996	1.0470	0.9884	0.4500	0.6053	0.5999	1.6873
IRL	1997	1.0935	1.0331	0.4514	0.6276	0.5999	2.1793
IRL	1998	1.1835	1.1103	0.4941	0.6894	0.6590	2.9771
IRL	1999	1.2510	1.1643	0.5200	0.7204	0.6817	3.9129
IRL	2000	1.2863	1.2135	0.5851	0.8005	0.7600	4.2755
IRL	2001	1.3438	1.2759	0.6279	0.8441	0.7935	5.3426
IRL	2002	1.3953	1.3230	0.6508	0.9029	0.7849	6.1315
IRL	2003	1.3774	1.3549	0.6709	0.9462	0.8240	5.7444
IRL	2004	1.3598	1.3698	0.6922	0.9829	0.8739	4.9371
IRL	2005	1.3381	1.3859	0.7696	0.9967	0.9695	4.2401
IRL	2006	1.3062	1.3753	0.8542	1.0349	0.8981	3.2632
IRL	2007	1.2760	1.3796	0.8206	1.0356	1.0097	2.7986
IRL	2008	1.2631	1.3985	0.8868	1.0043	1.0328	2.3371
IRL	2009	1.1874	1.3289	0.8642	1.0024	1.0169	2.5162
IRL	2010	1.2468	1.3369	0.8813	1.0368	1.0848	2.5352
IRL	2011	1.2524	1.3486	0.9070	1.0946	1.2093	2.5509
ITA	1995	0.9853	0.9463	0.9491	0.8039	0.9351	0.4746

ITA	1996	0.9878	0.9474	1.0163	0.8696	0.9655	0.4968
ITA	1997	1.0086	0.9763	1.0803	0.9315	0.9820	0.5167
ITA	1998	1.0132	0.9870	1.0778	0.9388	0.9465	0.5616
ITA	1999	1.0261	1.0059	1.1299	0.9486	0.9660	0.5725
ITA	2000	1.0755	1.0606	1.1673	0.9708	0.9879	0.6198
ITA	2001	1.1004	1.0937	1.0404	1.0511	1.0192	0.6355
ITA	2002	1.1159	1.1140	0.9701	1.1024	1.0499	0.6371
ITA	2003	1.1587	1.1680	0.8273	0.9566	1.2581	0.5997
ITA	2004	1.2170	1.2348	1.0221	1.1507	1.1134	0.6060
ITA	2005	1.2640	1.2918	0.9763	1.1816	1.1577	0.5436
ITA	2006	1.2585	1.2904	0.9497	1.2001	1.1833	0.5131
ITA	2007	1.2506	1.2765	0.9902	1.2409	1.2100	0.5108
ITA	2008	1.2782	1.3093	1.0489	1.2664	1.2964	0.4263
ITA	2009	1.2190	1.2544	1.0593	1.3003	1.3190	0.3193
ITA	2010	1.2348	1.2565	1.0778	1.3226	1.3374	0.3965
ITA	2011	1.2365	1.2543	1.1122	1.3687	1.3958	0.3732
JPN	1995	137.0866	129.6117	101.1273	115.1672	141.0520	179.9637
JPN	1996	134.4954	127.2777	101.3370	114.7058	142.3816	180.0156
JPN	1997	136.6674	130.3693	102.5533	117.4360	146.9646	178.2619
JPN	1998	135.1329	129.5697	104.4459	119.3576	148.8189	169.9353
JPN	1999	134.5705	128.5818	101.8889	119.5999	150.3031	163.9971
JPN	2000	135.2160	130.9475	102.0361	119.9134	154.5200	165.2366
JPN	2001	132.7663	129.4864	100.3942	119.1154	151.4971	144.4474
JPN	2002	129.4679	126.6171	102.3848	119.2381	150.4172	139.0102
JPN	2003	130.3154	128.4508	100.3500	117.9719	148.8571	140.3825
JPN	2004	134.1397	133.7476	101.8965	120.3779	152.4493	135.6228
JPN	2005	137.5695	139.2302	102.7472	121.9216	153.1436	127.2158
JPN	2006	135.2266	137.3641	101.7123	121.4862	153.1423	113.7053
JPN	2007	131.3311	133.7318	103.9044	123.7455	156.0103	110.2023
JPN	2008	134.5635	136.9408	102.8304	122.4463	154.1196	92.0671
JPN	2009	120.8061	122.9167	101.2017	119.3559	147.9280	78.2430
JPN	2010	125.1865	124.5842	114.7396	135.3200	167.6550	88.7252
JPN	2011	120.2522	119.8935	113.3563	133.7531	165.7063	85.3993
