<u>Fiscal Year 2010 (FY10) Data Notes</u>

I. Indicators

Political Rights
Freedom House publishes a 1-7 scale (where 7 is "least free" and 1 is "most free") for Political Rights. Since its *Freedom in the World 2006* report, Freedom House has also released data using a 0-40 scale for Political Rights (where 0 is "least free" and 40 is "most free"). The Political Rights indicator is based on a 10 question checklist grouped into the three subcategories: Electoral Process (3 questions), Political Pluralism and Participation (4 questions), and Functioning of Government (3 questions). Points are awarded to each question on a scale of 0 to 4, where 0 points represents the fewest rights and 4 represents the most rights. The only exception to the addition of 0 to 4 points per checklist item is Additional Discretionary Question B in the Political Rights Checklist, for which 1 to 4 points are *subtracted* depending on the severity of the situation. The highest number of points that can be awarded to the Political Rights checklist is 40 (or a total of up to 4 points for each of the 10 questions). Freedom House has released these aggregated sub-category data for the period 2002-2008. Table 1 illustrates how the 1-7 scale used prior to Fiscal Year 2007 (FY07) corresponds to the new 0-40 scale.

Table 1: Political Rights

New Scale	Old Scale
36-40	1
30-35	2
24-29	3
18-23	4
12-17	5
6-11	6
0-5	7

Before FY07, the years displayed on the x-axis of the MCA Country Scorecards corresponded to the year of the Freedom House publication. For example, data from the *Freedom in the World 2005* publication was treated as "2005" data. This led to a significant amount of confusion since the *Freedom in the World* publications evaluate country performance in the previous year. To address this issue, MCC has adjusted the years on the x-axis of the MCA Country Scorecards to correspond to the period of time covered by the *Freedom in the World* publication. For instance, FY10 Political Rights data come from *Freedom in the World 2009* and are labeled as 2008 data on the scorecard.

Civil Liberties
Freedom House publishes a 1-7 scale (where 7 is "least free" and 1 is "most free") for Civil Liberties. Since its *Freedom in the World 2006* report, Freedom House has also released data using a 0-60 scale (where 0 is "least free" and 60 is "most free") for Civil Liberties. The Civil Liberties indicator is based on a 15 question checklist grouped into four subcategories: Freedom of Expression and Belief (4 questions), Associational and Organizational Rights (3 questions), Rule of Law (4 questions), and Personal Autonomy and Individual Rights (4 questions). Points are awarded to each question on a scale of 0 to 4, where 0 points represents the fewest liberties

and 4 represents the most liberties. The highest number of points that can be awarded to the Civil Liberties checklist is 60 (or a total of up to 4 points for each of the 15 questions). Freedom House has released these aggregated sub-category data for the period 2002-2008. Table 2 illustrates how the 1-7 scale used prior to FY07 corresponds to the new 0-60 scale.

Table 2: Civil Liberties

New Scale	Old Scale
53-60	1
44-52	2
35-43	3
26-34	4
17-25	5
8-16	6
0-7	7

Before FY07, the years displayed on the x-axis of the MCA Country Scorecards corresponded to the year of the Freedom House publication. For example, data from the *Freedom in the World 2005* publication was treated as "2005" data. This led to a significant amount of confusion since the *Freedom in the World* publications evaluate country performance in the previous year. To address this issue, MCC has adjusted the years on the x-axis of the MCA Country Scorecards to correspond to the period of time covered by the *Freedom in the World* publication. For instance, FY10 Civil Liberties data come from *Freedom in the World 2009* and are labeled as 2008 data on the scorecard.

Control of Corruption, Government Effectiveness, Rule of Law, Voice & Accountability, and Regulatory Quality
For ease of interpretation, MCC has adjusted the median for low income countries (LICs) and lower-middle income countries (LMICs) to zero for all World Bank Institute indicators. Country scores are calculated by taking the difference between actual scores and the median. For example, the unadjusted median for LICs on Voice and Accountability is -0.6603. In order to set the median at zero, we simply add 0.6603 to each country's score. Therefore, Mali's Voice and Accountability score, which was originally 0.2808, has been adjusted to 0.9411.

The FY10 scores come from the *Governance Matters VIII* dataset and largely reflect performance in calendar year 2008. Since the release of *Governance Matters V*, the World Bank Institute has updated all of it governance indicators annually.[1] Each year, the World Bank Institute also makes minor backward revisions to its historical data.

