



Index of Financial Inclusion

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Financial Inclusion

- Financial inclusion is a process that ensures ease of availability, accessibility and usage of the formal financial system by all members of the economy.
- An inclusive financial system increases the efficiency of an economy by improving the allocation of resources and by reducing the cost of capital.
- An inclusive financial system enhances welfare by providing opportunities for secure savings and by reducing dependence on informal sources of credit.
- Financial inclusion is seen as a policy priority in many countries in recent periods.
 - * Financial Inclusion Task Force (2005) in UK
 - * Community Reinvestment Act (1997) in US
 - * “No frills” accounts in India (2006)
 - * “Everyman” account in Germany (1996)
 - * “Mzansi” account in South Africa (2004)
 - * Emphasis on right to have a bank account by Law on exclusion (1998) in France

Need for an Index of Financial Inclusion

- The literature on financial inclusion lacks a simple comprehensive measure of financial inclusion that is comparable across economies.
- Individual indicators (such as no. of bank A/C, No. of bank branches etc.) can provide only partial information about financial inclusion – hence the need for an index.
- A good measure of financial inclusion should incorporate information on all aspects of financial inclusion.

An example (relates to 2004)

Country	A/C (100 popl.)	Branches/100,000 popl	Credit/GDP (%)	Deposit/GDP (%)
Brazil	63	14.5	89.1	26.1
India	48.5	6.3	56.8	62
Romania	120.1	13.8	19.6	25.5
South Africa	-	6	78.9	52.7

We propose an Index of Financial Inclusion (IFI) such that it

- incorporates information on several aspects (dimensions) of financial inclusion
- is easy and simple to compute
- is comparable across economies
- is free from any unit
- has values between 0 and 1, 0 indicating complete financial exclusion and 1 indicating complete financial inclusion.

IFI – Methodology

- The methodology for computing IFI is similar to that used by UNDP for computing HDI and GDI.
- In order to compute IFI, first, a dimension index is calculated for each dimension of financial inclusion.
- The IFI is the weighted average of the dimension indexes.

- The dimension index D_i for the i^{th} dimension is computed by using the following formula

$$D_i = \frac{A_i - m_i}{M_i - m_i} \quad (1)$$

where

A_i = Actual value of dimension i

m = minimum value of dimension i

M = maximum value of dimension i

- The minimum and the maximum values are obtained from empirical observation.

- The IFI is a weighted average of the dimension indexes.

$$\text{IFI} = \sum_{i=1}^n w_i D_i \quad (2)$$

where w_i is the weight of the i^{th} dimension and n is the number of dimensions.

- If all dimensions are considered equally important, then an equally weighted scheme can be adopted

$$\text{IFI} = \frac{1}{n} \sum_{i=1}^n D_i \quad (3)$$

Dimensions of Financial Inclusion

→ Depth of the financial system

- indicates how much the banking system has penetrated among the members of the economy
- can be proxied by number of bank A/C per capita.

→ Availability of the financial system

- indicates the extent of the banking system's availability to its users
- can be proxied by number of bank branches per 1000 population

→ Usage of the financial system

- indicates how much the banking system has been used by its users
- can be proxied by the size of bank credit and bank deposits, relative to the GDP.

IFI calculation

- Availability of latest data for a large number of countries is a big problem.
- The latest available data is for 2004.
- Sources: IMF's IFS database for size dimension and World Bank's WDI for depth and availability dimensions.
- Data on all the three dimensions are available for 45 countries (2004).
- Data on only two dimensions – availability and usage – are available for 81 countries (2004).
- Accordingly, two sets of IFI have been calculated.

