

### III. The Business Cost Data

As noted already, the business cost survey data that we analyse comes from four sources. The main one is the Economist Intelligence Unit, which administers a six-monthly survey in 54 major capitals and business centres. We use their survey results from mid-2002 and supplemented them with questions of our own. To provide comparable data on small economies, the Commonwealth Secretariat commissioned identical surveys to be conducted by regional organisations in various (mostly small) economies: Imani Capricorn in Africa, The Caribbean Community in the Caribbean and The Pacific Islands Forum in the Pacific. These surveys were completed between **x** and **y** 2002. A specimen survey is included as Annex 1 of this report.<sup>1</sup>

The full sample of countries was defined in table 2.1 above, along with information about their survey organisation, their size (population and aggregate GDP), average income (GDP per capita) and their region in 2000. The data were received by the authors as Word or Excel files of the questionnaire with answers included. These were transcribed, including the large number of side comments – solicited and not – into Excel spreadsheets which were then examined carefully for inconsistencies and eccentricities.

All survey data are subject to error and ours are no exception. Many of the survey questions seek averages or tendencies and so are subject to unconscious selectivity by respondents, while others, despite our best efforts, proved open to different interpretations. The surveys for large and small countries were implemented by different organisations and so may have been subject to different reporting biases: for example, in some cases requested ranges of data were collapsed into single averages, or vice versa. In addition, there are also simple random errors arising from, for example, the use of the wrong units or illegible replies, and the omission of various answers.

None of this should suggest that the survey results are useless: indeed, we believe the data are very useful and should be made available to other researchers. However, it is important to recognise their inherent limitations and noisiness. Two illustrations of the latter are available. First, two African countries – Kenya and Zimbabwe – were involved in both the EIU and the Imani samples. Comparing the two sets of answers is salutary. For the questions requesting cardinal answers the mean absolute proportionate difference between the two sources was 29.4% for Kenya (45 variables) and 56.8% for Zimbabwe (44 variables).<sup>2</sup> Even excluding the four largest deviations, to allow for random mis-reporting, the figures are 21.2% and 44.3% respectively. Among the categorical questions the corresponding statistic was 38.3% for Kenya and 10.0% for Zimbabwe (10 variables

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<sup>1</sup> In several cases we were unable to formulate questions sufficiently precisely to make them worth including – for example, on insurance (impossible to devise an equivalent product) and the risk to sovereign debt (small countries are not rated publicly). In both cases, we suspect that small countries are at a disadvantage.

<sup>2</sup> The statistic is the mean of  $|z_1 - z_2| / 0.5 * (|z_1| + |z_2|)$  where  $z_1$  and  $z_2$  are the two replies to the same question from the two sources.

each).<sup>3</sup> In the areas of dispute, we have used the EIU data, because we found them, on the whole, more plausible.

The second area in which we have two estimates of the same phenomenon concerns air freight costs from 5 Caribbean countries. The mean absolute difference of these data, which are explained and reported in Annex IV.1 below, is 69.8%!

In order to increase the value of the data we have corrected the most obvious of the errors – for example, re-scaling prices that have been reported in cents rather than dollars.

We were surprised by the large number of eccentricities in the simple macro-economic data collected in the survey. These were frequently at variance with international sources and sometimes at variance with common sense. Ms Anna Yartseva attempted to clean and clarify these series and we believe that they are now reasonably representative. We became conscious, however, that having 92 sources of macro data (one per country) was likely to generate inconsistencies and so, in view of their centrality to our exercise, we decided to collect additional data for 2000 on population and GDP from international sources.

In general, data for GDP (current million US dollars), GDP Power Purchasing Parity (current million US dollars) and Population were taken from the World Development Indicators 2002 database. Data refer to the year 2000. In those countries not covered by the WDI 2002 database (Anguilla, Cook Islands, Nauru, Niue, Taiwan and Tuvalu) or to fill missing values, data from the Survey were primarily used and complemented by the CIA Factbook 2002 (downloadable from the CIA website). ADB data were also used.

