

SECTORAL TRENDS IN OUTPUT PER EMPLOYEE

by

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Sectoral Trends in Output Per Employee

The trend has been for an improvement in output per employee over the period 1978-1992. However, severe downturns in the ratio between 1979 and 1982 and between 1989 and 1992 were associated with a slump in output (Chart 1.1). The growth of employment slowed and then employment declined in step with output in the first downturn. On the second occasion, employment contracted in the year following the output decline (Chart 1.2). Between 1982 and 1984 there was a strong recovery from the earlier slump but employment continued to contract. Jobs did not begin to expand until 1986 after three consecutive years of output growth. Because of that, output per employee rose rapidly during the recovery. Thereafter, output grew more quickly than employment until 1989 resulting in a steady improvement in output per employee. Recovery from the early 1990s decline is only now underway in 1994 and the employment response is still uncertain.

Although Government and business services provided most jobs this sector's influence on output per employee was overshadowed by others. Output per employee in this sector rose between 1981 and 1985 then stagnated and declined in the 1990s. It remained well below the national average throughout (Chart 2.2; in Charts 2.1-2.6 sectoral output per employee is

plotted as a broken line, with national output per employee as a solid line for comparison).

Tourism and commerce had a very strong influence on output to employment trends. This sector accounts for about a quarter of all jobs. Output per employee declined during the early 1980s recession and improved during the recovery up until 1987. Since then, it has been on the decline with an exceptional fall in 1990 (Chart 2.6).

Manufacturing's contribution to employment has fallen somewhat between 1978 and 1992 from about 13% to 10%. Output per employee in this sector had a strong upward trend between 1982 and 1991. It fell well below the national averages in the early 1980s but by 1991 was once more close to average performance (Chart 2.4).

The remaining sectors are relatively small contributors to output and employment, each between 5% and 10% of the total. Output per employee in construction declined gradually over the period, ending well below the national average. By contrast, output per employee in agriculture has

improved all be it with very marked cycles of gains and losses. Output per employee in transport and communications has also improved, ending well above the national average (Charts 2.1, 2.3 & 2.5).

Manufacturing 1986-1991

A more detailed analysis of the manufacturing sector is available from employment data supplied by the IDC. Output per employee declined between the first quarter of 1986 and the first quarter of 1988 before improving from 1988 to 1991. Output per employee followed exactly the pattern of the food sub-sector which is the largest within the manufacturing category with about 16% of the total. Output per employee in chemicals improved between the first quarter of 1987 and the end of 1991 though rather more slowly than for manufacturing as a whole. Output per employee for wooden products and electronic components moved upward from about 1987/1988 onward but the trend was quite weak. Output per employee for wearing apparel and non-metallic mineral products declined (Charts 3.1 - 3.6; the solid line is an index of output per employee for manufacturing and the broken line gives the index for each sub-sector).

Projections

The trend of output per employee yields an increase of 0.65% per year. To realise this, the decline in output per employee in tourism and commerce since 1988 will have to be turned around. Since 1988 these sectors have seen a dramatic fall which, if continued, would depress the overall ratio. Very little improvement in output per employee is found in Government and miscellaneous services, which is the second major category of employment. Trends for agriculture, manufacturing, transport and communications show improvement but construction shows a decline.

Note on Data and Projections

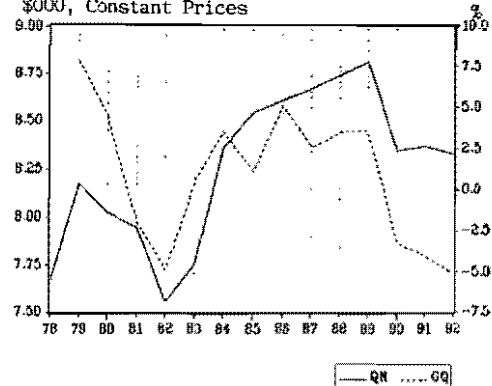
The data are all drawn from the ASD tables I1, I5, I15 and I17. Employment by sector is expressed as a ratio to real GDP. For the manufacturing sector employment as recorded by the BIDC is expressed as a ratio to the relevant categories of the index of industrial production. Some sectors had to be consolidated in order to make a reasonable match between the sectoral definitions in the employment tables and those in the output tables.