IFI values (all dimensions)

Country	D_1 (Depth)	D_2 (Avail)	D_3 (Size)	IFI	IFI Rank
High Financial Inclusion (0.6 – 1)					
Switzerland	0.730	1.000	0.890	0.873	1
Denmark	1.000	0.990	0.626	0.8723	2
Malta	0.921	0.789	0.771	0.8268	3
Medium Financial Inclusion (0.4 – 0.6)					
Lebanon	0.128	0.467	1.000	0.5316	4
Mauritius	0.580	0.304	0.598	0.4940	5
Malaysia	0.454	0.247	0.670	0.4570	6
Singapore	0.612	0.230	0.492	0.4443	7
Czech Republic	0.706	0.284	0.319	0.4363	8
Thailand	0.519	0.178	0.583	0.4264	9
Iran	0.829	0.210	0.178	0.4054	10
Low Financial Inclusion (< 0.4)					
Bulgaria	0.492	0.356	0.213	0.3538	11
Chile	0.377	0.237	0.341	0.3181	12
Jordan	0.159	0.253	0.507	0.3067	13
Romania	0.438	0.353	0.117	0.3026	14
Brazil	0.221	0.375	0.298	0.2984	15
Turkey	0.403	0.213	0.274	0.2967	16
Russian Federation	0.695	0.046	0.130	0.2901	17
Trinidad and Tobago	0.388	0.232	0.139	0.2529	18
Guyana	0.199	0.069	0.442	0.2367	19
Lithuania	0.422	0.076	0.162	0.2202	20
India	0.167	0.154	0.308	0.2096	21
Dominican Republic	0.255	0.146	0.205	0.2019	22

IFI values (all dimensions)–contd.

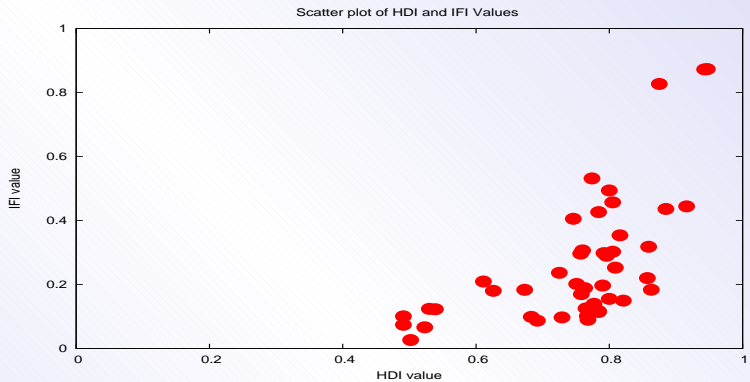
Country	D_1 (Depth)	D_2 (Avail)	D_3 (Size)	IFI	IFI Rank
Colombia	0.214	0.219	0.157	0.1968	23
Philippines	0.098	0.195	0.273	0.1887	24
Argentina	0.123	0.253	0.175	0.1837	25
Guatemala	0.136	0.256	0.158	0.1836	26
Namibia	0.143	0.105	0.293	0.1805	27
Fiji	0.151	0.133	0.226	0.1701	28
Bosnia and Herzegovina	0.146	0.089	0.230	0.155	29
Mexico	0.101	0.190	0.159	0.150	30
Saudi Arabia	0.065	0.129	0.225	0.140	31
Ecuador	0.142	0.234	0.000	0.125	32
Bangladesh	0.071	0.105	0.196	0.124	33
Pakistan	0.057	0.112	0.200	0.123	34
Albania	0.045	0.042	0.263	0.117	35
Venezuela	0.167	0.104	0.071	0.114	36
Peru	0.103	0.097	0.104	0.102	37
Zimbabwe	0.050	0.073	0.179	0.101	38
Honduras	0.093	0.005	0.199	0.099	39
El Salvador	0.156	0.109	0.027	0.097	40
Armenia	0.027	0.189	0.054	0.090	41
Bolivia	0.000	0.027	0.235	0.087	42
Kenya	0.011	0.023	0.189	0.074	43
Papua New Guinea	0.030	0.030	0.140	0.066	44
Uganda	0.002	0.000	0.078	0.027	45

