

# Index of Financial Inclusion

(A concept note)

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November 2007

Financial inclusion can be defined as a process that ensures the ease of access, availability and usage of the formal financial system for all members of an economy. An inclusive financial system facilitates efficient allocation of productive resources and reduces cost of capital. Financially excluded people are exposed to the informal sources of credit with high interest rates and often with unethical recovery practices. Further, they indulge in unsafe saving practices. An all-inclusive financial system thus enhances human welfare.

Financial inclusion is seen as a policy priority in many countries in the recent times. Initiatives for financial inclusion have come from the financial regulators, the governments and the banking industry. banking industries, the central banks and the governments. For example, the German Bankers' Association introduced a voluntary code in 1996 providing for an 'everyman' current banking account that facilitates basic banking transactions. In the United States, the Community Reinvestment Act (1997) requires banks to offer credit throughout their entire area of operation and prohibits them from targeting only the rich neighbourhoods. In France, the law on exclusion (1998) emphasises the right to have a bank account. In South

Africa, a low cost bank account called ‘Mzansi’ was launched for financially excluded people in 2004 by the South African Banking Association. In the United Kingdom, the Financial Inclusion Task Force has been constituted by the government in 2005 in order to monitor the development of financial inclusion. And in 2005, the Reserve Bank of India advised Indian banks to facilitate basic ‘no frills’ accounts with low or minimum stipulated balance and in 2006, banks were encouraged to set up bank linkages with micro-finance institutions and Self-Help Groups.

While the importance of financial inclusion has been widely accepted, the literature on financial inclusion lacks a comprehensive measure that can be used to indicate the extent of financial inclusion across economies. Individual indicators (such as number of bank accounts, number of bank branches and so on) that are generally used as measures of financial inclusion can provide only partial information on the level of financial inclusion in an economy. A comprehensive measure of financial inclusion should be able to incorporate information on several aspects (dimensions) of financial inclusion, preferably in one single number.

We propose an index of financial inclusion (IFI), which

1. incorporates information on two or more aspects of financial inclusion
2. is easy and simple to compute
3. is comparable across countries
4. has values between 0 and 1, zero indicating lowest financial inclusion and 1 indicating complete financial inclusion.

## **Methodology**

The methodology for computing IFI is similar to that used by UNDP for computation of some well established development indexes such as the Human Development Index (HDI) and the Gender-related Development Index (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.<sup>1</sup>

The dimension index for the  $i^{th}$  dimension,  $D_i$ , is computed by 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 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 averaging scheme can be adopted. In that case,

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

## Empirical estimation of IFI and cross country comparisons

In the empirical exercise that follows, we consider three basic dimensions of financial inclusion, as follows:

Depth: An inclusive financial system should have as many users as possible – this gives an

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<sup>1</sup>An inclusive financial system may be judged from different dimensions of inclusiveness. Some examples of dimensions of financial inclusion are – how much the financial system has penetrated amongst its users (financial depth), how easily available the services of the financial system are (availability) and how much the financial system is being utilised (usage).

indication of how much the financial system has penetrated among its users. A proxy measure for this dimension is the number of bank accounts per 100 population.

Availability: An inclusive financial system should be easily accessible to its users. This dimension is measured by proxies such as number of bank branches or number of ATMs per 1000 population. In our estimation, we have used number of bank branches per 1000 population to measure this dimension.

Usage: An inclusive financial system should be utilised as much as possible by its users. The size of the bank credit and bank deposits, relative to the GDP of a country is used as a measure for this aspect.

Using data for 45 countries on all of the above dimensions and data for *availability* and *usage* dimensions for 81 countries for the year 2004, equally weighted IFI have been calculated. IFI computed for various countries is provided in Tables 1 and 2.

Depending on the value of IFI, countries are categorised into

1.  $0.6 < \text{IFI} \leq 1$  – high financial inclusion
2.  $0.4 < \text{IFI} < 0.6$  – medium financial inclusion
3.  $0 \leq \text{IFI} < 0.4$  – low financial inclusion

It is found that the majority of the countries belong to the category of low financial inclusion countries.

In the group of 45 countries for which a three dimensional IFI has been estimated, Switzerland leads with the highest value of IFI closely followed by Denmark and Malta (Table 1). India ranks 21 with a low IFI value of 0.21. In the group of 81 countries for which IFI has been computed using two dimensions, Canada leads with an IFI value of 0.85, followed by Switzerland, Denmark and Malta. India is ranked 38<sup>th</sup> with an IFI value of 0.197 (Table 2).

A comparison of the IFI ranks with the ranks of UNDP's Human Development Index (HDI) for various countries indicate that they seem to move in the similar direction.

**Table 1** Index of Financial Inclusion—using data on 3 dimensions of financial inclusion(2004)

Country	$D_1$ (Depth)	$D_2$ (Avail)	$D_3$ (Usage)	IFI	IFI Rank
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
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
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
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

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**Table 2** Index of Financial Inclusion—using data on 2 dimensions of financial inclusion (2004)

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Country	$D_2$ (Avail)	$D_3$ (Usage)	IFI	IFI Rank
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
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
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
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
Indonesia	0.178	0.190	0.184	41
Argentina	0.212	0.149	0.181	42

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**Table 2** Index of Financial Inclusion – contd.

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Country	$D_2$ (Avail)	$D_3$ (Usage)	IFI	IFI Rank
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
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

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