KOR	1995	438.5902	412.1135	165.2213	265.5106	276.7504	727.3378
KOR	1996	455.3055	426.3091	192.1284	317.0834	321.9938	688.8391
KOR	1997	486.4708	452.1363	196.7781	333.6043	332.6044	747.5018
KOR	1998	574.2631	506.3819	195.2384	338.5854	322.3688	793.9475
KOR	1999	567.0928	516.5886	198.1642	344.6191	337.3742	969.4922
KOR	2000	590.1848	543.7295	211.4797	356.9944	453.0591	1048.7230
KOR	2001	611.1489	565.6735	238.2569	397.1355	468.8654	975.9891
KOR	2002	628.2328	584.1224	274.2930	442.6567	469.9550	1005.8740
KOR	2003	674.8016	630.3515	298.2114	463.7341	549.9865	928.0894
KOR	2004	772.4585	719.5344	325.8435	498.3286	599.9100	1015.1630
KOR	2005	821.5959	770.2643	391.7215	562.5995	607.0997	881.7924
KOR	2006	816.9642	775.5112	418.0912	606.5609	653.0052	800.5455
KOR	2007	811.8134	777.6198	469.4033	680.9501	735.3914	804.1588
KOR	2008	930.3591	892.5770	497.5778	726.1814	787.6311	811.2482
KOR	2009	927.7386	868.6354	522.2532	759.6709	815.5721	789.8583
KOR	2010	996.5673	938.0779	604.9225	866.0474	923.0670	914.7475
KOR	2011	1025.6940	959.6833	653.0923	931.6348	996.8172	946.7074
LTU	1995	2.3361	1.8572	0.2431	0.1897	0.1716	3.8079
LTU	1996	2.6552	2.1471	0.2923	0.2356	0.2109	4.4167
LTU	1997	2.9195	2.3384	0.3571	0.2948	0.2684	4.5150

LTU	1998	2.7576	2.2624	0.3733	0.2964	0.2655	3.9037
LTU	1999	2.7040	2.2762	0.4639	0.3461	0.2661	3.0576
LTU	2000	2.7763	2.4148	0.3963	0.3332	0.2445	3.5978
LTU	2001	2.6626	2.3243	0.4066	0.3871	0.2772	3.3467
LTU	2002	2.4954	2.2127	0.3797	0.3621	0.2818	3.4640
LTU	2003	2.5103	2.2393	0.4310	0.4122	0.3591	3.2495
LTU	2004	2.6816	2.3913	0.5377	0.5197	0.3858	3.6862
LTU	2005	2.8095	2.6011	0.5891	0.5529	0.4621	4.0622
LTU	2006	2.8778	2.7262	0.6652	0.6467	0.5567	3.6945
LTU	2007	3.0121	2.9103	0.7006	0.7543	0.8416	3.4304
LTU	2008	3.3689	3.3167	0.7629	0.8486	1.2855	3.4506
LTU	2009	2.9744	2.9209	0.6475	0.6770	1.1431	2.4965
LTU	2010	3.0909	3.0090	0.6847	0.7221	1.2318	2.3263
LTU	2011	3.3536	3.2323	0.7397	0.7869	1.3487	2.3070
LVA	1995	0.5212	0.4263	0.0470	0.0424	0.0492	0.3440
LVA	1996	0.5655	0.4711	0.0553	0.0506	0.0577	0.3346
LVA	1997	0.5654	0.4805	0.0713	0.0615	0.0675	0.3185
LVA	1998	0.5476	0.4778	0.0724	0.0633	0.0706	0.2013
LVA	1999	0.5068	0.4594	0.0751	0.0660	0.0690	0.1991
LVA	2000	0.5325	0.4898	0.0796	0.0781	0.0819	0.2592
LVA	2001	0.5331	0.4942	0.0750	0.0803	0.0861	0.3006
LVA	2002	0.5283	0.4940	0.0753	0.0823	0.0977	0.3807
LVA	2003	0.5785	0.5388	0.0744	0.0895	0.1412	0.3610
LVA	2004	0.6304	0.5911	0.0946	0.1036	0.1201	0.4169
LVA	2005	0.6869	0.6421	0.1143	0.1287	0.1585	0.3747
LVA	2006	0.7574	0.7118	0.1401	0.1540	0.1890	0.3378
LVA	2007	0.8702	0.8207	0.1816	0.2026	0.2582	0.3975
LVA	2008	0.9110	0.8761	0.2296	0.2331	0.3144	0.2765
LVA	2009	0.8426	0.8076	0.2366	0.2328	0.3222	0.2154
LVA	2010	0.8094	0.7604	0.2242	0.2215	0.3091	0.2336
