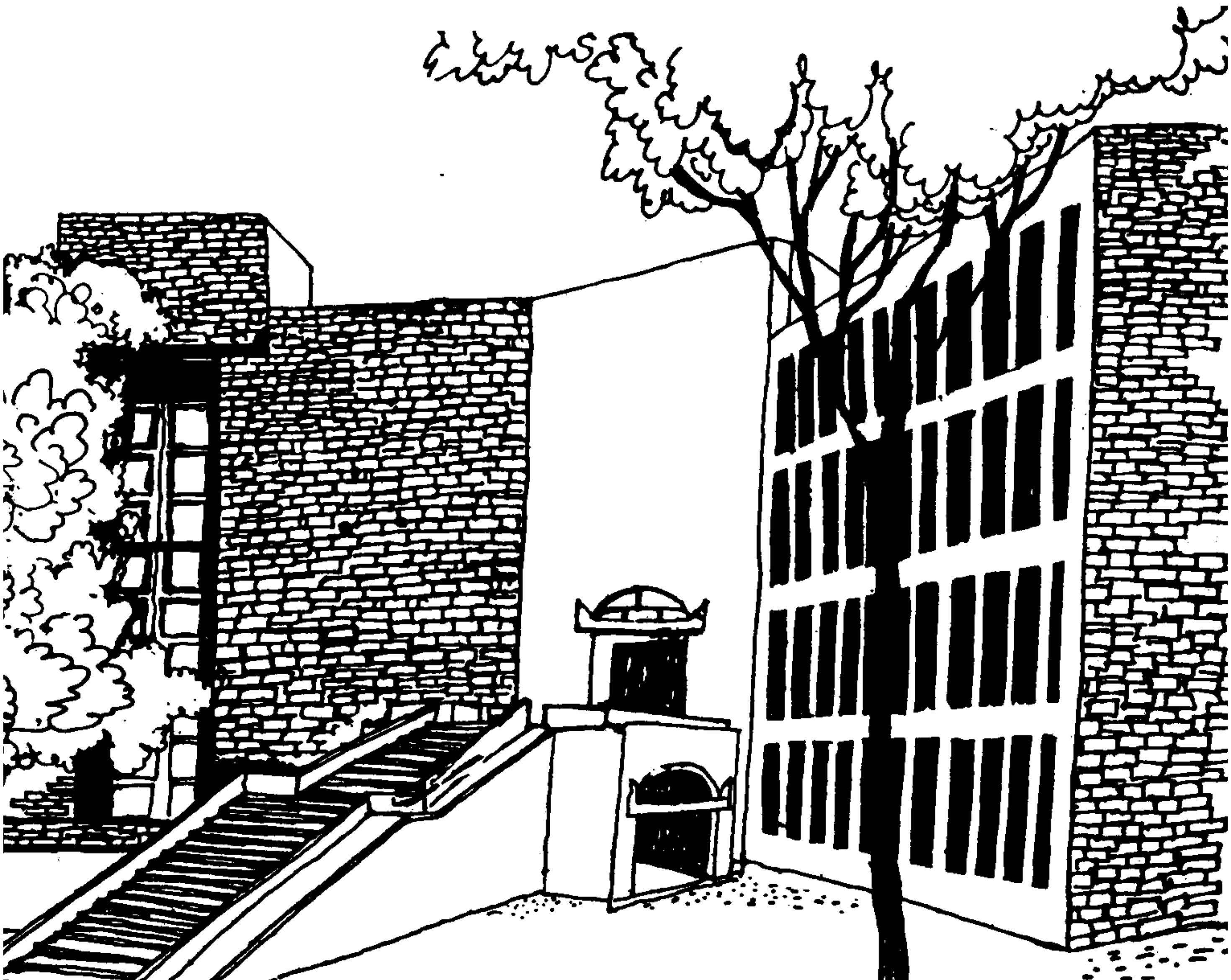
Working Paper



STRUCTURAL DETERMINANTS OF OPENNESS OF ECONOMIES: THE CONCEPTUAL BASIS AND CROSS-SECTIONAL EVIDENCE

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W.P. No.1130
August 1993

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STRUCTURAL DETERMINANTS OF OPENNESS OF ECONOMIES : THE CONCEPTUAL BASIS AND CROSS-SECTIONAL EVIDENCE [1]

(ABSTRACT)

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This study argues that structural factors - principally population per capita income and population density - can explain a significant proportion of the variation in openness defined as (exports + imports)/gross national product. It also provides a conceptual and theoretical basis for the form of the function that explains openness. Spatial theories of order in the location of economic activities - the ideas of Christaller and Lösch - which have found much support in studies of geographers, and other empirical findings of spatial order viz., the famous rank size rule of cities' populations, and the equally famous 'gravity-model' of spatial interaction, can all be used fruitfully to understand openness. They explain why openness is inversely related to population sizes, and more generally the functional form of the structural dependence. Biometricians in the early part of this century had used allometric growth models to understand the form and growth of organisms, across not too distant species. Use of the allometric model to the problem of trade openness only calls for recognising the economy as having a structure and therefore as being more than a collection of producers and consumers; and simple assumptions about the economy's principal characteristics.

Given this structural determination of openness we are able to explain the long standing puzzle of Tarshis that smaller countries, but not smaller regions within a nation, would tend to show greater economic stability. Our study would also call for re-examination of many of the studies linking growth to trade openness, especially those conducted in a cross-sectional framework: We would contend that the measure of the openness that is induced by policy (and other non-structural factors) would have to be proxied not by revealed openness as such, but by the same adjusted for the structural component.

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[1] This study was sponsored by the Research and Publications Division of the Indian Institute of Management, Ahmedabad. The author gratefully acknowledges the support provided.

STRUCTURAL DETERMINANTS OF OPENNESS OF ECONOMIES: THE CONCEPTUAL BASIS; AND CROSS-SECTIONAL EVIDENCE[2]

Introduction

Even a cursory glance at the trade ratios of different countries alerts us to the possibility that larger countries are less open than smaller ones. Adam Smith too mentioned this , and Simon Kuznets [1960] had pursued the matter empirically to establish that population size (and not so much the GDP) is the primary structural determinant of openness of economies

Yet a recent survey by D.H. Perkins and Moshe Sryquin [1989], had not much to say on the matter, besides the presentation of much data reinforcing Kuznets' insight, and other factual differences between the three size classes of countries on a host of variables. The focus of this study was large countries, but the lack of conceptual clarity, and the little a priori justification for the mixed criteria used in classification of the countries meant that the idea of large and very large countries was rather forced.

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[2] This study was sponsored by the Research and Publications Division of the Indian Institute of Management, Ahmedabad. The author gratefully acknowledges the support provided.

Economists have always argued that the root of the fact that small economies tend to be more open are scale economies (incl. minimum economic sizes)[3], which makes smaller countries specialise in particular products with significant exports therefore, and generalised imports. While this is no doubt true, there has been little conceptual clarity on how this factor operates, little attempt has been made to explore and understand the specific nature of the dependence, viz. that it is population size in the first instance rather that GDP size that explains openness.

A vast policy oriented literature that is concerned about trade and growth, has been spawned by the World Bank and IMF's thrust and sponsorship of liberalisation policies including that of the trade sector. The thesis that more open economies have grown faster than others less open, has been reiterated by the WDR [1987]. Many of these studies, but especially those that use a cross-sectional framework, even when they start with openness in a policy sense, do end up using the measure of trade as a proportion to GNP in their regressions. And given the strong basis for a structural dependence both on theoretical and empirical grounds, as we hope to build up in this paper, it

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[3]For a discussion see D.H.Perkins and M. Sryquin (1989)

implies that these studies be re-examined,[4] on this score.

Our task here is neither to define liberalisation nor trade orientation: We are concerned with the measure of openness defined as (exports+imports)/ GNP. It is our contention that there is a strong, systematic and steady dependence of this ratio on a few simple structural measures of an economy - population, per capita income and population density in that order. This implies that only the deviation of actual openness from the structurally determined openness (or fitted openness) may be used a proxy for trade policy and other factors that determine trade orientation, in the studies that seek to explain variability in growth across countries.

In the process of providing a conceptual and theoretical basis we would be arguing the case of the economy as a structured whole, whose characteristics and even size (in special contexts) is not adequately captured by GNP alone. More specifically we would use ideas from biometry, and from the spatial theories of

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[4]For critical review of these studies in other ways see Cf. Ross Levine and David Renelt (1991), Sebastian Edwards (1989), Edmund J. Sheehey (1990), and W.S. Jung and P.J. Marshall (1985).

location originally put forward by Christaller [1933] and Lösch [1954][5]

An Intuitive Idea and Allometric Growth

Intuitively it is obvious that since economies have both external and internal trade, if two economies were to merge, and even if nothing else happened immediately, then the trade ratio of the merged economy would be lower since what was originally external trade would now be internal to the merged economy. Thus trade is more a boundary concept rather than a body concept, whereas GNP or GDP is more the latter. Such notions are at the root of biometrical principles, that found much development in the early part of this century in cross-species studies of form and structure. More specifically it leads us directly to the allometric growth model which has been successfully used in metrical studies of growth and structural change in organisms.

The allomteric growth model states that

$$Y = aX^b \tag{1}$$

where Y is a measure of an organ, X of the organism, and a and b are parametric constants, so that if we also see Y and X as

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[5]For a review see Walter Isard (1956), or a good text like P.E. Lloyd and P. Dicken (1972).

changing in time then,

$$\frac{1}{Y}\frac{dY}{dt} = \tilde{Y} = b\frac{1}{X}\frac{dX}{dt} = b\tilde{X} \qquad (2)$$

where $\tilde{Y}$ and $\tilde{X}$ represent growth rates.

The differing yet (linear- proportionality) in growth rates occur because of the 'volume-surface' type considerations, i.e., the measure of an organ may have a dimension different from that of the measure of the organism. Thus say a limb may be well measured by its length, whereas the mass of the organism has the dimension of length cubed, while the skin has the dimension of length squared. This means that an organism with no structural change, i.e., where the adults look exactly like the neophytes, and have the same material composition (something that is very rarely observed), the relationship above is likely to be exact. The foot and skin would grow at one-third and two-thirds of the organism's growth rate. This leads to the proposition that deviations from a fitted model (a,b) may be used to indicate a certain kind of structural change. The same analogy may be used usefully in the social sciences when we are reasonably clear about the objects of our study.

Model I

Thus if we tentatively recognise GNP (G) as a measure of the organism then,

$$T = a\,G^{b}\ ,\ \text{so that}\ \frac{T}{G} = a\,G^{b-1}$$

We may write the above as,

$$Ln(O) = Ln(a) + (b-1)Ln(G) \tag{3}$$

What value of b do we expect intutively ? If we see trade, particularly generalised imports, as being dependent upon the level of GNP, and being more when GNP is higher, then we expect b to be greater than 0.

From the supply side, we see that as GNP increases, in the first instance via increase in population at the same level of per capita income, the scope for domestic production of all goods, but especially those that arise at a higher level of per capita income also increases. We may see this as arising because now there are absolutely more people at any particular level of income, so that the number of people now available to buy any particular good has increased, so that more goods now have a viable market: the costs remain the same because costs in the first instance can be assumed to depend upon the per capita income. (When the costs remain the same the minimum as well as the optimum level of output for all goods remain the same).

This implies that there is the potential for increased domestic production, so that, trade increases slower than GNP and openness ratio can be expected to go down with GNP increase arising from a population increase. We expect b to be less than

On the other hand a GNP increase that arises from an increase in per capita has a different effect. As the per capita income increases there is an increase in the goods demanded but particularly of the higher order goods, but the costs cannot be expected to remain the same so that there is a change in the minimum economic (and optimal) sizes, generally increasing both, so that the scope for domestic production of more items deceases. Indeed the option to specialise in a few goods, which are exported while others are imported increases, so that the net effect on trade may well be positive, so that the trade ratio can increase at a rate faster than GNP if the increase in GNP comes about by a per capita income increase.

But given the fact that there is great population size difference within the set that constitute the totality of countries in our study[6]: population sizes range from less than a

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[6]The countries in our study are those for which data on population, exports and imports of goods and services, per capita income, land area, are available in the World Tables 1989 of the World Bank. The table gives data for 137 countries, and omitting those for which data are missing, sets of between 100 and 130 countries are available. We are grateful to the World Bank for providing the data gratis.

million to nearly 900 m i.e., over a 1000 times, whereas per capita income variation is less being of the order of 100 times, we expect the dependence on population to be statistically more firmly established. The net dependence of the trade ratio on GNP variation cross sectionally is then assured. Concievably in a world constituted by countries of all equal populations, and with equal per capita incomes, as the per capita income increases of all countries increase together we would expect not only the trade to increase but do more so than in proportion to GNP so that the trade ratio itself increases. Only in this rather special case can we expect b to be greater than 1.

When (3) is empirically estimated we get b to be of the order of 0.85. See Appendix I for the results.

Model II

It would be quite naive to assume that GNP however constituted is the same for understanding trade, as the discussions in the section above suggests. In a less general and more specific way it was always realised, by Kuznets [1960] for example, that at low levels of income needs are few and are mostly for wage goods, the bulk of which would be for food, and in general for the immediate products of land and simple labour, obtained locally. As income grows the demand for goods produced non-locally increases, simply as the variety of goods demanded increases. This implies that we would expect trade to increase faster with respect to increases in per capita income than with population. But the more fundamental reason is what we have already discussed, since the Kuznet's idea is contingent on a certian historcal process of development viz of the agricultural revolution or development, preceeding the industrial development. For many countries in Africa which did not have an agricultural development, and also for the oil rich middle east, even food and lower order goods need not be local products, as they move from food gathering and hunting societies, with only a primitive developement of agriculture to modernisation. Here the Kuznets' argument may not capture the essential reason for the observation that trade goes up faster with increase in per capita income than with population.

For the purpose of trade which we now treat as an aspect (organ) of the economy (the organism), it would be appropriate to define a measure of the economy not as GNP but as Pi^{σ} where P is the population and i the per capita income. Only when trade is indifferent to per capita income in relation to population, would we expect σ to be equal to 1, so that in general we must allow for σ to be empirically determined. We expect σ to be much greater than 1. The model thus becomes:

$$T = a\ (Pi^{\sigma})^{b}$$

$$\therefore \quad \frac{T}{G} = \frac{T}{Pi} = aP^{b-1} \, i^{\sigma b-1}$$

i.e.,

$$Ln(O) = Ln(a) + (b-1)Ln(P) + (\sigma b-1)Ln(i) \tag{4}$$

We can estimate this model empirically, the parameters being given by,

$$a = e^{\hat{c}} \; ; \; b = 1+\beta_1 \; ; \; \sigma = \frac{1+\beta_2}{1+\beta_1}$$

where $\hat{c}$, β_1, and β_2 are the parameter estimates of equation (4)

Empirically we do obtain values of σb which are a little above 1. See Appendix II. This implies that σ is of the order of 1.5 or 1.6, so that per capita income in relation to population makes a big difference in the demand for foreign trade. Trade increases in going from one country to another with a large population alone, is to the extent of b (< 1) times the increase in GNP, whereas in going from one country to another where the per capita alone is larger, the trade increases by σb which is greater than 1.

As we had mentioned, Kuznets gave certain reasons why this must be so. Yet lack of proper data, the fact that in the fifties and forties many nations were dependencies, use of multivariate methods were still in their infancy among economists, all meant that Kuznets could not elicit from the data this dependence of openness on per capita income, even though he harboured very strong a priori reasons for such a dependence. Clearly, if we adopt Kuznets' method for controlling for population, then ceteris paribus, from our empirically estimated relation we may write:

$$\tilde{O} = \sigma b \tilde{i}$$

where $\tilde{O}$ and $\tilde{i}$ are proportional changes in openness and per capita income respectively. And since σb is greater than 1 by only about 6-10%, using simple correlations could not possibly have brought out this factor.

Model III

We now go on to another structural factor namely land area. Thus far we have assumed that population density is uniform, so that a larger economy in terms of GNP (or more correctly in terms of Pi^{σ} given Model II), has the same spatial density of GNP or Pi^{σ}. We do know from Kuznets and plain common sense that sparse populations impose additional costs for a given level of well being, arising out of the need to overcome distance, only one aspect of which are transport costs. Thus acting via per capita income we would a priori expect high population density to have a positive effect on trade.

Yet the reality is that population density varies as much (or more) within large countries as across countries. This is an indication of the strength of distance costs in the spatial location of economic activities. Much of the economic activities are evenly distributed in pre-industrial societies, so that population is evenly distributed across areas with similar agricultural productivity per unit of land. With industrialisation agglomeration economies come into play for both the emerging manufacturing activities, service activities and for their consumption, so that population tends to be highly unevenly distributed. The unevenness is not only in the increased urbanisation that follows industrialisation but also on account of the variation in regional industrialisation. (Among the large countries only those that start their industrialisation with a high population density - India, China, Bangladesh - may possibly not show this feature).Thus more than half the population of the USA is concentrated in and around the north east. Two thirds or more of Brazil in an around the Sao Paulo region, and so on. This means that uneven population density within countries acts to mitigate against the influence of large land sizes (low overall population dendity), so that in an empirical determination of the influence of this factor we would not find it to be very strong. In other words the very process of development necessarily gathers population into urban places; and usually differentiates the country in terms of population density, building upon the pre-industrial differences, and on the accident of location of the early industrial enclaves, and on such factors, as access to the sea. The initial patterns through the action of agglomeration economies, and the reinforcing influence of exisiting networks of transport and communication have a great influence in determining the future patterns. Indeed this is the spatial expression of the emergence of a single home market.

Formally, extending Model II we may therefore write,

$$T = a \left[P\, i^{\sigma_1} \left(\frac{P}{L}\right)^{\sigma_1 \sigma_2} \right]^b$$

where L is the land area, and σ_2 the factor by which population density affects per capita income and through that the trade. so that O the openness is,

$$O = a\, P^{(b+\sigma_1\sigma_2 b-1)}\, i^{(\sigma_1 b-1)}\, L^{(-\sigma_1\sigma_2 b)}$$

Therefore we can estimate,

$$Ln(O) = Ln(a) + \left[b+\sigma_1\sigma_2-1\right] Ln(P) + \left[\sigma_1 b-1\right] Ln(i) + (-\sigma_1\sigma_2\ b) Ln(L) \quad (5)$$

Estimatihg this model we get:

$$a = e^{\hat{c}}$$

$$b = 1+\beta_1+\beta_3$$

$$\sigma_1 = \frac{(1+\beta_2)}{(1+\beta_1+\beta_3)}$$

$$\sigma_2 = \frac{-\beta_3(1+\beta_1+\beta_3)}{\beta_2+1}$$

With the addition of population density we find that the parameters as estimated in Model II do not change much. σ_2 itself is only of the order of 2 to 3 %. See Appendix III. Thus while population density or land size affects openness its influence is not strong. This is because of the fact of regional variations in population density discussed above that are found in economies with low population densities[7]

Thus our final model of openness based on factors that are indisputably structural is as follows:

$$O = 8.678 \left[P\ (\ i\ (\frac{P}{L})^{0.0347})^{1.381}\right]^{0.782} \qquad (6)$$

for data that is the average values of the variables for the years 1985,86 and 87; and when we use the measure of exports plus

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[7]Thus our model could perhaps be improved (the adjusted R^2 would rise), if rather then using population density on the average, we use the per capita income weighted population density. Such data would not be available, so that approximately the population density may be divided by the spatial variance in population density. This has not been pursued further.

imports of goods and non factor services (from the balance of payments data of the World Tables, 1989), to gross national income.

The regressions for Models I to III have been carried ouy for specific period averages, 1970,71 & 72; 1973,74 & 75; 1975, 76 & 78; 1985,86 & 87, both for trade measured as the sum of exports and imports of goods and non-factor services (OBP) and of goods alone (OCN). Since non-factor services are not fundamentally distinguished from goods except in terms of their tangibility, the fit when we use the former measure (OBP) is generally better.

There is no doubt some variation in the estimates of a, b, σ_1, and σ_2, across time. But it is small and systematic, so that, we may conclude that the parameters over a long period may be considered as approximately constant or slowly varying. In a later section on time dependence, after we have provided a conceptual basis for the model in spatial theories, we will draw up a model wherein we keep all the parameters except 'a' constant, which we will allow to vary with time.

Spatial Basis for the Determination of Openness

Christaller [1930 & 1966] in the thirties argued that given uniform population distribution, and given goods for which particular unit transport costs, and fixed costs operate, centres of production (and sale) in a lattice like pattern would emerge. Given several commodities with broadly similar unit transport costs (more generally distance costs) for purchase, central places for the different commodities would converge due to the economy of collective purchase and possibly collective sale. This is the so-called 'market principle'. As there are other goods whose unit fixed costs can be higher in relation to unit variable costs, or because their demand arise at higher level of income, or in smaller amounts, from among the first order central places, one in three (k=3 based on the 'market-principle'), would emerge as higher order central place; and so on until the primate city of the country is reached. This model is the simplest of the possible abstractions to the reality. Its merit is in calling attention to the fact of urban places and their hierarcy as a basic facet of any economy where there are goods with different threshold levels of output, and transport or distance costs are finite. Christaller himself discussed alternative arrangements: the k=4 pattern based on the 'traffic principle' i.e., that as many central places as possible between two central places of higher rank lie on a straight line, thereby economising on the cost of routes, the k=7 pattern based on the so-called 'administrative principle' i.e., the idea that central places command a distinct territory with no overlap. It is to the power of Christaller's reasoning that so abstract and parsimonious a model such his fits the reality in even a few places.[8]. Subsequently Lösch argued for a more flexible mechanism of central place formation and distribution, based on the simultaneous operation of the various k-factors of Christaller, and many more (up to a total of 150), and not insisting upon a total correspondence of central places for various kinds of goods. Using one centre, the primate one, in an economy where every good would be available he was led to the idea of activity rich and activity poor sectors alternating with each other, and the activity rich sectors would tend to have cities of higher order than the sectors which are activity poor. The former is served by trunk routes from the metropolitan centre while the latter by indirect routes.