The projections are all based on straight lines with the period of projection chosen by inspecting the charts of the historical performance. Periods were chosen so as to reflect the most recent persistent trends. Only where the underlying trend seems to have persisted throughout did we use all the observations to make the projection.

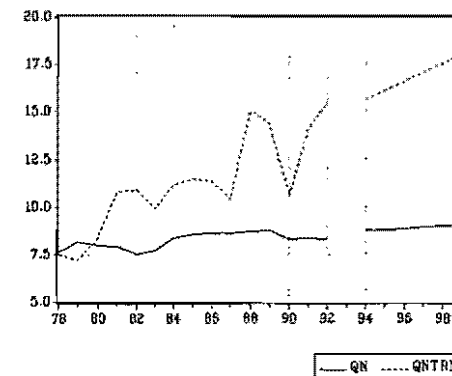
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OUTPUT/EMPLOYMENT

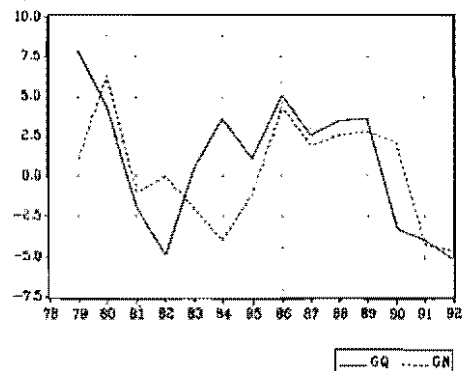
1.1 Output/Empl. (QN) and Growth of Output (GQ)
\$000, Constant Prices



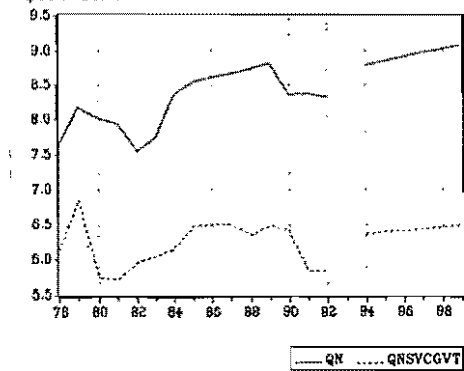
2.1 Transport and Communications
\$000 Constant Prices



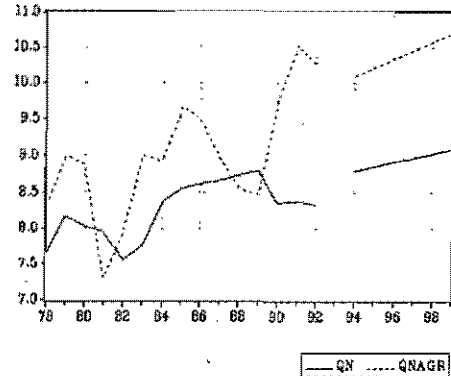
1.2 Growth of Output (GQ) and Employment (GN)
%



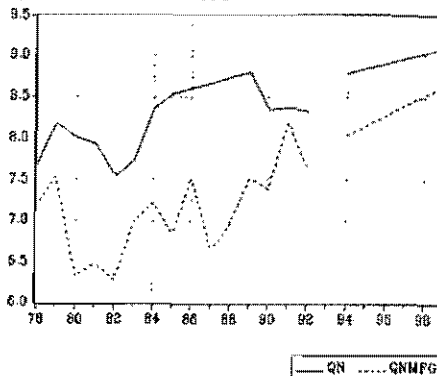
2.2 Gov't and Misc. Services
\$000 Constant Prices