LVA	2011	0.8600	0.8081	0.2747	0.2709	0.3758	0.2673
MEX	1995	3.6769	3.4078	0.7458	0.6993	0.2441	4.7630
MEX	1996	4.6049	4.2001	0.9430	0.8857	0.3039	6.9662
MEX	1997	5.3471	4.8672	1.1245	1.0529	0.3822	8.0783
MEX	1998	5.9635	5.4294	1.3434	1.2892	0.4512	8.8932
MEX	1999	6.6710	6.1348	1.5738	1.5099	0.5303	10.0602
MEX	2000	7.3177	6.7839	1.8023	1.7714	0.6445	11.7808
MEX	2001	7.5091	6.9528	1.9409	1.8987	0.6793	12.6299
MEX	2002	7.7549	7.2621	2.0478	1.9981	0.7124	14.4313
MEX	2003	8.3325	7.8337	2.0848	2.0132	0.7053	14.8045
MEX	2004	9.4221	8.8930	2.0486	1.9533	0.6812	16.7327
MEX	2005	10.0783	9.5647	2.0403	2.2107	0.7258	16.7793
MEX	2006	10.5865	10.0257	2.1976	2.3145	0.7751	19.8028
MEX	2007	10.8874	10.3157	2.2713	2.4364	0.7758	22.2295
MEX	2008	11.9427	11.2710	2.1862	2.3817	0.7167	24.7700
MEX	2009	11.7257	10.9308	2.1168	2.3071	0.7078	20.5083
MEX	2010	12.3094	11.4977	2.2169	2.4948	0.7637	25.3750
MEX	2011	13.3020	12.3738	2.2966	2.6201	0.8095	30.7919
MLT	1995	0.9229	0.8490	0.6866	0.5978	0.5038	0.7872
MLT	1996	0.9323	0.8601	0.6703	0.5997	0.5125	0.7927
MLT	1997	0.9471	0.8729	0.6784	0.6082	0.5223	0.6991
MLT	1998	0.9520	0.8784	0.7198	0.6493	0.5655	0.6910
MLT	1999	0.9825	0.9014	0.7417	0.6696	0.5705	0.6633

MLT	2000	0.9707	0.8995	0.7530	0.6860	0.5761	0.8030
MLT	2001	1.0047	0.9203	0.8684	0.8250	0.7035	0.6224
MLT	2002	1.0168	0.9333	0.7586	0.7408	0.6385	0.6940
MLT	2003	1.0729	0.9803	0.5038	0.4886	0.7713	0.7399
MLT	2004	1.0969	1.0013	0.7800	0.7423	0.6568	0.5952
MLT	2005	1.1098	1.0103	0.7941	0.7690	0.6720	0.6365
MLT	2006	1.1055	1.0043	0.8062	0.8429	0.7297	0.5685
MLT	2007	1.1228	1.0194	0.7474	0.8512	0.7300	0.5732
MLT	2008	1.1416	1.0345	1.6757	1.9575	1.4964	0.0796
MLT	2009	1.1507	1.0463	1.2831	1.6340	1.2826	0.1496
MLT	2010	1.1501	1.0521	1.2644	1.6111	1.2456	0.2247
MLT	2011	1.1692	1.0690	1.1825	1.5097	1.1454	0.2373
NLD	1995	0.9717	0.9717	0.9960	1.0760	1.2148	1.1277
NLD	1996	0.9667	0.9651	1.0223	1.0713	1.2227	1.1877
NLD	1997	1.0024	1.0057	1.0124	1.0969	1.2174	1.2870
NLD	1998	0.9966	1.0075	1.0159	1.1853	1.2969	1.2928
NLD	1999	1.0053	1.0143	1.1025	1.1916	1.3264	1.3415
NLD	2000	1.0778	1.0890	1.1775	1.2308	1.3499	1.6214
NLD	2001	1.1109	1.1393	1.1802	1.3081	1.4324	1.7937
NLD	2002	1.1130	1.1517	1.2439	1.3381	1.4931	1.7568
NLD	2003	1.1557	1.2135	1.1576	1.2812	1.7923	1.8249
NLD	2004	1.2016	1.2595	1.2887	1.4107	1.5287	1.9226
NLD	2005	1.2777	1.3542	1.3000	1.4224	1.5168	2.0493
NLD	2006	1.2853	1.3761	1.3467	1.4661	1.5708	2.0971
NLD	2007	1.2756	1.3601	1.3288	1.5283	1.6905	2.0018
NLD	2008	1.3230	1.4098	1.3322	1.5921	1.7762	2.0504
NLD	2009	1.1592	1.2533	1.3457	1.6018	1.8034	1.5008
NLD	2010	1.2159	1.2967	1.3477	1.6079	1.8105	1.6440
NLD	2011	1.2856	1.3507	1.3773	1.6518	1.8609	1.7821
POL	1995	1.9655	1.7045	0.4484	0.3479	0.2562	0.7066