The flexibility inherent in Lösch's scheme allowed geographers to look for spatial order in a less restrictive fashion, and the enormous research that followed, not only confirmed the existence of spatial order but also of the Lösch's activity rich and activity poor areas. While Christaller's scheme

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[8]Besides Christaller's own work on central places in Southern Germany, other studies of small regions do confirm the basis of his approach Cf. G. W. Skinner (1964), J.H. Stine (1962) quoted in P. E. Lloyd & Peter Dicken (1972).

senanded that central places interact only in a hierarchical fashion, the Löschian landscape does provide for lateral interaction between central places, and so was able to bring in an essential aspect of real landscapes.

Among the principal empirical evidences for spatial order is the so-called rank-size rule of cities' populations. In very any countries[9] if cities are ranked in descending order of their populations we do find an interesting feature. The rank of a city times its population is a constant that equals the population of the first ranked (largest) city. This is usually expressed as:

$$P_j = \frac{P*}{j^Q} (6) \qquad (7)$$

where P_j is the population of the j^{th} ranked city, and P* is the population of the first ranked city, and Q is a constant close to 1[10].

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[9] There are some significant exceptions, but most of them present another systematic pattern, the pattern of extreme metropolitian development, in which the primate city is very large, and the next many cities have far lower populations than what the rank size rule would imply. Examples are Thailand, Japan, Eastern India, Mexico

[10] R. Vining (1950), C. H. Madden (1956), were the early studies on this aspect. Berry (1961) did a large scale comparative study of about 38 countries.

There is also much evidence for the so-called 'gravity' model of social interaction. It postulates that the interaction (either commodity flow, exchange of messages, of persons, movement of commuters, etc. depending upon the context) between two central places obeys a law akin to Newton's law of gravity, viz. the interaction level is directly proportional to the product of the 'masses' of the central places (either output, income, population, built up area etc. depending upon the context), and inversely to the square of the distance between the two centres. The square of the distance may be generalised to a certain power 'Q' which may be empirically determined. The distance may also be seen more generally than the distance as the crow flies: besides that it has been taken as road distance, time, cost, etc. In the literature 'Q' has been termed "the 'frictional'[11] effect of distance". We may formally present the model as:

$$I_{ij} = k \frac{P_i P_j}{\left[d_{ij}\right]^2} \qquad (8)$$

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[11] We may following the examples of various forces in physics, call it the range factor (of the force). We are unable to fathom how the term 'frictional' effect has crept into the literature.

Large number of empirical studies[12] do confirm the validity of this model; and a good test of it has been to show that given the interaction levels between cities on either side and across the US Canada border, cross-border pairs of cities do show systematically higher values of k[13]

Central Place Theory and Openness

Since the k-factor of Lösch is a mix of several possible k-factors, including those of Christaller (k=3,4 & 7), we allow

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[12] Cf. M. H. Yeates (1969), R. J. Johnston (1973), M. Chisholm and P. O'Sullivan (1973), R. A. Hart (1970), referred to in M. Chisholm (1975) for some of the early works in this area. Subsequent research have tried to find closer fits with the reality by suitably altering the simple model. But to the extent that we recognise that the gravity model is only an ideal type, such research unless theoretically conceptualised do not provide fresh insights into the problem of spatial interaction.

[13] J.R. Mackay (1958) used telephone traffic to understand the k value across and within political units using the US-Canada border. Similarly, R.I. Wolfe (1962) who studied the rail transport network on either side could regenerate the boundary. The US and Canada have had perhaps the closest economic ties of any two largish countries, until the emergence of the European Common Market recently. And even in this case the fact that the border could be put back, gives support to the reality of tional boundaries: More than natural factors, it is the fact of the state which creates (not merely in an administrative sense) boundaries, so that spatial geography would have to go beyond geography (in the traditional sense) into the political. We would have occasion later in this paper when we discuss the issue of country size and stability to come back to one of the essential differences that the state makes which implies that an area constituted as a region and as an independent country are fundamentally different.

'k' to take on non-integer values, so k^n is the total number of central places, where n is the maximum order obtained of all central places in an economy. Let us present a highly simplified approach relating central place theory to openness. Central place theory as such does not provide us with a basis for the GNP across central places of various orders. So making the gross assumption that all central places have the same GNP (G_o), we may write

$k^n = \frac{GNP}{G_o}$, where G_o is the GNP in the 'smallest' central place. Recognising also that per capita income has an effect from population in its central place formation aspect, we may more correctly write

$$k^n = \frac{P(i-i_o)^{\sigma}}{G_o}$$

where i_o is the minimum per capita income that is serviced within the 'smallest' central places, σ is the factor that distinguishes between per capita income and population, and G_o is the GDP that is serviced by central places of higher order than the 'smallest' central place.

Now n is measure of the hierarcy of the economy, and external trade ratio ought to depend upon it in an inverse fashion since, the greater the hierarchy, the greater the dependence of the economy on itself. Allowing for non-linearity in the dependence of O, we may write

$$Ln(1/0) = k_1 n$$

$$\therefore \quad Ln(0) = -\left[\frac{k_1}{Ln(k)} G_o\right] + \left[\frac{k_1}{Ln(k)}\right] Ln(P) + \left[\frac{\sigma k_1}{Ln(k)}\right] Ln(i - i_o) \qquad (9)$$

We may estimate this equation by ordinary least squares linear regression assuming a value of i_o which is close to the minimum per capita GNP for the set of countries.

Then,

$$G_o = e^{-(\hat{c}/\hat{\beta}_1)}$$

$$\sigma = \frac{\hat{\beta}_2}{\hat{\beta}_1}$$

Using the parameter estimates from this linear regression we estimate the final values of the parameters including i_o by reestimating using a non-linear regression procedure based on the algorithim developed by Marquardt[1963]. See Appendix IV for the results. We see that G_o is of the order of 1,25,000 US dollars, generally, which means that at an average per capita income of the set of approximately US $ 500, the minimum population constituting the 'smallest' central place is about 250 persons, which is not too far away from the population of the smallest settlements in the main regions of most countries. i_o is typically of the order of the lowest per capita income of all countries, and since our sample includes countries where industrialisation is still to begin - Nepal, Bhutan etc., this is understandable. That we are able to get estimates for G_o not too far from the reality after the gross assumptions that we have made, is indeed remarkable. The spatial theory of Lösch and Christaller are at a high level of abstraction, and the derivation of openness of economies from them is less satisfactory than the derivation of openness from the less abstract theories of spatial order, which we carry out in the sections below.

The Rank Size Rule and Openness

From the rank size rule we can write:

$$\text{Total population} = P = \sum_j P_j = \sum_1^N \frac{P*}{Q_j} = P*\sum_1^N \frac{1}{j}$$

where N is the total number of settlements. Since the sum of (1/j) for j up to a finite N is not available in a closed form, let us modify the above rule by postulating a 'density' function P(s), a function of rank 's' of the city. Now the rank 's' can take on non-integer values, so that the population of a set of settlements from 's' to 's + ds' ranks is P(s)ds. Let P(s) at s=1 be P_c. Thus,

$$P = \int_s P(s)ds$$

Let us also postulate that P is finite, and despite an infinite number of settlements, the rank of the lowest central place is finite being equal to N, so that the above is to be integrated from 1 to N. Using a continuous version of the rank size rule we can write,

$$P(s) = \frac{P_o}{s^Q} \quad , \text{ where Q is of the order 1.}$$

Now, further assuming that Q is exactly equal to 1,

$$P = \int_1^N \frac{P_o}{s} ds = P_o \, Ln(N)$$

Now we may attribute the external trade relation to be a monotonically decreasing function of Ln(N), which is a measure of the number of levels in the hierarchy of settlement patterns. Allowing for non linearity we may write,

$$\frac{1}{0} = k\left[Ln(N)\right]^{\sigma} = k\left[\frac{P}{P_o}\right]^{\sigma}$$

Thus,

$$Ln(0) = -Ln(k) - \sigma Ln(P_o) - \sigma Ln(P) \qquad (10)$$

so that a regression of Ln(0) on Ln(P), should give

$$\hat{c} = -Ln(k) - \sigma Ln(P_o) \quad \text{and} \quad \sigma = -\hat{\beta}$$

While σ is determined, Ln(k) and P_o are not unless P_o is identified with P*. The results in Appendix V, particularly the high values of R^2 adj. do confirm that it is spatial order that underlies a sgnificant part of the variation in openness across countries. That the spatial order or hierarchy is built on population size rather than on GNP and the fact that openness is determined principally by population size are therefore related.

The Gravity Model of Interaction and Openness

We may apply the 'gravity' model of interaction between central places, to the problem at hand in a rather simple way. Let us postulate uniform densities of population across countries, so that when countries vary in population, they also do so in land size. Let us also assume that the country in question is a 'disk' facing other countries on all sides along its pheriphery. Let us also assume that the country interacts only through the centre where its primate city is located to all central places outside the city. This is done to simplify working with the gravity model while retaining its essence. Let the disk have a radius R, so that we may represent GDP (or population if we assume similar incomes per head across significant units of space). Then the gravity model would predict that the interaction this country and a small part of the world located at a distance r from the centre of this country is:

$$\frac{k\ 2\pi r dr (GNP)}{r^{Q}}$$

(Assume Q > 2)[14]

Let the rest of the world extend up to infinity. Then the total interaction (trade) T arising out of this country with the rest of the world is

$$T = \int_R^{\infty} \frac{k\ 2\pi r dr\ (GNP)}{r^Q}$$

so that,

$$T = (GNP)\ k\ 2\pi\ \frac{1}{(Q-1)}\ R^{-Q+2}$$

Now openness,

$$O = \frac{T}{GNP} = k\ 2\pi\ \frac{1}{(Q-1)}\ R^{-Q+2} = k\ 2\pi \frac{1}{(Q-1)}\ R^{-Q+2}$$

Since GNP = πR^2, R = $(GNP/\pi)^{1/2}$

$$\therefore\ O = k.2\pi^Q\ \frac{1}{(Q-1)}\ (GNP)^{-\frac{(Q-2)}{2}}$$

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[14]Certain geographers have argued that this factor ought to be approximately 2 to keep the geographical 'gravity' model consistent with the physical model. Our own contention is that this need not be so. There are attractive forces which decline faster than gravity, such as the Van der Vaal's force between molecules for instance; although values lower than 2 would mean that localisation, and hence seperability of systems in space (an essential aspect of the universe) would not be possible.

Therefore for $Q \neq 1$, we may write

$$O = a\,(GNP)^{-\frac{(Q-2)}{2}}$$

where $a = k\ 2\pi^{Q}\frac{1}{(Q-1)}$

so that we may estimate the following equation:

$$Ln(O) = Ln(a) - \left[\frac{Q-2}{2}\right]Ln(GNP) \qquad (11)$$

The above equation was already estimated in the allometric model I earlier. See Appendix 1. With $-\left[\frac{Q-2}{2}\right] = -0.15$ generally, we compute $Q \cong 2.30$, which is in keeping with the value of Q assumed (>2 and not equal to 1) in making the above derivation.

The derivation is very simple, nevertheless we may interpret the results to explain why the interaction does not become unbounded, even in a virtually unbounded landscape. Thus it explains why say an Indian village settlement in pre-capitalist times (the plain of other settlements around it may be taken as very large or virtually infinite), or even a family unit, has finite trade. As far as the problem at hand is concerned we are led to a strong inverse relationship between GNP (size) and openness.

If we were to develop further Dodd's statement[15] that "*the average Chinese peasant does not make the same contribution to sociological intensity', as the United States dweller*", we may define the 'mass' in the context of the gravity model a little more imaginatively not as GNP but as Pi^{σ}, where we expect and we have already shown that $\sigma > 1$

Proceeding as above with

$$T = k\int_{R}^{\infty} \frac{2\pi r dr (Pi^{\sigma})}{r^{Q}}$$

$$\text{and } Pi^{\sigma} = \pi R^{2}$$

$$Ln(O) = Ln(a) + \left[\sigma(2 - Q/2) - 1\right] Ln(i) - \left[\frac{Q-2}{2}\right] Ln(P) \qquad (12)$$

which given the estimate of the above in Appendix II, we may compute $Q \cong 2.44$ and $\sigma \cong 1.35$, which is in keeping with our requirement the $Q>2$ and $\sigma>1$. Thus the gravity model of spatial interaction can be simply manipulated to yield the structural dependence of openness of economies.

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[15] S. C. Dodd (1950) quoted in P. E. Lloyd and Peter Dicken (1972) p.57.

The Allometric Model with Time Dependence Model IV

Earlier we had noted that the parametric estimates, are slowly varying across time, but that this variation is systematic. We have two possible options to refine Model III. We could allow for variation in the parameters b, σ_1 and σ_2, or we could allow for a itself to be a function of time. The basis for the values of the paramters are technological developments which alter distance costs, political adjustments, change in boundaries, as when countries merge, form into closely integrated common markets, and divisions of countries. Policy too, of individual countries, could concievably have an indirect effect on the whole system that is trade, so that while we don't see policy of individual countries affecting the structural component of their openness, it would have an effect on the overall model, especially when the particular policy has a cascading effect among countries. The picture we have is analogous to the following: Policies of individual firms do not affect demand, but via cascading effects, when other firms are forced to follow a particular firm or a group of firms, it could affect total demand. Thus we now choose to see our factors as not just structural in the usual sense of the term but as also pertaining to the whole, so that policy changes and other decisions of individual countries (only) to the extent that they affect the whole are included in our conception of the structure. Obviously, a policy such as outward orientation of Korea, and China today which has affected their own revealed openness largely, would not legitimately be part of the structural factors. But to the extent that they have had long term effect on the system they would be part of the parametric changes in our structural model. Afterall we include them only in their interactive and systemic aspect.

Proceeding by now viewing a as a function of time[16] and allowing for it a to have one point of change in direction, let us write,

$$a(t) = e^{(a_o + a_1 t + a_2 t^2)}$$

so that the regression model (IV) becomes,

$$Ln(O) = a_o + a_1 t + a_2 t^2 + \left[b + \sigma_1 \sigma_2 - 1\right] Ln(P) + \left[\sigma_1 b - 1\right] Ln(i)$$

$$- (\sigma_1 \sigma_2 b) Ln(L) \qquad (13)$$

The above was estimated using pooled data (2170 points of

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[16]Making it a cubic function of time was attempted. But the contribution of the cubic term was less than of one in 10^4 to the model variance. Step wise procedure yields, only the selection of one of $time^2$ or $time^3$ while all other variables are inevitably selected. This means that there is only one point in which the time trend in 'a' changes direction. If our period of inquiry were to be sufficiently large we would have to provide for more than one point of change in direction.

data excluding missing values), with O being taken as the ratio of exports plus imports of goods and non factor services, to GNP; and i is the per capita income in US$ deflated by using the deflator of the US economy for its domestic absorption. We find a good fit for the above model, with an F-number of 746, and the coefficients all highly significant (‖t values‖ in excess of 6). See Appendix VI.

The time dependent part of openness [a(t)] is plotted below. (Fig.1). It shows that ever since 1966, from which point our data starts, the systemic openness was growing. It reached a peak around 1978 and declined thereafter. Looking more closely at the graph, and remembering that they are based on three-year moving averages of the variables, we see that the slowing down began in 1972 or so and has continued thereafter. Besides the plateauing of the post world war growth from the early seventies, which was described as the 'slowing down of the engine of growth' by Arthur Lewis [1978], the oil crisis may have much to do with this decline in the growth of systemic openness. We will not in this paper pursue the matter since our object was more to show that the systemic openness does change slowly with time.

The estimated model is:

$$O = e^{(2.40+0.067t-0.00237t^2)}\left[P_i^{1.0484}\left(\frac{F}{L}\right)^{0.0268}\right]^{0.7446}$$

..(14)

This model is then used to to compute the structural openness (or fitted openness) of over 130 countries, over time. The results are listed in Appendix VII. In Fig. 2, we have plotted the ratio of openness to fitted openness for a selected set of countries. We do find that the ratio changes much more for the structurally transforming LDCs - China, Korea and India - than for the already developed countries. The UK and Germany show relatively higher values of the ratio relative to Japan and the USA, reflecting the fact of greater opportunites for trade within the European region coming from the developing common market arrangements. The sharp rise in the ratio in China is possibly partly explainable in terms of export orientation in China that came about since 1978 with China's "open-door" policy. The ratio was rising even earlier, and is most likely linked to the Hongkong factor. China's "open-door" policy took advantage of the central place fuction for international trade, commerce and finance that Hongkong offered, so that its trade was increasingly channelled through Hongkong. This rejuvenated, and reinforced the central place function of Hongkong so that its ratio shows a reversal and an upward trend since 1980 as Hongkong recovered its lost hinterland of China. In other words we are witnessing the reintegration of Hongkong with China, after more than two decades of relative isolation under communist rule in China. Thus if Hongkong is seen as part of China, (their mutual trade cancelling out), the actual openness of the Chinese economy, may not be too far above the predicted openness today[17]. Except for the year 1979, India was always less open than what it should have been, thereby allowing for the possibility that policy may well have created a bias against external trade from 1966 up to 1976 or so. The same is true of Japan and the USA. In the case of the Korean economy the trade policy was most probably resposible r the ratio above being consistently larger than one.

The values of deviation of openness from the structural openness are closer as proxies for trade orientation. Even they would have to be further adjusted for countries like Singapore and Hongkong which provide a central place function for terrritories outside their own boundaries. Indeed the merit of our analysis is that it points to factors such as metroplitian status of countries, special geographical isolation of small distant island economies - Iceland for instance - where we expect the model to deviate much the revealed openness.

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[17] For a discussion on how and to what extent the economies of Hongkong and China are becoming complementary ~~see~~ Yung-Wing Sung (1991).

Size, Openness and Stability

Tarshis [1960], and Leduc and Willer [1960] had posed the question of the size of a country and its relationship to the stability of national income. Tarshis found that smaller economies tend to be less unstable than larger economies, the instability being measured by the '*ratio of the root mean square of the deviation of the actual level of personal income from the potential level to the mean value*' [p.193, Tarshis (1960)]. At the same time there was little or no systematic pattern in the size of a region and the instability of its income. This prompted the author to suggest that perhaps internal and external factors act through demand and induced supply multiplier a la Keynes, so that a priori it is difficult to say which of these factors dominate. For countries their sovereign states seeking to control economic activity may mean that the country gets shielded from external disturbances, so that internal factors may be playing out more, making the larger economies less stable. He felt that more than the relative value of exports, the character of the exports -being less or more specialised - would be an important factor in determining the impact of external buffetting, and much of his a priori reasoning led him to believe that smaller countries should show greater instability. Yet the empirical evidence seemed to show the opposite, and the author suggested that: "*Perhaps the explanation for the apparent paradox consists in the fact that policy has been somewhat more sensible in the relatively small economies; certainly it seems clear that the United States, Germany, and France, in the interwar years anyway, made almost incredible efforts to nourish any instability existing in their economies.*" [p.199 ibid.]. The conference[18] which considered the issue of size of nations was no doubt eclectic about the defination of size, which ranged from overall GNP to population and land area, to mixes of these, though in the empirical data the classification of countries into large and small would hold on the basis of population or overall GNP.

Once we recognise that the openness of economies has a principal structural dependence, being larger for small economies, we have an easy explanation for the observed relationship between size and stability.

Let us consider a simple multiplier model of the economy. Basic instability emerges from the autonomous variables particularly investment. It is well known that investment is the most volatile of all the autonomous components,

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[18]Proceedings reported in E. A. G. Robinson (ed.) (1960).

so that the autonomous expenditure multipier determines stability, the larger the multiplier, the more unstable the economy. In a simple Keynesian economy the autonomous expenditure multiplier M, is realated to income changes dY, and to changes in autonomous expenditures dA as follows:

$$dY = M\ dA, \text{ where } M = \frac{1}{1-b+m}$$

b being the marginal propensity to consume, and m the marginal propensity to import.

Now in an open economy which is striving for balance of payments stability, as countries in contrast to regions are constrained to, exports would tend to equal imports, so that we may write:

$$(X+M)/Y = p$$

p being the openness ratio. So that,

$$m = p/2$$

For regions on the other hand m is not constrained to equal the structurally determined openness ratio, or for that matter any value, so that M the multiplier for the region has no first order dependence on its size. On the other hand countries' multipliers would depend upon size since m the marginal propensity to import would depend upon size, so that the inverse relationship between size and stabilty[19] is established, while we also show why such a relationship would not hold for regions. This analysis is contingent upon a world in which significantly large capital transfers do not take place, since we have assumed that exports equal imports, or in other words, no country can maintain for longish periods balance of payments deficit or surplus. If the world becomes truly integrated as when the constraint on payments balance is removed, we ought not to observe the inverse relationship between stability and size. The Feldstein-Horioka[20] puzzle and the research that followed tells us that capital flows across economies (and it is the net[21] capital

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19 Instability (I) $= \frac{\sqrt{E(Y-\bar{Y})^2}}{\bar{Y}} = \frac{M\ E(dA)}{\bar{Y}}$. Assume that the change in all autonomous variables including investment and exports is proportional to their average values, so that $dA = k\ dA$; and assume that the proportions of particular autonomous expenditures to income tends to constancy, so that,
$I = \frac{M\ k\bar{A}}{\bar{Y}}$, which is $k'M$, where k' is a constant.

