

FreeBalance®
Case Studies



**FreeBalance Government Clients
On the Path to Governance Success**

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FreeBalance Government Clients

On the Path to Governance Success

Introduction

Greater effectiveness, efficiency, transparency and accountability throughout the budget preparation cycle are key government reform objectives. FreeBalance helps governments improve Public Financial Management (PFM) by leveraging modern Government Resource Planning (GRP) software and advisory services. FreeBalance solutions cover the entire budget cycle at all levels of central, regional and local government. These solutions contribute to improved public sector governance.

The ultimate goal for FreeBalance, a for-profit social enterprise, is to accelerate country growth and help governments raise the standard of living for its citizens. This goal can be achieved through improved economic growth and public policies. It is, therefore, essential to efficiently manage public resources and invest wisely. It is also very important to attract new foreign direct investment or development assistant funds to extend public resources to encourage growth and employment. FreeBalance believes that good governance is required to sustain growth and should be considered as integral to economic development. Good governance can lead to sustainable growth.

FreeBalance is much more than a provider of GRP software to governments. The company is about providing a *good balance* for public budgets to meet government development goals. How well are FreeBalance clients leveraging GRP software and PFM processes to meet these goals? Clearly there are countless variables that can be used to explain the social and economic achievements and failures of any government. Is there any relationship between being a FreeBalance client and improved economic growth? How have the economies of FreeBalance government customers been performing compared to global and regional trends? How well have these countries managed public debt? What are the public revenue and expenditure trends in these countries? Is there any relationship with government effectiveness ratings? What is the economic outlook of FreeBalance client economies?

These are the type of questions that will be briefly addressed in this paper. The analysis includes only countries that are using FreeBalance software at the national or federal level. The maturity of PFM reform and the functions of FreeBalance GRP software used differ among the countries analyzed.

This is not meant to be an exhaustive study. This brief governance analysis about FreeBalance GRP customers is meant as food for thought for further discussion.

Findings of this study show that countries operating FreeBalance Governance Resource Planning (GRP) solutions have been *outperforming other countries* in their economic regions in several relevant economic indicators. Among these indicators, economic growth rate, investment rate, fiscal consolidation process and public debt reductions achieved in recent years are highlighted. It also seems clear that this positive momentum is expected to continue in the years to come, providing a positive economic outlook for citizens and investors. Also, in order to better understand how good governance can positively influence economic growth, an econometric cross-sectional analysis on the economic growth of 172 countries was run, finding empirical evidence to suggest that strong government effectiveness and investment levels deliver superior economic growth rates.

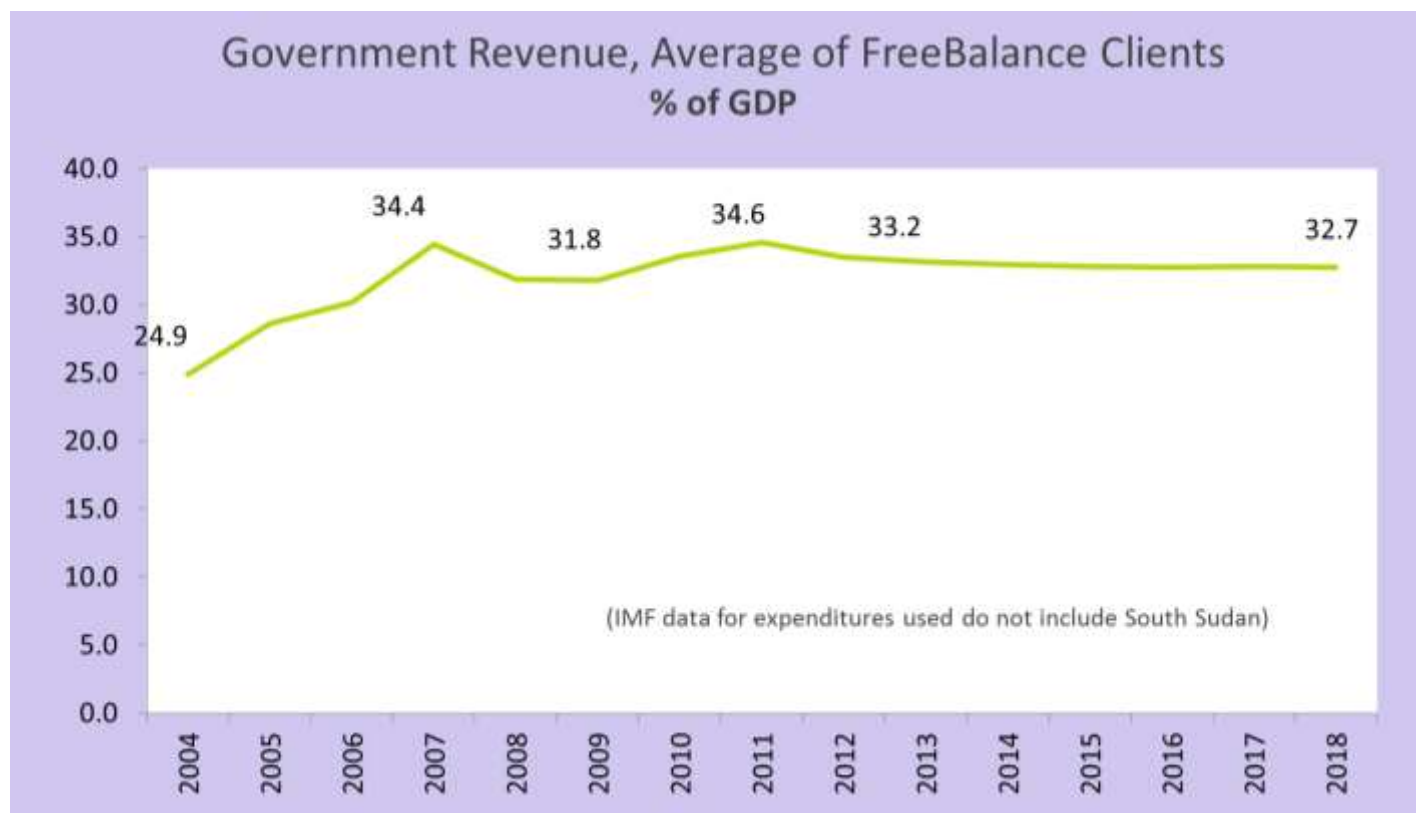


Public Financial Management (PFM) Related Governance

Government Revenues

Sound Public Expenditure Management (PEM) and Government Receipts Management (GRM) are two of the major challenges faced by governments. The less developed a country, the harder it is to manage these dimensions and to have a tax base large enough to finance public expenditures. These factors combined with often high levels of tax evasion seriously jeopardize the ability that developing country governments have to generate revenues to invest in their economies without incurring large deficits. The lack of government revenue can result in “debt traps” as governments issue debt to overcome the lack of tax revenues.

Most FreeBalance clients represent developing countries. Only a decade ago these countries were experiencing a combination of high debt to GDP and low government revenue to GDP ratios. In other words, extremely high public debt and low government revenues in proportion to the GDP.