POL	1996	2.1214	1.8752	0.5701	0.4252	0.2915	0.6957
POL	1997	2.3306	2.0918	0.7003	0.5169	0.3472	0.7329
POL	1998	2.5016	2.2521	0.8200	0.6103	0.4214	0.6526
POL	1999	2.6306	2.3660	0.8972	0.6790	0.4960	0.6241
POL	2000	2.7925	2.5458	0.9332	0.6447	0.3888	1.2619
POL	2001	2.7609	2.5683	0.9228	0.7151	0.4798	1.3808
POL	2002	2.7810	2.6106	0.9205	0.7000	0.4621	1.4561
POL	2003	2.9057	2.7381	0.8243	0.6822	0.6225	1.8070
POL	2004	3.2145	3.0149	0.9339	0.7002	0.4749	2.4808
POL	2005	3.2527	3.0890	0.9243	0.7227	0.5039	2.2714
POL	2006	3.0713	2.9632	0.9471	0.7398	0.5196	2.5167
POL	2007	3.0652	2.9589	1.0174	0.7949	0.5452	2.8610
POL	2008	3.0528	2.9675	1.0305	0.8894	0.6265	2.5933
POL	2009	3.0415	2.9443	1.0474	0.9039	0.6747	2.9299
POL	2010	3.1534	3.0465	1.1172	0.9457	0.6988	2.6217
POL	2011	3.4636	3.2843	1.1668	1.0163	0.7785	2.9783
PRT	1995	0.9413	0.8897	0.4700	0.3860	0.2574	0.6229
PRT	1996	0.9505	0.8984	0.4969	0.4219	0.2775	0.6583
PRT	1997	0.9448	0.9067	0.5392	0.4590	0.3047	0.6754
PRT	1998	0.9989	0.9492	0.5688	0.4882	0.3330	0.7136
PRT	1999	1.0076	0.9521	0.6066	0.5169	0.3404	0.7455
PRT	2000	1.0075	0.9646	0.6175	0.5465	0.3476	0.7186
PRT	2001	1.0316	0.9930	0.6123	0.5747	0.3604	0.8087

PRT	2002	0.9994	0.9793	0.6100	0.5821	0.3744	0.7855
PRT	2003	1.0350	1.0257	0.3867	0.3549	0.4149	0.7287
PRT	2004	1.1107	1.1071	0.6208	0.5817	0.3839	0.7188
PRT	2005	1.1512	1.1543	0.6285	0.6077	0.3946	0.6537
PRT	2006	1.2441	1.2570	0.6192	0.6602	0.4293	0.6833
PRT	2007	1.2317	1.2385	0.5859	0.6736	0.4515	0.6019
PRT	2008	1.2182	1.2278	0.6092	0.7242	0.4623	0.5084
PRT	2009	1.2208	1.2103	0.5632	0.7234	0.4569	0.4464
PRT	2010	1.1973	1.1777	0.5873	0.7546	0.4815	0.4673
PRT	2011	1.1929	1.1656	0.5862	0.7534	0.4924	0.4620
ROU	1995	0.2156	0.1604	0.0229	0.0184	0.0119	0.0897
ROU	1996	0.2924	0.2224	0.0349	0.0281	0.0177	0.1280
ROU	1997	0.5690	0.4472	0.0686	0.0545	0.0340	0.3169
ROU	1998	0.7290	0.5794	0.1224	0.0982	0.0622	0.2947
ROU	1999	0.9166	0.7714	0.1433	0.1025	0.0551	0.4447
ROU	2000	1.2446	1.0599	0.2231	0.1817	0.0895	0.5871
ROU	2001	1.6493	1.4139	0.3541	0.3160	0.1549	0.8669
ROU	2002	1.9451	1.6988	0.4093	0.3611	0.2328	1.1842
ROU	2003	2.3106	2.0453	0.3257	0.2703	0.3161	1.3942
ROU	2004	2.7980	2.4874	0.5639	0.5189	0.3307	2.0450
ROU	2005	3.1012	2.7786	0.7155	0.6759	0.4376	1.5321
ROU	2006	3.2490	2.9296	0.7187	0.7574	0.5101	1.5426
ROU	2007	3.4767	3.1508	0.8020	0.9227	0.6148	1.4163
ROU	2008	3.9151	3.5538	1.0874	1.2918	0.8051	1.3271
ROU	2009	3.7561	3.3999	0.8950	1.1435	0.7431	1.4859
ROU	2010	3.7914	3.4228	0.9159	1.1866	0.7668	1.4408
ROU	2011	4.0507	3.6390	1.1433	1.4713	0.8804	1.5102
RUS	1995	2.7656	2.2408	0.3052	0.2365	0.1941	1.2694
RUS	1996	3.9155	3.1171	0.4147	0.3277	0.2765	1.9339
RUS	1997	4.4910	3.6740	0.4580	0.3651	0.3100	1.8808
RUS	1998	4.2780	3.4737	0.5203	0.4128	0.3448	1.9911