20 See Martin Feldstein and Charles Horioka (1982)

21 The very large short term capital flows are not particularly relevant since it is net capital flows that are the issue. In another sense too we would like to include capital flight particularly from the developing countries, in the estimates of net flows. If we were to do that the developing countries would not show very large payments deficits being sustained by capital inflows. For some estimates of capital flight see Dieter Duwendag (1988), and Manuel Pastor Jr. (1990).

flows that matter) still remains marginal, so that domestic savings and investment are still highly correlated.

Conclusions

We have to recognise that the economy is structured and is hierarchically ordered. This is in keeping with its complexity since in nature and in society it is complexity that results in hierarchy and hence order[22]. The first element in the complexity is to recognise that the economy cannot be viewed as a mere collection of producers and consumers. Economies of scale, and per capita income levels which through costs that affect scale economies, interact with each other and with distance costs to produce the observed spatial order of geographers. We can use their observations and theories to show why larger economies tend to be less open than smaller ones, and that the principal factor that determines this openness is population rather than either land area or per-capita income. Recognising the economy to have a structure, leads us to viewing it as an "organism" and hence to the use of the allometric growth model of the biometricians of

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[22]For a philosophical and conceptual discussion see Howard H. Patee (1973), and Herbert Simon (1973).

the early part of this century. The empirical analyses confirm that a significantly large part of the openness of economies is determined structurally, so that many of the empirical (cross-sectional) work that use revealed openness as a proxy for the policy induced openness ought to be re-examined.

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August 8, 1993

FIG. 1

Time Dependence of the Parameter a(t)

MODEL IV

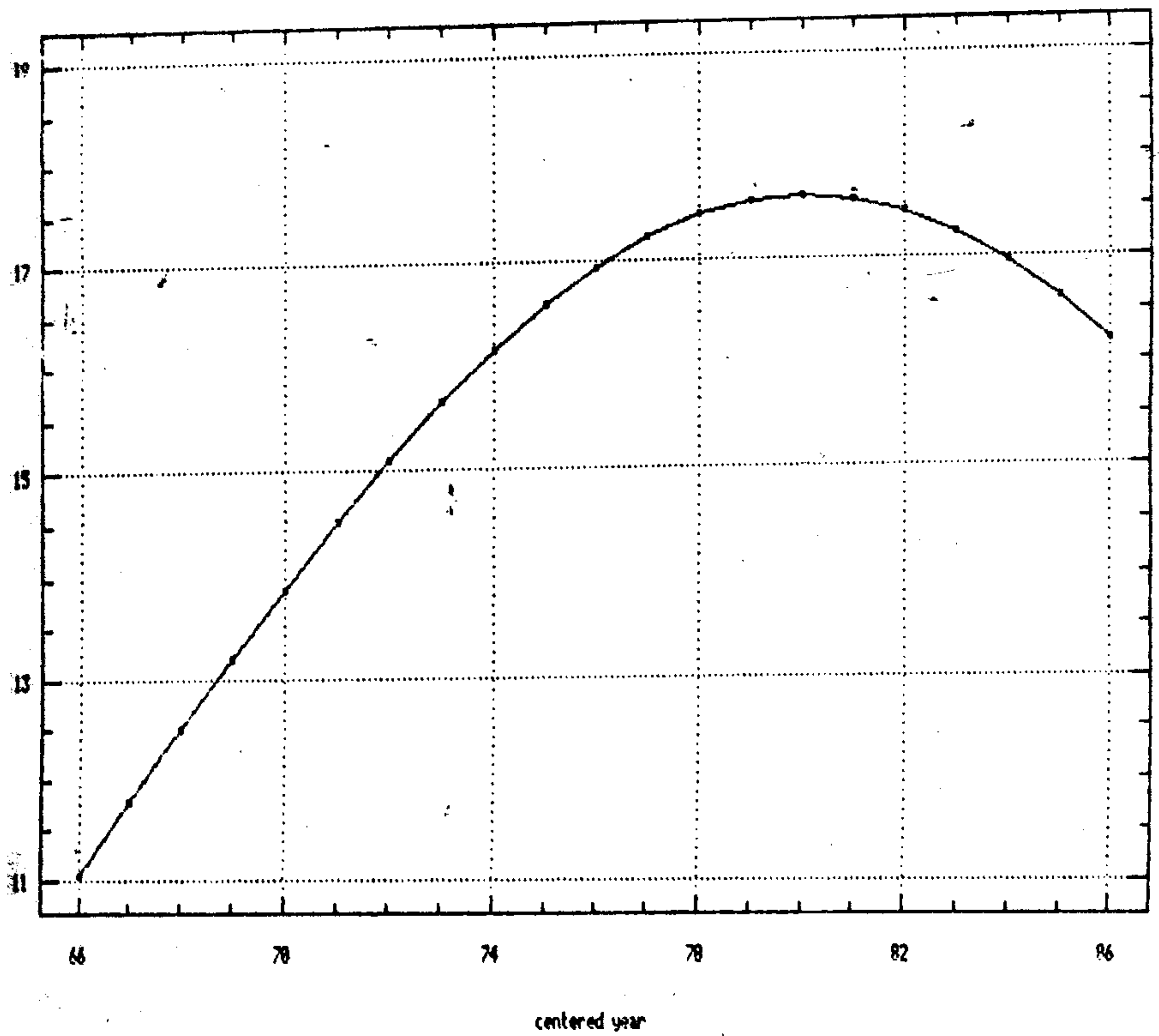
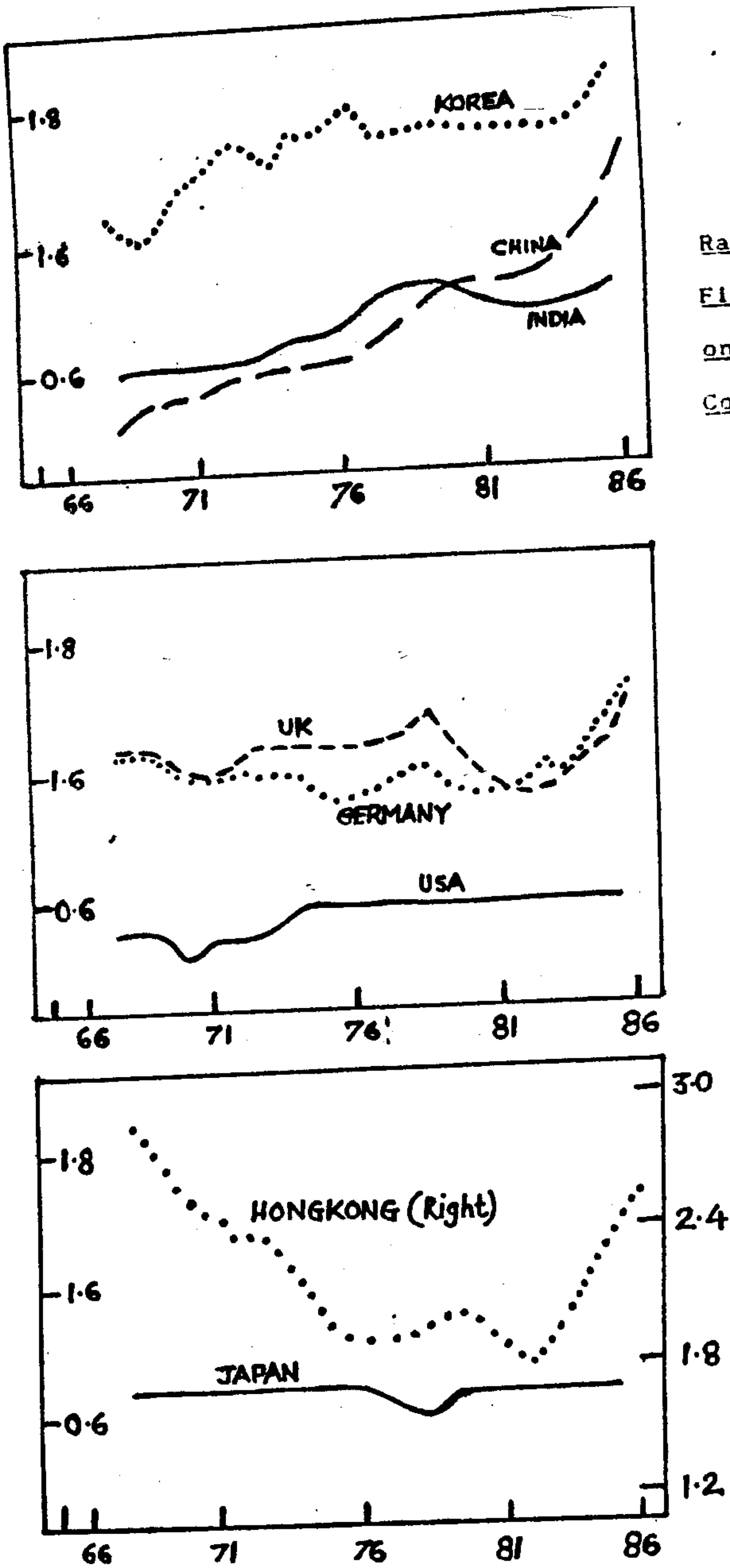


FIG. 2

Ratio of Openness to Fitted Openness, based on Model IV for Selected Countries



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Appendix I

Eqs. (3) & (11), Model I and the Gravity Model of Interaction

	Ln(OCN) on Ln(GNP)		Ln(OBP) on Ln(GNP)	
	1970,71,72 (Obs. 104)		1970,71,72 (Obs. 111)	
	Coeff.	t-value	Coeff.	t-value
$\hat{c}$	2.558754	4.4931	2.70643	4.7014
$\hat{\beta}$	-0.146422	-5.6046	-0.15767	-6.0202
	R^2 adj.	F-number	R^2 adj.	F-number
	0.2280	31.4114	0.2426	36.2429
a	12.92	Q = 2.293	15.04	Q = 2.315
b	0.6535		0.641	

	Ln(OCN) on Ln(GNP)		Ln(OBP) on Ln(GNP)	
	1973,74,75 (Obs. 106)		1973,74,75 (Obs. 115)	
	Coeff.	t-value	Coeff.	t-value
$\hat{c}$	2.269	3.996	2.626	4.669
$\hat{\beta}$	-0.124	-4.866	-0.140	-5.550
	R^2 adj.	F-number	R^2 adj.	F-number
	0.1776	23.682	0.207	30.800
a	9.670	Q = 2.246	13.816	Q = 2.260
b	0.676		0.660	

	Ln(OCN) on Ln(GNP)		Ln(OBP) on Ln(GNP)	
	1976,77,78 (Obs. 112)		1976,77,78 (Obs. 122)	
	Coeff.	t-value	Coeff.	t-value
$\hat{c}$	2.636	5.616	2.730	5.746
$\hat{\beta}$	-0.137	-6.551	-0.143	-6.765
	R^2 adj.	F-number	R^2 adj.	F-number
	0.274	42.911	0.271	46.036
b	13.957	Q = 2.274	15.333	Q = 2.266
b	0.863		0.857	

	Ln(OCN) on Ln(GNP)		Ln(OBP) on Ln(GNP)	
	1985,86,87 (Obs. 103)		1985,86,87 (Obs. 133)	
	Coeff.	t-value	Coeff.	t-value
$\hat{c}$	2.490	4.902	2.169	4.666
$\hat{\beta}$	-0.127	-5.708	-0.116	-5.905
	R^2 adj.	F-number	R^2 adj.	F-number
	0.236	32.580	0.204	34.868
a	12.060	Q = 2.254	8.926	Q = 2.232
b	0.873		0.864	

Appendix II

Eqs. (4) and (12) for Model II, and the Gravity Model of Interaction.

	Ln(OCN) on Ln(P,i)		Ln(OBP) on Ln(P,i)	
	1970,71,72 (Obs. 104)		1970,71,72 (Obs. 111)	
	Coeff.	t-value	Coeff.	t-value
$\hat{c}$	3.376	8.385	3.437	8.639
$\hat{\beta}_1$	-0.301	-12.905	-0.310	-13.842
$\hat{\beta}_2$	0.115	3.731	0.114	3.782
	R^2 adj.	F-number	R^2 adj.	F-number
	0.628	88.085	0.649	102.658
a = 29.253		Q = 2.602	a = 31.087	Q = 2.620
b = 0.699		σ = 1.592	b = 0.689	σ = 1.614
σ = 1.594			σ = 1.616	

	Ln(OCN) on Ln(P,i)		Ln(OBP) on Ln(P,i)	
	1973,74,75 (Obs.106)		1973,74,75 (Obs. 115)	
	Coeff.	t-value	Coeff.	t-value
$\hat{c}$	3.135	7.510	3.212	8.117
$\hat{\beta}_1$	-0.273	-11.505	-0.279	-12.985
$\hat{\beta}_2$	0.110	3.429	0.102	3.662
	R^2 adj.	F-number	R^2 adj.	F-number
	0.575	71.899	0.620	94.113
	a= 22.985	Q= 2.546	a= 24.627	Q= 2.556
	b= 0.727	σ= 1.527	b= 0.721	σ= 1.528
	σ= 1.513		σ= 1.528	

	Ln(OCN) on Ln(P,i)		Ln(OBP) on Ln(P,i)	
	1976,77,78 (Obs. 112)		1976,77,78 (Obs. 122)	
	Coeff.	t-value	Coeff.	t-value
$\hat{c}$	2.875	8.391	2.955	8.732
$\hat{\beta}_1$	-0.249	-13.130	-0.255	-14.033
$\hat{\beta}_2$	0.080	2.998	0.078	3.075
	R^2 adj.	F-number	R^2 adj.	F-number
	0.615	89.698	0.632	104.888
	a= 17.723	Q= 2.498	a= 19.188	Q= 2.510
	b= 0.752	σ= 1.438	b= 0.745	σ= 1.447
	σ= 1.437		c= 1.447	

	Ln(OCN) on Ln(P,i)		Ln(OBP) on Ln(P,i)	
	1985,86,87 (Obs.103)		1985,86,87 (Obs. 133)	
	Coeff.	t-value	Coeff.	t-value
$\hat{c}$	2.684	7.204	2.208	6.577
$\hat{B}_1$	-0.231	-11.742	-0.214	-12.222
$\hat{B}_2$	0.071	2.683	0.092	3.677
	R^2 adj.	F-number	R^2 adj.	F-number
	0.591	74.578	0.557	84.003
	a= 14.644	Q= 2.462	a= 9.094	Q= 2.428
	b= 0.769	σ= 1.393	b= 0.786	σ= 1.389
	σ= 1.394		σ= 1.390	

Appendix III

Eq.(5) of Model III

	Ln(OCN) on Ln(P,i,L)		Ln(OBP) on Ln(P,i,L)	
	1970,71,72 (Obs. 102)		1970,71,72 (Obs. 110)	
	Coeff.	t-value	Coeff.	t-value
$\hat{c}$	3.492	8.880	3.488	8.829
$\hat{\beta}_1$	-0.253	-8.928	-0.283	-9.818
$\hat{\beta}_2$	0.0989	3.229	0.104	3.418
$\hat{\beta}_3$	-0.0836	-2.844	-0.0354	-1.578
	R^2 adj.	F-number	R^2 adj.	F-number
	0.643	61.688	0.657	70.485
	a = 32.85		a= 32.83	
	b = 0.884		b= 0.882	
	σ_1 = 1.607		σ_1= 1.818	
	σ_2 = 0.0398		σ_2= 0.0218	

	Ln(OCN) on Ln(P,i,L)		Ln(OBP) on Ln(P,i,L)	
	1973,74,75 (Obs. 104)		1973,74,75 (Obs. 114)	
	Coeff.	t-value	Coeff.	t-value
$\hat{c}$	3.199	7.769	3.263	8.328
$\hat{\beta}_1$	-0.228	-7.653	-0.254	-9.043
$\hat{\beta}_2$	0.0876	2.984	0.0945	3.357
$\hat{\beta}_3$	-0.0565	-2.395	-0.0324	-1.417
	R^2 adj.	F-number	R^2 adj.	F-number
	0.582	48.815	0.626	64.082
	a = 24.505		a= 26.133	
	b = 0.715		b= 0.714	
	σ_1 = 1.520		σ_1= 1.533	
	σ_2 = 0.0371		σ_2= 0.0211	

	Ln(OCN) on Ln(P,i,L)		Ln(OBP) on Ln(P,i,L)	
	1976,77,78 (Obs. 110)		1976,77,78 (Obs. 121)	
	Coeff.	t-value	Coeff.	t-value
$\hat{c}$	2.826	6.156	2.926	6.752
$\hat{\beta}_1$	-0.216	-7.582	-0.216	-6.480
$\hat{\beta}_2$	0.0705	2.594	0.0701	2.806
$\hat{\beta}_3$	-0.0334	-1.465	-0.0449	-2.213
	R^2 adj.	F-number	R^2 adj.	F-number
	0.614	58.826	0.647	74.421
	a = 16.916		a= 16.69	
	b = 0.751		b= 0.739	
	σ_1 = 1.427		σ_1= 1.446	
	σ_2 = 0.0234		σ_2= 0.0311	

	Ln(OCN) on Ln(P,i,L)		Ln(OBP) on Ln(P,i,L)	
	1985,86,87 (Obs. 101)		1985,86,87 (Obs. 132)	
	Coeff.	t-value	Coeff.	t-value
$\hat{c}$	2.654	7.240	2.161	6.514
$\hat{\beta}_1$	-0.187	-6.234	-0.170	-6.269
$\hat{\beta}_2$	0.0536	2.013	0.0803	3.242
$\hat{\beta}_3$	-0.0457	-1.850	-0.0479	-2.176
	R^2 adj.	F-number	R^2 adj.	F-number
	0.599	50.711	0.577	60.446
	a = 14.211		a= 8.676	
	b = 0.767		b= 0.762	
	σ_1 = 1.374		σ_1= 1.361	
	σ_2 = 0.0333		σ_2= 0.0347	

Appendix IV

Eq. (9) of Central Place Theory and Openness
(Linear and Non-linear Estimation)

	$Ln(OBP)$ on $Ln(P, i-i_o)$		Non-linear estimation	
	1970,71,72 (Obs. 111)		1970,71,72 (Obs. 111)	
	Coeff./value	t-value	Coeff.	t-value
$\hat{c}$	3.548	9.346	3.622	9.467
$\hat{\beta}_1$	-0.309	-13.877	-0.309	-13.853
$\hat{\beta}_2$	0.0964	4.010	0.0855	3.540
i_o	50	-	59.311	53.347
	R^2 adj.	F-number	R^2	F-number
	0.654	104.939	0.663	156.342
G_o	96,974.24		1,21,370.09	
σ	-0.312		-0.276	

	Ln(OBP) on Ln(P,i-i_o)		Non-linear estimation	
	1973,74,75 (Obs. 115)		1973,74,75 (Obs. 115)	
	Coeff./value	t-value	Coeff.	t-value
$\hat{c}$	3.300	8.886	3.325	8.778
β_1	-0.277	-13.007	-0.277	-12.954
β_2	0.088	3.993	0.0844	3.544
i_o	70	-	74.963	11.583
	R^2 adj.	F-number	R^2	F-number
	0.6276	97.145	0.635	92.938
G_o	1,50,521.44		1,65,835.37	
σ	-0.318		-0.305	

	Ln(OBP) on Ln(P, i-i_o)		Non-linear estimation	
	1976,77,78 (Obs. 122)		1976,77,78 (Obs. 122)	
	Coeff./value	t-value	Coeff.	t-value
$\hat{c}$	2.990	9.290	2.993	9.202
β_1	-0.253	-13.963	-0.253	-13.863
β_2	0.0693	3.399	0.0687	3.105
i_o	90	-	91.178	9.409
	R^2 adj.	F-number	R^2	F-number
	0.638	107.570	0.644	105.892
G_o	1,38,010.98		1,40,099.59	
σ	-0.274		-0.272	

	Ln(OBP) on Ln(P, $i-i_o$)		Non-linear estimation	
	1985,86,87 (Obs. 133)		1985,86,87 (Obs. 133)	
	Coeff./value	t-value	Coeff.	t-value
$\hat{c}$	2.299	7.126	2.239	5.491
$\hat{\beta}_1$	-0.213	-12.120	-0.214	-11.915
$\hat{\beta}_2$	0.0789	3.652	0.0878	2.109
i_o	100	-	42.060	0.146
	R^2 adj.	F-number	R^2	F-number
	0.557	83.809	0.564	84.258
G_o	49,054.43		35,393.58	
σ	-0.371		-0.411	

<u>Appendix V</u>

Eq. (10) for Model Based on the Rank Size Rule

	Ln(OCN) on Ln(P)		Ln(OBP) on Ln(P)	
	1970,71,72 (Obs. 104)		1970,71,72 (Obs. 11)	
	Coeff.	t-value	Coeff.	t-value
$\hat{c}$	4.009	10.341	4.122	10.991
$\hat{\beta}$	-0.297	-12.000	-0.310	-13.048
	R^2 adj.	F-number	R^2 adj.	F-number
	0.581	144.003	0.608	170.249
	σ = 0.297		σ = 0.310	

	Ln(OCN) on Ln(P)		Ln(OBP) on Ln(P)	
	1973,74,75 (Obs. 108)		1973,74,75 (Obs. 115)	
	Coeff.	t-value	Coeff.	t-value
$\hat{c}$	3.670	9.839	3.950	11.121
$\hat{\beta}$	-0.266	-11.160	-0.283	-12.551
	R^2 adj.	F-number	R^2 adj.	F-number
	0.536	124.534	0.579	157.522
	σ = 0.266		σ = 0.283	