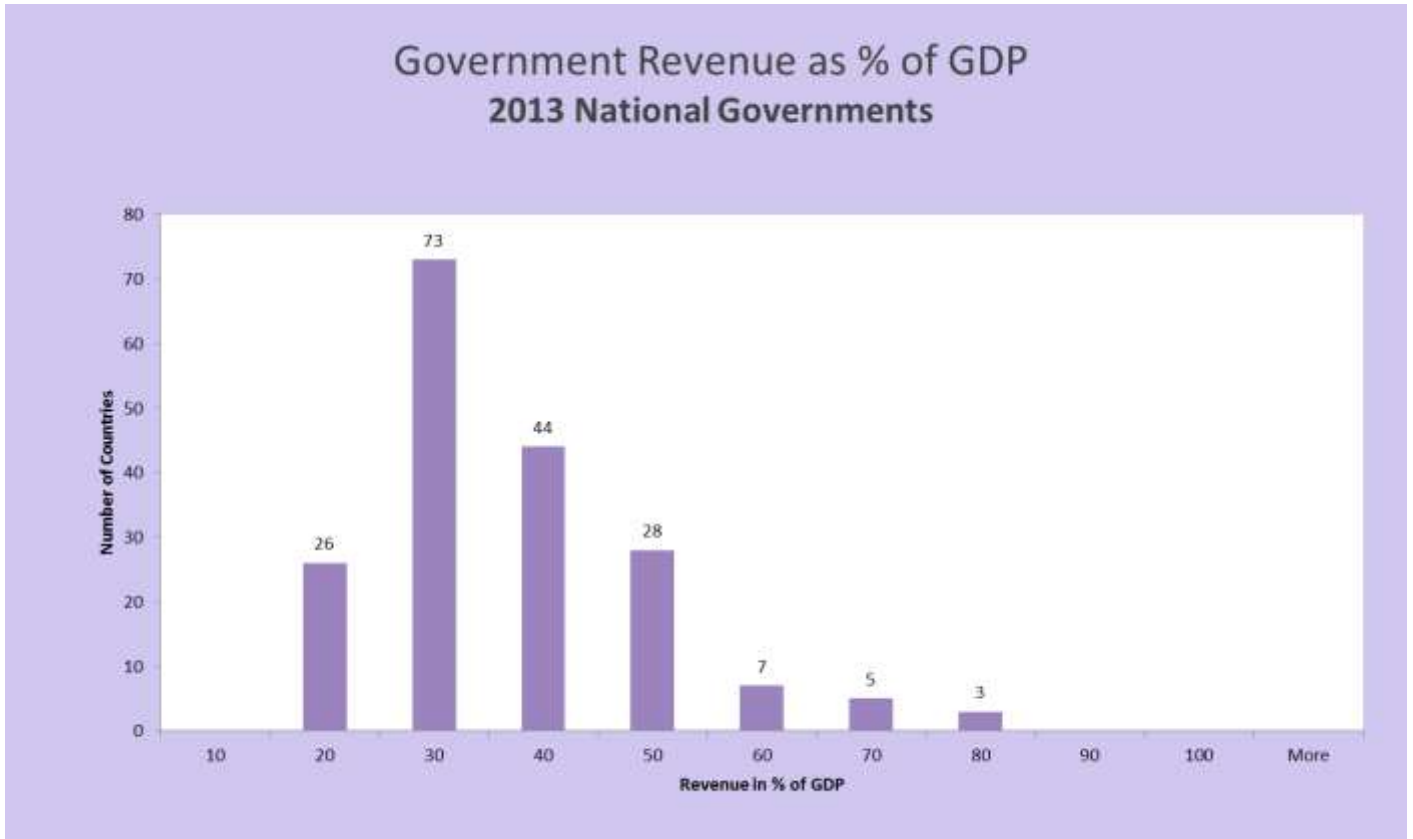


One big challenge that most of these governments had was to achieve sustainable and substantial increases in government revenues. These increases should allow for fiscal deficits reduction while making it possible for strategic public expenditure and investments. In developing countries, markets are usually highly imperfect. Infrastructure suffers from underinvestment and a gradual increase in the relative size of revenues in proportion to the GDP. Expenditures, if properly used, can positively promote economic development and social stability. Once revenues are collected, it is essential to have good PFM tools so that additional revenue is used properly.



Governments using FreeBalance GRP solutions at the national/federal level have made considerable progress in terms of increasing government revenues. Overall, the simple average of governmental revenues in percentage of the GDP moved from about 25% of the GDP in 2004 to almost 35% in 2011.

The following histogram shows us that, according to the April 2013 IMF estimates, 53% of governments will have revenues of less than 30% of the GDP, while 77% will have revenues of less than 40% of the GDP. More than 3 out of 4 of the governments will have total revenues that are somewhere in between 20 and 50% of the GDP.

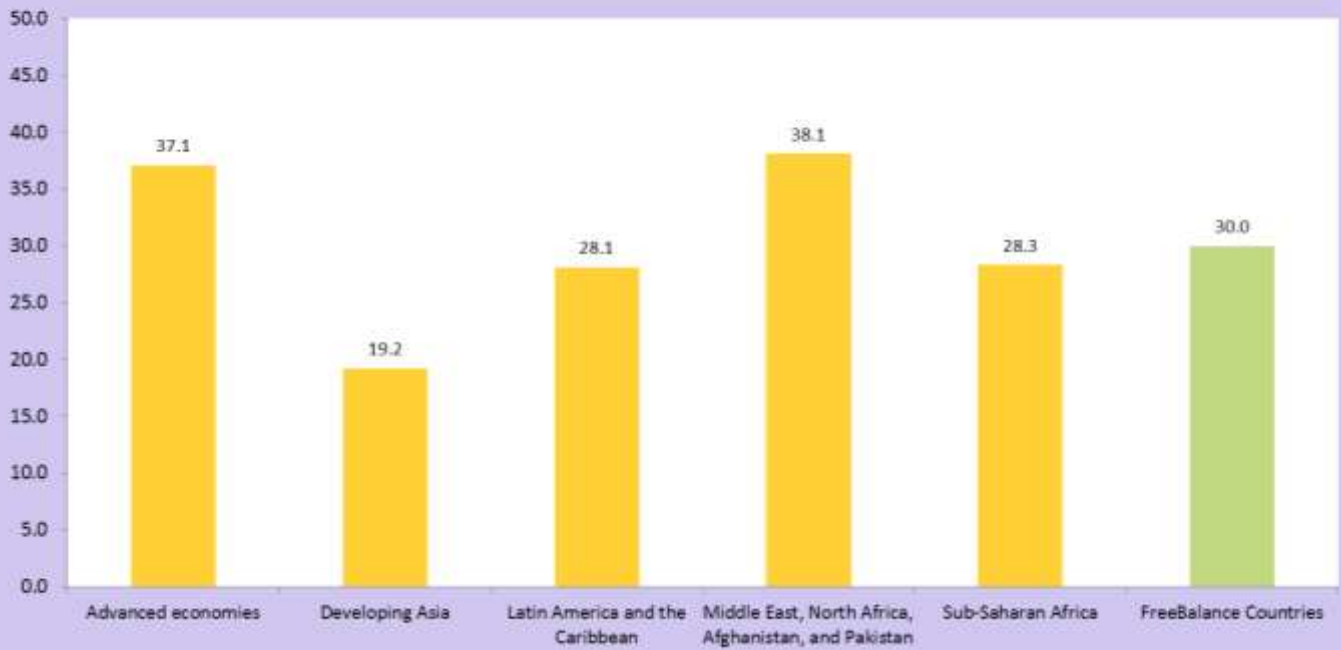


There is evidence that the average level of government revenues increased modestly over the last decade in FreeBalance countries. The five year average revenue of countries using FreeBalance solutions at the national level increased from 30 to 33% of GDP from the 2004-2008 to the 2009-2013 five year period.

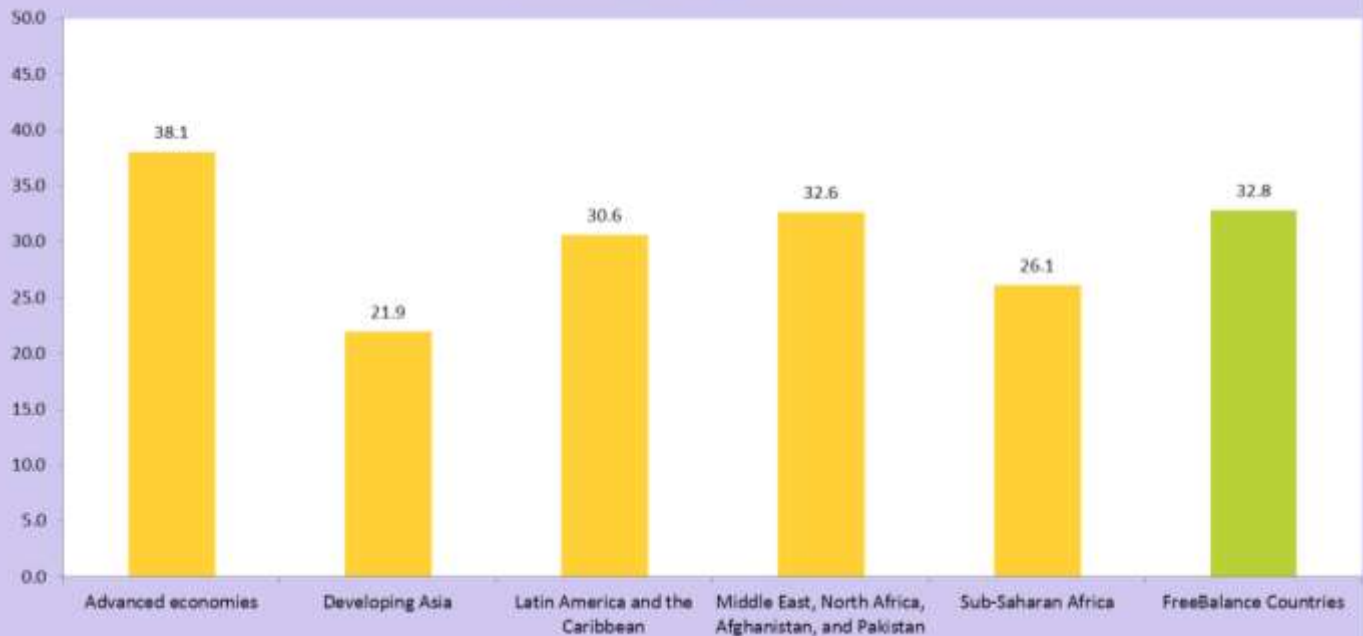
Asia and Latin America have seen the relative size of government revenues increase over the last 10 years. Countries in Sub-Saharan Africa, North Africa, Middle East, and South Asia have seen their average government revenues decrease. Projections show that FreeBalance government customers are likely to collect more revenue per GDP than peer countries that are using alternative software for public finance.