Health Expenditure
This indicator measures public expenditure on health as a percent of gross domestic product (GDP). MCC relies on the World Health Organization (WHO) for data on public health expenditure. The WHO estimates general government health expenditure (GGHE) – the sum of

---

[1] Prior to 2006, the World Bank Institute released data every two years (1996, 1998, 2000, 2002 and 2004). With the release of *Governance Matters V* dataset in 2006, the World Bank Institute moved to an annual reporting cycle and provided additional historical data for 2003 and 2005.

outlays by government entities to purchase health care services and goods – in million national currency units (million NCU) and in current prices. GDP data are primarily drawn from the United Nations National Accounts statistics. Countries receive an FY10 score only if 2007 or 2008 expenditure data were available to the WHO. As better data become available, the WHO makes backward revisions to its historical data.

Primary Education Expenditures
This indicator measures public expenditure on primary education as a percent of GDP. MCC relies on the United Nations Educational, Scientific and Cultural Organization (UNESCO) as its primary source and self-reported data from national governments as its secondary source.[2] UNESCO data are always treated as the preferred source of information. If UNESCO data are not available for a particular country, MCC relies on data reported by national governments. Due to gaps in the historical time-series data, countries only receive an FY10 Primary Education Expenditures score if a value was reported by UNESCO or the government for 2008, 2007, or 2006. For both UNESCO data and nationally reported data, the most recent data available within those three years are used. If a country has neither UNESCO data nor nationally reported data for 2008, 2007, or 2006, it does not receive an FY10 score.

For UNESCO data, the GDP estimates used in the denominator are provided to UNESCO by the World Bank. For self-reported data, MCC also requests self-reported GDP estimates, which are cross checked with GDP estimates from the World Bank or the International Monetary Fund (IMF). In its data request to Candidate Countries, MCC requests inclusion of all government expenditures, including sub-national expenditures (both current and capital) and the consolidated public sector (i.e. state-owned enterprises and semi-autonomous institutions), but exclusion of donor funds unless it is not possible to disaggregate them. All data are requested in current local currency (not a constant base year, nor US dollars). As better data become available, UNESCO and MCC make backward revisions to historical data.

Immunization Rates
MCC relies on official WHO/United Nations Children's Fund (UNICEF) estimates for all immunization data. MCC uses the simple average of the 2008 DPT3 coverage rate and the 2008 measles coverage rate to calculate FY10 country scores. If a country is missing data for either DPT3 or Measles, it does not receive an index value. The same rule is applied to historical data. As better data become available, WHO/UNICEF make backward revisions to the historical data.

Girls' Primary Education Completion Rates
MCC draws on the UNESCO as its exclusive source of data. To receive an FY10 score, countries must have either a 2008, 2007, or 2006 UNESCO value. MCC uses the most recent year available. As better data become available, UNESCO makes backward revisions to its historical data.

Girls' Primary Education Completion is measured as the gross intake ratio in the last grade of primary, which is the total number of female students enrolled in the last grade of primary (regardless of age), minus the number of female students repeating the last grade of primary,

---

[2] Efforts are currently underway at UNESCO to improve country coverage, and MCC hopes to discontinue its use of self-reported country data as coverage expands.

divided by the total female population of the entrance age of the last grade of primary. This indicator was selected since data limitations preclude adjusting the girls' primary education completion rate for students who drop out during the final year of primary school. Therefore, UNESCO's estimates should be taken as an upper-bound estimate of the actual female primary completion rate. Because the numerator may include late entrants and over-age children who have repeated one or more grades of primary school but are now graduating, as well as children who entered school early, it is possible for the primary completion rate to exceed 100 percent.

Natural Resource Management
In creating the index used for the FY10 data, Columbia University's Center for International Earth Science Information Network (CIESIN) and the Yale Center for Environmental Law and Policy (YCELP) relied on 2008 eco-region protection data, 2008 child (ages 1-4) mortality data, 2006 water access data, and 2006 sanitation access data. If no 2006 water and sanitation updates were available, 2004 data were applied.[3] Each of the four components (eco-region protection, child mortality, access to water, and access to sanitation) is equally weighted (25%) in the overall index. Country scores are reported on the MCA Country Scorecards as 2009 data. As better data become available, CIESIN and YCELP make backward revisions to historical data.