	Ln(OCN) on Ln(P)		Ln(OBP) on Ln(P)	
	1976,77,78 (Obs. 114)		1976,77,78 (Obs. 122)	
	Coeff.	t-value	Coeff.	t-value
$\hat{c}$	3.318	11.198	3.518	11.960
$\hat{\beta}$	-0.242	-12.685	-0.257	-13.680
	R^2 adj.	F-number	R^2 adj.	F-number
	0.586	160.903	0.606	187.138
	σ = 0.242		σ = 0.257	

	Ln(OCN) on Ln(P)		Ln(OBP) on Ln(P)	
	1985,86,87 (Obs. 104)		1985,86,87 (Obs.)	
	Coeff.	t-value	Coeff.	t-value
$\hat{c}$	3.272	10.445	2.922	10.197
$\hat{\beta}$	-0.236	-11.771	-0.216	-11.875
	R^2 adj.	F-number	R^2 adj.	F-number
	0.572	138.556	0.515	141.007
	σ = 0.236		σ = 0.216	

Appendix VI

Eq. (13) of Model IV (Time Dependent Allometric Model)

Ln(OBP) on $Ln\left[t, t^2, P, i(defl.), L\right]$ for pooled data of three-year averages, for 137 countries for the period from 1965 to 1987; t being the centered years.

a_o	2.402140 (26.891)	R^2adj. =	0.6322
a_1	0.066480 (8.198)	F-num. =	746.649
a_2	-0.002369 (-6.936)	Obs. =	2170
$\hat{\beta}_1$	-0.219320 (-34.337)	b	0.7446
$\hat{\beta}_2$	0.086700 (13.881)	σ_1	1.4594
$\hat{\beta}_3$	-0.036060 (-7.072)	σ_2	0.02471

Appendix VIII: Results of Model IV

Country code, openness(OBP), fitted openness, residuals, and centered year
(The country codes are as in World Tables, 1989 of the World Bank

ARE	.	.	.	66
ARE	.	.	.	67
ARE	.	.	.	68
ARE	.	.	.	69
ARE	.	.	.	70
ARE	.	.	.	71
ARE	.	.	.	72
ARE	.	.	.	73
ARE	1.59	1.26	.33	74
ARE	1.35	1.28	.07	75
ARE	1.25	1.28	-.03	76
ARE	1.06	1.29	-.23	77
ARE	1.04	1.28	-.24	78
ARE	1.07	1.28	-.21	79
ARE	1.08	1.27	-.19	80
ARE	1.03	1.24	-.21	81
ARE	.94	1.20	-.26	82
ARE	.87	1.16	-.29	83
ARE	.83	1.12	-.28	84
ARE	.83	1.07	-.24	85
ARE	.83	1.01	-.19	86
ARG	.	.29	.	66
ARG	.	.30	.	67
ARG	.	.32	.	68
ARG	.19	.33	-.15	69
ARG	.18	.35	-.17	70
ARG	.18	.36	-.19	71
ARG	.18	.38	-.20	72
ARG	.19	.40	-.20	73
ARG	.19	.41	-.22	74
ARG	.18	.42	-.24	75
ARG	.20	.42	-.22	76
ARG	.24	.43	-.18	77
ARG	.30	.43	-.12	78
ARG	.37	.43	-.06	79
ARG	.41	.43	-.01	80
ARG	.40	.42	-.03	81
ARG	.34	.41	-.07	82
ARG	.28	.41	-.13	83
ARG	.26	.40	-.14	84
ARG	.24	.39	-.15	85
ARG	.23	.38	-.15	86
ATG	.	1.39	.	66
ATG	.	1.48	.	67
ATG	.	1.56	.	68
ATG	.	1.63	.	69
ATG	.	1.70	.	70
ATG	.	1.77	.	71
ATG	.	1.84	.	72
ATG	.	1.91	.	73
ATG	.	1.96	.	74
ATG	.	1.99	.	75
ATG	1.19	2.01	-.82	76
ATG	1.24	2.03	-.79	77
ATG	1.34	2.05	-.71	78
ATG	1.74	2.08	-.33	79
ATG	2.03	2.09	-.06	80
ATG	2.15	2.08	.07	81
ATG	1.90	2.06	-.16	82
ATG	1.79	2.03	-.24	83
ATG	1.72	2.00	-.28	84
ATG	1.81	1.97	-.16	85
ATG	1.82	1.93	-.11	86
AUS	.	.34	.	66
AUS	.	.36	.	67
AUS	.	.39	.	68
AUS	.30	.41	-.11	69
AUS	.29	.43	-.13	70
AUS	.29	.45	-.15	71
AUS	.31	.47	-.15	72
AUS	.34	.49	-.14	73
AUS	.35	.51	-.16	74
AUS	.32	.52	-.20	75
AUS	.29	.53	-.24	76
AUS	.29	.54	-.25	77
AUS	.31	.55	-.23	78
AUS	.34	.55	-.21	79
AUS	.35	.55	-.20	80
AUS	.34	.55	-.21	81
AUS	.31	.54	-.23	82
AUS	.30	.53	-.23	83
AUS	.30	.52	-.22	84
AUS	.31	.50	-.19	85
AUS	.33	.49	-.16	86
AUT	.	.43	.	66

AUT	.	.46	.	67
AUT	.	.49	.	68
AUT	.58	.52	.06	69
AUT	.59	.55	.04	70
AUT	.60	.57	.03	71
AUT	.65	.60	.04	72
AUT	.68	.63	.05	73
AUT	.69	.66	.03	74
AUT	.68	.68	-.00	75
AUT	.68	.70	-.02	76
AUT	.71	.72	-.01	77
AUT	.75	.73	.01	78
AUT	.77	.74	.03	79
AUT	.74	.75	-.00	80
AUT	.71	.74	-.03	81
AUT	.68	.73	-.04	82
AUT	.70	.71	-.01	83
AUT	.74	.70	.04	84
AUT	.80	.68	.12	85
AUT	.86	.67	.19	86
BDI	.	.41	.	66
BDI	.	.43	.	67
BDI	.	.45	.	68
BDI	.23	.48	-.25	69
BDI	.22	.50	-.28	70
BDI	.24	.53	-.29	71
BDI	.25	.55	-.30	72
BDI	.27	.56	-.30	73
BDI	.28	.58	-.30	74
BDI	.29	.60	-.30	75
BDI	.32	.61	-.29	76
BDI	.33	.62	-.29	77
BDI	.37	.63	-.26	78
BDI	.37	.63	-.27	79
BDI	.35	.64	-.29	80
BDI	.32	.63	-.31	81
BDI	.32	.62	-.30	82
BDI	.33	.61	-.27	83
BDI	.31	.59	-.28	84
BDI	.30	.57	-.27	85
BDI	.29	.56	-.26	86
BEL	.	.	.	66
BEL	.	.	.	67
BEL	.	.	.	68
BEL	.83	.	.	69
BEL	.83	.	.	70
BEL	.86	.	.	71
BEL	.94	.	.	72
BEL	1.05	.	.	73
BEL	1.07	.	.	74
BEL	1.03	.	.	75
BEL	1.00	.	.	76
BEL	1.05	.	.	77
BEL	1.13	.	.	78
BEL	1.17	.	.	79
BEL	1.16	.	.	80
BEL	1.13	.	.	81
BEL	1.15	.	.	82
BEL	1.24	.	.	83
BEL	1.33	.	.	84
BEL	1.45	.	.	85
BEL	1.50	.	.	86
BEN	.	.43	.	66
BEN	.	.46	.	67
BEN	.	.48	.	68
BEN	.55	.51	.04	69
BEN	.62	.53	.09	70
BEN	.64	.54	.09	71
BEN	.69	.56	.13	72
BEN	.69	.59	.11	73
BEN	.73	.61	.12	74
BEN	.72	.62	.10	75
BEN	.75	.63	.12	76
BEN	.74	.64	.11	77
BEN	.73	.64	.08	78
BEN	.75	.65	.10	79
BEN	.73	.65	.08	80
BEN	.77	.64	.13	81
BEN	.68	.63	.05	82
BEN	.63	.61	.03	83
BEN	.58	.59	-.00	84
BEN	.57	.57	-.00	85
BEN	.54	.55	-.02	86
BGD	.	.20	.	66
BGD	.	.22	.	67
BGD	.	.23	.	68
BGD	.18	.24	-.06	69
BGD	.16	.25	-.09	70
BGD	.18	.26	-.08	71
BGD	.19	.27	-.08	72
BGD	.21	.27	-.06	73
BGD	.20	.28	-.09	74
BGD	.18	.29	-.11	75
BGD	.17	.29	-.13	76
BGD	.19	.29	-.11	77
BGD	.21	.29	-.09	78
BGD	.25	.29	-.05	79
BGD	.25	.30	-.04	80

BGD	.26	.29	-.04	81	BLZ	.	1.07	.	67
BGD	.24	.29	-.04	82	BLZ	.	1.13	.	68
BGD	.25	.28	-.03	83	BLZ	.	1.19	.	69
BGD	.25	.27	-.02	84	BLZ	.	1.24	.	70
BGD	.25	.27	-.02	85	BLZ	.	1.30	.	71
BGD	.24	.26	-.01	86	BLZ	.	1.35	.	72
BHR	.	.	.	66	BLZ	.	1.40	.	73
BHR	.	.	.	67	BLZ	.	1.45	.	74
BHR	.	.	.	68	BLZ	.	1.49	.	75
BHR	.	.	.	69	BLZ	.	1.51	.	76
BHR	.	.	.	70	BLZ	.	1.53	.	77
BHR	.	.	.	71	BLZ	.	1.54	.	78
BHR	.	.	.	72	BLZ	.	1.55	.	79
BHR	.	.	.	73	BLZ	.	1.55	.	80
BHR	.	.	.	74	BLZ	.	1.53	.	81
BHR	.	.	.	75	BLZ	.	1.49	.	82
BHR	.	.	.	76	BLZ	1.47	1.45	.01	83
BHR	.	.	.	77	BLZ	1.43	1.42	.01	84
BHR	.	.	.	78	BLZ	1.39	1.38	.01	85
BHR	.	.	.	79	BLZ	1.35	1.34	.02	86
BHR	.	.	.	80	BOL	.	.38	.	66
BHR	.	.	.	81	BOL	.	.40	.	67
BHR	.	.	.	82	BOL	.	.43	.	68
BHR	.	.	.	83	BOL	.39	.45	-.06	69
BHR	.	.	.	84	BOL	.37	.47	-.10	70
BHR	.	.	.	85	BOL	.36	.49	-.12	71
BHR	.	.	.	86	BOL	.37	.50	-.13	72
BHS	.	1.12	.	66	BOL	.48	.52	-.04	73
BHS	.	1.19	.	67	BOL	.57	.54	.03	74
BHS	.	1.26	.	68	BOL	.65	.55	.10	75
BHS	.	1.32	.	69	BOL	.65	.56	.09	76
BHS	.	1.38	.	70	BOL	.68	.56	.12	77
BHS	.	1.43	.	71	BOL	.73	.56	.17	78
BHS	1.66	1.48	.18	72	BOL	.73	.57	.16	79
BHS	1.85	1.52	.33	73	BOL	.72	.56	.16	80
BHS	1.92	1.55	.37	74	BOL	.62	.56	.07	81
BHS	2.06	1.57	.49	75	BOL	.58	.54	.03	82
BHS	2.01	1.59	.42	76	BOL	.51	.53	-.02	83
BHS	1.99	1.61	.38	77	BOL	.49	.52	-.03	84
BHS	1.85	1.64	.21	78	BOL	.46	.50	-.04	85
BHS	1.81	1.66	.15	79	BOL	.43	.49	-.05	86
BHS	1.75	1.66	.09	80	BRA	.	.18	.	66
BHS	1.71	1.65	.06	81	BRA	.	.20	.	67
BHS	1.62	1.63	-.01	82	BRA	.	.21	.	68
BHS	1.45	1.62	-.16	83	BRA	.15	.22	-.07	69
BHS	1.41	1.59	-.18	84	BRA	.15	.23	-.08	70
BHS	1.36	1.56	-.21	85	BRA	.16	.24	-.09	71
BHS	1.37	1.52	-.15	86	BRA	.17	.25	-.08	72
BLZ	.	1.01	.	66	BRA	.21	.27	-.06	73

BRA	.22	.28	-.06	74
BRA	.21	.28	-.07	75
BRA	.18	.29	-.11	76
BRA	.17	.30	-.13	77
BRA	.16	.30	-.13	78
BRA	.18	.30	-.13	79
BRA	.19	.30	-.11	80
BRA	.19	.30	-.10	81
BRA	.19	.29	-.10	82
BRA	.19	.28	-.09	83
BRA	.20	.27	-.08	84
BRA	.19	.27	-.08	85
BRA	.17	.26	-.08	86
BRB	.	1.02	.	66
BRB	.	1.09	.	67
BRB	.	1.16	.	68
BRB	1.32	1.22	.09	69
BRB	1.28	1.29	-.01	70
BRB	1.29	1.35	-.07	71
BRB	1.29	1.42	-.12	72
BRB	1.34	1.48	-.14	73
BRB	1.32	1.54	-.22	74
BRB	1.24	1.58	-.34	75
BRB	1.17	1.63	-.45	76
BRB	1.17	1.66	-.49	77
BRB	1.25	1.69	-.44	78
BRB	1.36	1.72	-.36	79
BRB	1.40	1.73	-.33	80
BRB	1.39	1.73	-.34	81
BRB	1.36	1.71	-.35	82
BRB	1.38	1.69	-.32	83
BRB	1.35	1.67	-.32	84
BRB	1.26	1.64	-.38	85
BRB	1.18	1.60	-.42	86
BTN	.	.	.	66
BTN	.	.	.	67
BTN	.	.	.	68
BTN	.	.	.	69
BTN	.	.	.	70
BTN	.	.	.	71
BTN	.	.	.	72
BTN	.	.	.	73
BTN	.	.	.	74
BTN	.	.	.	75
BTN	.	.	.	76
BTN	.	.	.	77
BTN	.	.	.	78
BTN	.	.	.	79
BTN	.	.	.	80
BTN	.	.	.	81
BTN	.	.75	.	82
BTN	.	.74	.	83
BTN	.	.72	.	84
BTN	.	.71	.	85
BTN	.	.69	.	86
BWA	.	.55	.	66
BWA	.	.59	.	67
BWA	.	.63	.	68
BWA	1.83	.66	1.17	69
BWA	1.98	.69	1.29	70
BWA	2.00	.73	1.28	71
BWA	2.11	.76	1.35	72
BWA	1.89	.80	1.09	73
BWA	1.71	.83	.89	74
BWA	1.50	.85	.65	75
BWA	1.56	.85	.70	76
BWA	1.60	.87	.73	77
BWA	1.78	.88	.90	78
BWA	1.90	.89	1.01	79
BWA	1.86	.89	.97	80
BWA	1.64	.89	.75	81
BWA	1.47	.88	.60	82
BWA	1.48	.85	.62	83
BWA	1.54	.83	.71	84
BWA	1.60	.80	.80	85
BWA	1.85	.77	1.08	86
CAF	.	.43	.	66
CAF	.	.46	.	67
CAF	.	.48	.	68
CAF	.74	.51	.23	69
CAF	.72	.53	.19	70
CAF	.69	.55	.14	71
CAF	.70	.57	.12	72
CAF	.68	.60	.09	73
CAF	.69	.62	.08	74
CAF	.63	.64	-.00	75
CAF	.61	.65	-.04	76
CAF	.60	.66	-.06	77
CAF	.62	.67	-.05	78
CAF	.65	.67	-.02	79
CAF	.62	.67	-.05	80
CAF	.59	.66	-.07	81
CAF	.53	.65	-.12	82
CAF	.53	.63	-.10	83
CAF	.57	.61	-.04	84
CAF	.61	.59	.01	85
CAF	.63	.58	.05	86
CAN	.	.31	.	66

CAN	.	.33	.	67	CHL	.38	.51	-.13	74
CAN	.	.35	.	68	CHL	.44	.52	-.08	75
CAN	.44	.37	.07	69	CHL	.47	.52	-.05	76
CAN	.44	.39	.05	70	CHL	.48	.53	-.05	77
CAN	.44	.41	.03	71	CHL	.50	.54	-.04	78
CAN	.45	.42	.02	72	CHL	.51	.55	-.04	79
CAN	.48	.44	.04	73	CHL	.51	.56	-.04	80
CAN	.49	.46	.03	74	CHL	.46	.55	-.09	81
CAN	.49	.47	.02	75	CHL	.40	.54	-.14	82
CAN	.47	.48	-.01	76	CHL	.40	.52	-.12	83
CAN	.47	.49	-.02	77	CHL	.44	.50	-.07	84
CAN	.49	.49	-.00	78	CHL	.51	.49	.02	85
CAN	.52	.49	.03	79	CHL	.60	.47	.13	86
CAN	.55	.49	.06	80	CHN	.	.10	.	66
CAN	.53	.49	.05	81	CHN	.	.11	.	67
CAN	.51	.48	.03	82	CHN	.	.12	.	68
CAN	.51	.48	.03	83	CHN	.05	.12	-.07	69
CAN	.52	.47	.05	84	CHN	.05	.13	-.07	70
CAN	.53	.46	.07	85	CHN	.06	.13	-.07	71
CAN	.54	.44	.09	86	CHN	.07	.14	-.07	72
CHE	.	.49	.	66	CHN	.09	.14	-.06	73
CHE	.	.52	.	67	CHN	.10	.15	-.05	74
CHE	.	.55	.	68	CHN	.10	.15	-.05	75
CHE	.65	.58	.07	69	CHN	.10	.15	-.06	76
CHE	.65	.61	.04	70	CHN	.10	.15	-.05	77
CHE	.66	.64	.02	71	CHN	.11	.16	-.04	78
CHE	.69	.67	.02	72	CHN	.13	.16	-.03	79
CHE	.71	.71	.00	73	CHN	.15	.16	-.01	80
CHE	.69	.74	-.05	74	CHN	.15	.16	-.01	81
CHE	.65	.76	-.11	75	CHN	.14	.16	-.01	82
CHE	.63	.78	-.15	76	CHN	.15	.15	-.01	83
CHE	.68	.80	-.12	77	CHN	.17	.15	.02	84
CHE	.71	.81	-.10	78	CHN	.19	.15	.05	85
CHE	.73	.83	-.10	79	CHN	.22	.14	.08	86
CHE	.68	.83	-.16	80	CIV	.	.38	.	66
CHE	.63	.83	-.19	81	CIV	.	.40	.	67
CHE	.67	.81	-.14	82	CIV	.	.43	.	68
CHE	.74	.80	-.05	83	CIV	.72	.45	.27	69
CHE	.82	.78	.04	84	CIV	.73	.47	.26	70
CHE	.90	.76	.13	85	CIV	.76	.48	.27	71
CHE	.95	.75	.21	86	CIV	.85	.50	.35	72
CHL	.	.36	.	66	CIV	.97	.52	.45	73
CHL	.	.38	.	67	CIV	.99	.53	.46	74
CHL	.	.41	.	68	CIV	.96	.55	.42	75
CHL	.30	.43	-.13	69	CIV	.96	.56	.40	76
CHL	.27	.45	-.17	70	CIV	.98	.57	.42	77
CHL	.25	.47	-.21	71	CIV	.97	.58	.39	78
CHL	.25	.49	-.24	72	CIV	.88	.58	.30	79
CHL	.30	.50	-.20	73	CIV	.76	.58	.19	80

CIV	.69	.56	.13	81	COL	.	.29	.	67
CIV	.67	.54	.12	82	COL	.	.31	.	68
CIV	.73	.52	.21	83	COL	.29	.32	-.03	69
CIV	.79	.50	.28	84	COL	.29	.34	-.05	70
CIV	.83	.48	.35	85	COL	.29	.35	-.07	71
CIV	.83	.47	.36	86	COL	.29	.37	-.08	72
CMR	.	.34	.	66	COL	.31	.38	-.08	73
CMR	.	.36	.	67	COL	.32	.39	-.08	74
CMR	.	.39	.	68	COL	.33	.40	-.07	75
CMR	.50	.41	.09	69	COL	.34	.41	-.08	76
CMR	.51	.43	.08	70	COL	.34	.42	-.08	77
CMR	.53	.44	.09	71	COL	.34	.43	-.09	78
CMR	.60	.46	.14	72	COL	.33	.43	-.10	79
CMR	.62	.48	.14	73	COL	.31	.43	-.12	80
CMR	.63	.50	.14	74	COL	.30	.43	-.13	81
CMR	.59	.51	.08	75	COL	.27	.42	-.15	82
CMR	.60	.52	.08	76	COL	.26	.42	-.15	83
CMR	.61	.53	.09	77	COL	.25	.41	-.15	84
CMR	.66	.54	.12	78	COL	.27	.39	-.12	85
CMR	.64	.54	.10	79	COL	.30	.38	-.08	86
CMR	.61	.54	.06	80	COM	.	.81	.	66
CMR	.55	.54	.00	81	COM	.	.86	.	67
CMR	.52	.53	-.01	82	COM	.	.91	.	68
CMR	.51	.52	-.01	83	COM	.	.95	.	69
CMR	.53	.50	.03	84	COM	.	1.00	.	70
CMR	.54	.49	.05	85	COM	.	1.04	.	71
CMR	.50	.47	.03	86	COM	.	1.09	.	72
COG	.	.52	.	66	COM	.	1.13	.	73
COG	.	.55	.	67	COM	.	1.16	.	74
COG	.	.59	.	68	COM	.	1.19	.	75
COG	.70	.62	.08	69	COM	.	1.21	.	76
COG	.77	.65	.12	70	COM	.	1.22	.	77
COG	.80	.67	.13	71	COM	.	1.23	.	78
COG	.87	.70	.17	72	COM	.42	1.25	-.83	79
COG	.97	.73	.24	73	COM	.47	1.26	-.79	80
COG	1.04	.76	.28	74	COM	.51	1.24	-.74	81
COG	1.09	.77	.32	75	COM	.57	1.22	-.65	82
COG	1.10	.78	.32	76	COM	.62	1.18	-.56	83
COG	1.12	.79	.33	77	COM	.66	1.14	-.48	84
COG	1.14	.79	.34	78	COM	.71	1.11	-.40	85
COG	1.24	.80	.44	79	COM	.71	1.07	-.37	86
COG	1.31	.81	.50	80	CPV	.	.	.	66
COG	1.32	.81	.50	81	CPV	.	.	.	67
COG	1.23	.80	.43	82	CPV	.	.	.	68
COG	1.14	.78	.36	83	CPV	.	.	.	69
COG	1.15	.76	.40	84	CPV	.	.	.	70
COG	1.12	.73	.39	85	CPV	.	.	.	71
COG	1.13	.70	.43	86	CPV	.	.	.	72
COL	.	.28	.	66	CPV	.	.	.	73