Government Total Revenue in % of GDP 2004-2008



Government Total Revenue in % of GDP 2014-2018 Projected

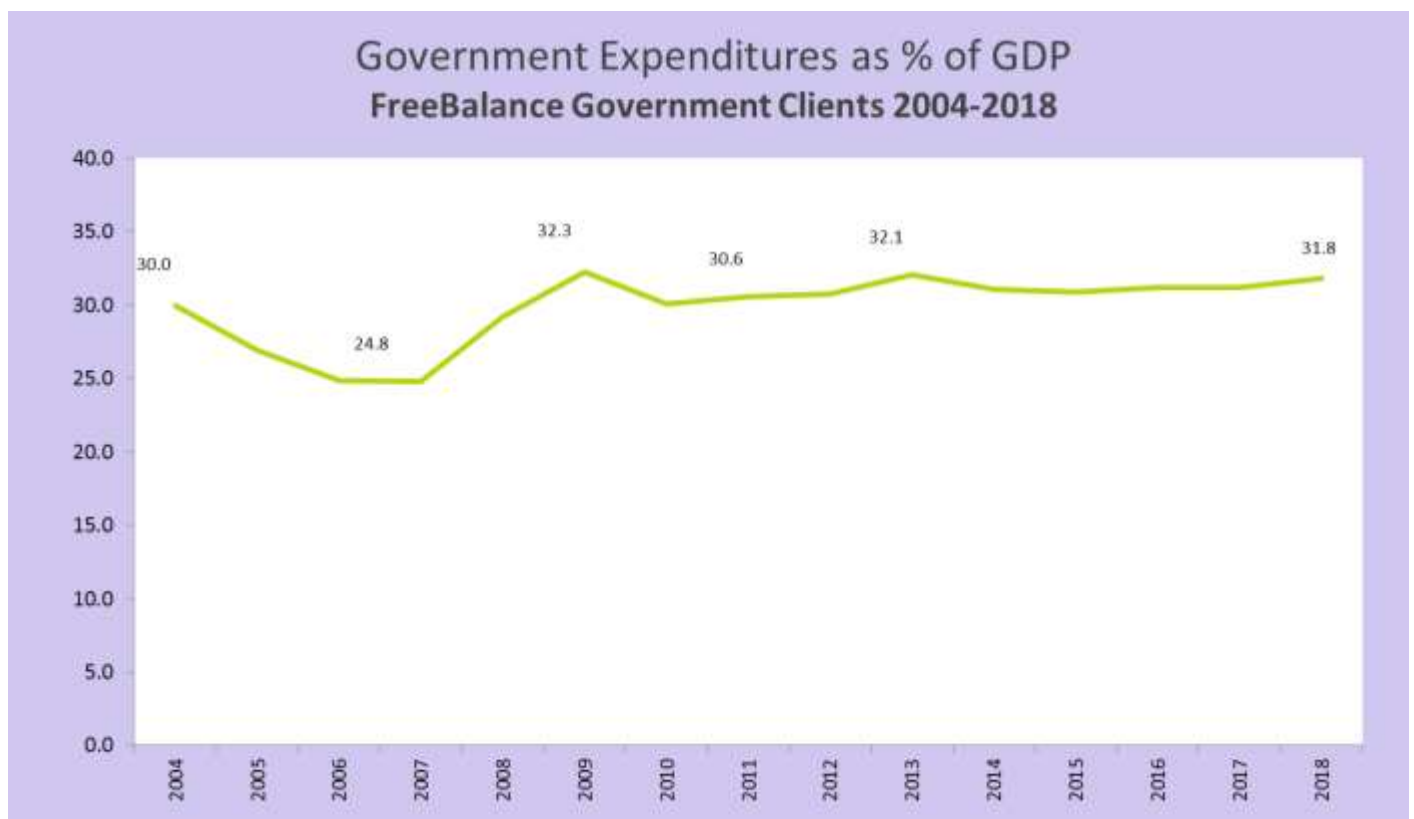




Government Expenditures

Government expenditure as a percentage of GDP experienced some volatility over the last decade but this trend does not seem to be increasing. This means that the increase in revenue has been mainly used to balance fiscal deficits instead of being mainly used to finance additional expenditure. According to IMF data and using a simple average of government expenditures as a percentage of GDP, the average expenditures of FreeBalance clients has fluctuated at around 30% of the GDP over the last decade and is expected to remain stable in following years.

Also important to be mentioned is the fact that FreeBalance clients are not, on average, spending a higher percentage of the country's GDP than the regional average.