RUS	1999	6.8549	5.4876	1.0979	0.8813	0.7494	4.6684
RUS	2000	8.9846	7.3098	1.5135	1.2432	1.0546	6.5821
RUS	2001	10.5212	8.7098	1.7549	1.4141	1.2053	8.7889
RUS	2002	11.0466	9.3845	2.1397	1.8247	1.6585	10.3348
RUS	2003	12.0126	10.5042	2.6121	2.1233	1.8498	11.4980
RUS	2004	14.5430	12.7257	3.2615	2.6037	2.1750	18.0613
RUS	2005	17.4804	15.3303	4.5241	3.4008	2.8805	21.8372
RUS	2006	18.6562	16.5118	5.5791	4.2079	3.5753	23.2928
RUS	2007	20.1917	17.9445	6.7526	5.0679	4.2909	25.0883
RUS	2008	22.9935	20.4741	7.5511	5.7354	4.9269	29.3820
RUS	2009	21.5844	19.0585	6.9557	5.3418	4.5915	28.5045
RUS	2010	23.5865	20.7919	7.9757	5.9709	5.0044	34.6500
RUS	2011	26.3043	23.1304	10.1320	7.5623	6.3293	42.6775
SVK	1995	0.8247	0.7139	0.0955	0.1021	0.1070	0.5628
SVK	1996	0.8544	0.7278	0.1067	0.1138	0.1202	0.5971
SVK	1997	0.8857	0.7662	0.1256	0.1334	0.1415	0.5733
SVK	1998	0.8973	0.7841	0.1432	0.1514	0.1624	0.6639
SVK	1999	0.9836	0.8481	0.1658	0.1622	0.1753	0.8110
SVK	2000	1.1750	0.9761	0.1921	0.1817	0.1908	0.8728
SVK	2001	1.1893	1.0061	0.1907	0.1920	0.2055	0.9563
SVK	2002	1.1792	1.0237	0.2154	0.2153	0.2233	0.9650
SVK	2003	1.2001	1.0710	0.2096	0.2327	0.3910	0.9684

SVK	2004	1.1976	1.1003	0.2545	0.2437	0.2421	0.9826
SVK	2005	1.1851	1.1107	0.2734	0.2580	0.2526	0.9103
SVK	2006	1.1486	1.1011	0.3151	0.2926	0.2784	0.8641
SVK	2007	1.0990	1.0491	0.3251	0.3186	0.3121	0.8868
SVK	2008	1.0819	1.0385	0.3462	0.3373	0.3447	0.8561
SVK	2009	1.0535	1.0077	0.3189	0.3241	0.3050	0.6495
SVK	2010	1.0486	0.9943	0.3093	0.3178	0.2891	0.7437
SVK	2011	1.0830	1.0138	0.3291	0.3354	0.3157	0.7464
SVN	1995	0.5957	0.5294	0.2561	0.2019	0.1514	0.1567
SVN	1996	0.6431	0.5749	0.2923	0.2305	0.1728	0.2312
SVN	1997	0.6916	0.6239	0.3211	0.2528	0.1883	0.3433
SVN	1998	0.7405	0.6722	0.3529	0.2786	0.2087	0.3855
SVN	1999	0.7874	0.7208	0.3857	0.2994	0.2112	0.4201
SVN	2000	0.8143	0.7610	0.4197	0.3217	0.2488	0.4606
SVN	2001	0.8736	0.8224	0.4421	0.3819	0.3006	0.5006
SVN	2002	0.9043	0.8573	0.4997	0.4026	0.3281	0.6290
SVN	2003	0.9506	0.9128	0.5159	0.4259	0.3529	0.6602
SVN	2004	1.0028	0.9679	0.5462	0.4554	0.3774	0.6042
SVN	2005	1.0356	1.0108	0.5992	0.4854	0.3961	0.5227
SVN	2006	1.0494	1.0303	0.6048	0.5176	0.4139	0.5692
SVN	2007	1.0749	1.0546	0.6140	0.5546	0.4753	0.6730
SVN	2008	1.1199	1.0985	0.5870	0.5618	0.4770	0.5735
SVN	2009	1.0799	1.0600	0.6002	0.5640	0.4851	0.5453
SVN	2010	1.0493	1.0294	0.6266	0.5894	0.5132	0.5405
SVN	2011	1.0662	1.0438	0.6581	0.6186	0.5357	0.5936
SWE	1995	8.4157	8.1187	8.1180	9.0349	11.2768	12.0976
SWE	1996	8.1918	7.9929	8.8264	9.6877	12.0550	10.2986
SWE	1997	8.3863	8.2596	9.1402	10.2257	12.7717	10.8328
SWE	1998	8.3745	8.3107	9.3218	10.6047	13.1202	11.5958
SWE	1999	8.5305	8.5171	9.4401	10.5836	13.0254	12.3261
SWE	2000	8.9121	8.8773	9.6233	11.2985	13.8651	12.8622
