

South Africa Refutes One of Jeffrey Sachs' Hypotheses Based on Commercialisation Index Scores

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Abstract

Commercialisation index (CI) scores were developed for 20 countries by Sachs (2011) in a book published as a response to the international financial crisis that commenced in 2007 with the sub-prime crisis and is still prevalent in some economies. The CI scores measure the degree in which countries are oriented towards consumption and impatience (a "now" society demanding instant gratification of wants), rather than oriented towards collective consumption and regard for the future (Sachs, 2011:146). Sachs (2011) hypothesises that countries with high CI scores have (i) a high national poverty rate; (ii) with the largest share of household income accruing to the richest 1 per cent of the population; and (iii) a low level of development aid to poor countries. As South Africa is not one of the countries included in the CI scores developed by Sachs (2011), this paper (i) reports the results of a first compilation of such a score for the country and (ii) refutes one of Sachs' hypotheses based on CI scores. South Africa has a particularly high CI score (third out of the 21 countries used in this comparison). South Africa confirms the first and second hypotheses put forward by Sachs (2011), but refutes the hypothesis that countries with a high CI score makes relatively low contributions in terms of development aid to poor countries.

Keywords: commercialisation score index, development aid, Jeffrey Sachs; skew income distribution

1. Introduction

The international financial crisis that commenced in 2007 with the sub-prime crisis in the housing market in the United States of America is well-documented (see for instance Baily and Elliott 2009, International Monetary Fund 2009 or Simkovic, 2009). Rossouw and Padayachee (2009:315) went as far as calling it a sub-prime pricing problem in the financial market, with possible criminal intent in the structuring of some transactions. In short, the sub-prime crisis originated in the United States of America (United States) when homeowners could no longer afford the repayment of their mortgage bonds owing to interest rate increases, resulting in the development of more wide-spread financial problems.

Not only has considerable literature been published on the factors contributing to the financial crisis, but even more have been published on how to resolve the crisis (see for instance Borio et al, 2010, Ergungor and Cherny, 2009, or Mian et al. 2012). One of the publications on a strategy for resolving the crisis has been published by Jeffrey Sachs (Sachs, 2011), with the title *The Price of Civilization: Economics and ethics after the fall*. In this book Sachs (2011) raises a number of reasons for the emergence of the financial crisis and the inability of some countries to overcome the effects of the crisis. His solutions for the crisis include aspects such as the fostering of a more caring society, care for the environment, sustained energy provision and improved education. Among others, he uses commercialisation index (CI) scores in his analysis.

Sachs is well-known for his work on proposals for the cancellation of the international debt of poor countries, economic development, environmental sustainability and poverty alleviation, to name but a few. He serves as Director of the Earth Institute at Columbia University and holds a number of other teaching positions at the same university. He also serves as Special Advisor to the Secretary-General of the United Nations.

Sachs (2011) ascribes the prolonged financial crisis to a mass-media culture evidenced, *inter alia*, by excessive advertising and long hours of watching TV. To put some degree of measurement to this statement, Sachs developed a commercialisation index (CI) score for 20 individual countries, which " ... aims to measure the degree to which each national economy is oriented towards private consumption and impatience¹ rather than collective (public) consumption and regard for the future (2011:146). Sachs (2011) hypothesises that a high reading on the CI score results in:

- a high national poverty rate, owing to societies leaving the poor behind;
- the largest share of household income accruing to the richest 1 per cent of the population; and
- a low level of development aid to poor countries.

Since South Africa is not one of the 20 countries covered by the analysis, this paper (i) reports the results of a first compilation of such a CI score for South Africa and (ii) assesses South Africa's performance in terms of the three hypotheses put forward by Sachs (2011).

This paper has a fairly simple structure: Section 2 replicates the construction and calculation of the CI scores and highlights calculation errors made by Sachs (2011). Section three reports on the use of the same methodology to calculate a CI score for South Africa and the testing of the three hypotheses put forward by Sachs (2011) on CI scores. The conclusions follow in Section 4.