Government Total Expenditures in % of GDP 2004-2008

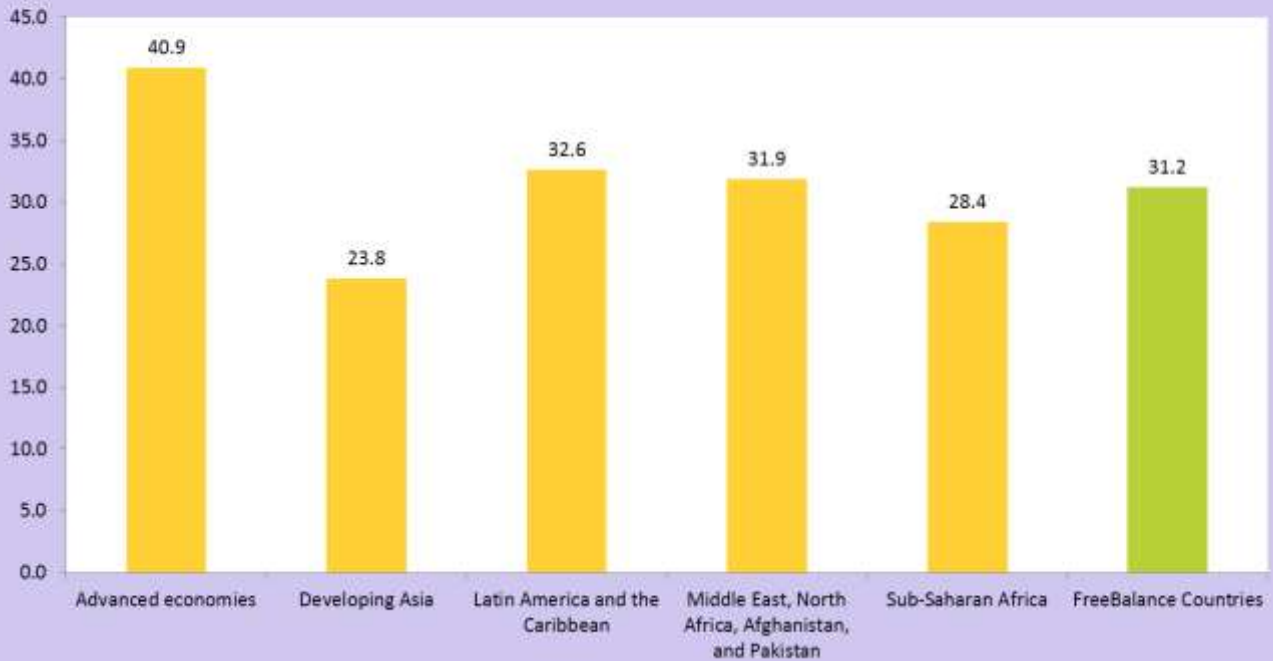


Government Total Expenditures in % of GDP 2009-2013

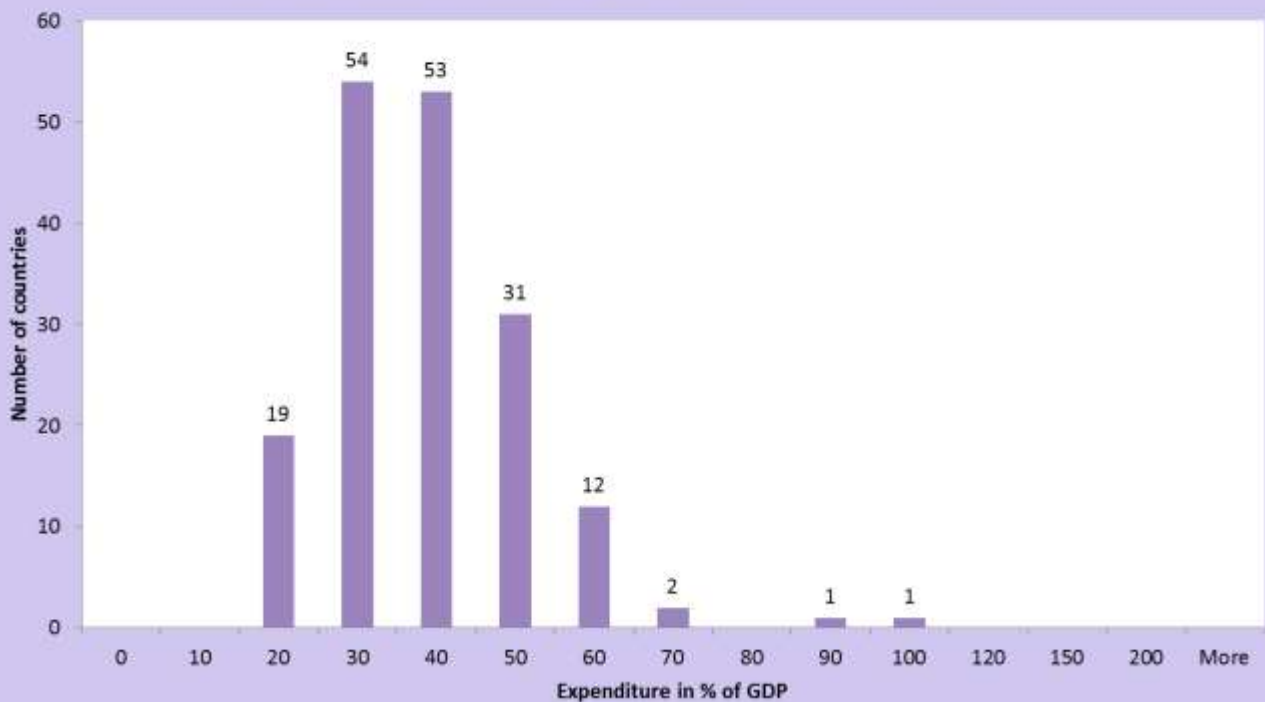




Government Expenditures in % of GDP 2014-2018 Projected



Government Total Expenditure in % of GDP

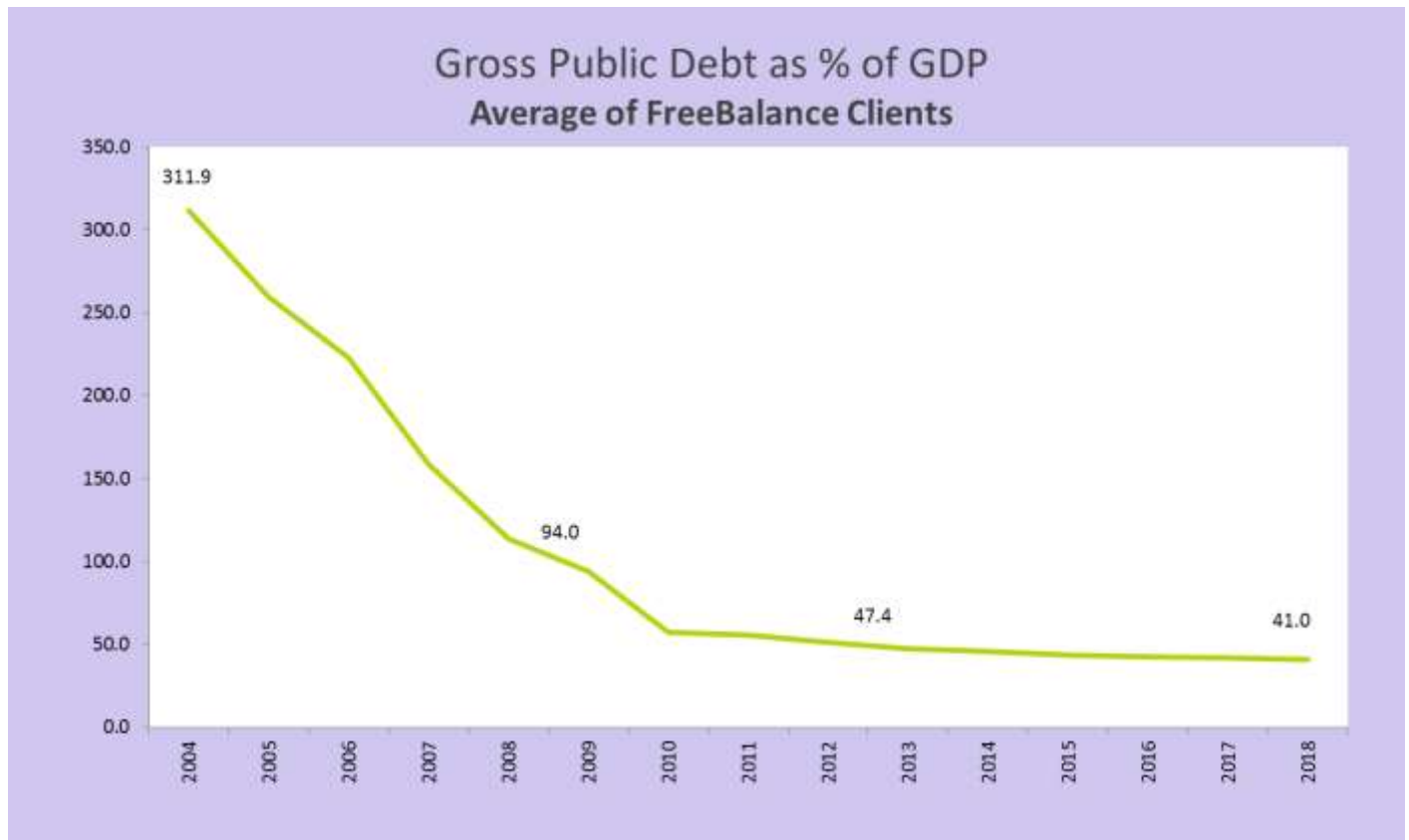




Government Gross Debt

Some FreeBalance clients have benefited from debt relief programs over the last ten years. Thanks to these relief programs, debt ratios in these countries became considerably lower, releasing funds for poverty reduction policies. Nevertheless, debt relief programs are not the sole reason why public debts diminished as a percentage of the GDP. Along with such programs these countries managed to register strong economic growth rates which contributed to a further reduction in the relative size of public debts. They also decreased their fiscal deficits through higher governmental revenues while avoiding the temptation of increasing expenditures significantly.

Overall, while the advanced economies experienced sharply increased public debts, most FreeBalance clients experienced remarkable debt reductions. This reduction was remarkable to the extent that most of these countries currently owe less as a percentage of their GDP than advanced economies.