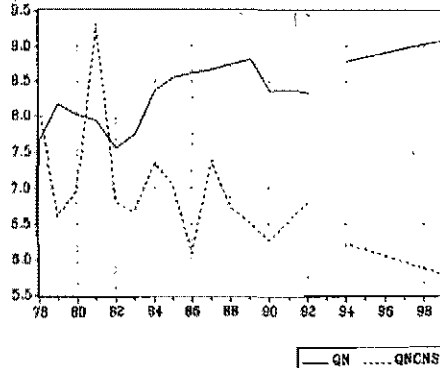
2.3 Agriculture
\$000 Constant Prices



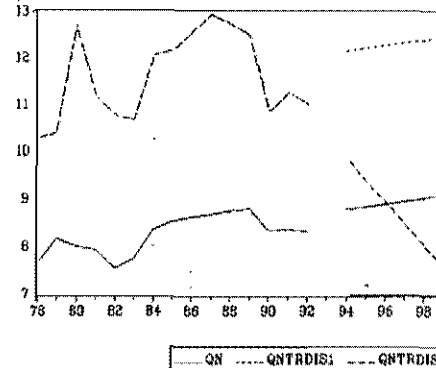
2.4 Manufacturing
\$000 Constant Prices



2.5 Construction
\$000 Constant Prices



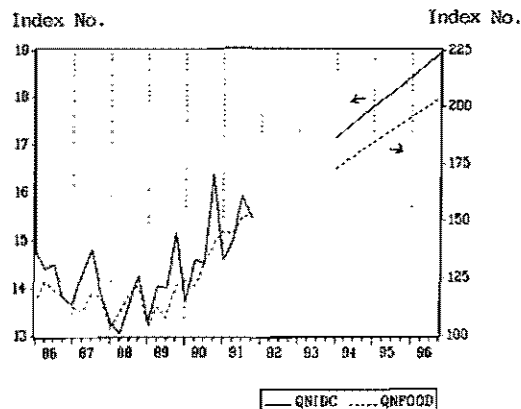
2.6 Tourism and Commerce
\$000 Constant Prices



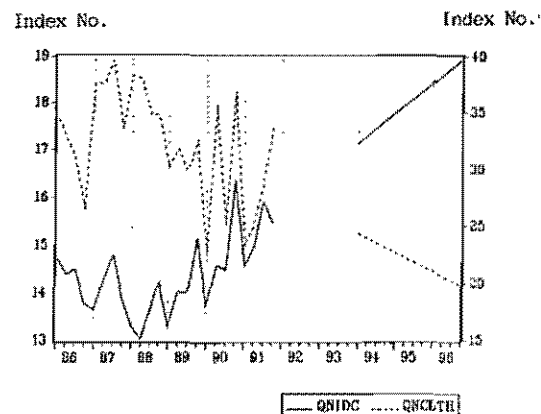
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INDEX OF INDUSTRIAL PRODUCTION EMPLOYMENT RECORDED BY BIDC