We complemented our Population statistics with the survey values for Anguilla, Cook Islands, Nauru, Niue, Taiwan and Tuvalu, which probably correspond to the year 2001. GDP (US\$) for Anguilla, Cook Islands, Niue and Taiwan were taken from the Survey (2000), while for Nauru and Tuvalu the source is ‘Business Information Guide to the Pacific’ published by the ADB, since there no data were given in the Survey. Finally, for Dominica, Marshall Islands and Micronesia data on GDP (PPP, US\$) refer to the Survey, while for Anguilla, Cook Islands, Kiribati, Marshall, Nauru, Niue, Palau, Seychelles, Taiwan, Tonga and Tuvalu, where data from the Survey were unavailable, values were taken from the CIA Factbook 2002 (different years). Per capita values for GDP (US\$) and GDP (PPP, US\$) were derived from the aggregate variables described above.

As a cross check, we compared these values with other sources. We ranked countries by GDP per capita and compared them with the World Bank’s income classification of countries. One doubt arises: Kiribati (US\$475, lower middle income) has lower GDP per capita than, for example, Indonesia (US\$728, low income). However, we have to bear in mind that the World Bank’s classification is based on the GNI Atlas Method.

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<sup>3</sup> If the categories chosen by the two surveys for categorical variables were  $i_1$  and  $i_2$ , we calculate the average of  $\left| (i_1 - i_2) \right| / (n - 1)$ , where  $n$  is the number of categories, so that  $(n-1)$  is the maximum difference.

Regarding GDP (PPP, US\$), the values from the Survey differ substantially from those of the CIA Factbook 2002, in three cases

US\$428m – US\$262m for Dominica

US\$62m – US\$115m Marshall Islands

US\$214m – US\$269m Micronesia,

but we tend to believe that data from the Survey is more accurate.

Furthermore, values for GDP per capita (PPP, US\$) were compared with values from the WDI 2002 and CIA Factbook 2002. Minor inconsistencies were found, and two major differences: Niue (US\$4251 – US\$3600) and Cook Islands (US\$6522 – US\$5000).

Finally, It is worth noting that, while GDP (PPP, US\$) is normally higher than GDP (US\$) for developing countries, this is not the case of some of our small countries (e.g. Anguilla, Marshall Islands, Micronesia and Seychelles). We take this as a substantive result, however.

In fact, these freshly collected data from 2000 are the only macro-economic data that we use in this report, although the original series are included in the dataset.

In all cases we record these changes and substitutions in notes appended to the Excel data spreadsheets. Some are also discussed briefly in the analytical sections of chapter IV. While wishing to respect the original sources, we believe that they increase the value of the dataset overall.

Even after the first round of cleansing, the data still contain a number of obvious surprises and outliers. Where possible we have verified these from secondary sources, but have not over-ridden the reported values. We have, however, omitted them from our analysis in chapter IV. In addition, during the analysis a further set of outliers was identified in the form of absolutely large residuals from our estimated relationships. Since our aim is to test the relationship between the various business costs and size, we have in general eliminated these from the regressions in order to preserve the normality of the residuals and hence the legitimacy of the statistical inference. In all cases, however, we report the direction in which the observation is outlying and checking that the nature of the estimated relationship is not greatly changed by the elimination. If it is, we exercise great caution in drawing conclusions.

Table 3.1 summarises some of the key data from the survey by calculating averages by region, by size class and by income group. Such summary statistics are not powerful tools for inference because, for example, regions and size are highly correlated as we saw in section II.4, but the table certainly suggests a prima face case to be answered. Small countries appear to have higher costs in many dimensions. The next chapter sets about answering this case in a systematic fashion.