SWE	2001	9.1536	9.2341	10.0267	11.8604	14.4751	11.6716
SWE	2002	9.1618	9.2838	10.4283	12.4062	15.0356	12.7231
SWE	2003	9.3661	9.6340	9.7946	12.8778	17.5044	13.0567
SWE	2004	9.7428	10.1778	10.6221	13.4272	16.2974	14.6895
SWE	2005	10.2753	10.8524	10.7672	13.8946	17.1574	15.0815
SWE	2006	10.2069	10.8674	10.8289	14.1615	17.7729	15.9647
SWE	2007	10.1608	10.6927	11.4381	14.8273	19.2257	15.2832
SWE	2008	10.2899	10.8431	10.9132	15.2504	20.0473	12.1144
SWE	2009	9.7617	10.1444	10.9579	15.5530	19.7544	8.4671
SWE	2010	10.1915	10.6940	10.6623	15.1442	19.2962	13.8280
SWE	2011	10.1612	10.5723	10.7320	15.2318	19.5215	14.6926
TUR	1995	0.0729	0.0632	0.0074	0.0047	0.0025	0.0608
TUR	1996	0.1160	0.0993	0.0132	0.0085	0.0046	0.1061
TUR	1997	0.1888	0.1631	0.0288	0.0190	0.0098	0.1859
TUR	1998	0.3118	0.2666	0.0523	0.0352	0.0190	0.3159
TUR	1999	0.4205	0.3809	0.0944	0.0613	0.0301	0.3739
TUR	2000	0.5813	0.5340	0.1484	0.1014	0.0512	0.5439
TUR	2001	0.7951	0.7509	0.2033	0.1359	0.0644	0.8000
TUR	2002	1.1044	1.0299	0.2562	0.1866	0.0963	1.5322
TUR	2003	1.4364	1.3363	0.3280	0.2391	0.1264	1.8673
TUR	2004	1.6782	1.5760	0.3824	0.2818	0.1558	1.8313
TUR	2005	1.8012	1.7064	0.4292	0.3327	0.2001	1.8462

TUR	2006	1.8628	1.7600	0.4719	0.3923	0.2379	1.4424
TUR	2007	1.8520	1.7783	0.5542	0.4603	0.2846	1.2003
TUR	2008	1.9457	1.9078	0.5894	0.4916	0.3050	1.1618
TUR	2009	1.9567	1.8880	0.5996	0.4971	0.3007	1.3003
TUR	2010	2.1147	1.9981	0.6490	0.5410	0.3280	1.4314
TUR	2011	2.3009	2.1368	0.7658	0.6345	0.3706	1.5063
TWN	1995	29.0662	25.6787	9.2672	10.9820	11.6696	25.3305
TWN	1996	29.8631	26.1182	9.9817	11.8635	12.6000	26.2814
TWN	1997	30.3555	26.5597	9.7088	11.6106	12.4009	26.2618
TWN	1998	30.4621	26.8374	9.8330	11.8197	12.7169	26.6122
TWN	1999	28.8774	25.6594	9.9571	12.0092	12.9965	24.9583
TWN	2000	29.2084	25.9508	9.6494	11.6459	12.5845	23.3649
TWN	2001	29.1953	25.9785	10.3398	12.4449	13.2408	20.2975
TWN	2002	29.7312	26.1456	9.9077	11.8886	12.5566	22.9363
TWN	2003	29.0394	25.6967	9.9113	11.8212	12.5916	22.2486
TWN	2004	28.3607	25.7481	9.9629	11.8561	12.8775	21.7117
TWN	2005	27.5930	25.2832	10.1966	12.5923	13.8254	19.1303
TWN	2006	27.0192	25.1417	10.6061	13.2555	14.9500	17.3356
TWN	2007	27.3960	25.8945	10.6547	13.5645	15.7084	18.5358
TWN	2008	26.2470	25.3869	10.5523	13.2923	15.8748	14.7020
TWN	2009	28.3076	27.1936	10.3769	12.8136	14.1801	16.3446
TWN	2010	32.5437	31.1596	12.2739	15.2243	16.8439	19.1030
TWN	2011	30.1533	27.9560	11.1870	14.0679	15.8317	17.2776

References

- Aghion, P., U. Akcigit and P. Howitt (2014), “What Do We Learn From Schumpeterian Growth Theory?”, pp. 515-563 in P. Aghion and S.N. Durlauf (eds.), *Handbook of Economic Growth*, Volume 2, Amsterdam: Elsevier B.V.
- Asea, P.K. and W.M. Corden (1994), “The Balassa-Samuelson Model: an Overview”, *Review of International Economics* 2(3): 191-200.