CPV	.	1.21	.	74	CYP	.	.	.	81
CPV	.	1.24	.	75	CYP	.	.	.	82
CPV	.	1.26	.	76	CYP	1.05	1.23	-.18	83
CPV	.	1.28	.	77	CYP	1.01	1.20	-.20	84
CPV	.	1.29	.	78	CYP	1.00	1.18	-.18	85
CPV	.	1.30	.	79	CYP	.98	1.15	-.17	86
CPV	.	1.30	.	80	DEU	.	.27	.	66
CPV	.	1.28	.	81	DEU	.	.29	.	67
CPV	.	1.25	.	82	DEU	.	.31	.	68
CPV	.	1.23	.	83	DEU	.44	.32	.12	69
CPV	.	1.19	.	84	DEU	.44	.34	.09	70
CPV	.	1.16	.	85	DEU	.43	.36	.07	71
CPV	.	1.13	.	86	DEU	.45	.38	.07	72
CRI	.	.55	.	66	DEU	.48	.40	.08	73
CRI	.	.59	.	67	DEU	.49	.41	.08	74
CRI	.	.62	.	68	DEU	.49	.43	.07	75
CRI	.64	.65	-.02	69	DEU	.49	.44	.05	76
CRI	.63	.69	-.06	70	DEU	.50	.45	.06	77
CRI	.63	.71	-.09	71	DEU	.52	.46	.06	78
CRI	.63	.74	-.11	72	DEU	.53	.46	.07	79
CRI	.69	.77	-.08	73	DEU	.52	.46	.05	80
CRI	.72	.80	-.07	74	DEU	.50	.46	.04	81
CRI	.74	.81	-.07	75	DEU	.50	.45	.05	82
CRI	.74	.83	-.09	76	DEU	.52	.44	.08	83
CRI	.72	.85	-.12	77	DEU	.54	.43	.11	84
CRI	.71	.86	-.15	78	DEU	.59	.42	.17	85
CRI	.68	.87	-.19	79	DEU	.64	.41	.23	86
CRI	.68	.86	-.17	80	DMA	.	1.23	.	66
CRI	.73	.83	-.10	81	DMA	.	1.30	.	67
CRI	.81	.80	.01	82	DMA	.	1.38	.	68
CRI	.85	.78	.07	83	DMA	.	1.45	.	69
CRI	.82	.77	.05	84	DMA	.	1.53	.	70
CRI	.75	.75	-.00	85	DMA	.	1.60	.	71
CRI	.73	.73	-.01	86	DMA	.	1.67	.	72
CYP	.	.	.	66	DMA	.	1.72	.	73
CYP	.	.	.	67	DMA	.	1.77	.	74
CYP	.	.	.	68	DMA	1.09	1.81	-.72	75
CYP	.	.	.	69	DMA	1.10	1.85	-.75	76
CYP	.	.	.	70	DMA	1.12	1.89	-.78	77
CYP	.	.	.	71	DMA	1.23	1.92	-.69	78
CYP	.	.	.	72	DMA	1.30	1.94	-.64	79
CYP	.	.	.	73	DMA	1.29	1.96	-.67	80
CYP	.	.	.	74	DMA	1.18	1.96	-.78	81
CYP	.	.	.	75	DMA	1.12	1.94	-.82	82
CYP	.	.	.	76	DMA	1.13	1.91	-.79	83
CYP	.	.	.	77	DMA	1.12	1.88	-.76	84
CYP	.	.	.	78	DMA	1.11	1.85	-.74	85
CYP	.	.	.	79	DMA	1.09	1.81	-.71	86
CYP	.	.	.	80	DNK	.	.50	.	66

DNK	.	.54	.	67	DZA	.77	.43	.34	74
DNK	.	.57	.	68	DZA	.78	.44	.34	75
DNK	.61	.61	.00	69	DZA	.71	.45	.26	76
DNK	.61	.64	-.03	70	DZA	.67	.46	.20	77
DNK	.61	.67	-.06	71	DZA	.67	.47	.20	78
DNK	.65	.70	-.05	72	DZA	.69	.47	.22	79
DNK	.70	.73	-.03	73	DZA	.69	.47	.21	80
DNK	.73	.76	-.04	74	DZA	.66	.47	.19	81
DNK	.70	.79	-.08	75	DZA	.58	.46	.12	82
DNK	.67	.81	-.14	76	DZA	.53	.45	.08	83
DNK	.66	.83	-.16	77	DZA	.49	.44	.05	84
DNK	.66	.84	-.18	78	DZA	.43	.43	-.00	85
DNK	.67	.85	-.18	79	DZA	.37	.42	-.05	86
DNK	.66	.85	-.19	80	ECU	.	.38	.	66
DNK	.67	.84	-.17	81	ECU	.	.40	.	67
DNK	.69	.83	-.14	82	ECU	.	.42	.	68
DNK	.71	.81	-.10	83	ECU	.35	.44	-.09	69
DNK	.75	.79	-.05	84	ECU	.36	.46	-.10	70
DNK	.79	.78	.02	85	ECU	.37	.48	-.11	71
DNK	.83	.76	.07	86	ECU	.41	.50	-.08	72
DOM	.	.43	.	66	ECU	.56	.52	.05	73
DOM	.	.46	.	67	ECU	.64	.54	.10	74
DOM	.	.48	.	68	ECU	.67	.55	.11	75
DOM	.44	.51	-.07	69	ECU	.58	.56	.02	76
DOM	.45	.53	-.08	70	ECU	.56	.58	-.02	77
DOM	.47	.55	-.09	71	ECU	.57	.58	-.01	78
DOM	.49	.58	-.09	72	ECU	.57	.59	-.02	79
DOM	.55	.60	-.05	73	ECU	.55	.59	-.04	80
DOM	.61	.62	-.01	74	ECU	.50	.59	-.09	81
DOM	.61	.64	-.02	75	ECU	.44	.57	-.14	82
DOM	.56	.65	-.09	76	ECU	.43	.56	-.13	83
DOM	.49	.66	-.17	77	ECU	.45	.54	-.08	84
DOM	.49	.66	-.17	78	ECU	.47	.52	-.05	85
DOM	.51	.67	-.15	79	ECU	.47	.50	-.03	86
DOM	.53	.67	-.13	80	EGY	.	.24	.	66
DOM	.48	.66	-.18	81	EGY	.	.26	.	67
DOM	.43	.65	-.22	82	EGY	.	.27	.	68
DOM	.43	.63	-.20	83	EGY	.31	.28	.02	69
DOM	.50	.61	-.11	84	EGY	.30	.30	.01	70
DOM	.57	.58	-.01	85	EGY	.30	.31	-.01	71
DOM	.61	.56	.05	86	EGY	.31	.32	-.01	72
DZA	.	.29	.	66	EGY	.42	.33	.09	73
DZA	.	.31	.	67	EGY	.55	.34	.20	74
DZA	.	.33	.	68	EGY	.65	.35	.30	75
DZA	.49	.35	.14	69	EGY	.65	.35	.30	76
DZA	.46	.36	.10	70	EGY	.66	.36	.30	77
DZA	.46	.38	.08	71	EGY	.72	.36	.36	78
DZA	.49	.40	.10	72	EGY	.78	.36	.42	79
DZA	.65	.41	.23	73	EGY	.83	.36	.47	80

EGY	.80	.36	.44	81
EGY	.77	.35	.42	82
EGY	.74	.35	.40	83
EGY	.73	.34	.39	84
EGY	.71	.33	.38	85
EGY	.63	.32	.31	86
ESP	.	.28	.	66
ESP	.	.30	.	67
ESP	.	.32	.	68
ESP	.27	.33	-.06	69
ESP	.27	.35	-.08	70
ESP	.28	.37	-.08	71
ESP	.30	.38	-.08	72
ESP	.33	.40	-.07	73
ESP	.34	.42	-.09	74
ESP	.32	.43	-.11	75
ESP	.30	.44	-.14	76
ESP	.30	.45	-.15	77
ESP	.32	.46	-.14	78
ESP	.34	.46	-.13	79
ESP	.34	.47	-.12	80
ESP	.34	.46	-.12	81
ESP	.34	.45	-.11	82
ESP	.37	.44	-.08	83
ESP	.39	.43	-.04	84
ESP	.42	.42	.00	85
ESP	.45	.41	.03	86
ETH	.	.22	.	66
ETH	.	.23	.	67
ETH	.	.25	.	68
ETH	.22	.26	-.04	69
ETH	.21	.27	-.06	70
ETH	.22	.28	-.07	71
ETH	.23	.29	-.06	72
ETH	.26	.30	-.04	73
ETH	.27	.31	-.04	74
ETH	.26	.32	-.06	75
ETH	.26	.32	-.06	76
ETH	.28	.32	-.05	77
ETH	.29	.33	-.04	78
ETH	.29	.33	-.04	79
ETH	.29	.32	-.04	80
ETH	.29	.32	-.03	81
ETH	.29	.31	-.02	82
ETH	.32	.31	.02	83
ETH	.33	.30	.03	84
ETH	.35	.29	.06	85
ETH	.33	.28	.05	86
FIN	.	.46	.	66
FIN	.	.49	.	67
FIN	.	.53	.	68
FIN	.51	.56	-.05	69
FIN	.50	.59	-.08	70
FIN	.51	.62	-.11	71
FIN	.53	.64	-.12	72
FIN	.59	.68	-.09	73
FIN	.61	.70	-.10	74
FIN	.60	.73	-.13	75
FIN	.56	.75	-.19	76
FIN	.55	.76	-.21	77
FIN	.58	.77	-.19	78
FIN	.63	.78	-.15	79
FIN	.65	.79	-.14	80
FIN	.62	.78	-.16	81
FIN	.57	.77	-.20	82
FIN	.56	.76	-.20	83
FIN	.56	.74	-.18	84
FIN	.58	.73	-.15	85
FIN	.60	.71	-.11	86
FJI	.	.73	.	66
FJI	.	.77	.	67
FJI	.	.82	.	68
FJI	1.06	.86	.20	69
FJI	1.10	.90	.20	70
FJI	1.11	.94	.17	71
FJI	1.16	.99	.17	72
FJI	1.18	1.04	.14	73
FJI	1.12	1.08	.05	74
FJI	.99	1.11	-.13	75
FJI	.87	1.13	-.27	76
FJI	.85	1.15	-.30	77
FJI	.92	1.16	-.24	78
FJI	1.00	1.17	-.17	79
FJI	1.01	1.17	-.16	80
FJI	.98	1.16	-.18	81
FJI	.93	1.14	-.21	82
FJI	.89	1.11	-.22	83
FJI	.88	1.08	-.20	84
FJI	.86	1.05	-.19	85
FJI	.86	1.01	-.16	86
FRA	.	.27	.	66
FRA	.	.29	.	67
FRA	.	.31	.	68
FRA	.31	.33	-.02	69
FRA	.31	.35	-.04	70
FRA	.33	.36	-.04	71
FRA	.36	.38	-.02	72
FRA	.40	.40	.01	73

FRA	.42	.41	.01	74
FRA	.42	.43	-.00	75
FRA	.41	.44	-.02	76
FRA	.42	.44	-.02	77
FRA	.44	.45	-.01	78
FRA	.46	.46	.00	79
FRA	.46	.46	-.00	80
FRA	.43	.46	-.02	81
FRA	.42	.45	-.03	82
FRA	.43	.44	-.01	83
FRA	.45	.43	.03	84
FRA	.49	.42	.07	85
FRA	.51	.41	.11	86
GAB	.	.67	.	66
GAB	.	.72	.	67
GAB	.	.77	.	68
GAB	1.19	.81	.37	69
GAB	1.22	.86	.37	70
GAB	1.28	.89	.39	71
GAB	1.45	.92	.52	72
GAB	1.56	.97	.58	73
GAB	1.53	1.03	.50	74
GAB	1.26	1.08	.18	75
GAB	1.07	1.10	-.03	76
GAB	1.06	1.10	-.04	77
GAB	1.23	1.09	.14	78
GAB	1.32	1.08	.24	79
GAB	1.29	1.08	.21	80
GAB	1.17	1.07	.10	81
GAB	1.11	1.04	.07	82
GAB	1.11	1.01	.10	83
GAB	1.17	.97	.20	84
GAB	1.11	.94	.18	85
GAB	1.07	.90	.17	86
GBR	.	.27	.	66
GBR	.	.29	.	67
GBR	.	.31	.	68
GBR	.43	.33	.10	69
GBR	.44	.34	.09	70
GBR	.44	.36	.08	71
GBR	.45	.38	.08	72
GBR	.50	.39	.11	73
GBR	.54	.41	.14	74
GBR	.56	.42	.15	75
GBR	.56	.42	.13	76
GBR	.57	.43	.14	77
GBR	.61	.44	.16	78
GBR	.62	.45	.17	79
GBR	.58	.45	.13	80

GBR	.52	.45	.06	81
GBR	.46	.45	.01	82
GBR	.47	.44	.03	83
GBR	.50	.43	.07	84
GBR	.54	.42	.12	85
GBR	.57	.41	.16	86
GHA	.	.35	.	66
GHA	.	.37	.	67
GHA	.	.39	.	68
GHA	.45	.41	.05	69
GHA	.41	.43	-.01	70
GHA	.38	.44	-.06	71
GHA	.39	.46	-.07	72
GHA	.47	.47	-.00	73
GHA	.57	.48	.09	74
GHA	.63	.49	.14	75
GHA	.67	.49	.17	76
GHA	.64	.50	.14	77
GHA	.61	.50	.11	78
GHA	.56	.51	.06	79
GHA	.53	.50	.03	80
GHA	.46	.49	-.03	81
GHA	.37	.48	-.12	82
GHA	.31	.47	-.16	83
GHA	.30	.46	-.16	84
GHA	.32	.44	-.13	85
GHA	.33	.43	-.10	86
GMB	.	.69	.	66
GMB	.	.73	.	67
GMB	.	.77	.	68
GMB	.81	.80	.01	69
GMB	.78	.84	-.06	70
GMB	.79	.87	-.09	71
GMB	.80	.91	-.11	72
GMB	.90	.95	-.05	73
GMB	1.00	.98	.02	74
GMB	1.05	1.00	.05	75
GMB	1.05	1.02	.04	76
GMB	1.04	1.03	.02	77
GMB	1.04	1.04	.00	78
GMB	1.04	1.04	-.00	79
GMB	1.01	1.04	-.03	80
GMB	.99	1.02	-.03	81
GMB	.97	.99	-.01	82
GMB	.97	.95	.01	83
GMB	1.02	.92	.10	84
GMB	1.17	.88	.29	85
GMB	1.33	.85	.48	86
GNB	.	.	.	66

GNB	.	.	.	67
GNB	.	.	.	68
GNB	.	.	.	69
GNB	.	.	.	70
GNB	.	.84	.	71
GNB	.	.86	.	72
GNB	.	.88	.	73
GNB	.	.90	.	74
GNB	.	.91	.	75
GNB	.	.91	.	76
GNB	.	.91	.	77
GNB	.	.91	.	78
GNB	.	.90	.	79
GNB	.	.88	.	80
GNB	.61	.87	-.26	81
GNB	.58	.86	-.28	82
GNB	.61	.85	-.23	83
GNB	.60	.82	-.22	84
GNB	.64	.80	-.16	85
GNB	.65	.77	-.13	86
GRC	.	.39	.	66
GRC	.	.41	.	67
GRC	.	.44	.	68
GRC	.28	.47	-.19	69
GRC	.28	.50	-.21	70
GRC	.30	.52	-.22	71
GRC	.35	.54	-.20	72
GRC	.40	.57	-.17	73
GRC	.43	.59	-.16	74
GRC	.42	.61	-.19	75
GRC	.41	.62	-.21	76
GRC	.42	.63	-.21	77
GRC	.44	.64	-.20	78
GRC	.46	.65	-.19	79
GRC	.47	.65	-.18	80
GRC	.45	.64	-.19	81
GRC	.45	.63	-.18	82
GRC	.44	.62	-.18	83
GRC	.46	.60	-.14	84
GRC	.48	.58	-.10	85
GRC	.52	.57	-.05	86
GRD	.	.	.	66
GRD	.	.	.	67
GRD	.	.	.	68
GRD	.	1.38	.	69
GRD	.	1.44	.	70
GRD	.	1.50	.	71
GRD	.	.	.	72
GRD	.	.	.	73
GRD	.	.	.	74
GRD	.	.	.	75
GRD	.	.	.	76
GRD	.	.	.	77
GRD	.	.	.	78
GRD	1.55	1.95	-.39	79
GRD	1.49	1.95	-.46	80
GRD	1.43	1.94	-.51	81
GRD	1.31	1.92	-.61	82
GRD	1.20	1.89	-.69	83
GRD	1.18	1.85	-.68	84
GRD	1.23	1.81	-.58	85
GRD	1.30	1.77	-.47	86
GTM	.	.41	.	66
GTM	.	.43	.	67
GTM	.	.46	.	68
GTM	.36	.48	-.12	69
GTM	.35	.50	-.15	70
GTM	.36	.52	-.17	71
GTM	.38	.54	-.16	72
GTM	.44	.56	-.12	73
GTM	.47	.58	-.10	74
GTM	.51	.59	-.08	75
GTM	.52	.60	-.09	76
GTM	.52	.62	-.09	77
GTM	.50	.62	-.12	78
GTM	.48	.63	-.15	79
GTM	.45	.63	-.18	80
GTM	.40	.62	-.21	81
GTM	.34	.61	-.26	82
GTM	.30	.59	-.29	83
GTM	.28	.58	-.30	84
GTM	.27	.56	-.29	85
GTM	.29	.54	-.25	86
GUY	.	.	.	66
GUY	.	.	.	67
GUY	.	.	.	68
GUY	1.16	.74	.42	69
GUY	1.13	.78	.35	70
GUY	1.15	.81	.34	71
GUY	1.18	.84	.34	72
GUY	1.34	.88	.47	73
GUY	1.47	.90	.58	74
GUY	1.54	.92	.61	75
GUY	1.46	.94	.52	76
GUY	1.39	.95	.44	77
GUY	1.37	.95	.42	78
GUY	1.47	.95	.51	79
GUY	1.52	.95	.57	80

GUY	1.49	.94	.56	81
GUY	1.37	.92	.46	82
GUY	1.32	.89	.43	83
GUY	1.40	.86	.53	84
GUY	1.45	.84	.61	85
GUY	1.47	.81	.66	86
HKG	.	.55	.	66
HKG	.	.58	.	67
HKG	.	.62	.	68
HKG	1.85	.65	1.20	69
HKG	1.84	.69	1.16	70
HKG	1.82	.72	1.09	71
HKG	1.84	.76	1.09	72
HKG	1.86	.79	1.07	73
HKG	1.82	.82	.99	74
HKG	1.75	.85	.91	75
HKG	1.68	.87	.82	76
HKG	1.72	.89	.83	77
HKG	1.75	.90	.85	78
HKG	1.80	.90	.90	79
HKG	1.80	.91	.89	80
HKG	1.72	.90	.81	81
HKG	1.65	.89	.76	82
HKG	1.71	.88	.84	83
HKG	1.88	.86	1.02	84
HKG	2.03	.84	1.20	85
HKG	2.10	.82	1.28	86
HND	.	.47	.	66
HND	.	.49	.	67
HND	.	.52	.	68
HND	.62	.55	.07	69
HND	.60	.57	.03	70
HND	.59	.59	-.00	71
HND	.60	.61	-.01	72
HND	.68	.63	.05	73
HND	.73	.65	.08	74
HND	.76	.66	.10	75
HND	.76	.67	.09	76
HND	.79	.68	.11	77
HND	.82	.69	.13	78
HND	.84	.69	.15	79
HND	.82	.68	.13	80
HND	.74	.67	.06	81
HND	.64	.66	-.02	82
HND	.61	.65	-.04	83
HND	.61	.63	-.02	84
HND	.61	.61	.00	85
HND	.59	.59	-.01	86
HTI	.	.40	.	66