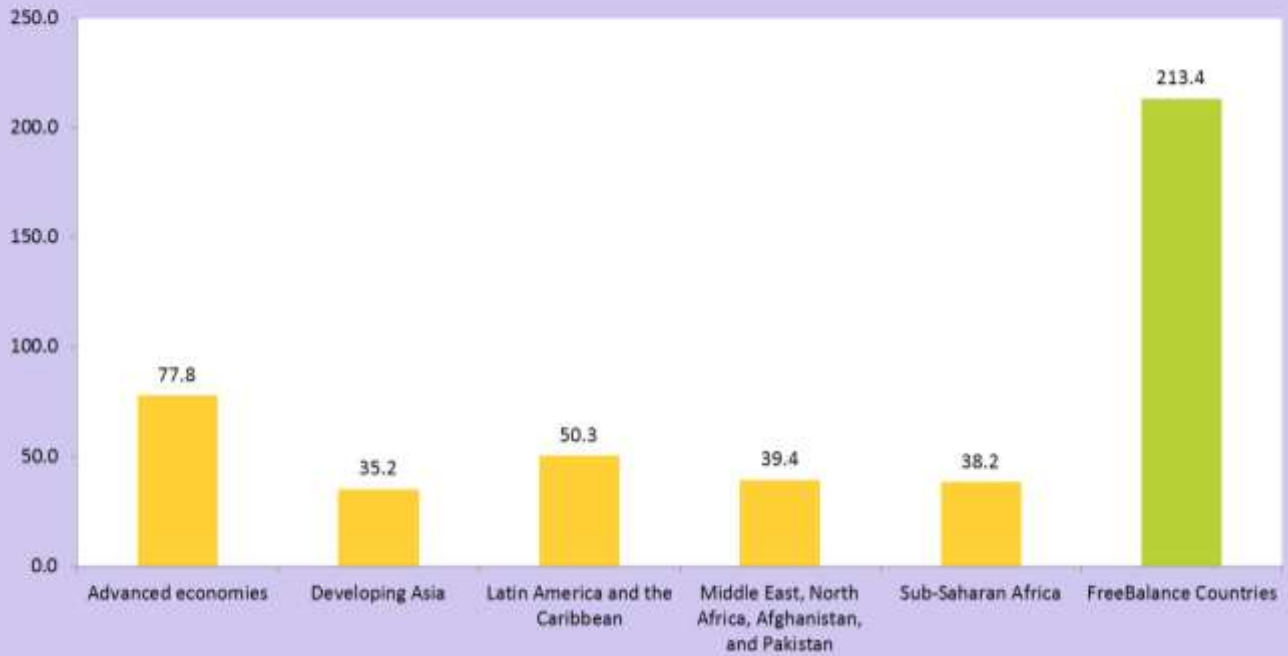


The previous graph did not include some countries due to the lack of consistent data. There does not appear to be any evidence that including these countries would in any way change the conclusion that overall debt, as a percentage of the GDP, is being quickly reduced among FreeBalance clients.

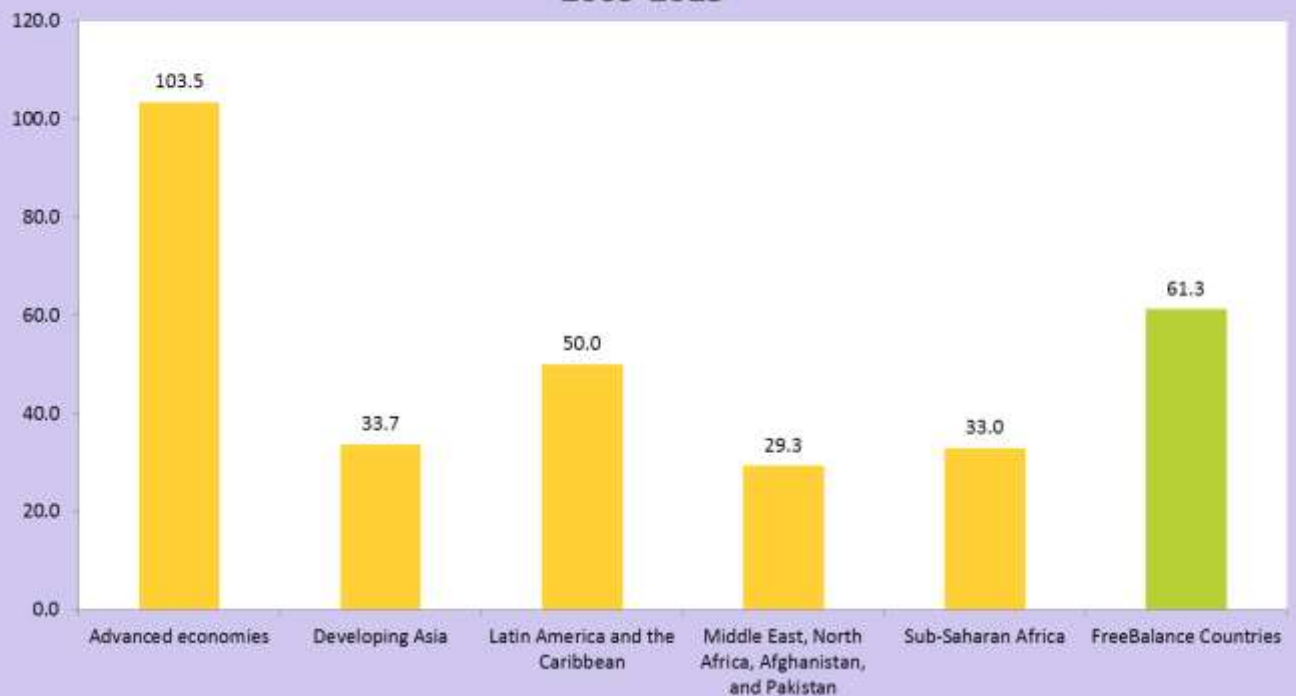
A computation of the simple average of the public debts among the previously mentioned FreeBalance clients reveals that the average public debt fell from 312% of the GDP in 2004 to just 47% in 2013. The decrease is expected to continue for the next 5 years based on IMF projections. As mentioned before, FreeBalance clients/countries benefited from significant debt relief programs during the last decade but the overall public debt decrease was also possible due to strong reductions in the fiscal deficits,