2. CI Score

Sachs (2011:146) included six items from 20 countries to calculate each country's CI score. Sachs (2011) does not include all 29 member countries of the Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD) in his analysis, and this research can in due course be expanded to include all these countries.

Each item has been selected for inclusion to measure a distinct aspect of the public/private or current/future dimensions of social choice, with a higher score (closer to 1) signifying a higher degree of commercialisation. The six items are (Sachs, 2011:146):

- the national consumption rate (private plus government consumption as a share of the GDP);
- the average hours worked per year by a full-time employee (low leisure time, high orientation to market consumption);
- the national non-voting rate (lack of public participation);
- private health care spending as a percentage of total national health care spending (health care as a private good rather than a public good);
- private education spending as a percentage of total national education spending (education as a private good rather than a public good); and
- private consumption spending as a percentage of national (private plus public) consumption (private consumption as the dominant form of consumption).

Most of these items are fairly straightforward to identify or calculate in an analysis of countries not covered by Sachs (2011), but two aspects are somewhat challenging for the analysis that follows in Section 3. First, it is not clear whether national health care spending is taken as health care spending by the government only, or as health care spending by the government plus private health care spending. Secondly, it is not clear whether national education spending is taken as education spending by the government only, or as education spending by the government plus private education spending. In both cases the latter approach is followed (private plus public to get national), as Sachs (2011:146) states in respect of national consumption that it includes private plus public consumption.

¹ "Impatience" in this context implies that consumers demand instant gratification, i.e. they demand gratification of all their wants immediately. This can be referred to as consumers living in a "now" society, i.e. everything comes immediately.

Table 1: Data used for CI score calculations by Sachs, 2011

Country	CI score	NCR	AAHW	NNVR	PCE	PHCS	PES
Australia	0.56	0.76	1713	0.17	0.76	0.33	0.28
Austria	0.35	0.74	1581	0.24	0.71	0.23	0.11
Belgium	0.26	0.76	1550	0.14	0.66	0.27	0.06
Canada	0.6	0.76	1699	0.46	0.71	0.3	0.26
Denmark	0.2	0.78	1536	0.17	0.73	0.16	0.08
Finland	0.39	0.82	1697	0.32	0.65	0.26	0.03
France	0.42	0.81	1554	0.45	0.69	0.22	0.09
Germany	0.35	0.78	1419	0.28	0.73	0.23	0.15
Ireland	0.45	0.89	1584	0.31	0.72	0.23	0.06
Italy	0.49	0.84	1773	0.21	0.74	0.23	0.08
Japan	0.55	0.73	1714	0.33	0.74	0.18	0.33
Netherlands	0.28	0.78	1378	0.23	0.61	0.38	0.16
New Zealand	0.51	0.84	1729	0.22	0.73	0.2	0.2
Norway	0.06	0.65	1403	0.23	0.63	0.16	0.02
Portugal	0.57	0.91	1719	0.33	0.74	0.29	0.08
Spain	0.43	0.8	1653	0.23	0.71	0.28	0.11
Sweden	0.21	0.77	1602	0.19	0.62	0.18	0.03
Switzerland	0.7	0.69	1640	0.6	0.81	0.41	N/A
United Kingdom	0.55	0.85	1646	0.42	0.71	0.17	0.25
United States	0.9	0.88	1681	0.58	0.79	0.54	0.32
	8.83						

NCR = National consumption rate
AAHW = Annual average hours worked
NNVR = National non-voting rate as % of total
PCE = Private consumption spending as % of total
PHCS = Private health care spending as % of total
PES = Private education spending as % of total

Source: Sachs, 2011:148 and 149

Sachs (2011:147) scales the six indicators reported above from 0 to 1, where zero indicates least commercially oriented (lowest score in terms of indicator) and 1 indicates the most commercially oriented (or highest score in terms of indicator). In addition, “(e)ach country’s overall Commercialization (sic) Index score is calculated as the simple average of the six components”. The number calculated is the CI score. Of the 20 countries reported in the analysis by Sachs (2011), the United States has the highest CI score of 0,90, while Norway recorded the lowest score of 0,06 (Sachs, 2011:148 and 149; please see Table 1).