HTI	.	.42	.	67
HTI	.	.44	.	68
HTI	.25	.46	-.22	69
HTI	.25	.49	-.24	70
HTI	.24	.51	-.26	71
HTI	.25	.53	-.28	72
HTI	.28	.54	-.26	73
HTI	.32	.56	-.24	74
HTI	.37	.58	-.20	75
HTI	.42	.59	-.17	76
HTI	.46	.60	-.14	77
HTI	.48	.60	-.13	78
HTI	.51	.61	-.09	79
HTI	.53	.61	-.08	80
HTI	.55	.60	-.06	81
HTI	.53	.59	-.06	82
HTI	.52	.58	-.06	83
HTI	.51	.57	-.06	84
HTI	.46	.56	-.10	85
HTI	.41	.54	-.14	86
HUN	.	.	.	66
HUN	.	.	.	67
HUN	.	.	.	68
HUN	.	.	.	69
HUN	.	.	.	70
HUN	.	.	.	71
HUN	.	.	.	72
HUN	.	.	.	73
HUN	.	.	.	74
HUN	.	.	.	75
HUN	.97	.57	.39	76
HUN	.97	.58	.39	77
HUN	.98	.59	.39	78
HUN	.97	.60	.37	79
HUN	.94	.60	.34	80
HUN	.88	.60	.29	81
HUN	.85	.59	.26	82
HUN	.86	.58	.28	83
HUN	.90	.57	.33	84
HUN	.95	.55	.40	85
HUN	.99	.54	.45	86
HVO	.	.34	.	66
HVO	.	.36	.	67
HVO	.	.38	.	68
HVO	.28	.39	-.12	69
HVO	.31	.41	-.10	70
HVO	.35	.43	-.08	71
HVO	.42	.44	-.02	72
HVO	.47	.46	.01	73

HVO	.52	.48	.04	74
HVO	.52	.49	.03	75
HVO	.54	.50	.04	76
HVO	.54	.51	.03	77
HVO	.56	.51	.05	78
HVO	.57	.52	.05	79
HVO	.54	.52	.02	80
HVO	.51	.51	.00	81
HVO	.48	.50	-.02	82
HVO	.48	.48	-.00	83
HVO	.48	.47	.01	84
HVO	.52	.46	.07	85
HVO	.54	.44	.10	86
IDN	.	.16	.	66
IDN	.	.17	.	67
IDN	.	.18	.	68
IDN	.25	.19	.06	69
IDN	.26	.20	.06	70
IDN	.28	.21	.06	71
IDN	.34	.22	.12	72
IDN	.47	.23	.24	73
IDN	.54	.24	.30	74
IDN	.55	.25	.30	75
IDN	.47	.26	.21	76
IDN	.44	.26	.18	77
IDN	.44	.27	.18	78
IDN	.48	.27	.21	79
IDN	.52	.27	.25	80
IDN	.51	.27	.24	81
IDN	.48	.26	.22	82
IDN	.45	.26	.20	83
IDN	.45	.25	.20	84
IDN	.42	.24	.18	85
IDN	.43	.23	.19	86
IND	.	.12	.	66
IND	.	.12	.	67
IND	.	.13	.	68
IND	.09	.14	-.05	69
IND	.09	.14	-.05	70
IND	.09	.15	-.06	71
IND	.10	.16	-.06	72
IND	.11	.16	-.06	73
IND	.11	.17	-.05	74
IND	.12	.17	-.05	75
IND	.13	.17	-.04	76
IND	.14	.17	-.03	77
IND	.16	.17	-.01	78
IND	.17	.18	-.00	79
IND	.17	.18	-.00	80
IND	.16	.17	-.02	81
IND	.14	.17	-.03	82
IND	.14	.17	-.03	83
IND	.14	.17	-.02	84
IND	.15	.16	-.01	85
IND	.15	.16	-.00	86
IRL	.	.51	.	66
IRL	.	.55	.	67
IRL	.	.58	.	68
IRL	.82	.62	.20	69
IRL	.82	.65	.17	70
IRL	.81	.68	.13	71
IRL	.83	.71	.12	72
IRL	.88	.75	.13	73
IRL	.90	.77	.13	74
IRL	.92	.79	.13	75
IRL	.99	.80	.19	76
IRL	1.14	.81	.33	77
IRL	1.30	.83	.47	78
IRL	1.30	.84	.46	79
IRL	1.21	.84	.37	80
IRL	1.08	.84	.24	81
IRL	1.04	.83	.22	82
IRL	1.10	.81	.29	83
IRL	1.22	.79	.43	84
IRL	1.37	.77	.60	85
IRL	1.48	.75	.73	86
ISL	.	1.00	.	66
ISL	.	1.06	.	67
ISL	.	1.11	.	68
ISL	.90	1.16	-.26	69
ISL	.91	1.22	-.31	70
ISL	.89	1.28	-.39	71
ISL	.90	1.34	-.45	72
ISL	.89	1.41	-.52	73
ISL	.86	1.47	-.61	74
ISL	.79	1.51	-.73	75
ISL	.75	1.55	-.80	76
ISL	.76	1.58	-.83	77
ISL	.78	1.61	-.84	78
ISL	.77	1.64	-.87	79
ISL	.75	1.64	-.90	80
ISL	.70	1.63	-.93	81
ISL	.68	1.60	-.92	82
ISL	.70	1.56	-.85	83
ISL	.77	1.51	-.74	84
ISL	.84	1.48	-.64	85
ISL	.87	1.45	-.58	86
ISR	.	.56	.	66

ISR	.	.60	.	67
ISR	.	.63	.	68
ISR	.68	.67	.01	69
ISR	.69	.70	-.01	70
ISR	.66	.73	-.07	71
ISR	.71	.76	-.05	72
ISR	.75	.79	-.04	73
ISR	.78	.82	-.03	74
ISR	.76	.84	-.08	75
ISR	.75	.85	-.09	76
ISR	.82	.86	-.04	77
ISR	.89	.86	.03	78
ISR	.94	.86	.08	79
ISR	.92	.86	.05	80
ISR	.86	.86	.01	81
ISR	.80	.85	-.05	82
ISR	.77	.83	-.06	83
ISR	.78	.81	-.03	84
ISR	.82	.79	.03	85
ISR	.88	.77	.12	86
ITA	.	.27	.	66
ITA	.	.29	.	67
ITA	.	.31	.	68
ITA	.29	.32	-.03	69
ITA	.30	.34	-.04	70
ITA	.31	.36	-.05	71
ITA	.33	.37	-.04	72
ITA	.37	.39	-.02	73
ITA	.39	.40	-.01	74
ITA	.41	.41	-.01	75
ITA	.41	.42	-.01	76
ITA	.44	.43	.01	77
ITA	.47	.44	.03	78
ITA	.49	.44	.04	79
ITA	.47	.45	.03	80
ITA	.44	.45	-.00	81
ITA	.42	.44	-.02	82
ITA	.42	.43	-.01	83
ITA	.43	.42	.00	84
ITA	.44	.41	.03	85
ITA	.46	.41	.06	86
JAM	.	.58	.	66
JAM	.	.62	.	67
JAM	.	.66	.	68
JAM	.81	.69	.12	69
JAM	.80	.73	.07	70
JAM	.78	.76	.02	71
JAM	.75	.79	-.05	72
JAM	.80	.82	-.02	73

JAM	.86	.85	.01	74
JAM	.86	.87	-.01	75
JAM	.76	.89	-.13	76
JAM	.69	.90	-.21	77
JAM	.74	.90	-.17	78
JAM	.90	.90	.01	79
JAM	1.04	.89	.15	80
JAM	1.08	.87	.20	81
JAM	1.00	.86	.14	82
JAM	.96	.84	.12	83
JAM	1.03	.82	.22	84
JAM	1.15	.78	.37	85
JAM	1.26	.76	.50	86
JOR	.	.	.	66
JOR	.	.	.	67
JOR	.	.	.	68
JOR	.	.	.	69
JOR	.	.	.	70
JOR	.49	.63	-.14	71
JOR	.55	.65	-.10	72
JOR	.64	.67	-.03	73
JOR	.80	.69	.11	74
JOR	.93	.71	.21	75
JOR	1.04	.73	.31	76
JOR	1.08	.75	.33	77
JOR	1.16	.76	.40	78
JOR	1.16	.77	.39	79
JOR	1.21	.78	.44	80
JOR	1.18	.77	.41	81
JOR	1.16	.76	.40	82
JOR	1.11	.74	.37	83
JOR	1.08	.72	.36	84
JOR	1.02	.69	.33	85
JOR	1.00	.67	.33	86
JPN	.	.22	.	66
JPN	.	.24	.	67
JPN	.	.26	.	68
JPN	.21	.27	-.07	69
JPN	.21	.29	-.08	70
JPN	.21	.30	-.09	71
JPN	.22	.32	-.10	72
JPN	.25	.33	-.08	73
JPN	.27	.35	-.08	74
JPN	.28	.36	-.08	75
JPN	.26	.36	-.10	76
JPN	.26	.37	-.11	77
JPN	.25	.38	-.13	78
JPN	.25	.39	-.14	79
JPN	.26	.39	-.13	80

JPN	.26	.38	-.12	81	KOR	.	.27	.	67
JPN	.26	.38	-.12	82	KOR	.	.29	.	68
JPN	.26	.37	-.11	83	KOR	.41	.31	.10	69
JPN	.26	.37	-.10	84	KOR	.41	.33	.08	70
JPN	.26	.36	-.10	85	KOR	.50	.34	.16	71
JPN	.24	.35	-.11	86	KOR	.54	.36	.18	72
KEN	.	.30	.	66	KOR	.62	.38	.24	73
KEN	.	.32	.	67	KOR	.61	.40	.21	74
KEN	.	.34	.	68	KOR	.66	.41	.26	75
KEN	.65	.35	.30	69	KOR	.71	.42	.29	76
KEN	.62	.37	.25	70	KOR	.75	.43	.32	77
KEN	.59	.38	.20	71	KOR	.76	.44	.32	78
KEN	.58	.40	.18	72	KOR	.76	.45	.32	79
KEN	.63	.41	.22	73	KOR	.76	.45	.31	80
KEN	.68	.42	.26	74	KOR	.76	.44	.32	81
KEN	.69	.43	.26	75	KOR	.75	.44	.31	82
KEN	.68	.43	.25	76	KOR	.74	.43	.31	83
KEN	.71	.44	.27	77	KOR	.73	.42	.30	84
KEN	.70	.44	.26	78	KOR	.74	.41	.33	85
KEN	.69	.45	.24	79	KOR	.78	.40	.38	86
KEN	.63	.44	.19	80	KWT	.	.88	.	66
KEN	.59	.44	.15	81	KWT	.	.91	.	67
KEN	.51	.42	.09	82	KWT	.	.95	.	68
KEN	.51	.41	.10	83	KWT	.97	.98	-.01	69
KEN	.52	.40	.12	84	KWT	1.06	1.01	.05	70
KEN	.55	.38	.17	85	KWT	1.13	1.04	.09	71
KEN	.54	.37	.17	86	KWT	1.31	1.07	.25	72
KNA	.	.	.	66	KWT	1.73	1.10	.62	73
KNA	.	.	.	67	KWT	1.74	1.15	.59	74
KNA	.	.	.	68	KWT	1.55	1.20	.35	75
KNA	.	1.68	.	69	KWT	1.08	1.22	-.14	76
KNA	.	1.77	.	70	KWT	.95	1.23	-.28	77
KNA	.	1.86	.	71	KWT	1.01	1.23	-.22	78
KNA	.	1.95	.	72	KWT	1.10	1.23	-.13	79
KNA	.	2.04	.	73	KWT	1.10	1.22	-.12	80
KNA	.	2.12	.	74	KWT	.99	1.19	-.20	81
KNA	.	2.18	.	75	KWT	.82	1.16	-.34	82
KNA	.	2.22	.	76	KWT	.79	1.13	-.34	83
KNA	.	2.25	.	77	KWT	.80	1.09	-.29	84
KNA	.	2.28	.	78	KWT	.74	1.05	-.31	85
KNA	1.66	2.31	-.65	79	KWT	.70	1.01	-.31	86
KNA	1.60	2.32	-.72	80	LBR	.	.54	.	66
KNA	1.55	2.32	-.77	81	LBR	.	.58	.	67
KNA	1.48	2.30	-.81	82	LBR	.	.61	.	68
KNA	1.46	2.26	-.80	83	LBR	1.04	.64	.40	69
KNA	1.52	2.22	-.71	84	LBR	1.03	.67	.36	70
KNA	1.55	2.18	-.62	85	LBR	1.04	.69	.35	71
KNA	1.61	2.12	-.51	86	LBR	1.14	.71	.43	72
KOR	.	.26	.	66	LBR	1.30	.73	.56	73

LBR	1.32	.75	.57	74
LBR	1.25	.77	.48	75
LBR	1.12	.78	.34	76
LBR	1.10	.79	.31	77
LBR	1.06	.80	.26	78
LBR	1.05	.80	.25	79
LBR	.99	.79	.20	80
LBR	.96	.77	.18	81
LBR	.91	.75	.16	82
LBR	.92	.73	.18	83
LBR	.87	.71	.16	84
LBR	.81	.69	.12	85
LBR	.75	.66	.09	86
LBY	.	.52	.	66
LBY	.	.55	.	67
LBY	.	.59	.	68
LBY	.95	.63	.32	69
LBY	1.00	.65	.35	70
LBY	1.01	.67	.34	71
LBY	1.08	.70	.39	72
LBY	1.30	.72	.58	73
LBY	1.32	.75	.57	74
LBY	1.21	.78	.42	75
LBY	.95	.80	.15	76
LBY	.88	.81	.07	77
LBY	.96	.81	.15	78
LBY	1.05	.81	.23	79
LBY	1.11	.81	.31	80
LBY	1.05	.79	.25	81
LBY	.92	.77	.15	82
LBY	.84	.75	.09	83
LBY	.78	.72	.06	84
LBY	.69	.69	-.00	85
LBY	.61	.66	-.05	86
LCA	.	1.14	.	66
LCA	.	1.21	.	67
LCA	.	1.28	.	68
LCA	.	1.35	.	69
LCA	.	1.42	.	70
LCA	.	1.49	.	71
LCA	.	1.55	.	72
LCA	.	1.60	.	73
LCA	.	1.64	.	74
LCA	1.37	1.68	-.30	75
LCA	1.43	1.71	-.28	76
LCA	1.55	1.74	-.19	77
LCA	1.70	1.77	-.06	78
LCA	1.92	1.78	.14	79
LCA	1.93	1.78	.15	80
LCA	1.87	1.77	.10	81
LCA	1.70	1.75	-.05	82
LCA	1.64	1.72	-.08	83
LCA	1.62	1.69	-.07	84
LCA	1.63	1.65	-.02	85
LCA	1.60	1.61	-.01	86
LKA	.	.33	.	66
LKA	.	.35	.	67
LKA	.	.36	.	68
LKA	.38	.38	-.01	69
LKA	.37	.40	-.03	70
LKA	.37	.41	-.04	71
LKA	.37	.43	-.05	72
LKA	.42	.44	-.01	73
LKA	.46	.45	.01	74
LKA	.47	.46	.01	75
LKA	.48	.47	.01	76
LKA	.53	.47	.06	77
LKA	.66	.48	.19	78
LKA	.79	.48	.31	79
LKA	.82	.48	.35	80
LKA	.80	.47	.32	81
LKA	.72	.47	.25	82
LKA	.70	.46	.23	83
LKA	.67	.45	.22	84
LKA	.64	.44	.20	85
LKA	.62	.43	.19	86
LSO	.	.53	.	66
LSO	.	.57	.	67
LSO	.	.60	.	68
LSO	.46	.63	-.17	69
LSO	.48	.67	-.19	70
LSO	.54	.70	-.16	71
LSO	.61	.73	-.11	72
LSO	.68	.76	-.09	73
LSO	.70	.79	-.10	74
LSO	.72	.82	-.10	75
LSO	.73	.83	-.10	76
LSO	.75	.85	-.10	77
LSO	.79	.86	-.06	78
LSO	.88	.86	.02	79
LSO	.92	.86	.06	80
LSO	.86	.86	.00	81
LSO	.80	.84	-.05	82
LSO	.74	.82	-.08	83
LSO	.71	.80	-.09	84
LSO	.70	.77	-.07	85
LSO	.70	.74	-.04	86
LUX	.	.	.	66

LUX	.	.	.	67	MDG	.46	.48	-.02	74
LUX	.	.	.	68	MDG	.45	.49	-.04	75
LUX	.	.	.	69	MDG	.44	.49	-.05	76
LUX	.	.	.	70	MDG	.44	.50	-.06	77
LUX	.	.	.	71	MDG	.49	.50	-.01	78
LUX	.	.	.	72	MDG	.52	.50	.02	79
LUX	.	.	.	73	MDG	.49	.50	-.01	80
LUX	.	.	.	74	MDG	.42	.49	-.07	81
LUX	.	.	.	75	MDG	.35	.48	-.13	82
LUX	.	.	.	76	MDG	.33	.47	-.14	83
LUX	.	.	.	77	MDG	.33	.45	-.12	84
LUX	.	.	.	78	MDG	.35	.44	-.08	85
LUX	.	.	.	79	MDG	.38	.42	-.04	86
LUX	.	.	.	80	MEX	.	.23	.	66
LUX	.	.	.	81	MEX	.	.25	.	67
LUX	.	.	.	82	MEX	.	.26	.	68
LUX	.	.	.	83	MEX	.16	.28	-.11	69
LUX	.	.	.	84	MEX	.16	.29	-.13	70
LUX	.	.	.	85	MEX	.16	.30	-.14	71
LUX	.	.	.	86	MEX	.17	.31	-.15	72
MAR	.	.30	.	66	MEX	.18	.32	-.14	73
MAR	.	.32	.	67	MEX	.19	.34	-.15	74
MAR	.	.34	.	68	MEX	.18	.34	-.17	75
MAR	.38	.35	.03	69	MEX	.16	.35	-.19	76
MAR	.37	.37	.00	70	MEX	.17	.35	-.18	77
MAR	.38	.38	-.01	71	MEX	.21	.36	-.15	78
MAR	.41	.40	.01	72	MEX	.25	.36	-.10	79
MAR	.49	.41	.08	73	MEX	.28	.36	-.08	80
MAR	.55	.43	.12	74	MEX	.27	.36	-.09	81
MAR	.57	.44	.12	75	MEX	.25	.35	-.11	82
MAR	.54	.45	.09	76	MEX	.25	.34	-.10	83
MAR	.52	.46	.06	77	MEX	.26	.33	-.07	84
MAR	.52	.46	.06	78	MEX	.27	.32	-.05	85
MAR	.50	.46	.04	79	MEX	.27	.31	-.04	86
MAR	.50	.46	.04	80	MLI	.	.	.	66
MAR	.49	.46	.04	81	MLI	.	.	.	67
MAR	.49	.44	.04	82	MLI	.	.36	.	68
MAR	.51	.43	.08	83	MLI	.31	.38	-.07	69
MAR	.55	.42	.13	84	MLI	.34	.40	-.06	70
MAR	.60	.40	.20	85	MLI	.36	.42	-.06	71
MAR	.63	.39	.24	86	MLI	.43	.43	-.01	72
MDG	.	.33	.	66	MLI	.50	.45	.05	73
MDG	.	.36	.	67	MLI	.52	.46	.06	74
MDG	.	.38	.	68	MLI	.47	.47	-.01	75
MDG	.46	.39	.06	69	MLI	.39	.49	-.10	76
MDG	.46	.41	.05	70	MLI	.38	.50	-.11	77
MDG	.46	.43	.04	71	MLI	.42	.50	-.09	78
MDG	.46	.44	.01	72	MLI	.47	.51	-.04	79
MDG	.45	.46	-.01	73	MLI	.45	.51	-.06	80

MLI	.41	.50	-.08	81
MLI	.41	.49	-.07	82
MLI	.48	.47	.01	83
MLI	.59	.45	.14	84
MLI	.65	.44	.21	85
MLI	.66	.43	.23	86
MLT	.	.96	.	66
MLT	.	1.03	.	67
MLT	.	1.10	.	68
MLT	1.19	1.16	.03	69
MLT	1.19	1.22	-.03	70
MLT	1.22	1.28	-.06	71
MLT	1.34	1.34	-.00	72
MLT	1.54	1.40	.14	73
MLT	1.64	1.46	.18	74
MLT	1.65	1.50	.15	75
MLT	1.62	1.54	.08	76
MLT	1.66	1.57	.09	77
MLT	1.75	1.59	.16	78
MLT	1.81	1.61	.20	79
MLT	1.73	1.61	.12	80
MLT	1.53	1.61	-.08	81
MLT	1.32	1.59	-.27	82
MLT	1.25	1.56	-.31	83
MLT	1.29	1.53	-.24	84
MLT	1.40	1.49	-.09	85
MLT	1.57	1.46	.12	86
MOZ	.	.	.	66
MOZ	.	.	.	67
MOZ	.	.	.	68
MOZ	.	.	.	69
MOZ	.	.	.	70
MOZ	.	.	.	71
MOZ	.	.	.	72
MOZ	.	.	.	73
MOZ	.	.	.	74
MOZ	.	.	.	75
MOZ	.	.	.	76
MOZ	.	.	.	77
MOZ	.	.	.	78
MOZ	.	.	.	79
MOZ	.	.	.	80
MOZ	.51	.43	.07	81
MOZ	.47	.42	.05	82
MOZ	.42	.41	.01	83
MOZ	.34	.40	-.06	84
MOZ	.27	.39	-.12	85
MOZ	.28	.38	-.10	86
MRT	.	.49	.	66
MRT	.	.52	.	67
MRT	.	.55	.	68
MRT	.92	.58	.34	69
MRT	.97	.60	.37	70
MRT	1.00	.62	.38	71
MRT	1.06	.65	.42	72
MRT	1.12	.67	.45	73
MRT	1.14	.70	.44	74
MRT	1.15	.72	.43	75
MRT	1.10	.73	.37	76
MRT	1.03	.74	.30	77
MRT	.98	.74	.24	78
MRT	.97	.74	.23	79
MRT	1.03	.74	.29	80
MRT	1.10	.73	.37	81
MRT	1.15	.72	.43	82
MRT	1.16	.70	.46	83
MRT	1.19	.68	.51	84
MRT	1.22	.66	.57	85
MRT	1.26	.63	.63	86
MUS	.	.71	.	66
MUS	.	.74	.	67
MUS	.	.78	.	68
MUS	.81	.82	-.01	69
MUS	.80	.86	-.06	70
MUS	.85	.90	-.05	71
MUS	.91	.94	-.02	72
MUS	1.11	.99	.12	73
MUS	1.18	1.03	.15	74
MUS	1.16	1.07	.09	75
MUS	1.05	1.09	-.04	76
MUS	1.01	1.11	-.10	77
MUS	1.03	1.12	-.09	78
MUS	1.05	1.13	-.08	79
MUS	1.02	1.12	-.11	80
MUS	.96	1.11	-.15	81
MUS	.89	1.09	-.19	82
MUS	.90	1.06	-.16	83
MUS	.97	1.04	-.07	84
MUS	1.11	1.01	.10	85
MUS	1.30	.99	.31	86
MWI	.	.37	.	66
MWI	.	.39	.	67
MWI	.	.41	.	68
MWI	.68	.43	.25	69
MWI	.63	.45	.18	70
MWI	.64	.47	.17	71
MWI	.63	.49	.14	72
MWI	.65	.50	.14	73