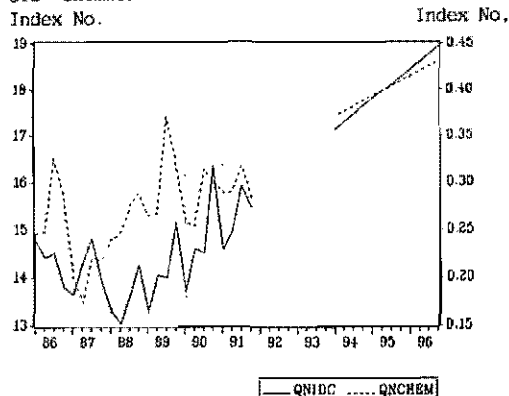
3.1 Food



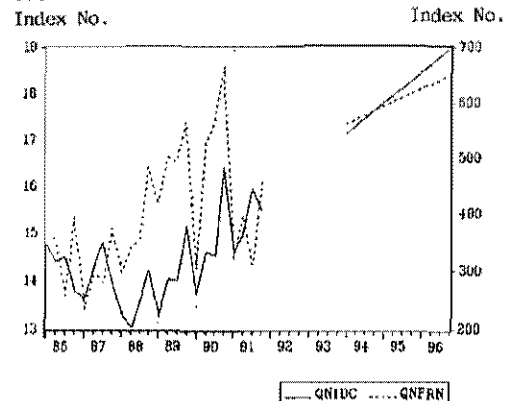
3.2 Wearing Apparel



3.3 Chemicals

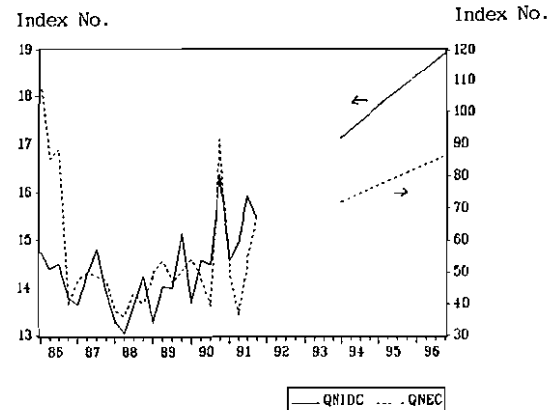


3.4 Wooden Products

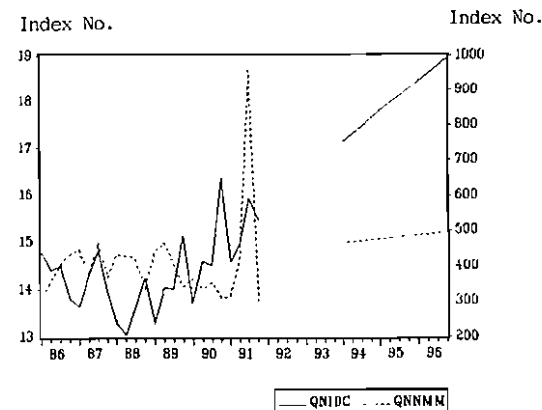


1. OUTPUT/EMPLOYEE

3.5 Elec. Components



3.6 Non-Metallic Mineral Products



	Total	Agr.	Mfg.	Constr.	Commerce & Tourism	Trnsp. & Comm.	Gov't & Misc. Svcs.
obs	QN	QNAGR	QNMFG	QNCNS	QNTDTS	QNTAN	QNSVCGVT
1978	7.660215	8.310346	7.181102	8.122808	10.27619	7.516129	6.129477
1979	8.177660	9.000001	7.544715	6.600000	10.41841	7.208955	6.870482
1980	8.023001	8.881721	6.320000	6.962963	12.74286	8.423729	5.752500
1981	7.947474	7.276596	6.482269	9.317460	11.18376	10.81250	5.714634
1982	7.555555	7.940476	6.268116	6.802632	10.75688	10.91837	5.977041
1983	7.750515	9.000001	6.984252	6.649351	10.67757	9.872727	6.051414
1984	8.361976	8.917647	7.232000	7.347826	12.07035	11.17647	6.161039
1985	8.543974	9.666667	6.816667	7.028169	12.17413	11.50980	6.484293
1986	8.605619	9.493976	7.543860	6.079545	12.56039	11.37037	6.501266
1987	8.662922	8.974359	6.636364	7.376624	12.95434	10.40323	6.498759
1988	8.740040	8.558441	6.967479	6.728261	12.75319	15.06977	6.353920
1989	8.808140	8.450705	7.525000	6.495146	12.50988	14.35417	6.495261
1990	8.348528	9.742425	7.386555	6.260416	10.85240	10.60000	6.417051
1991	8.371032	10.52542	8.217821	6.541176	11.29388	14.08333	5.845815
1992	8.326743	10.23333	7.620000	6.797297	11.00420	15.52381	5.844548
1993	NA	NA	NA	NA	NA	NA	NA
1994	8.789833	10.09075	8.038026	6.220765	9.865005	15.62949	6.367945
1995	8.848826	10.21215	8.158160	6.133370	9.413974	16.11541	6.393769
1996	8.907820	10.33355	8.278294	6.045976	8.962962	16.60133	6.419594
1997	8.966813	10.45496	8.398428	5.958582	8.511909	17.08724	6.445418
1998	9.025806	10.57636	8.518562	5.871188	8.060878	17.57316	6.471242
1999	9.084800	10.69776	8.638697	5.783794	7.609846	18.05908	6.497067