Fiscal Policy
This indicator is measured as a three-year average of the annual fiscal balance (government revenues minus government expenditures) as a share of GDP. The FY10 score averages the annual fiscal balances of 2006, 2007 and 2008. The data for this measure rely primarily on International Monetary Fund (IMF) country reports, or are provided directly by the recipient government where public IMF data are outdated or unavailable. In calculating the fiscal balance, donor funds are included in total expenditures, and both revenues and expenditures include the consolidated public sector (i.e. state-owned enterprises and semi-autonomous institutions). If general government balance data are not available, MCC relies on central government balance data. All data are cross-checked with the IMF's World Economic Outlook (WEO) database. As better data become available, backward revisions are made to historical data.

Inflation
MCC relies exclusively on the IMF's WEO database for inflation data. WEO inflation data reflect annual percentage change averages for the year, not end-of-period data. FY10 data refer to the 2008 inflation rate. As better data become available, the IMF makes backward revisions to its historical data.

Trade Policy
MCC relies on the Trade Freedom component of its *Index of Economic Freedom* for its Trade Policy indicator. In 2006, the Heritage Foundation re-scaled the Trade Freedom component to provide greater differentiation among countries. The new scale ranges from 0 to 100, where 0 represents the highest level of protectionism and 100 represents the lowest level of protectionism. FY10 data come from the *2010 Index of Economic Freedom* and are treated as

---

[3] WHO and UNICEF release updated water and sanitation estimates every two years, so 2004 is the next most recent estimate before 2006.

2009 values on the scorecard.[4] As better data become available, the Heritage Foundation makes backward revisions to its historical data.

The equation used to convert tariff rates and non-tariff barriers (NTB) into the 0-100 scale is presented below:

$$\text{Trade Policy}_i = \{[(\text{Tariff}_{max}\text{-}\text{Tariff}_i)/(\text{Tariff}_{max}\text{-}\text{Tariff}_{min})] \times 100\} - \text{NTB}_i$$

Trade Policy$_i$ represents the trade freedom in country i, Tariff$_{max}$ and Tariff$_{min}$ represent the upper and lower bounds (50 and 0 percent respectively), and Tariff$_i$ represents the weighted average tariff rate in country i. The result is multiplied by 100 to convert it to a percentage. If applicable to country i, an NTB penalty of 5, 10, 15, or 20 points is then subtracted from the base score, depending on the pervasiveness of NTBs.

Business Start-Up: The Business Start-Up index is calculated as the average of two indicators from the International Finance Corporation's (IFC) *Doing Business* survey:

- Days to Start a Business: This component measures the number of calendar days it takes to comply with all procedures that are officially required for an entrepreneur to start up and formally operate an industrial or commercial business. These include obtaining all necessary licenses and permits and completing any required notifications, verifications or inscriptions for the company and employees with relevant authorities.

- Cost of Starting a Business: This component measures the cost of starting a business as a percentage of country's per capita income. The IFC records all procedures that are officially required for an entrepreneur to start up and formally operate an industrial or commercial business. These include obtaining all necessary licenses and permits and completing any required notifications, verifications or inscriptions for the company and employees with relevant authorities.

Since the two sub-components of the Business Start-Up index have different scales, MCC normalizes the indicators to create a common scale for each of the. Each indicator is transformed using a simple formula:

Country X's Normalized score =   Maximum observed value – Country X's raw score
                                 Maximum observed value – Minimum observed value

For example, to calculate Mozambique's normalized score on the Days to Start a Business indicator, we would first subtract Mozambique's raw score (26) from the maximum observed

---

[4] The *Index of Economic Freedom* is typically released in January, and before FY09, MCC had relied on the most recent of these data for its Trade Policy indicator. However, beginning in September of 2008, the Heritage Foundation has released a preview of the Trade Freedom scores for the upcoming *Index of Economic Freedom*. On September 28, 2009, the Heritage Foundation published its preview of the Trade Freedom scores for the *2010 Index of Economic Freedom* in a paper entitled "Global Trade Liberalization Continues, But Risks Abound" by Daniella Markheim and Ambassador Terry Miller. The FY10 Trade Policy scores come from this document. The historical time series for Trade Policy comes from previous editions of the *Index of Economic Freedom* through the 2009 edition.

value (694)[5]. We would then divide the difference between those two numbers (668) by the difference between the maximum observed value (694) and the minimum observed value (1). This yields a normalized "days to start a business" score of 0.9639. After both of the two sub-components were transformed into a common scale, MCC calculated the Business Start-Up Index using the following formula:

Business Start-Up = .5(IFC Days to Start a Business) + .5(IFC Cost of Starting a Business)

In Mozambique's case, its normalized Days to Start a Business score (0.9639) is given a 50% weight and its Cost of Starting a Business score (0.9614) is given a 50% weight. This yields a Business Start-Up index value of 0.9626.