MWI	.67	.52	.15	74	NER	.57	.54	.03	81
MWI	.68	.53	.15	75	NER	.50	.53	-.03	82
MWI	.70	.54	.17	76	NER	.48	.51	-.03	83
MWI	.68	.54	.13	77	NER	.46	.49	-.03	84
MWI	.69	.55	.14	78	NER	.47	.47	.00	85
MWI	.69	.55	.14	79	NER	.40	.45	-.05	86
MWI	.69	.55	.14	80	NGA	.	.20	.	66
MWI	.62	.54	.09	81	NGA	.	.21	.	67
MWI	.55	.53	.02	82	NGA	.	.22	.	68
MWI	.52	.52	.00	83	NGA	.27	.23	.03	69
MWI	.51	.50	.01	84	NGA	.28	.25	.03	70
MWI	.51	.48	.02	85	NGA	.28	.26	.01	71
MWI	.49	.47	.03	86	NGA	.30	.27	.03	72
MYS	.	.34	.	66	NGA	.39	.29	.10	73
MYS	.	.36	.	67	NGA	.47	.30	.17	74
MYS	.	.38	.	68	NGA	.51	.31	.20	75
MYS	.78	.40	.39	69	NGA	.49	.32	.17	76
MYS	.76	.42	.34	70	NGA	.46	.32	.14	77
MYS	.74	.43	.31	71	NGA	.46	.33	.14	78
MYS	.79	.45	.34	72	NGA	.49	.33	.16	79
MYS	.91	.47	.44	73	NGA	.49	.33	.16	80
MYS	.96	.49	.47	74	NGA	.43	.33	.11	81
MYS	.95	.50	.45	75	NGA	.34	.32	.02	82
MYS	.90	.51	.39	76	NGA	.28	.31	-.03	83
MYS	.95	.52	.43	77	NGA	.26	.30	-.04	84
MYS	1.04	.53	.51	78	NGA	.23	.29	-.06	85
MYS	1.12	.53	.59	79	NGA	.26	.27	-.02	86
MYS	1.13	.53	.60	80	NIC	.	.51	.	66
MYS	1.11	.53	.57	81	NIC	.	.54	.	67
MYS	1.10	.52	.58	82	NIC	.	.57	.	68
MYS	1.14	.51	.63	83	NIC	.57	.59	-.03	69
MYS	1.13	.50	.64	84	NIC	.56	.62	-.06	70
MYS	1.08	.48	.60	85	NIC	.58	.64	-.06	71
MYS	1.09	.47	.63	86	NIC	.64	.66	-.02	72
NER	.	.38	.	66	NIC	.73	.68	.05	73
NER	.	.40	.	67	NIC	.74	.71	.03	74
NER	.	.42	.	68	NIC	.73	.73	.00	75
NER	.22	.44	-.22	69	NIC	.72	.74	-.02	76
NER	.22	.45	-.24	70	NIC	.74	.74	-.00	77
NER	.24	.47	-.23	71	NIC	.76	.74	.02	78
NER	.31	.48	-.17	72	NIC	.74	.73	.00	79
NER	.36	.50	-.14	73	NIC	.74	.73	.01	80
NER	.39	.51	-.12	74	NIC	.67	.72	-.05	81
NER	.40	.52	-.12	75	NIC	.61	.71	-.10	82
NER	.44	.53	-.09	76	NIC	.54	.69	-.15	83
NER	.51	.54	-.03	77	NIC	.53	.67	-.14	84
NER	.58	.55	.03	78	NIC	.51	.65	-.14	85
NER	.64	.55	.08	79	NIC	.49	.63	-.14	86
NER	.62	.55	.07	80	NLD	.	.40	.	66

NLD	.	.43	.	67
NLD	.	.46	.	68
NLD	.86	.48	.38	69
NLD	.87	.51	.36	70
NLD	.88	.53	.35	71
NLD	.93	.56	.37	72
NLD	.99	.59	.40	73
NLD	1.01	.61	.40	74
NLD	.99	.63	.36	75
NLD	.95	.65	.30	76
NLD	.95	.66	.29	77
NLD	.97	.67	.30	78
NLD	.99	.68	.31	79
NLD	.97	.68	.29	80
NLD	.95	.67	.28	81
NLD	.94	.66	.28	82
NLD	.98	.64	.34	83
NLD	1.03	.63	.41	84
NLD	1.11	.61	.50	85
NLD	1.17	.60	.58	86
NOR	.	.49	.	66
NOR	.	.52	.	67
NOR	.	.55	.	68
NOR	.88	.59	.30	69
NOR	.88	.62	.26	70
NOR	.87	.65	.22	71
NOR	.90	.68	.22	72
NOR	.96	.71	.25	73
NOR	1.00	.74	.26	74
NOR	.98	.77	.21	75
NOR	.94	.79	.15	76
NOR	.91	.81	.10	77
NOR	.90	.82	.08	78
NOR	.91	.83	.08	79
NOR	.91	.83	.07	80
NOR	.88	.83	.05	81
NOR	.82	.82	-.00	82
NOR	.80	.80	-.01	83
NOR	.81	.79	.02	84
NOR	.83	.77	.06	85
NOR	.84	.75	.09	86
NPL	.	.30	.	66
NPL	.	.32	.	67
NPL	.	.34	.	68
NPL	.18	.36	-.18	69
NPL	.19	.37	-.18	70
NPL	.20	.38	-.19	71
NPL	.22	.40	-.18	72
NPL	.22	.41	-.18	73

NPL	.24	.42	-.18	74
NPL	.24	.43	-.19	75
NPL	.24	.44	-.20	76
NPL	.23	.44	-.21	77
NPL	.25	.44	-.19	78
NPL	.27	.44	-.17	79
NPL	.29	.44	-.15	80
NPL	.30	.44	-.14	81
NPL	.30	.43	-.13	82
NPL	.29	.42	-.13	83
NPL	.29	.41	-.12	84
NPL	.29	.40	-.11	85
NPL	.31	.38	-.07	86
NZL	.	.53	.	66
NZL	.	.56	.	67
NZL	.	.60	.	68
NZL	.48	.63	-.15	69
NZL	.49	.66	-.17	70
NZL	.51	.69	-.18	71
NZL	.56	.72	-.16	72
NZL	.59	.75	-.16	73
NZL	.57	.77	-.20	74
NZL	.54	.79	-.26	75
NZL	.52	.81	-.29	76
NZL	.57	.82	-.25	77
NZL	.63	.83	-.19	78
NZL	.66	.83	-.17	79
NZL	.64	.84	-.20	80
NZL	.59	.84	-.25	81
NZL	.55	.83	-.28	82
NZL	.55	.82	-.27	83
NZL	.56	.80	-.24	84
NZL	.59	.78	-.19	85
NZL	.64	.75	-.11	86
OMN	.	.59	.	66
OMN	.	.64	.	67
OMN	.	.69	.	68
OMN	.	.74	.	69
OMN	.	.77	.	70
OMN	.	.81	.	71
OMN	.	.83	.	72
OMN	.	.86	.	73
OMN	.	.92	.	74
OMN	.	.99	.	75
OMN	.	1.03	.	76
OMN	1.19	1.05	.14	77
OMN	1.24	1.05	.20	78
OMN	1.48	1.04	.44	79
OMN	1.48	1.05	.43	80

OMN	1.36	1.05	.31	81
OMN	1.01	1.05	-.04	82
OMN	.91	1.02	-.11	83
OMN	.91	.99	-.08	84
OMN	.84	.96	-.12	85
OMN	.81	.92	-.10	86
PAK	.	.21	.	66
PAK	.	.22	.	67
PAK	.	.23	.	68
PAK	.22	.24	-.03	69
PAK	.21	.26	-.05	70
PAK	.20	.27	-.07	71
PAK	.20	.27	-.07	72
PAK	.25	.28	-.03	73
PAK	.32	.28	.04	74
PAK	.35	.29	.06	75
PAK	.33	.29	.04	76
PAK	.30	.30	.01	77
PAK	.31	.30	.01	78
PAK	.33	.30	.03	79
PAK	.35	.30	.05	80
PAK	.34	.30	.05	81
PAK	.33	.29	.04	82
PAK	.32	.29	.03	83
PAK	.32	.28	.04	84
PAK	.32	.27	.05	85
PAK	.32	.26	.06	86
PAN	.	.57	.	66
PAN	.	.61	.	67
PAN	.	.64	.	68
PAN	.77	.68	.09	69
PAN	.76	.71	.06	70
PAN	.77	.74	.03	71
PAN	.77	.76	.01	72
PAN	.87	.79	.08	73
PAN	.95	.81	.14	74
PAN	.99	.83	.17	75
PAN	.95	.84	.11	76
PAN	.89	.85	.04	77
PAN	.89	.86	.04	78
PAN	1.30	.86	.43	79
PAN	1.70	.86	.84	80
PAN	1.99	.86	1.13	81
PAN	1.73	.85	.89	82
PAN	1.50	.83	.67	83
PAN	1.38	.81	.57	84
PAN	1.41	.79	.62	85
PAN	1.43	.77	.66	86
PER	.	.32	.	66
PER	.	.34	.	67
PER	.	.36	.	68
PER	.32	.37	-.05	69
PER	.29	.39	-.10	70
PER	.28	.41	-.12	71
PER	.27	.42	-.15	72
PER	.29	.44	-.14	73
PER	.31	.45	-.14	74
PER	.31	.46	-.16	75
PER	.30	.47	-.17	76
PER	.30	.47	-.17	77
PER	.36	.47	-.10	78
PER	.43	.46	-.04	79
PER	.46	.46	-.01	80
PER	.42	.46	-.04	81
PER	.37	.46	-.09	82
PER	.34	.44	-.10	83
PER	.34	.43	-.09	84
PER	.32	.42	-.10	85
PER	.32	.41	-.09	86
PHL	.	.25	.	66
PHL	.	.26	.	67
PHL	.	.28	.	68
PHL	.31	.29	.02	69
PHL	.32	.30	.02	70
PHL	.33	.31	.01	71
PHL	.37	.32	.04	72
PHL	.45	.34	.11	73
PHL	.49	.35	.14	74
PHL	.48	.36	.12	75
PHL	.43	.36	.07	76
PHL	.42	.37	.05	77
PHL	.44	.37	.07	78
PHL	.46	.38	.09	79
PHL	.46	.38	.09	80
PHL	.44	.37	.07	81
PHL	.41	.37	.05	82
PHL	.40	.36	.05	83
PHL	.41	.34	.06	84
PHL	.41	.33	.08	85
PHL	.43	.32	.11	86
PNG	.	.44	.	66
PNG	.	.47	.	67
PNG	.	.50	.	68
PNG	.74	.52	.22	69
PNG	.78	.55	.23	70
PNG	.82	.58	.25	71
PNG	.94	.60	.34	72
PNG	1.02	.63	.39	73

PNG	.99	.65	.34	74	PRT	.69	.61	.07	81
PNG	.91	.66	.24	75	PRT	.68	.60	.07	82
PNG	.87	.67	.20	76	PRT	.70	.59	.11	83
PNG	.88	.68	.20	77	PRT	.75	.57	.18	84
PNG	.91	.69	.22	78	PRT	.81	.56	.25	85
PNG	.94	.69	.24	79	PRT	.87	.55	.32	86
PNG	.96	.69	.27	80	PRY	.	.45	.	66
PNG	.95	.68	.27	81	PRY	.	.48	.	67
PNG	.91	.67	.25	82	PRY	.	.51	.	68
PNG	.92	.65	.27	83	PRY	.31	.53	-.23	69
PNG	.93	.63	.30	84	PRY	.30	.56	-.25	70
PNG	.95	.61	.33	85	PRY	.30	.58	-.28	71
PNG	.99	.60	.40	86	PRY	.31	.60	-.29	72
POL	.	.	.	66	PRY	.34	.63	-.29	73
POL	.	.	.	67	PRY	.36	.65	-.29	74
POL	.	.	.	68	PRY	.35	.67	-.32	75
POL	.	.	.	69	PRY	.35	.68	-.33	76
POL	.	.	.	70	PRY	.37	.70	-.33	77
POL	.	.	.	71	PRY	.40	.71	-.31	78
POL	.	.	.	72	PRY	.42	.71	-.29	79
POL	.	.	.	73	PRY	.41	.72	-.31	80
POL	.	.	.	74	PRY	.39	.72	-.33	81
POL	.	.	.	75	PRY	.31	.71	-.40	82
POL	.	.	.	76	PRY	.28	.69	-.41	83
POL	.	.	.	77	PRY	.28	.66	-.38	84
POL	.	.	.	78	PRY	.37	.63	-.26	85
POL	.	.	.	79	PRY	.47	.60	-.13	86
POL	.	.	.	80	RWA	.	.40	.	66
POL	.40	.43	-.03	81	RWA	.	.42	.	67
POL	.38	.42	-.05	82	RWA	.	.45	.	68
POL	.36	.42	-.06	83	RWA	.27	.47	-.20	69
POL	.32	.41	-.09	84	RWA	.27	.49	-.22	70
POL	.31	.40	-.09	85	RWA	.28	.51	-.23	71
POL	.32	.39	-.07	86	RWA	.32	.52	-.20	72
PRT	.	.37	.	66	RWA	.40	.54	-.14	73
PRT	.	.40	.	67	RWA	.46	.56	-.10	74
PRT	.	.42	.	68	RWA	.50	.57	-.08	75
PRT	.51	.45	.06	69	RWA	.47	.59	-.12	76
PRT	.54	.48	.06	70	RWA	.46	.60	-.14	77
PRT	.56	.50	.05	71	RWA	.46	.61	-.15	78
PRT	.60	.53	.07	72	RWA	.45	.62	-.17	79
PRT	.65	.55	.10	73	RWA	.41	.61	-.20	80
PRT	.63	.57	.06	74	RWA	.35	.61	-.25	81
PRT	.57	.59	-.02	75	RWA	.32	.60	-.27	82
PRT	.50	.60	-.10	76	RWA	.32	.58	-.26	83
PRT	.49	.61	-.11	77	RWA	.31	.57	-.26	84
PRT	.55	.61	-.07	78	RWA	.32	.55	-.24	85
PRT	.62	.62	.00	79	RWA	.31	.54	-.23	86
PRT	.67	.62	.06	80	SAU	.	.38	.	66

SAU	.	.40	.	67	SEN	.87	.56	.31	74
SAU	.	.42	.	68	SEN	.87	.58	.30	75
SAU	1.05	.44	.61	69	SEN	.85	.59	.27	76
SAU	1.02	.46	.56	70	SEN	.83	.59	.24	77
SAU	1.06	.48	.58	71	SEN	.83	.59	.24	78
SAU	1.28	.50	.77	72	SEN	.77	.60	.17	79
SAU	2.00	.53	1.46	73	SEN	.80	.59	.21	80
SAU	2.24	.56	1.67	74	SEN	.78	.58	.20	81
SAU	2.11	.60	1.52	75	SEN	.82	.57	.25	82
SAU	1.45	.62	.83	76	SEN	.81	.55	.26	83
SAU	1.20	.63	.57	77	SEN	.84	.53	.30	84
SAU	1.22	.64	.58	78	SEN	.85	.52	.34	85
SAU	1.36	.64	.72	79	SEN	.84	.51	.33	86
SAU	1.42	.64	.78	80	SGP	.	.64	.	66
SAU	1.27	.64	.63	81	SGP	.	.68	.	67
SAU	1.03	.63	.40	82	SGP	.	.72	.	68
SAU	.89	.61	.29	83	SGP	2.27	.77	1.50	69
SAU	.84	.58	.26	84	SGP	2.26	.81	1.45	70
SAU	.79	.55	.24	85	SGP	2.33	.85	1.48	71
SAU	.75	.53	.22	86	SGP	2.57	.89	1.68	72
SDN	.	.27	.	66	SGP	3.04	.93	2.11	73
SDN	.	.29	.	67	SGP	3.17	.97	2.19	74
SDN	.	.30	.	68	SGP	3.15	1.00	2.14	75
SDN	.36	.32	.04	69	SGP	2.99	1.02	1.97	76
SDN	.35	.33	.01	70	SGP	3.19	1.04	2.15	77
SDN	.34	.35	-.00	71	SGP	3.53	1.06	2.47	78
SDN	.36	.36	-.00	72	SGP	3.97	1.07	2.90	79
SDN	.37	.37	.00	73	SGP	4.25	1.07	3.18	80
SDN	.37	.38	-.01	74	SGP	4.23	1.07	3.16	81
SDN	.35	.39	-.04	75	SGP	3.87	1.07	2.81	82
SDN	.32	.41	-.09	76	SGP	3.48	1.06	2.42	83
SDN	.30	.41	-.12	77	SGP	3.15	1.04	2.11	84
SDN	.27	.42	-.14	78	SGP	2.95	1.02	1.94	85
SDN	.28	.42	-.14	79	SGP	3.03	.99	2.05	86
SDN	.28	.41	-.13	80	SLB	.	.	.	66
SDN	.31	.40	-.10	81	SLB	.	.	.	67
SDN	.32	.39	-.07	82	SLB	.	.	.	68
SDN	.35	.38	-.04	83	SLB	.	.	.	69
SDN	.36	.37	-.01	84	SLB	.	.	.	70
SDN	.35	.36	-.01	85	SLB	.	.	.	71
SDN	.30	.34	-.04	86	SLB	.	.	.	72
SEN	.	.40	.	66	SLB	.	1.20	.	73
SEN	.	.43	.	67	SLB	1.12	1.22	-.10	74
SEN	.	.45	.	68	SLB	1.08	1.24	-.16	75
SEN	.55	.47	.08	69	SLB	1.10	1.25	-.15	76
SEN	.56	.49	.08	70	SLB	1.12	1.27	-.15	77
SEN	.61	.51	.10	71	SLB	1.28	1.28	-.00	78
SEN	.68	.52	.15	72	SLB	1.54	1.29	.25	79
SEN	.81	.54	.27	73	SLB	1.63	1.29	.34	80

SLB	1.51	1.27	.23	81
SLB	1.27	1.25	.02	82
SLB	1.27	1.22	.04	83
SLB	1.34	1.19	.15	84
SLB	1.39	1.15	.25	85
SLB	1.35	1.10	.25	86
SLE	.	.45	.	66
SLE	.	.48	.	67
SLE	.	.50	.	68
SLE	.60	.53	.07	69
SLE	.58	.55	.03	70
SLE	.59	.57	.01	71
SLE	.61	.59	.02	72
SLE	.68	.61	.06	73
SLE	.66	.63	.03	74
SLE	.61	.64	-.04	75
SLE	.55	.65	-.11	76
SLE	.60	.66	-.06	77
SLE	.68	.66	.02	78
SLE	.74	.67	.07	79
SLE	.65	.67	-.03	80
SLE	.52	.67	-.15	81
SLE	.35	.66	-.30	82
SLE	.30	.64	-.35	83
SLE	.26	.63	-.37	84
SLE	.27	.61	-.34	85
SLE	.26	.58	-.32	86
SLV	.	.47	.	66
SLV	.	.50	.	67
SLV	.	.52	.	68
SLV	.49	.55	-.06	69
SLV	.49	.57	-.08	70
SLV	.52	.59	-.08	71
SLV	.57	.61	-.04	72
SLV	.65	.63	.02	73
SLV	.71	.65	.06	74
SLV	.76	.67	.10	75
SLV	.80	.68	.12	76
SLV	.79	.70	.09	77
SLV	.77	.71	.06	78
SLV	.72	.71	.01	79
SLV	.69	.70	-.01	80
SLV	.63	.69	-.07	81
SLV	.57	.68	-.11	82
SLV	.54	.67	-.13	83
SLV	.53	.66	-.12	84
SLV	.54	.64	-.11	85
SLV	.52	.62	-.10	86
SOM	.	.38	.	66
SOM	.	.40	.	67
SOM	.	.42	.	68
SOM	.32	.44	-.12	69
SOM	.32	.46	-.14	70
SOM	.33	.48	-.14	71
SOM	.38	.49	-.12	72
SOM	.48	.51	-.03	73
SOM	.52	.52	-.01	74
SOM	.51	.54	-.03	75
SOM	.43	.55	-.12	76
SOM	.40	.56	-.16	77
SOM	.42	.57	-.15	78
SOM	.56	.57	-.00	79
SOM	.67	.56	.11	80
SOM	.74	.55	.19	81
SOM	.65	.54	.11	82
SOM	.59	.53	.06	83
SOM	.48	.52	-.04	84
SOM	.43	.50	-.07	85
SOM	.37	.49	-.12	86
SUR	.	.75	.	66
SUR	.	.80	.	67
SUR	.	.84	.	68
SUR	1.31	.89	.42	69
SUR	1.35	.93	.42	70
SUR	1.37	.97	.40	71
SUR	1.38	1.01	.37	72
SUR	1.45	1.06	.40	73
SUR	1.44	1.11	.33	74
SUR	1.45	1.16	.29	75
SUR	1.34	1.19	.15	76
SUR	1.29	1.22	.07	77
SUR	1.26	1.24	.02	78
SUR	1.32	1.26	.07	79
SUR	1.32	1.27	.05	80
SUR	1.27	1.26	.01	81
SUR	1.12	1.24	-.12	82
SUR	1.02	1.21	-.19	83
SUR	.90	1.18	-.27	84
SUR	.82	1.14	-.32	85
SUR	.77	1.10	-.33	86
SWE	.	.43	.	66
SWE	.	.45	.	67
SWE	.	.48	.	68
SWE	.48	.51	-.03	69
SWE	.49	.54	-.05	70
SWE	.49	.56	-.07	71
SWE	.52	.59	-.07	72
SWE	.58	.62	-.03	73