- Barro, R.J. (2012), “Convergence and Modernization Revisited”, NBER Working Paper no. 18295, Cambridge MA.
- Bernard, A.B. and C.I. Jones (1996), “Comparing Apples to Oranges: Productivity Convergence and Measurement across Industries and Countries”, *American Economic Review* 86(5): 1216-1238.
- Carree, M. and L. Klomp (1997), “Testing the Convergence Hypothesis: a Comment”, *Review of Economics and Statistics* 79: 683-686.
- Caves, D.W., L.R. Christensen and W.E. Diewert (1982a), “The Economic Theory of Index Numbers and the Measurement of Input, Output and Productivity”, *Econometrica* 50, 1393-1414.

- Caves, D.W., L.R. Christensen and W.E. Diewert (1982b), "Multilateral Comparisons of Output, Input and Productivity using Superlative Index Numbers", *Economic Journal* 96, 659-679.
- Christensen, L.R., D.W. Jorgenson and L. Lau (1971), "Conjugate Duality and the Transcendental Logarithmic Production Function", *Econometrica* 39, 255-256.
- Debreu, G. (1951), "The Coefficient of Resource Utilization", *Econometrica* 19, 273-292.
- De Gregorio, J., A. Giovannini and H.C. Wolf (1994), "International Evidence on Tradables and Nontradables Inflation", *European Economic Review* 38: 1225-1244.
- Denison, E.F. (1962), *The Sources of Economic Growth in the United States and the Alternatives Before Us*, New York: Committee for Economic Development.
- Diewert, W.E. (1973), "Functional Forms for Profit and Transformation Functions", *Journal of Economic Theory* 6, 284-316.
- Diewert, W.E., (1974), "Applications of Duality Theory," pp. 106-171 in M.D. Intriligator and D.A. Kendrick (ed.), *Frontiers of Quantitative Economics*, Vol. II, Amsterdam: North-Holland.
- Diewert, W.E and K.J. Fox (2015), "Output Growth and Inflation Across Space and Time", UNSW Business School Research Paper No. 2015 ECON 4, University of New South Wales, Sydney 2052 Australia.
- Diewert, W.E. and C.J. Morrison (1986), "Adjusting Output and Productivity Indexes for Changes in the Terms of Trade", *Economic Journal* 96, 659-679.
- Eltető, O. and Köves, P. (1964), "On a Problem of Index Number Computation relating to international comparison", *Statisztikai Szemle* 42, 507-18.
- Farrell, M.J. (1957), "The Measurement of Production Efficiency", *Journal of the Royal Statistical Society*, Series A, 120, 253-278.
- Feenstra, R.C., R. Inklaar and M.P. Timmer (2015), "The Next Generation of the Penn World Tables", forthcoming in the *American Economic Review*.
- Gini, C. (1931), "On the Circular Test of Index Numbers", *Metron* 9:9, 3-24.
- Gordon, R.J. (2012), "Is U.S. Economic Growth Over? Faltering Innovation Confronts the Six Headwinds", NBER Working Paper 18315, Cambridge MA: NBER.