A comparison of IFI and HDI ranks

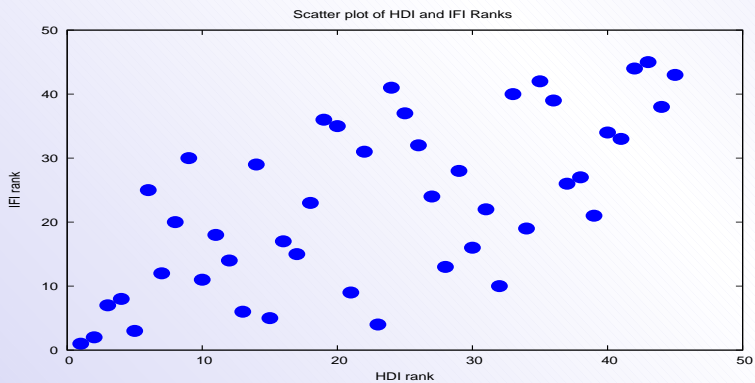
Country	IFI Rank	HDI Re-Rank	Country	IFI Rank	HDI Re-Rank
Switzerland	1	1	Colombia	23	18
Denmark	2	2	Philippines	24	27
Malta	3	5	Argentina	25	6
Lebanon	4	23	Guatemala	26	37
Mauritius	5	15	Namibia	27	38
Malaysia	6	13	Fiji	28	29
Singapore	7	3	Bosnia and Herzegovina	29	14
Czech Republic	8	4	Mexico	30	9
Thailand	9	21	Saudi Arabia	31	22
Iran	10	32	Ecuador	32	26
Bulgaria	11	10	Bangladesh	33	41
Chile	12	7	Pakistan	34	40
Jordan	13	28	Albania	35	20
Romania	14	12	Venezuela	36	19
Brazil	15	17	Peru	37	25
Turkey	16	30	Zimbabwe	38	44
Russian Federation	17	16	Honduras	39	36
Trinidad and Tobago	18	11	El Salvador	40	33
Guyana	19	34	Armenia	41	24
Lithuania	20	8	Bolivia	42	35
India	21	39	Kenya	43	45
Dominican Republic	22	31	Papua New Guinea	44	42
			Uganda	45	43

Comparing HDI and IFI

Values



Ranks



IFI with only two dimensions

IFI values (Availability and Usage dimensions)

Country	D_2 (Avail)	D_3 (Usage)	IFI	IFI Rank
High Financial Inclusion (0.6 – 1)				
Canada	1.000	0.705	0.853	1
Switzerland	0.832	0.759	0.796	2
Denmark	0.824	0.535	0.679	3
Malta	0.656	0.658	0.657	4
Lebanon	0.389	0.853	0.621	5
Japan	0.212	1.000	0.606	6
Medium Financial Inclusion (0.4 – 0.6)				
Sri Lanka	0.946	0.175	0.561	7
New Zealand	0.611	0.496	0.554	8
Australia	0.652	0.429	0.540	9
United States	0.674	0.358	0.516	10
Sweden	0.473	0.467	0.470	11
Hungary	0.616	0.249	0.432	12
Croatia	0.508	0.311	0.410	13
Low Financial Inclusion (< 0.4)				
Malaysia	0.208	0.572	0.390	14
Mauritius	0.255	0.510	0.383	15
Israel	0.317	0.405	0.361	16
Korea	0.287	0.393	0.340	17
United Kingdom	0.397	0.281	0.339	18

IFI values (Availability and Usage dimensions) – contd.

Country	D_2 (Avail)	D_3 (Usage)	IFI	IFI Rank
China	0.020	0.645	0.333	19
Thailand	0.150	0.497	0.324	20
Jordan	0.213	0.433	0.323	21
Panama	0.276	0.361	0.318	22
Singapore	0.193	0.420	0.306	23
Brazil	0.314	0.255	0.284	24
Belize	0.316	0.248	0.282	25
Morocco	0.137	0.377	0.257	26
Czech Republic	0.238	0.272	0.255	27
Egypt	0.071	0.420	0.245	28
Chile	0.199	0.291	0.245	29
Kuwait	0.174	0.313	0.243	30
Bulgaria	0.298	0.182	0.240	31
Slovak Republic	0.218	0.246	0.232	32
South Africa	0.123	0.329	0.226	33
Guyana	0.060	0.377	0.219	34
Turkey	0.179	0.234	0.207	35
Philippines	0.164	0.233	0.199	36
Romania	0.295	0.100	0.197	37
India	0.130	0.263	0.197	38
Costa Rica	0.203	0.182	0.193	39
Uruguay	0.132	0.249	0.190	40

IFI values (Availability and Usage dimensions) – contd.