## ANNEX TO CHAPTER 3

REGION	Employment													
	Construction worker (hourly \$)	Checkout operator in large supermarkets (hourly \$)	Kitchen Porter (hourly \$)	Bank Clerk/Teller (annual \$) "local banks"	Bank Clerk/Teller (annual \$) "foreign banks"	Garage Mechanic (annual \$)	Payroll Clerk (annual \$)	Qualified Teacher in State School (annual \$)	Branch Manager "local bank"	Branch Manager "foreign bank"	General Registered Nurse (annual \$)	Unemployment rate	Literacy rate	Manufacturing labour cost per hour
Pacific	1.47	1.45	1.33	4586	4891	5022	5305	5254	20175	23076	5557	17.90	88.68	1.80
Caribbean	2.83	1.90	1.81	7494	8082	7478	7145	9081	28293	35614	10420	11.33	90.39	2.75
SSA	0.72	0.68	0.63	3844	4316	2977	2676	3644	16329	22572	3820	32.64	70.03	2.06
LA	1.55	1.09	0.95	4536	4535	3810	6112	5798	17665	22157	4392	11.50	91.50	2.86
South Asia	0.31	0.32	0.28	1355	1980	873	1274	1255	4337	6809	989	6.40	54.50	0.47
Rest Asia	3.00	2.29	1.54	5594	6335	5353	6999	7633	18741	20982	6412	5.71	89.11	2.81
OECD	8.52	6.08	6.19	18549	19610	19203	19079	21169	43711	46554	18370	6.61	97.15	13.22
POPULATION														
<0.4 million	2.37	1.89	1.75	6320	6915	6946	6840	7850	27921	35136	8515	11.29	93.1	2.61
0.4–2.0 million	1.00	0.86	0.93	4124	4314	3604	3506	5164	13889	19232	5428	19.0	82.8	0.77
2–10 million	8.00	6.12	5.47	16325	15562	15570	15813	17419	40629	40391	16479	14.1	86.8	13.6
10–50 million	3.01	2.13	2.19	7668	7909	7177	7677	7836	21627	24322	6986	16.7	85.3	6.35
> 50 million	5.07	3.50	3.51	14694	16060	13555	14309	16763	39399	44660	13211	8.04	105.7	12.1
GDP														
<0.4 billion	2.08	1.61	1.53	5343	5684	5806	5970	6819	22659	25040	7060	14.9	93.4	2.44
0.4–2.0 billion	1.44	1.19	1.10	5464	6075	4398	4556	5952	23357	34578	5818	15.0	83.0	2.01
2–10 billion	1.15	0.98	0.94	4557	4797	4313	3647	4468	17912	21450	5734	28.9	70.1	0.57
10–100 billion	2.48	1.61	1.39	5724	6107	5529	6446	5493	19885	24439	4701	10.1	84.6	3.57
> 100 billion	6.87	5.08	5.00	15260	16245	15395	15889	18227	36290	38990	15697	7.77	93.0	11.0
INCOME														
Low income	0.53	0.51	0.46	3007	3412	1776	1784	2045	11535	16246	2299	29.5	63.9	0.54
Lower middle income	1.24	0.99	0.96	4361	5221	4810	4960	5468	19701	23774	5212	13.9	89.0	1.86
Upper middle income	2.31	1.82	1.66	6564	6662	6440	7017	7445	23083	28270	7739	10.6	91.5	2.70
High income Non OECD	7.95	5.52	3.58	11957	12050	11319	15078	16986	34065	36683	14168	4.30	89.7	5.95
High income OECD	10.05	7.16	7.28	21271	22251	21835	21692	24786	49536	51782	21454	6.21	97.9	15.9