The exact CI scores calculated and reported by Sachs (2011) could not be replicated, even after allowing for one missing value in the case of Switzerland and for countries with the same values for certain indicators. This is shown in Table 2.

Table 2: CI scores recalculated on data of Sachs, 2011

Country	CI score	NCR	AHW	NNVR	PCE	PHCS	PES
Australia	0.639388	0.31581	0.78948	0.10529	0.89474	0.84211	0.8889
Austria	0.417177	0.15792	0.31581	0.4737	0.4737	0.52633	0.5556
Belgium	0.265133	0.31581	0.21055	0	0.21055	0.63159	0.2223
Canada	0.673988	0.31581	0.73685	0.89474	0.4737	0.78948	0.83335
Denmark	0.31971	0.52633	0.15792	0.10529	0.68422	0	0.4445
Finland	0.474685	0.68422	0.68422	0.63159	0.15792	0.57896	0.1112
France	0.460062	0.63159	0.26318	0.84211	0.26318	0.31581	0.4445
Germany	0.496608	0.52633	0.10529	0.52633	0.68422	0.52633	0.61115
Ireland	0.528288	0.94737	0.36844	0.57896	0.52633	0.52633	0.2223
Italy	0.635495	0.78948	1	0.21055	0.84211	0.52633	0.4445
Japan	0.622818	0.10529	0.84211	0.73685	0.84211	0.21055	1
Netherlands	0.41814	0.52633	0	0.42107	0	0.89474	0.6667
New Zealand	0.602842	0.73685	0.94737	0.26318	0.68422	0.26318	0.72225
Norway	0.096503	0	0.05266	0.42107	0.10529	0	0
Portugal	0.775842	1	0.89474	0.73685	0.84211	0.73685	0.4445
Spain	0.548752	0.57896	0.57896	0.42107	0.4737	0.68422	0.5556
Sweden	0.220307	0.36844	0.42107	0.15792	0.05266	0.21055	0.1112
Switzerland	0.694746	0.05266	0.4737	1	1	0.94737	N/A
United Kingdom	0.585785	0.84211	0.52633	0.78948	0.4737	0.10529	0.7778
United States	0.894253	0.89474	0.63159	0.94737	0.94737	1	0.94445
	10.37052	10.31605	10.00027	10.26342	10.63183	10.31602	10.0008

Sources: Sachs, 2011:148 and 149; own calculations

The CI scores reported by Sachs (2011) and the recalculated CI scores (please see Table 2) are reported in Table 3, with

the percentage difference indicated in each instance. The CI scores calculated by Sachs for the 20 countries (Sachs 2011:148) add up to 8,83. The use of the methodology as explained by Sachs (2011:148) implies that the CI scores should add up to 10, or very close to 10 when duplications in indicator values between countries and missing data for Switzerland are taken into consideration. This is a simple arithmetic calculation, implying that if a particular country scored lowest on all indicators, such a country would have an overall score of 0. Likewise, a country that scores highest for all indicators would have a score of 1. A country with the second-highest score for all indicators would score 0,94373, the third 0,89474, and the second-from-the-bottom one at a score of 0,05266. Naturally the CI scores are not spread in this fashion, as countries occupy different places in terms of each indicator and therefore get a weighted score between 0 and 1. Given the methodology, the scores should add up to 10, but is slightly bigger than 10 in the analysis in this paper owing to countries sharing positions in the ranking.