FY10 data refer to the 2010 values reported in the IFC's *Doing Business 2010* report. As better data become available, the IFC makes backward revisions to its historical data.

Land Rights and Access: This index draws on 2004-2008 "Access to Land" data from the International Fund for Agricultural Development (IFAD) and 2004-2009 data from the IFC on the time and cost of property registration. Country scores are reported on the MCA Country Scorecards as 2009 data.

Countries that received a "no practice" score on the IFC's Time to Register Property indicator were assigned the maximum observed value (i.e. the worst possible score) plus one additional day. Countries that received a "no practice" score on the Cost of Registering Property indicator were assigned the maximum observed value (i.e. the worst possible score) plus one additional percentage point of the property value.[6]

Since each of the three sub-components of this index have different scales, MCC created a common scale for each of the indicators by normalizing them. Each indicator was transformed using a simple formula: [7]

Country X's Normalized score = $\dfrac{\text{Maximum observed value} - \text{Country X's raw score}}{\text{Maximum observed value} - \text{Minimum observed value}}$

For example, to calculate Morocco's normalized score on the IFC Days to Register Property indicator, we would first subtract the maximum observed value (514)[8] from Morocco's raw score

---

[5] The minimum and maximum observed values are the minimum and maximum of all 183 countries covered by the *Doing Business 2010* report.

[6] As described in the *Doing Business in 2007* report, "[w]hen an economy has no laws or regulations covering a specific area – for example bankruptcy – it receives a 'no practice' mark. Similarly, if regulation exists but is never used in practice, or if a competing regulation prohibits such practice, the economy receives a 'no practice' mark. This puts it at the bottom of the ranking" (World Bank 2006: 74).

[7] Due to the fact that high scores on the IFC indicators represent *low* levels of performance and high scores on the IFAD indicator represents *high* levels of performance, it was also necessary to invert either the IFAD normalized scale or the IFC normalized scales. MCC chose to chose to invert the IFAD scale by subtracting each country's normalized value from 1. As such, Morocco's original normalized IFAD score was 0.3077 [(5.25-4.25)/(5.25-2)] and its inverted normalized IFAD score was 0.6923 (1-0.3077).

(47). We would then divide the difference between those two numbers (467) by the difference between the maximum observed value (514) and the minimum observed value (2). This yields a normalized "days to register property" score of 0.9121. After each of the three sub-components was transformed into a common scale, MCC calculated the Land Rights and Access Index using the following formula:

Land Rights and Access = .5(IFAD) + .25(IFC Time to Register Property) + .25(IFC Cost of Registering Property)

In Morocco's case, its normalized IFAD score (0.6923) is given a 50% weight, its IFC Time to Register Property score is given a 25% weight (0.9121), and its IFC Cost of Registering Property score (0.8310) is given a 25% weight. This yields a Land Rights and Access index value of 0.7819.

FY10 data on the time and cost of registering property are drawn from the 2010 data in the IFC's *Doing Business 2010* Report. FY10 index values also rely upon the most recent year available from IFAD's 2004, 2005, 2006, 2007, and 2008 "Access to Land" data. Historical time series data was constructed using a lag structure that assigns an index value to a country only if that country has data from both IFAD and IFC for the year of interest or the most recent prior year if no data were available for the year of interest.[9] No index value is assigned if data from one source exists for a given year, but data from the other source exists only for years after the year of interest. For instance, if a country has data availability according to Table 3, that country would receive index values for 2009, 2008 and 2007. However, it would not receive an index value for 2004, 2005 or 2006 since no "Access to Land" score exists for 2006 or any prior years.

Table 3: Lag structure for Land Rights and Access' historical time series

	2004	2005	2006	2007	2008	2009
Access to Land (IFAD)				x	x	
Time to Register a Property (IFC)	x	x	x	x	x	x
Cost of Registering a Property (IFC)	x	x	x	x	x	x

x=available data

II. Data Collection Cutoff

Many of the indicator institutions make revisions to their data over time. The data on the FY10 country scorecards were current as of October 9, 2009, when MCC completed its data collection process.

---

[8] The minimum observed values is the minimum of all 183 countries covered by the *Doing Business 2010* report. The maximum observed value is the maximum of all 183 countries covered by the *Doing Business 2010* report plus one (day or percentage point) to account for the "no practice" values.
[9] As better data become available, the IFC makes backward revisions to its historical data.