REGION	Electricity		Water		Telephone					Fuel		
	Costs of Electricity (standard commercial line)	Connection fee (standard commercial line)	Costs of Water (standard commercial rate)	Connection fee (standard commercial line)	Installation fee (stand. comm. line)	Line rental fee (stand. comm. line)	Rate per minute local calls (peak hour)	Rate per minute of international calls to London during peak hour (\$)	Rate per minute of international calls to Tokyo during peak hour (\$)	Rate per minute of international calls to New York during peak hour (\$)	Retail price of diesel (per litre)	Retail price of petrol (per litre)
Pacific	0.21	73	3.56	61	61	9.3	0.09	1.86	1.85	1.71	0.56	0.57
Caribbean	0.16	259	3.41	338	66	20.2	0.06	1.21	1.80	1.06	0.47	0.55
SSA	0.37	499	1.92	143	105	6.4	0.12	1.20	1.44	1.39	0.53	0.63
LA	0.08	112	0.62	153	73	12.7	0.03	0.73	0.80	0.60	0.39	0.65
South Asia	0.08	691	0.16	553	195	3.7	0.04	0.80	0.85	0.89	0.34	0.54
Rest Asia	0.07	110	0.45	114	85	7.4	0.04	0.87	0.90	0.78	0.36	0.49
OECD	0.15	154	1.33	564	118	20.0	0.05	0.33	0.68	0.31	0.70	0.87
POPULATION												
	Electricity		Water		Telephone						Fuel	
<0.4 million	0.19	109	3.86	83	72	15.6	0.08	1.74	1.92	1.54	0.60	0.63
0.4–2.0 million	0.37	240	0.85	386	66	8.2	0.12	1.17	1.76	1.30	0.36	0.46
2-10 million	0.16	40	1.94	612	85	15.4	0.05	0.35	0.64	0.38	0.59	0.83
10-50 million	0.13	320	1.05	177	113	11.6	0.06	0.80	0.97	0.85	0.55	0.71
> 50 million	0.31	789	1.75	417	153	13.0	0.06	0.95	1.16	0.85	0.64	0.79
GDP												
	Electricity		Water		Telephone						Fuel	
<0.4 billion	0.19	132	4.02	65	62	11.0	0.10	1.8	1.92	1.70	0.57	0.57
0.4-2.0 billion	0.17	152	1.66	95	61	11.8	0.03	1.13	1.53	0.99	0.52	0.60
2-10 billion	0.30	143	2.42	312	121	11.2	0.13	1.24	1.60	1.44	0.50	0.63
10–100 billion	0.28	578	1.14	276	126	10.6	0.04	0.72	0.85	0.68	0.43	0.63
> 100 billion	0.09	207	1.06	498	97	16.4	0.05	0.47	0.74	0.44	0.60	0.76
INCOME												
	Electricity		Water		Telephone						Fuel	
Low income	0.24	510	2.88	181	114	5.84	0.08	1.20	1.28	1.32	0.49	0.58
Lower middle income	0.12	193	1.59	120	72	8.77	0.05	1.25	1.42	1.12	0.47	0.57
Upper middle income	0.31	185	2.13	320	95	16.2	0.09	1.11	1.49	1.08	0.50	0.61
High income Non OECD	0.09	109	0.56	2.94	55	8.56	0.02	0.50	0.51	0.43	0.54	0.82
High income OECD	0.09	111	1.04	591	115	21.2	0.04	0.29	0.62	0.26	0.70	0.88

REGION	Taxes						Bank				
	Corporate tax rate for residents	Corporate tax rate for non-resident	Value added tax (VAT) or sales tax rate.	(...) Min	(...) Max	Export duty rate (duties from exports as percentage of total government tax revenues)	Import Duty: weighted average tariff rate	Import Duty: Un-weighted average (nominal) tariff rate	Receipts from import duties and taxes	Lending rate	Deposit Rate
Pacific	21.71	29.30	9.06	6.00	20.00	4.39	14.36	14.57	53.17	12.12	2.81
Caribbean	35.35	35.35	10.50		17.50	6.84	26.08	15.95	48.87	13.33	5.29
SSA	31.58	32.28	14.61	14.22	24.60	4.95	24.85	21.98	38.31	21.14	8.66
LA	31.09	32.28	15.63	13.50	118.75	0.10	11.19	10.71	8.36	28.49	12.38
South Asia	36.93	41.25	12.50	8.25	17.50	0.10	30.20	28.93	20.40	14.97	9.37
Rest Asia	27.83	27.83	7.50	4.50	28.00	1.00	12.90	10.14	11.66	8.68	4.83
OECD	32.44	32.44	12.92	6.09	20.43		4.83	3.80	2.44	10.72	6.56
POPULATION											
<0.4 million	25.7	29.7	8.55	3.50	18.8		20.2	11.9	55.0	11.5	3.54
0.4 –2.0 million	33.0	33.5	12.8	11.7	21.0	3.88	26.8	18.1	45.9	15.5	6.28
2-10 million	28.3	30.0	13.4	10.9	22.5	2.94	8.62	7.35	12.2	13.1	4.41
10-50 million	31.7	32.4	15.1	8.61	26.6	4.06	12.0	11.3	17.9	16.6	7.92
> 50 million	44.2	45.5	7.43	8.92	89.4	0.45	20.9	20.3	17.4	21.0	12.5
GDP											
<0.4 billion	23.7	28.9	8.21	6.00	16.7		16.9	11.2	54.6	11.8	3.33
0.4-2.0 billion	33.9	34.4	11.2	17.5	26.7	4.92	25.3	17.7	48.5	18.3	7.21
2-10 billion	32.1	33.6	14.9	12.0	22.7	5.12	25.5	23.7	38.2	18.8	6.97
10 –100 billion	29.6	30.8	12.1	9.56	24.6	1.15	13.3	12.6	11.1	15.4	7.24
> 100 billion	32.8	33.1	12.3	5.45	39.5	0.25	7.84	6.37	6.86	13.3	7.73
INCOME											
Low income	32.06	35.45	13.48	12.10	21.67	4.06	24.45	23.95	30.81	20.7	8.28
Lower middle income	30.25	32.38	11.29	8.00	28.00	3.38	15.14	13.55	37.91	17.3	9.02
Upper middle income	28.86	29.74	12.50	8.06	55.70	1.05	17.01	9.55	27.41	16.5	6.98
High income Non OECD	21.83	21.83	3.00	2.00	60.00		8.80	5.20	2.20	6.03	2.00
High income OECD	33.38	33.38	12.50	6.35	19.54		3.93	2.87	2.05	6.87	3.19