20/9/94

2. RATIO OF INDEX OF INDUSTRIAL PRODUCTION TO EMPLOYMENT RECORDED BY IDC

	Mfg.	Food	Wearing Apparel	Chem.	Wooden Prods.	Elec. Comps.	Non-Metallic Mineral Prods.
obs	QNI0C	QNF00D	QNC1TH	QNCHEM	QNF0RN	QNEC	QNNMM
1986.1	14.78471	114.2388	34.88641	0.246284	377.9528	111.1732	313.0031
1986.2	14.40933	123.4607	32.83406	0.247039	354.1379	85.34239	356.9659
1986.3	14.49843	120.2032	30.98404	0.326298	259.1781	88.70674	407.8125
1986.4	13.79069	116.8712	26.47059	0.287683	396.7123	39.83957	433.0579
1987.1	13.64778	113.1451	37.79453	0.200968	233.2394	47.56911	446.4419
1987.2	14.29370	109.9902	37.53412	0.173913	300.9119	49.94246	372.0588
1987.3	14.80879	117.9255	39.86547	0.222466	278.0320	48.58116	466.1807
1987.4	13.90381	116.8781	33.38969	0.215659	377.2043	47.66455	368.2927
1988.1	13.31003	104.0434	38.36428	0.239521	297.2292	37.99250	432.9341
1988.2	13.03725	110.1079	38.05556	0.245042	342.5068	35.73001	427.8409
1988.3	13.63921	118.5438	34.66833	0.275150	357.3141	44.16058	424.9292
1988.4	14.25290	121.7680	34.81242	0.288859	484.4340	39.06525	334.3023
1989.1	13.29565	103.9039	30.10471	0.264481	415.9341	49.67259	437.1758
1989.2	14.03251	112.8601	31.83798	0.267196	502.2857	54.21003	467.5070
1989.3	14.00891	107.7412	29.62963	0.371343	491.1839	46.90432	404.1096
1989.4	15.15152	121.6304	32.58480	0.323315	565.8416	50.56948	340.7035
1990.1	13.72206	124.4060	22.59859	0.257179	301.0336	54.12541	364.6154
1990.2	14.58743	121.2812	35.78164	0.253109	519.6851	48.55073	333.8462
1990.3	14.50288	132.3040	24.94856	0.313966	563.3735	39.09091	353.7879
1990.4	16.36250	139.7753	37.14603	0.302162	666.7432	91.54488	308.5642
1991.1	14.57937	145.7207	23.22654	0.288315	320.6388	50.53305	314.2450
1991.2	14.97971	143.8833	25.21392	0.289941	401.5385	36.32735	428.8185
1991.3	15.92102	152.1073	28.69507	0.319277	304.4218	54.06007	958.1250
1991.4	15.45881	152.1264	33.83721	0.284257	457.5145	67.90890	299.7101
1992.1	NA	NA	NA	NA	NA	NA	NA
1992.2	NA	NA	NA	NA	NA	NA	NA
1992.3	NA	NA	NA	NA	NA	NA	NA
1992.4	NA	NA	NA	NA	NA	NA	NA
1993.1	NA	NA	NA	NA	NA	NA	NA
1993.2	NA	NA	NA	NA	NA	NA	NA
1993.3	NA	NA	NA	NA	NA	NA	NA
1993.4	NA	NA	NA	NA	NA	NA	NA
1994.1	17.13386	173.0612	24.36942	0.371176	561.3987	71.90226	464.9002
1994.2	17.29787	175.8742	23.95638	0.376655	569.4478	73.21926	467.6697
1994.3	17.46189	178.6872	23.54334	0.382135	577.4969	74.53626	470.4391
1994.4	17.62590	181.5002	23.13030	0.387614	585.5460	75.85326	473.2086
1995.1	17.78992	184.3132	22.71727	0.393093	593.5952	77.17027	475.9781
1995.2	17.95393	187.1262	22.30423	0.398573	601.6442	78.48727	478.7475
1995.3	18.11795	189.9392	21.89119	0.404052	609.6934	79.80427	481.5170
1995.4	18.28196	192.7522	21.47815	0.409532	617.7424	81.12128	484.2865
1996.1	18.44598	195.5652	21.06512	0.415011	625.7916	82.43828	487.0559
1996.2	18.60999	198.3783	20.65208	0.420491	633.8407	83.75528	489.8254
1996.3	18.77401	201.1913	20.23904	0.425970	641.8898	85.07228	492.5949
1996.4	18.93802	204.0043	19.82600	0.431450	649.9389	86.38928	495.3643