Country	D_2 (Avail)	D_3 (Usage)	IFI	IFI Rank
Indonesia	0.178	0.190	0.184	41
Argentina	0.212	0.149	0.181	42
Poland	0.172	0.190	0.181	43
Guatemala	0.215	0.135	0.175	44
Namibia	0.090	0.250	0.170	45
Iran	0.176	0.152	0.164	46
Colombia	0.184	0.134	0.159	47
Trinidad & Tobago	0.195	0.119	0.157	48
Slovenia	0.039	0.266	0.153	49
Fiji	0.113	0.193	0.153	50
Saudi Arabia	0.110	0.192	0.151	51
Dominican Republic	0.124	0.175	0.149	52
Mexico	0.160	0.136	0.148	53
Bosnia& Herzegovina	0.076	0.197	0.137	54
Pakistan	0.095	0.171	0.133	55
Albania	0.038	0.224	0.131	56
Bangladesh	0.090	0.167	0.129	57
Bolivia	0.025	0.200	0.112	58
Ethiopia	0.000	0.223	0.111	59
Zimbabwe	0.063	0.153	0.108	60
Armenia	0.159	0.046	0.103	61
Lithuania	0.066	0.138	0.102	62
Ecuador	0.197	0.000	0.098	63
Kenya	0.021	0.162	0.091	64
Honduras	0.007	0.170	0.088	65
Belarus	0.097	0.080	0.088	66

IFI values (Availability and Usage dimensions) – contd.

Country	D_2 (Avail)	D_3 (Usage)	IFI	IFI Rank
Peru	0.083	0.089	0.086	67
Russia	0.040	0.111	0.076	68
Venezuela	0.088	0.061	0.075	69
Papua New Guinea	0.027	0.119	0.073	70
Kazakhstan	0.045	0.099	0.072	71
Botswana	0.074	0.070	0.072	72
Zambia	0.024	0.120	0.072	73
Ghana	0.026	0.115	0.071	74
Georgia	0.060	0.065	0.063	75
El Salvador	0.093	0.023	0.058	76
Kyrgyz Republic	0.060	0.039	0.049	77
Nigeria	0.027	0.068	0.047	78
Madagascar	0.005	0.071	0.038	79
Uganda	0.003	0.066	0.034	80
Tanzania	0.004	0.064	0.034	81

A comparison of IFI and HDI ranks

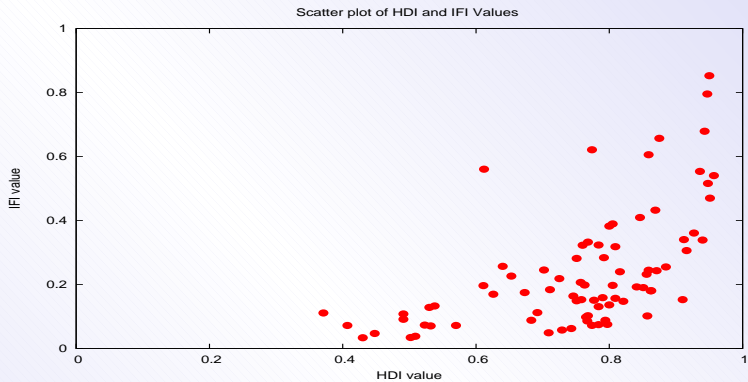
Country	IFI Rank	HDI Re-Rank	Country	IFI Rank	HDI Re-Rank
Canada	1	3	Jordan	21	50
Switzerland	2	6	Panama	22	28
Denmark	3	7	Singapore	23	11
Malta	4	15	Brazil	24	37
Lebanon	5	43	Belize	25	55
Japan	6	4	Morocco	26	66
Sri Lanka	7	53	Czech Republic	27	14
New Zealand	8	9	Egypt	28	61
Australia	9	1	Chile	29	20
United States	10	5	Kuwait	30	16
Sweden	11	2	Bulgaria	31	27
Hungary	12	17	Slovak Republic	32	22
Croatia	13	24	South Africa	33	65
Malaysia	14	31	Guyana	34	58
Mauritius	15	33	Turkey	35	52
Israel	16	10	Philippines	36	49
Korea	17	12	Romania	37	30
United Kingdom	18	8	India	38	68
China	19	46	Costa Rica	39	25
Thailand	20	41	Uruguay	40	23