Table 3: CI scores calculated by Sachs (2011) and own calculations

Country	CI score (Sachs)	CI score (calculated)	% difference
Australia	0.56	0.639388333	14.1764881
Austria	0.35	0.417176667	19.1933333
Belgium	0.26	0.265133333	1.97435897
Canada	0.6	0.673988333	12.3313889
Denmark	0.2	0.31971	59.855
Finland	0.39	0.474685	21.7141026
France	0.42	0.460061667	9.53849206
Germany	0.35	0.496608333	41.8880952
Ireland	0.45	0.528288333	17.3974074
Italy	0.49	0.635495	29.6928571
Japan	0.55	0.622818333	13.239697
Netherlands	0.28	0.41814	49.3357143
New Zealand	0.51	0.602841667	18.2042484
Norway	0.06	0.096503333	60.8388889
Portugal	0.57	0.775841667	36.1125731
Spain	0.43	0.548751667	27.6166667
Sweden	0.21	0.220306667	4.90793651
Switzerland	0.7	0.694746	-0.7505714
United Kingdom	0.55	0.585785	6.50636364
United States	0.9	0.894253333	-0.6385185
	8.83	10.37052267	17.4464628

Source: Sachs, 2011:148 and 149; own calculations

The closest replication of the research findings reported by Sachs (2011) is in respect of the United States, with a difference of – 0,64 per cent (please see Table 4). This finding provides confidence in the methodology followed in this paper. The values allocated in each instance for these indicators in the calculation in this paper are reported in Table 2. As this confirms the methodology used by Sachs (2011), the differences in respect of the CI scores of the other countries analysed by Sachs (2011) cannot be explained. The biggest differences between CI scores calculated by Sachs (2011) and scores calculated in this paper are in respect of Portugal, Norway and The Netherlands.

Table 4: Ranking of indicators for United States reported by Sachs (2011)

NCR = National consumption rate	3	0.89474
AAHW = Annual average hours worked	8	0.63159
NNVR = National non-voting rate as % of total	2	0.94737
PCE = Private consumption spending as % of total	2	0.94737
PHCS = Private health care spending as % of total	1	1
PES = Private education spending as % of total	2	0.94737
Weighted total		0.89474

Source: Sachs, 2011:148 and 149

It is interesting to note that Sachs under measured the CI score for most countries, while the CI scores of the United States and Switzerland are marginally over measured. The CI scores of some countries increasing without a concomitant decline in the scores of other countries is explained by the fact that the CI scores reported by Sachs (2011) adds up to 8,83, rather than 10 (or very close to 10). To the contrary, in this paper the CI scores for all the countries in the sample are over measured by 3,7 per cent, accounted for in the main by countries scoring the same values for a particular

indicator, and therefore being allocated the same score between 0 and 1. This approach implies that an overall score below 10 cannot be achieved, and an overall score of exactly 10 can only be achieved if no values of indicators are shared by any countries.

Sachs (2011:148) suggests as hypotheses that a high reading on the CI score is strongly associated with:

- a high national poverty rate, owing to societies leaving the poor behind;
- the largest share of household income accruing to the richest 1 per cent of the population; and
- a low level of development aid to poor countries.

The methodology developed in this section is used in the next section to calculate South Africa's CI score in comparison to the countries analysed by Sachs (2011), and to test his hypotheses for South Africa.

3. South Africa's CI Score

South Africa's CI score is calculated on the basis of the analysis in the previous section. The South African data are reported for comparative purposes in Table 5. No data is, however, provided for annual average hours worked. Yu and Bosch (2012) estimated the mean working hours of formal sector employees as 42,9 hours per week (= 8,58 hours per day) in the fourth quarter of 2011. On assumptions of a five-day work week, 12 public holidays per annum and 20 vacation days per annum, this amounts to a 229 work days per annum. At 8,58 hours per day, this implies 1 964,82 hours per annum. As this figure is clearly not in line with the average annual hours worked in other countries reported by Sachs (2011), it was decided to discard this figure and treat hours work in the same way as private education spending as percentage of total spending in the case of Switzerland, where Sachs (2011) provides no data.