- Gordon, R.J. (2014), “The Demise of U.S. Economic Growth: Restatement, Rebuttal and Reflections”, NBER Working Paper 19895, Cambridge MA: NBER.
- Herrendorf, B. and Á. Valentinyi (2012), “Which Sectors Make Poor Countries So Unproductive?”, *Journal of the European Economic Association* 10(2), 323-341.
- Hill, R.J. (1999), “Comparing Price Levels across Countries Using Minimum Spanning Trees”, *Review of Economics and Statistics* 81, 135-142.
- Hill, R.J. (2004), “Constructing Price Indexes across Space and Time: The Case of the European Union”, *American Economic Review* 94(5), 1379-1410.
- Hsieh, C.-T. and P.J. Klenow (2007), “Relative Prices and Relative Prosperity”, *American Economic Review* 97(3), 562-585.
- Inklaar, R. and D.S.P. Rao (2014), “Cross-Country Income Levels Over Time: Did the Developing World Suddenly Become Much Richer?”, Groningen Growth and Development Centre Research Memorandum 151, University of Groningen, The Netherlands.
- Inklaar, R. and M.P. Timmer (2014), “The Relative Price of Services”, *Review of Income and Wealth* 60(4), 727–746.
- Jorgenson, D.W. and Z. Griliches (1967). “The Explanation of Productivity Change”, *Review of Economic Studies* 34, 249–283.
- Kohli, U. (1990), “Growth Accounting in the Open Economy: Parametric and Nonparametric Estimates”, *Journal of Economic and Social Measurement* 16, 125-136.
- Lichtenberg, F.R. (1994), “Testing the Convergence Hypothesis”, *Review of Economics and Statistics* 76(3), 576-579.
- Malmquist, S. (1953), “Index Numbers and Indifference Surfaces”, *Trabajos de Estatística* 4, 209-242.
- Milanovic, B. (2012), “Global Inequality Recalculated and Updated: the Effect of New PPP Estimates on Global Inequality and 2005 Estimates”, *Journal of Economic Inequality* 10, 1-18.
- Mokyr, J., C. Vickers, and N.L. Ziebarth (2015), “The History of Technological Anxiety and the Future of Economic Growth: Is This Time Different?”, *Journal of Economic Perspectives* 29(3), 31–50.
- O’Mahony, M. and M.P. Timmer (2009), “Output, Input and Productivity Measures at the Industry Level: the EU KLEMS Database”, *Economic Journal* 119, F374-F403.

- Rao, D.S.P. (1993), "Intercountry Comparisons of Agricultural Output and Productivity", FAO Economic and Social Development Paper no. 112, Rome: Food and Agriculture Organization.
- Ricci, L.A., G.M. Milesi-Ferretti and J. Lee (2013), "Real Exchange Rates and Fundamentals: a Cross-Country Perspective", *Journal of Money, Credit, and Banking* 45(5): 845-865.
- Rodrik, D. (2013), "Unconditional Convergence in Manufacturing", *Quarterly Journal of Economics* 128(1), 165-204.
- Shiu, A. (2003), "Multilateral Comparisons of Productivity, Terms of Trade and Factor Accumulation", *Review of Income and Wealth* 49(1), 35-52.
- Szulc, B. (1964), "Indices for Multiregional Comparisons", *Przegląd Statystyczny* 3, 239-254.
- Theil, H. (1967), *Economics and Information Theory*, Amsterdam: North-Holland Publishing.
- Timmer, M.P. (ed.) (2012), "The World Input-Output Database (WIOD): Contents, Sources and Methods", WIOD Working Paper Number 10, downloadable at <http://www.wiod.org/publications/papers/wiod10.pdf>.
- Timmer, M.P., E. Dietzenbacher, B. Los, R. Stehrer and G.J. de Vries (2015), "An Illustrated Guide to the World Input-Output Database: the Case of Global Automotive Production", *Review of International Economics*, DOI: 10.1111/roie.12178.
- Timmer, Marcel P., Robert Inklaar, Mary O'Mahony and Bart van Ark (2010), *Economic growth in Europe. A comparative industry perspective*, Cambridge University Press: Cambridge: UK.
- World Bank (2008), *2005 International Comparison Program: Tables of Final Results*, Washington D.C.: The World Bank.
- World Bank (2014), *Purchasing Power Parities and Real Expenditures of World Economies – Summary of Results and Findings of the 2011 International Comparison Program*, Washington D.C.: The World Bank.