Government Public Debt in % of GDP 2004-2008

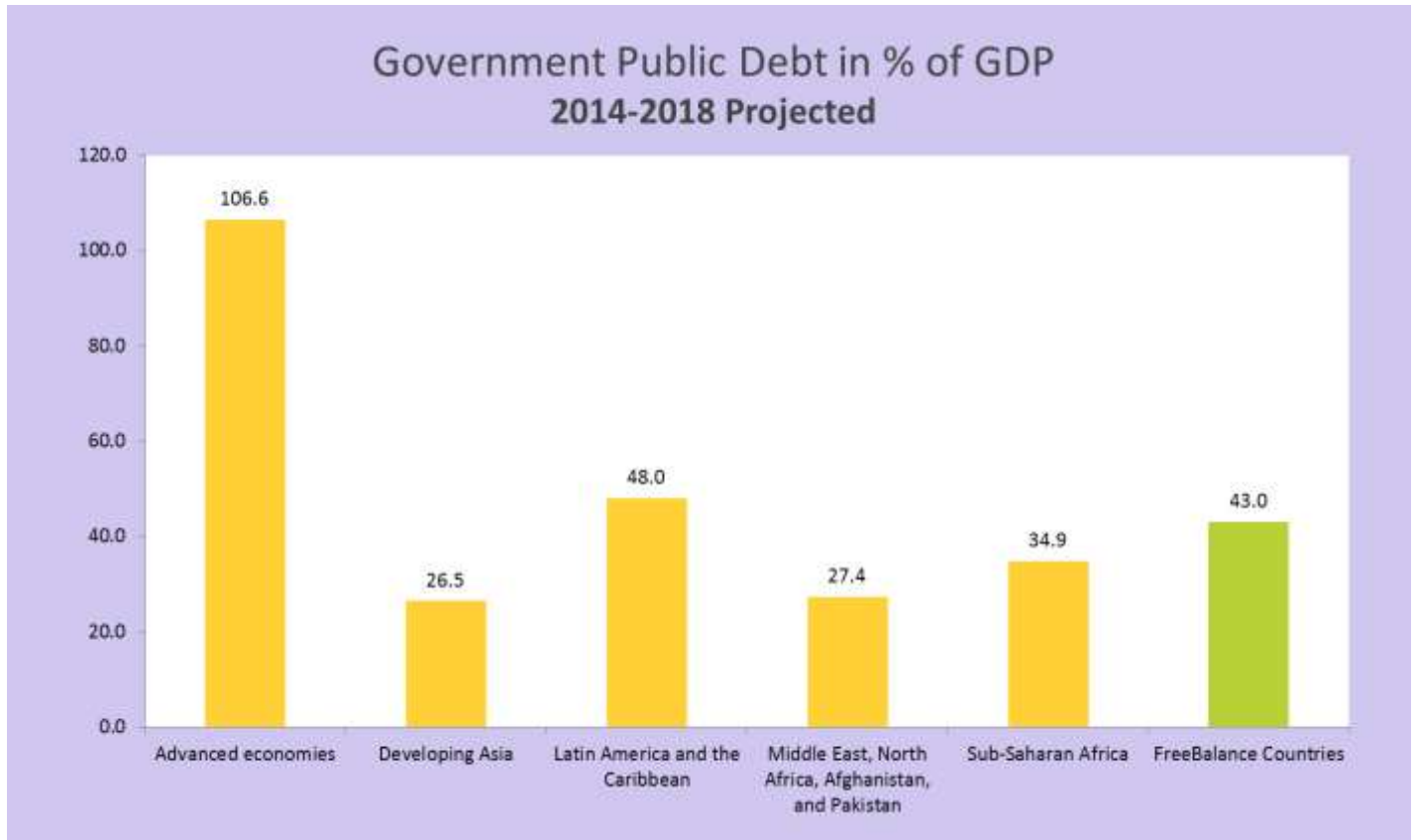


Government Public Debt in % of GDP 2009-2013





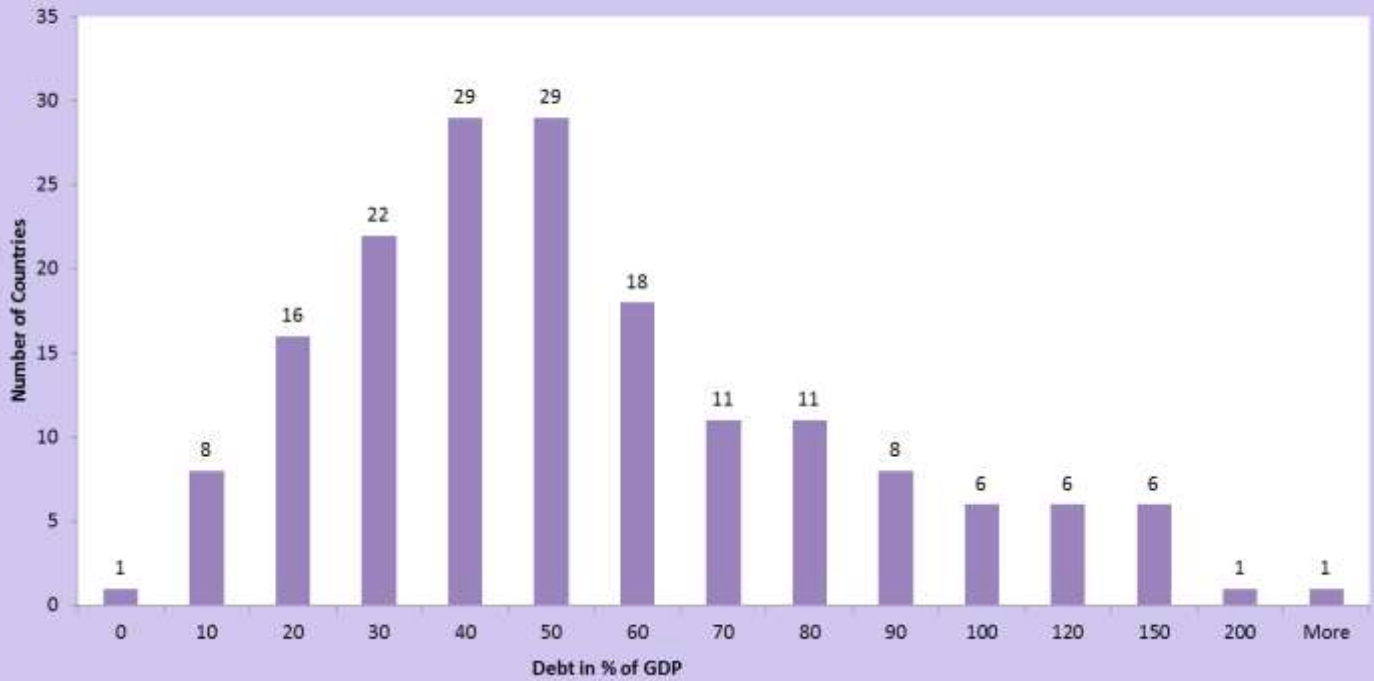
usually combined with strong economic growth rates. Such fiscal deficits reductions were possible due to expenditure controls, which stabilized expenditure growth in percentage of the GDP, together with revenue increases.



The following histogram shows us what the debt to GDP ratios were across 172 countries. Most of the countries have debt levels of less than 50% of the GDP. FreeBalance clients still owe in percentage of the GDP on average more than most countries but these debt levels are more clustered towards the global average than they were 10 years ago.