Table 5: South African data for CI score calculation

Country	NCR	AHW	NNVR	PCE	PHCS	PES
South Africa	82.9		22.7	73	59.6	21.5

Sources: Institute for Democracy and Electoral Assistance (Idea); SA Reserve Bank; Yu and Bosch (2011), own calculations

A comparison of South African data other than average annual hours worked with the data reported by Sachs (2011:147 and 148) for the 20 countries used in his analysis shows that South Africa has the third-highest CI score, after the United States and Portugal, and above Switzerland. This analysis is shown in Table 6.

The analysis in Table 6 puts South Africa at the high end of CI scores, which implies in terms of the hypotheses put forward by Sachs (2011:148) for South Africa:

- a high national poverty rate, owing to societies leaving the poor behind;
- the largest share of household income accruing to the richest 1 per cent of the population; and
- a low level of development aid to poor countries.

Table 6: CI scores for 21 countries (South Africa included)

Country	CI score	NCR	AHW	NNVR	PCE	PHCS	PES
Australia	0.630703	0.3	0.78948	0.1	0.9	0.8	0.89474
Austria	0.407023	0.15	0.31581	0.5	0.45	0.5	0.52633
Belgium	0.253517	0.3	0.21055	0	0.2	0.6	0.21055
Canada	0.66316	0.3	0.73685	0.9	0.45	0.75	0.84211
Denmark	0.304393	0.5	0.15792	0.1	0.7	0	0.36844
Finland	0.464918	0.65	0.68422	0.65	0.15	0.55	0.10529
France	0.447375	0.6	0.26318	0.85	0.25	0.3	0.42107
Germany	0.489042	0.5	0.10529	0.55	0.7	0.5	0.57896
Ireland	0.521498	0.95	0.36844	0.6	0.5	0.5	0.21055
Italy	0.61974	0.8	1	0.2	0.85	0.5	0.36844
Japan	0.623685	0.1	0.84211	0.75	0.85	0.2	1
Netherlands	0.405265	0.5	0	0.45	0	0.85	0.63159
New Zealand	0.605265	0.8	0.94737	0.25	0.7	0.25	0.68422
Norway	0.100443	0	0.05266	0.45	0.1	0	0
Portugal	0.76053	1	0.89474	0.75	0.85	0.7	0.36844
South Africa	0.71737	0.7	N/A	0.45	0.7	1	0.73685
Spain	0.534215	0.55	0.57896	0.45	0.45	0.65	0.52633
Sweden	0.212727	0.35	0.42107	0.15	0.05	0.2	0.10529
Switzerland	0.68474	0.05	0.4737	1	1	0.9	N/A
United Kingdom	0.585968	0.85	0.52633	0.8	0.45	0.1	0.78948
United States	0.88816	0.9	0.63159	0.95	0.95	0.95	0.94737
	10.91974	10.85	10.0003	10.9	11.25	10.8	10.31605

Source: Sachs, 2011:148 and 149; own calculations

An assessment of South Africa's performance in terms of these three hypotheses yields mixed results. South Africa has a high poverty rate and the largest share of household income accrues to the richest 1 per cent of the population. This is shown by the fact that South Africa has one of the highest GINI coefficients in the world, even after adjusted for grants, transfer payments and the like by government (Bosch et al., 2010). In this respect South Africa confirms to the first two hypotheses of Sachs (2011).

A different picture emerges for South Africa when development assistance is analysed.² South Africa makes development aid available to its partner countries in the Common Monetary Area (CMA, namely Lesotho, Namibia and Swaziland) and the SA Customs Union Agreement (SACU, namely Botswana, Lesotho, Namibia and Swaziland). The CMA seigniorage³ sharing payments are underpinned by a currency circulation agreement between South Africa and the LNS countries, while the customs union sharing payments are underpinned by an agreement pertaining to customs receipts between South Africa and the BLNS countries.