SWE	.62	.64	-.03	74	SYC	1.52	2.28	-.76	81
SWE	.62	.66	-.04	75	SYC	1.37	2.25	-.88	82
SWE	.59	.68	-.09	76	SYC	1.37	2.21	-.85	83
SWE	.57	.69	-.12	77	SYC	1.43	2.17	-.74	84
SWE	.59	.70	-.11	78	SYC	1.54	2.13	-.59	85
SWE	.63	.71	-.08	79	SYC	1.58	2.08	-.50	86
SWE	.63	.71	-.08	80	SYR	.	.38	.	66
SWE	.60	.70	-.11	81	SYR	.	.41	.	67
SWE	.59	.69	-.10	82	SYR	.	.43	.	68
SWE	.63	.68	-.05	83	SYR	.33	.45	-.12	69
SWE	.67	.66	.02	84	SYR	.33	.48	-.15	70
SWE	.72	.64	.08	85	SYR	.33	.50	-.17	71
SWE	.76	.63	.12	86	SYR	.35	.51	-.16	72
SWZ	.	.73	.	66	SYR	.42	.54	-.11	73
SWZ	.	.78	.	67	SYR	.47	.56	-.08	74
SWZ	.	.82	.	68	SYR	.50	.57	-.07	75
SWZ	.	.87	.	69	SYR	.50	.58	-.08	76
SWZ	.	.92	.	70	SYR	.49	.59	-.10	77
SWZ	.	.96	.	71	SYR	.51	.59	-.09	78
SWZ	.	.99	.	72	SYR	.51	.60	-.09	79
SWZ	1.59	1.03	.56	73	SYR	.54	.60	-.06	80
SWZ	1.50	1.07	.43	74	SYR	.51	.59	-.08	81
SWZ	1.48	1.10	.39	75	SYR	.49	.58	-.09	82
SWZ	1.43	1.11	.32	76	SYR	.47	.56	-.10	83
SWZ	1.52	1.12	.40	77	SYR	.46	.55	-.09	84
SWZ	1.64	1.12	.52	78	SYR	.39	.53	-.14	85
SWZ	1.91	1.13	.78	79	SYR	.34	.51	-.18	86
SWZ	1.93	1.13	.80	80	TCD	.	.36	.	66
SWZ	1.81	1.12	.69	81	TCD	.	.38	.	67
SWZ	1.59	1.10	.49	82	TCD	.	.41	.	68
SWZ	1.43	1.07	.36	83	TCD	.45	.43	.02	69
SWZ	1.30	1.03	.27	84	TCD	.48	.45	.03	70
SWZ	1.25	.99	.26	85	TCD	.48	.46	.01	71
SWZ	1.39	.95	.44	86	TCD	.53	.48	.05	72
SYC	.	1.40	.	66	TCD	.55	.49	.05	73
SYC	.	1.48	.	67	TCD	.57	.51	.06	74
SYC	.	1.56	.	68	TCD	.55	.52	.03	75
SYC	1.23	1.64	-.40	69	TCD	.55	.53	.02	76
SYC	1.31	1.71	-.40	70	TCD	.55	.54	.01	77
SYC	1.38	1.79	-.41	71	TCD	.47	.54	-.07	78
SYC	1.46	1.87	-.41	72	TCD	.35	.54	-.18	79
SYC	1.50	1.96	-.45	73	TCD	.27	.53	-.27	80
SYC	1.51	2.03	-.53	74	TCD	.24	.52	-.29	81
SYC	1.52	2.08	-.56	75	TCD	.32	.51	-.19	82
SYC	1.66	2.12	-.46	76	TCD	.45	.49	-.04	83
SYC	1.87	2.16	-.29	77	TCD	.57	.48	.09	84
SYC	2.01	2.21	-.21	78	TCD	.66	.47	.20	85
SYC	1.94	2.26	-.32	79	TCD	.70	.46	.25	86
SYC	1.71	2.28	-.57	80	TGO	.	.48	.	66

TGO	.	.51	.	67	TON	.	.	.	74
TGO	.	.54	.	68	TON	.	.	.	75
TGO	.55	.56	-.01	69	TON	.	.	.	76
TGO	.58	.59	-.01	70	TON	.	.	.	77
TGO	.58	.61	-.02	71	TON	.	.	.	78
TGO	.58	.63	-.05	72	TON	.	.	.	79
TGO	.63	.66	-.02	73	TON	.	.	.	80
TGO	.69	.68	.01	74	TON	.	.	.	81
TGO	.74	.70	.04	75	TON	.65	1.81	-1.17	82
TGO	.73	.71	.02	76	TON	.68	1.78	-1.10	83
TGO	.80	.72	.08	77	TON	.79	1.74	-.95	84
TGO	.92	.73	.19	78	TON	.90	1.69	-.79	85
TGO	1.04	.73	.31	79	TON	1.01	1.63	-.62	86
TGO	1.04	.73	.32	80	TTO	.	.71	.	66
TGO	1.04	.71	.33	81	TTO	.	.76	.	67
TGO	1.00	.69	.31	82	TTO	.	.80	.	68
TGO	1.03	.66	.36	83	TTO	.92	.84	.08	69
TGO	1.01	.64	.37	84	TTO	.99	.88	.11	70
TGO	1.05	.62	.44	85	TTO	.99	.92	.07	71
TGO	1.03	.60	.44	86	TTO	1.01	.96	.05	72
THA	.	.24	.	66	TTO	1.13	1.00	.13	73
THA	.	.26	.	67	TTO	1.15	1.05	.11	74
THA	.	.27	.	68	TTO	1.14	1.09	.05	75
THA	.33	.28	.04	69	TTO	.98	1.12	-.14	76
THA	.33	.30	.03	70	TTO	.91	1.15	-.24	77
THA	.35	.31	.04	71	TTO	.92	1.16	-.24	78
THA	.39	.32	.07	72	TTO	.97	1.18	-.21	79
THA	.45	.33	.12	73	TTO	.97	1.19	-.22	80
THA	.46	.34	.12	74	TTO	.90	1.19	-.29	81
THA	.46	.35	.10	75	TTO	.79	1.18	-.39	82
THA	.43	.36	.07	76	TTO	.74	1.16	-.42	83
THA	.44	.37	.08	77	TTO	.68	1.13	-.44	84
THA	.48	.37	.11	78	TTO	.62	1.09	-.47	85
THA	.52	.37	.15	79	TTO	.57	1.05	-.47	86
THA	.55	.37	.18	80	TUN	.	.39	.	66
THA	.53	.37	.16	81	TUN	.	.42	.	67
THA	.49	.36	.13	82	TUN	.	.44	.	68
THA	.47	.36	.12	83	TUN	.50	.47	.04	69
THA	.47	.35	.12	84	TUN	.50	.49	.01	70
THA	.48	.34	.14	85	TUN	.52	.51	.01	71
THA	.52	.33	.19	86	TUN	.57	.54	.03	72
TON	.	.	.	66	TUN	.66	.56	.10	73
TON	.	.	.	67	TUN	.71	.58	.13	74
TON	.	.	.	68	TUN	.71	.60	.11	75
TON	.	.	.	69	TUN	.69	.61	.07	76
TON	.	.	.	70	TUN	.71	.62	.08	77
TON	.	.	.	71	TUN	.79	.63	.16	78
TON	.	.	.	72	TUN	.85	.63	.22	79
TON	.	.	.	73	TUN	.88	.63	.25	80

TUN	.85	.63	.22	81	UGA	.	.35	.	67
TUN	.79	.61	.18	82	UGA	.	.37	.	68
TUN	.76	.60	.16	83	UGA	.30	.39	-.09	69
TUN	.73	.58	.15	84	UGA	.29	.41	-.11	70
TUN	.73	.56	.16	85	UGA	.28	.42	-.14	71
TUN	.73	.55	.18	86	UGA	.26	.44	-.18	72
TUR	.	.25	.	66	UGA	.25	.45	-.20	73
TUR	.	.27	.	67	UGA	.24	.46	-.22	74
TUR	.	.28	.	68	UGA	.23	.47	-.24	75
TUR	.13	.30	-.17	69	UGA	.25	.47	-.23	76
TUR	.14	.31	-.17	70	UGA	.25	.48	-.23	77
TUR	.16	.32	-.16	71	UGA	.26	.48	-.22	78
TUR	.19	.33	-.14	72	UGA	.22	.48	-.25	79
TUR	.22	.35	-.13	73	UGA	.22	.47	-.25	80
TUR	.23	.36	-.14	74	UGA	.22	.46	-.24	81
TUR	.22	.38	-.16	75	UGA	.26	.45	-.19	82
TUR	.20	.38	-.19	76	UGA	.29	.44	-.15	83
TUR	.17	.39	-.22	77	UGA	.28	.42	-.15	84
TUR	.15	.40	-.24	78	UGA	.27	.41	-.14	85
TUR	.16	.40	-.24	79	UGA	.25	.40	-.15	86
TUR	.18	.40	-.21	80	URY	.	.47	.	66
TUR	.23	.39	-.15	81	URY	.	.50	.	67
TUR	.28	.38	-.10	82	URY	.	.54	.	68
TUR	.33	.37	-.03	83	URY	.28	.57	-.29	69
TUR	.38	.36	.02	84	URY	.25	.61	-.36	70
TUR	.41	.35	.06	85	URY	.25	.64	-.39	71
TUR	.43	.34	.09	86	URY	.25	.67	-.42	72
TZA	.	.28	.	66	URY	.29	.69	-.40	73
TZA	.	.29	.	67	URY	.31	.72	-.41	74
TZA	.	.31	.	68	URY	.33	.74	-.41	75
TZA	.49	.33	.17	69	URY	.36	.75	-.39	76
TZA	.53	.34	.19	70	URY	.38	.76	-.38	77
TZA	.53	.35	.18	71	URY	.42	.78	-.36	78
TZA	.55	.36	.19	72	URY	.43	.79	-.37	79
TZA	.56	.38	.19	73	URY	.42	.81	-.39	80
TZA	.55	.39	.16	74	URY	.37	.81	-.43	81
TZA	.51	.40	.12	75	URY	.34	.79	-.45	82
TZA	.47	.40	.07	76	URY	.36	.76	-.41	83
TZA	.46	.41	.05	77	URY	.40	.73	-.33	84
TZA	.45	.41	.04	78	URY	.44	.71	-.27	85
TZA	.42	.41	.01	79	URY	.46	.69	-.24	86
TZA	.38	.41	-.04	80	USA	.	.19	.	66
TZA	.33	.41	-.08	81	USA	.	.21	.	67
TZA	.27	.40	-.13	82	USA	.	.22	.	68
TZA	.23	.39	-.15	83	USA	.10	.23	-.13	69
TZA	.22	.38	-.16	84	USA	.10	.24	-.14	70
TZA	.24	.36	-.12	85	USA	.11	.25	-.15	71
TZA	.30	.35	-.05	86	USA	.11	.26	-.15	72
UGA	.	.33	.	66	USA	.13	.27	-.14	73

USA	.15	.28	-.13	74	VEN	.52	.54	-.02	81
USA	.16	.29	-.13	75	VEN	.44	.53	-.10	82
USA	.16	.29	-.13	76	VEN	.39	.52	-.13	83
USA	.16	.30	-.13	77	VEN	.37	.50	-.14	84
USA	.17	.30	-.13	78	VEN	.37	.48	-.12	85
USA	.19	.30	-.12	79	VEN	.36	.46	-.10	86
USA	.19	.30	-.11	80	VUT	.	.	.	66
USA	.19	.30	-.11	81	VUT	.	.	.	67
USA	.18	.30	-.12	82	VUT	.	.	.	68
USA	.17	.29	-.12	83	VUT	.	.	.	69
USA	.17	.29	-.12	84	VUT	.	.	.	70
USA	.17	.28	-.12	85	VUT	.	.	.	71
USA	.17	.28	-.11	86	VUT	.	.	.	72
VCT	.	1.17	.	66	VUT	.	.	.	73
VCT	.	1.24	.	67	VUT	.	.	.	74
VCT	.	1.31	.	68	VUT	.	.	.	75
VCT	.	1.39	.	69	VUT	.	.	.	76
VCT	.	1.45	.	70	VUT	.	.	.	77
VCT	.	1.52	.	71	VUT	.	.	.	78
VCT	.	1.58	.	72	VUT	.	.	.	79
VCT	.	1.64	.	73	VUT	.	.	.	80
VCT	.	1.69	.	74	VUT	.	.	.	81
VCT	.	1.73	.	75	VUT	.	.	.	82
VCT	.	1.76	.	76	VUT	.	.	.	83
VCT	1.58	1.79	-.20	77	VUT	1.13	1.51	-.38	84
VCT	1.66	1.80	-.14	78	VUT	1.13	1.46	-.33	85
VCT	1.72	1.82	-.10	79	VUT	1.13	1.41	-.28	86
VCT	1.77	1.82	-.06	80	WSM	.	.	.	66
VCT	1.71	1.82	-.11	81	WSM	.	.	.	67
VCT	1.61	1.81	-.20	82	WSM	.	.	.	68
VCT	1.58	1.79	-.22	83	WSM	.	.	.	69
VCT	1.60	1.77	-.17	84	WSM	.	.	.	70
VCT	1.62	1.73	-.11	85	WSM	.	.	.	71
VCT	1.61	1.69	-.07	86	WSM	.	.	.	72
VEN	.	.37	.	66	WSM	.	.	.	73
VEN	.	.39	.	67	WSM	.	.	.	74
VEN	.	.41	.	68	WSM	.	.	.	75
VEN	.38	.43	-.04	69	WSM	.	.	.	76
VEN	.40	.44	-.05	70	WSM	.	.	.	77
VEN	.40	.46	-.06	71	WSM	.	.	.	78
VEN	.43	.48	-.05	72	WSM	.	.	.	79
VEN	.53	.50	.03	73	WSM	.	.	.	80
VEN	.57	.51	.06	74	WSM	.	.	.	81
VEN	.59	.53	.06	75	WSM	.	.	.	82
VEN	.53	.54	-.01	76	WSM	.78	1.50	-.72	83
VEN	.52	.55	-.02	77	WSM	.81	1.46	-.66	84
VEN	.53	.55	-.01	78	WSM	.82	1.42	-.59	85
VEN	.55	.55	-.00	79	WSM	.92	1.37	-.44	86
VEN	.54	.55	-.00	80	YEM	.	.	.	66

YEM	.	.	.	67
YEM	.	.	.	68
YEM	.	.	.	69
YEM	.	.	.	70
YEM	.42	.44	-.03	71
YEM	.44	.46	-.02	72
YEM	.42	.48	-.06	73
YEM	.42	.50	-.08	74
YEM	.45	.51	-.06	75
YEM	.56	.53	.03	76
YEM	.64	.54	.10	77
YEM	.70	.55	.15	78
YEM	.74	.56	.19	79
YEM	.75	.56	.19	80
YEM	.68	.56	.12	81
YEM	.57	.56	.01	82
YEM	.45	.55	-.10	83
YEM	.37	.54	-.17	84
YEM	.29	.52	-.23	85
YEM	.30	.50	-.20	86
YMD	.	.	.	66
YMD	.	.	.	67
YMD	.	.	.	68
YMD	.	.	.	69
YMD	.	.	.	70
YMD	.	.	.	71
YMD	.	.	.	72
YMD	.	.	.	73
YMD	.	.	.	74
YMD	.	.	.	75
YMD	.89	.73	.16	76
YMD	.84	.74	.11	77
YMD	.82	.74	.08	78
YMD	.90	.74	.16	79
YMD	.97	.74	.23	80
YMD	1.06	.73	.32	81
YMD	1.02	.72	.30	82
YMD	1.00	.71	.29	83
YMD	.97	.69	.28	84
YMD	.89	.66	.23	85
YMD	.86	.64	.23	86
YUG	.	.31	.	66
YUG	.	.33	.	67
YUG	.	.34	.	68
YUG	.42	.36	.06	69
YUG	.42	.38	.04	70
YUG	.43	.40	.03	71
YUG	.46	.42	.04	72
YUG	.51	.44	.07	73
YUG	.52	.45	.07	74
YUG	.50	.47	.03	75
YUG	.45	.48	-.03	76
YUG	.43	.49	-.07	77
YUG	.42	.51	-.09	78
YUG	.42	.51	-.09	79
YUG	.44	.51	-.07	80
YUG	.45	.51	-.06	81
YUG	.45	.50	-.04	82
YUG	.48	.48	.00	83
YUG	.53	.47	.06	84
YUG	.57	.45	.12	85
YUG	.57	.44	.13	86
ZAF	.	.29	.	66
ZAF	.	.31	.	67
ZAF	.	.32	.	68
ZAF	.31	.35	-.03	69
ZAF	.38	.36	.01	70
ZAF	.41	.38	.03	71
ZAF	.49	.39	.11	72
ZAF	.57	.40	.17	73
ZAF	.60	.42	.19	74
ZAF	.59	.43	.16	75
ZAF	.57	.43	.14	76
ZAF	.59	.43	.16	77
ZAF	.65	.44	.21	78
ZAF	.72	.44	.28	79
ZAF	.72	.45	.27	80
ZAF	.66	.44	.22	81
ZAF	.55	.44	.12	82
ZAF	.50	.43	.08	83
ZAF	.48	.41	.07	84
ZAF	.50	.40	.10	85
ZAF	.56	.38	.17	86
ZAR	.	.26	.	66
ZAR	.	.28	.	67
ZAR	.	.29	.	68
ZAR	.48	.31	.17	69
ZAR	.43	.32	.11	70
ZAR	.43	.33	.09	71
ZAR	.42	.35	.07	72
ZAR	.48	.36	.12	73
ZAR	.47	.37	.10	74
ZAR	.47	.37	.09	75
ZAR	.43	.38	.05	76
ZAR	.43	.38	.05	77
ZAR	.39	.39	.00	78
ZAR	.37	.39	-.01	79
ZAR	.37	.38	-.02	80

ZAR	.38	.37	.01	81
ZAR	.39	.36	.03	82
ZAR	.49	.35	.14	83
ZAR	.62	.33	.29	84
ZAR	.75	.31	.43	85
ZAR	.80	.30	.50	86
ZMB	.	.40	.	66
ZMB	.	.43	.	67
ZMB	.	.45	.	68
ZMB	.86	.48	.38	69
ZMB	.82	.50	.32	70
ZMB	.83	.52	.31	71
ZMB	.89	.53	.36	72
ZMB	.99	.55	.44	73
ZMB	.98	.57	.41	74
ZMB	.89	.58	.32	75
ZMB	.79	.58	.21	76
ZMB	.76	.58	.18	77
ZMB	.82	.58	.25	78
ZMB	.91	.58	.33	79
ZMB	.88	.58	.30	80
ZMB	.76	.57	.19	81
ZMB	.62	.56	.06	82
ZMB	.60	.54	.07	83
ZMB	.60	.52	.09	84
ZMB	.68	.49	.19	85
ZMB	.81	.47	.35	86
ZWE	.	.39	.	66
ZWE	.	.41	.	67
ZWE	.	.43	.	68
ZWE	.54	.45	.09	69
ZWE	.53	.47	.06	70
ZWE	.53	.49	.04	71
ZWE	.55	.51	.04	72
ZWE	.58	.54	.05	73
ZWE	.61	.55	.06	74
ZWE	.58	.56	.02	75
ZWE	.55	.57	-.01	76
ZWE	.53	.57	-.04	77
ZWE	.55	.57	-.02	78
ZWE	.60	.57	.02	79
ZWE	.61	.57	.04	80
ZWE	.58	.57	.01	81
ZWE	.50	.56	-.06	82
ZWE	.46	.54	-.09	83
ZWE	.44	.52	-.08	84
ZWE	.49	.50	-.02	85
ZWE	.53	.48	.05	86