Government Gross Debt in % of GDP Distribution

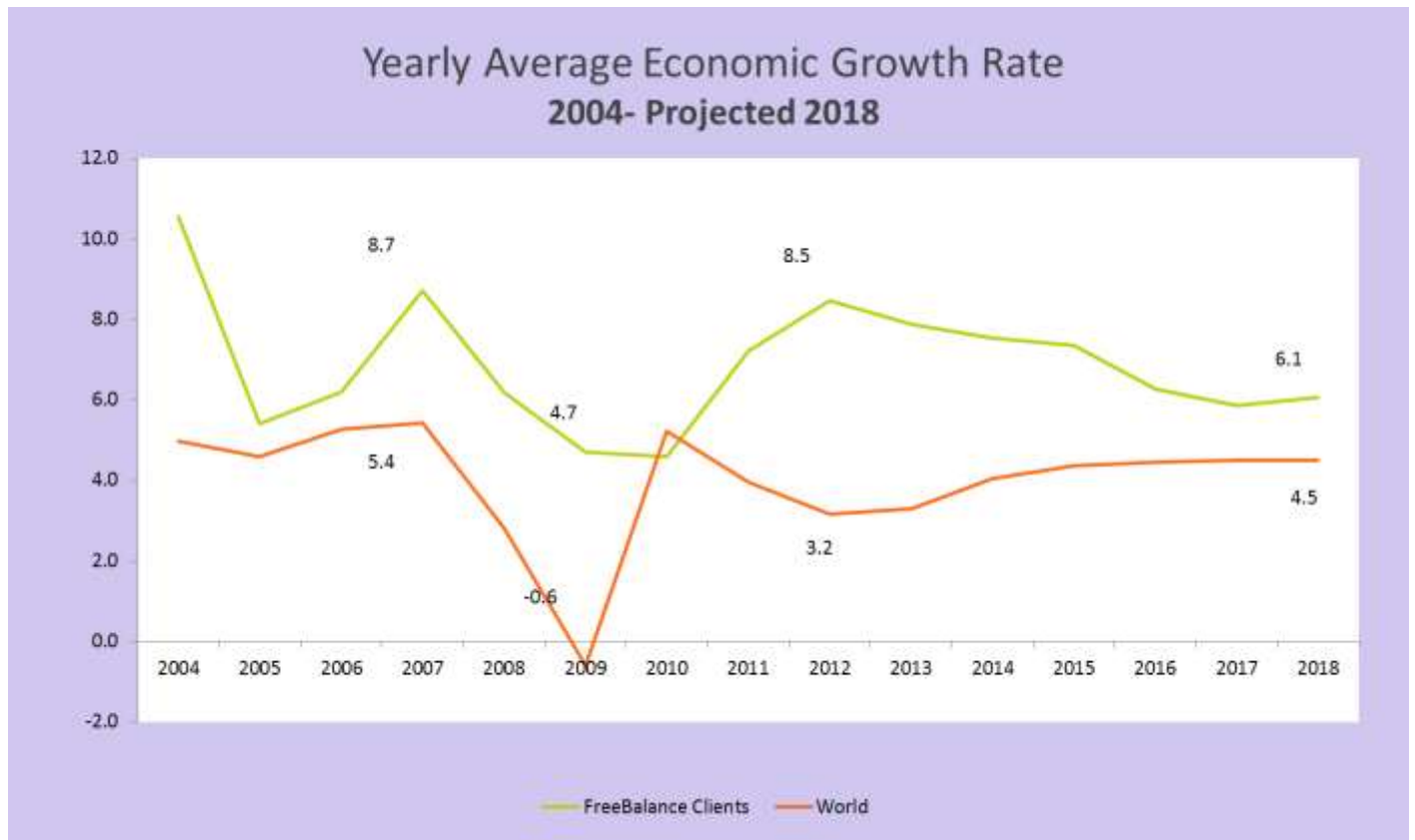




Real Economic Growth Rates

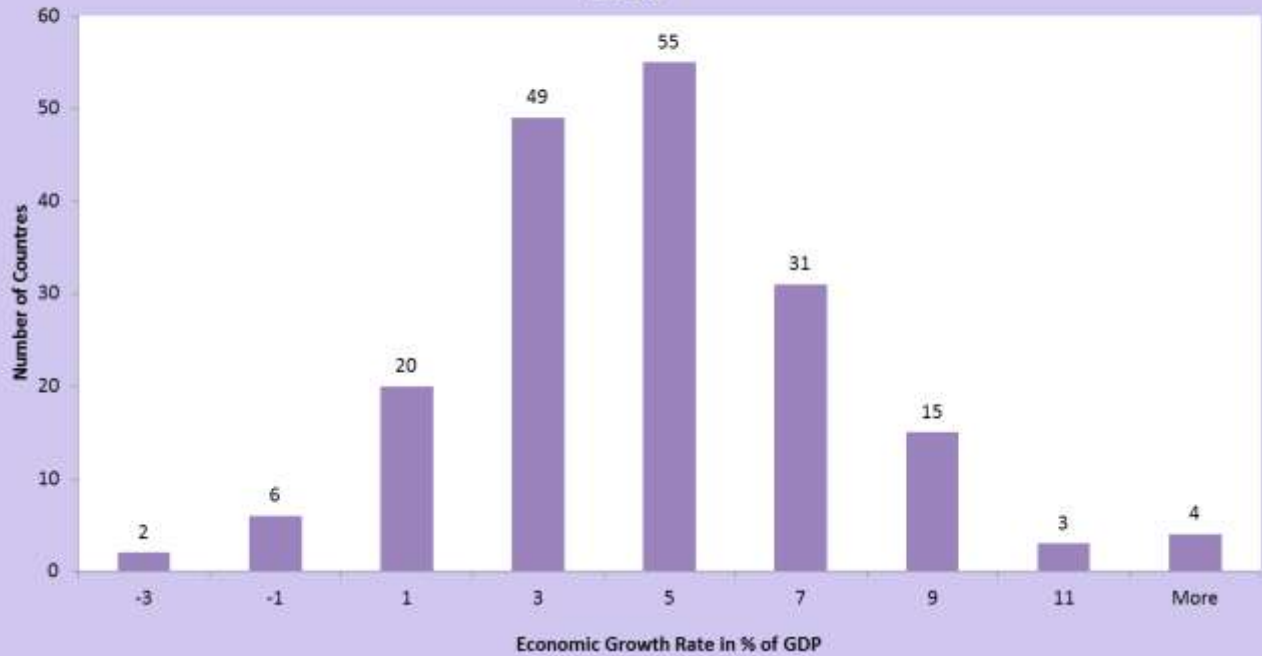
The computation of the simple average economic growth rate registered across FreeBalance clients/countries reveals that countries where FreeBalance operates have been, on average, growing considerably faster than the other countries. According to the latest IMF World Economic Outlook, the global economic growth rate was 3.8% and the yearly average is expected to increase by 4.5% in 2018. FreeBalance clients grew on average more than 8.5% a year in 2012 and are expected to keep robust growth rates of 6 to 8% up to at least 2018.

According to the IMF, more than 100 countries are expected to have yearly economic growth rates somewhere between 1 and 5%. Only 8 are expected to have a recession of more than 1% and just about 7 will grow more than 11%. FreeBalance economies are among the fastest growing economies on earth.