The CMA and SACU payments are not specifically appropriated by the South African Parliament as official development aid (ODA). No elements of these payments are therefore recognised as ODA by bodies such as the United Nations and the Organisation for Economic Co-operation and Development.

The CMA agreement provides for the South African rand to circulate freely in Lesotho, Namibia and Swaziland (the LNS countries). South Africa compensates the LNS countries for the loss of seigniorage on the rand circulating within their borders in terms of a seigniorage-sharing agreement. The basis for this compensation is twofold, namely (i) the SA Reserve Bank earns seigniorage on rand circulating in the LNS countries; and (ii) in the absence of rand circulating in the LNS countries, the local currency would have circulated and the local central bank would have earned seigniorage. However, the calculation of seigniorage payments are based on an estimate of rand circulation in the CMA countries and not on actual figures. Development assistance over and above compensation for rand circulating in the LNS countries amounted to some R403,8 million, or some 0,014 per cent of South Africa's GDP, in 2011. In the discussion that follows, only this "surplus" distribution is included. The balance not included is regarded as fair compensation to the CMA countries.

The SACU agreement of 2002 provides, *inter alia*, for an equitable sharing of customs revenue among SACU member states, with all countries contributing to the customs pool from which it is shared among South Africa and the BLNS countries. The respective shares of South Africa and the BLNS countries in SACU collections should be related to their respective gross domestic products (GDPs). South Africa accounts for more than 90 per cent of the SACU GDP. Total customs collected by South Africa in the fiscal year to 31 March 2012 amounted to R32,2 billion (Republic of South Africa). Based on relative GDP sizes, the amount transferred should have amounted to some R2,8 billion (8,6 per cent of R32,2 billion). Actual transfer amounted to R21,8 billion (Republic of South Africa, 2012). This implies "customs transfer ODA" amounting to R19,0 billion, or 0,61 per cent of South Africa's GDP as at 31 March 2012. For the period 2002 to 2012, total SACU transfers amounted to some 0,9 per cent of South Africa's GDP for that period. South Africa therefore provides a high level of development aid to poor countries, exceeding the level of 0,7 per cent envisaged in the Millennium Development Goals. South Africa therefore refutes the third hypothesis suggested by Sachs (2011).

4. Conclusions

This analysis leads to a number of conclusions. First, a CI score can be calculated for any country and compared to the CI scores of other countries. This paper reports the first calculation of a CI score for South Africa. South Africa has a high CI score, placing it third among the 21 countries analysed in this paper.

Secondly, the CI scores calculated by Sachs (2011) can be replicated, but the results differ from the results calculated and reported by Sachs (2011).

Thirdly, given its CI score, Sachs (2011) hypothesises that South Africa should have a high national poverty rate with the largest share of household income accruing to the richest 1 per cent of the population and a low level of development aid to poor countries. In respect of income distribution and poverty rate South Africa concurs with the hypotheses put forward by Sachs (2011). In respect of development aid to poor countries, South Africa refutes the third hypotheses put

² This discussion of transfer payments in terms of the CMA seigniorage-sharing and SACU customs income-sharing agreements are based on Rossouw (2013).

³ Seigniorage can be described in terms of a simplified definition as the interest earned by central banks on assets held against currency in circulation (i.e. assets balancing currency that is a liability on the central bank's balance sheet) on which no interest is paid. In terms of a more expanded definition, the cost of producing the currency in circulation is deducted from the interest earned to calculate net seigniorage.

forward by Sachs (2011), as the country makes a very substantial contribution to development aid by means of seigniorage sharing and customs union transfer agreements.

The calculation of CI scores can be expanded to include all member countries of the DAC of the OECD to assess whether Sachs' three hypotheses hold true in respect of these countries. In the case of South Africa the third hypothesis is refuted.

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