A comparison of IFI and HDI ranks – contd.

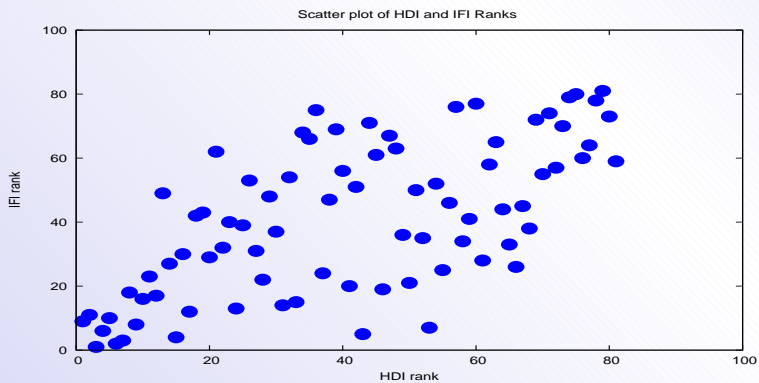
Country	IFI Rank	HDI Re-Rank	Country	IFI Rank	HDI Re-Rank
Indonesia	41	59	Zimbabwe	60	76
<u>Argentina</u>	<u>42</u>	<u>18</u>	Armenia	61	45
<u>Poland</u>	<u>43</u>	<u>19</u>	<u>Lithuania</u>	<u>62</u>	<u>21</u>
Guatemala	44	64	Ecuador	63	48
Namibia	45	67	Kenya	64	77
Iran	46	56	Honduras	65	63
Colombia	47	38	Belarus	66	35
Trinidad & Tobago	48	29	Peru	67	47
<u>Slovenia</u>	<u>49</u>	<u>13</u>	<u>Russia</u>	<u>68</u>	<u>34</u>
Fiji	50	51	<u>Venezuela</u>	<u>69</u>	<u>39</u>
Saudi Arabia	51	42	Papua New Guinea	70	73
Dominican Republic	52	54	<u>Kazakhstan</u>	<u>71</u>	<u>44</u>
<u>Mexico</u>	<u>53</u>	<u>26</u>	Botswana	72	69
<u>Bosnia & Herzegovina</u>	<u>54</u>	<u>32</u>	Zambia	73	80
Pakistan	55	70	Ghana	74	71
Albania	56	40	Georgia	75	36
Bangladesh	57	72	El Salvador	76	57
Bolivia	58	62	Kyrgyz Republic	77	60
Ethiopia	59	81	Nigeria	78	78
Madagascar	79	74			
Uganda	80	75			
Tanzania	81	79			

Comparing HDI and IFI

Values



Ranks



Concluding remarks –

- We have proposed an Index of Financial Inclusion (IFI) – a measure developed in line with well known development indexes such as HDI, HPI and GDI.
- IFI can be used to compare extent of financial inclusion across different economies.
- IFI can be used to monitor the progress of the economies with respect to financial inclusion over time.
- IFI calculations based on the latest available data indicate that many economies are at low levels of financial inclusion. In general, IFI and HDI of an economy tend to move similarly; however exceptions exist.
- It will be interesting to see the correlation between IFI and Gini coefficient.

Thank you