REGION	Transport											
	Airfreight cost to London (\$)	Airfreight cost to Tokyo (\$)	Airfreight cost to New York (\$)	Airfreight cost from London (\$)	Airfreight cost from Tokyo (\$)	Airfreight cost from New York (\$)	Shipping cost to Rotterdam (\$)	Shipping cost to Yokohama (\$)	Shipping cost to New York (\$)	Shipping cost from Rotterdam (\$)	Shipping cost from Yokohama (\$)	Shipping cost from New York (\$)
Pacific	798	507	599	1419	1135	1018	2717	2139	3248	3577	2619	3448
Caribbean	598	844	360	630	1082	406	2213	3388	2977	2440	3707	3187
SSA	462	680	520	896	1822	1250	1617	1666	2706	1931	1822	3344
LA	696	966	579	781	1584	890	1502	1470	1581	1497	2038	1520
South Asia	387	362	430	667	996	769	1012	804	2333	1314	1281	2598
Rest Asia	709	413	683	1119	420	745	892	597	2742	668	481	1976
OECD	446	686	527	485	1074	630	973	1260	2013	965	1521	2127
POPULATION												
<0.4 million	715	647	538	938	1075	679	2673	2928	3431	3105	3335	3510
0.4 –2.0 million	517	637	368	1084	1450	819	1799	1799	2584	1998	2280	3238
2-10 million	382	388	378	562	1030	596	875	1061	1982	841	1382	1789
10-50 million	508	731	527	800	1309	944	1407	1340	2240	1631	1702	2598
> 50 million	867	1018	943	986	1636	1175	1355	1368	3191	990	1258	2658
GDP												
<0.4 billion	818	683	629	1206	1138	874	2941	2769	3570	3450	3084	3648
0.4-2.0 billion	523	591	316	724	1352	544	1873	2193	2687	2345	2832	3514
2-10 billion	433	575	389	996	1838	1306	1689	1905	2795	1881	2286	3036
10 –100 billion	539	641	562	618	965	761	1168	1183	1951	1231	1460	2096
> 100 billion	540	719	594	695	1099	697	998	1084	2186	925	1321	2105
INCOME												
Low income	518	647	569	980	1647	1261	1695	1507	2698	1869	1617	3321
Lower middle income	708	633	521	874	1273	715	1749	1762	2205	2201	2212	2285
Upper middle income	530	654	453	681	995	666	1725	2152	2650	1720	2465	2689
High income Non OECD	566	338	543	2016	420	546	801	462	3217	690	412	2101
High income OECD	497	758	588	531	1097	695	960	1197	2044	1035	1536	2153