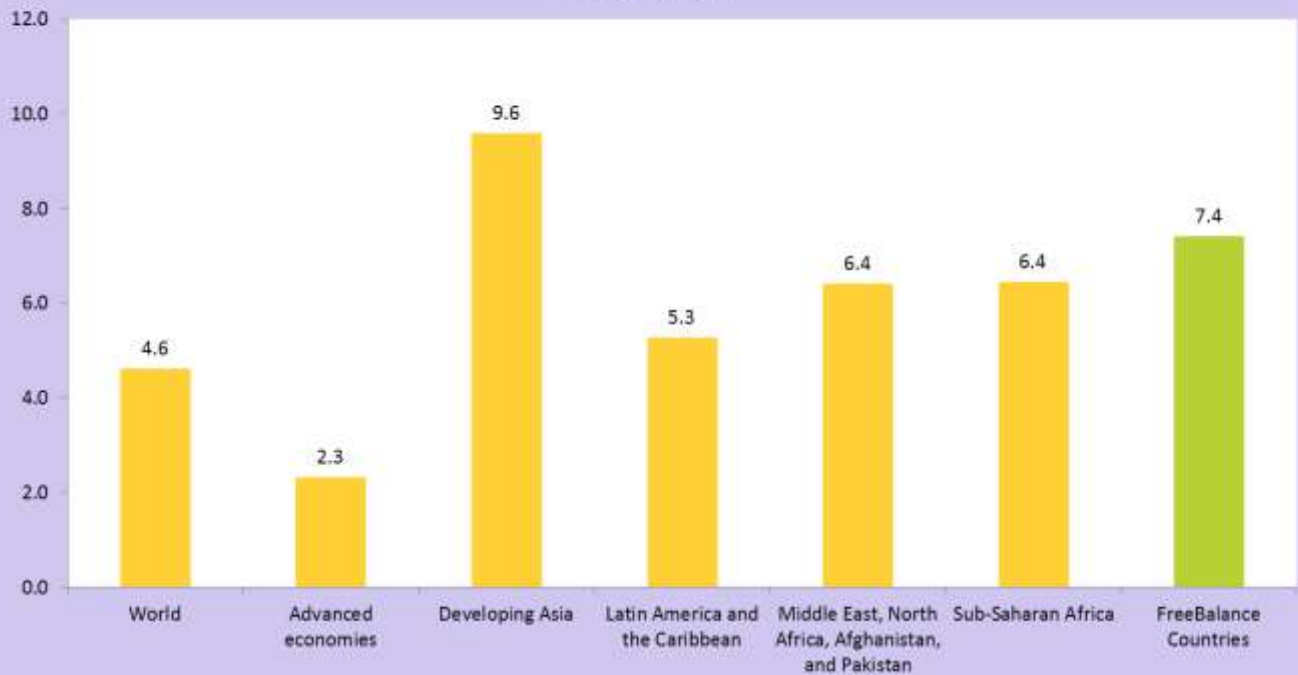




Country Economic Growth Rate 2013

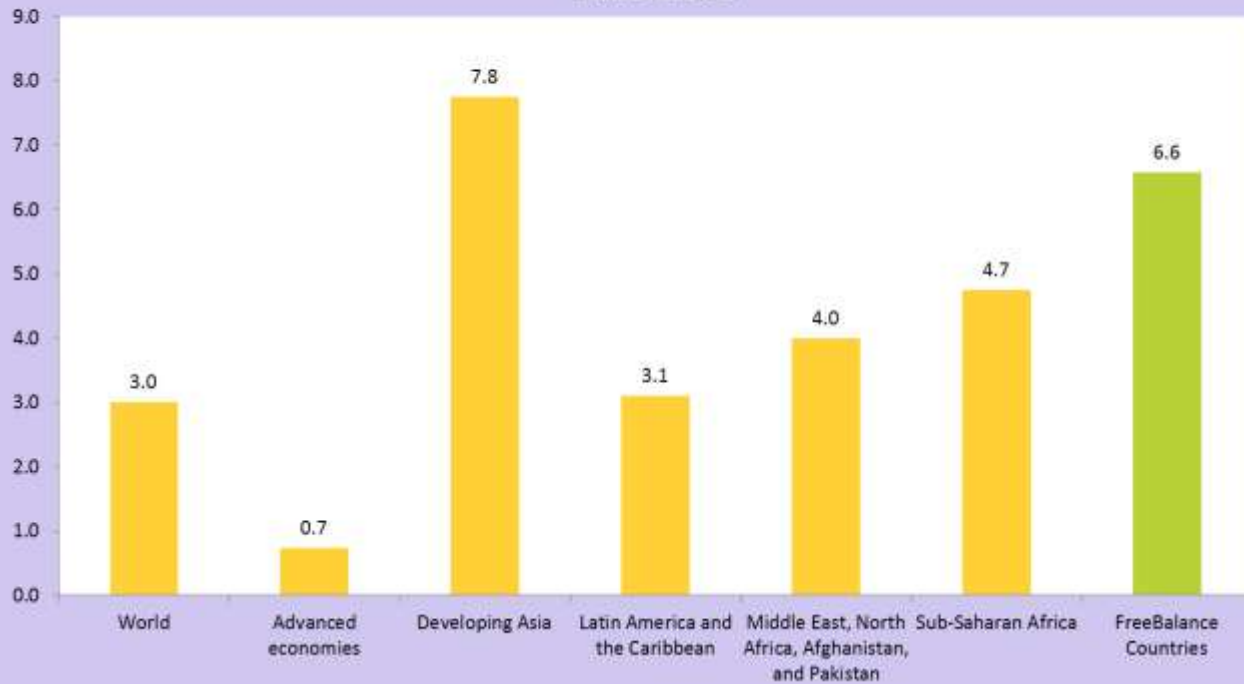


Average Economic Growth Rate 2004-2008

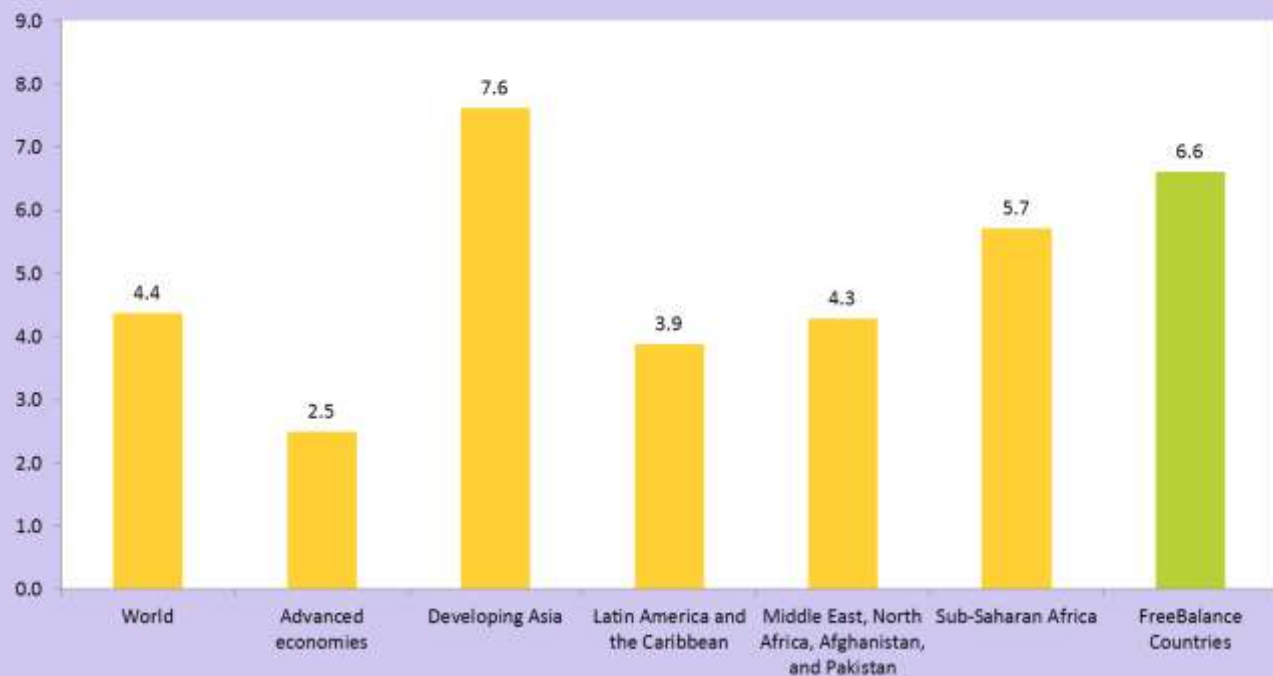




Average Economic Growth Rate 2009-2013



Average Economic Growth Rate 2014-2018 Projected

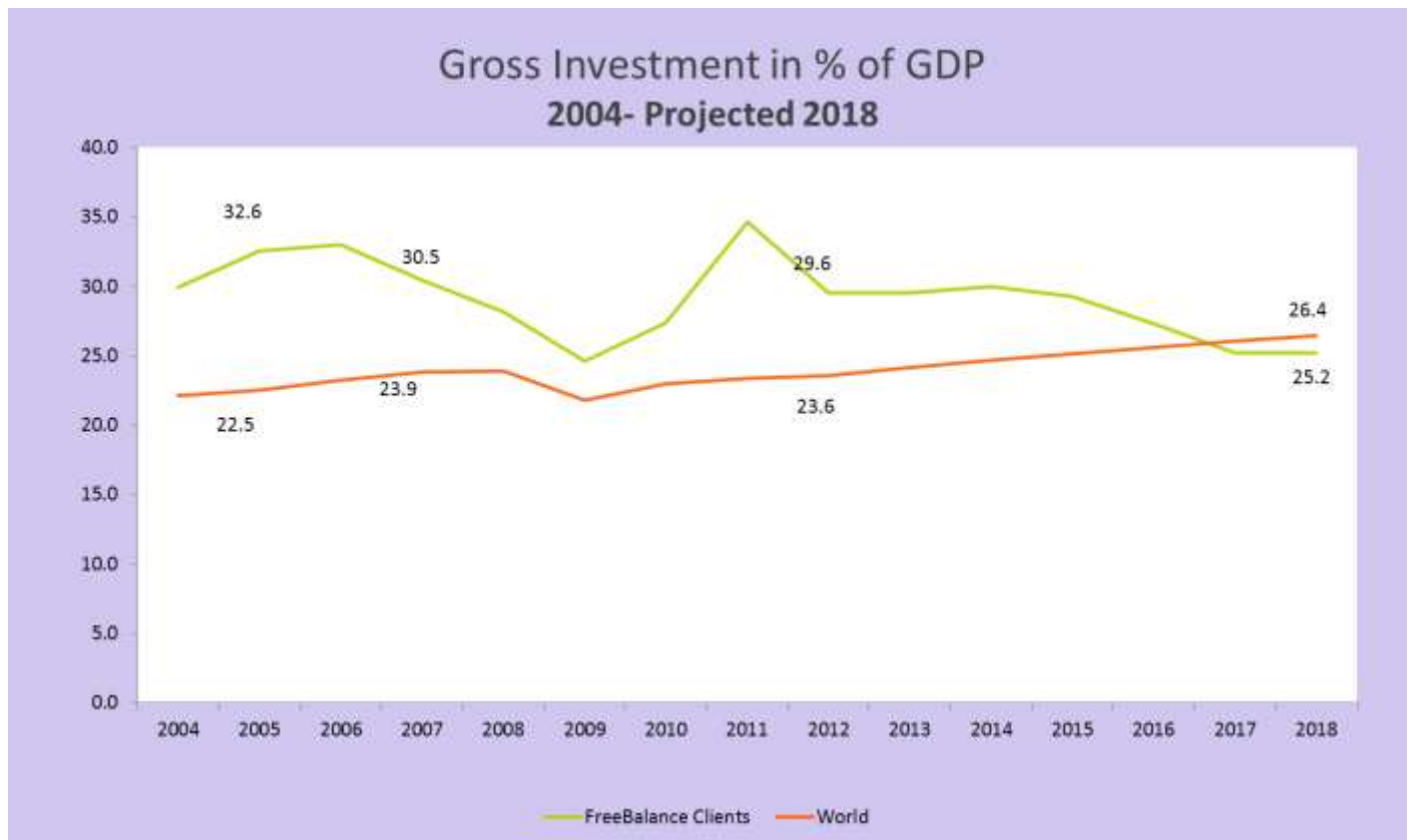




Gross Investment

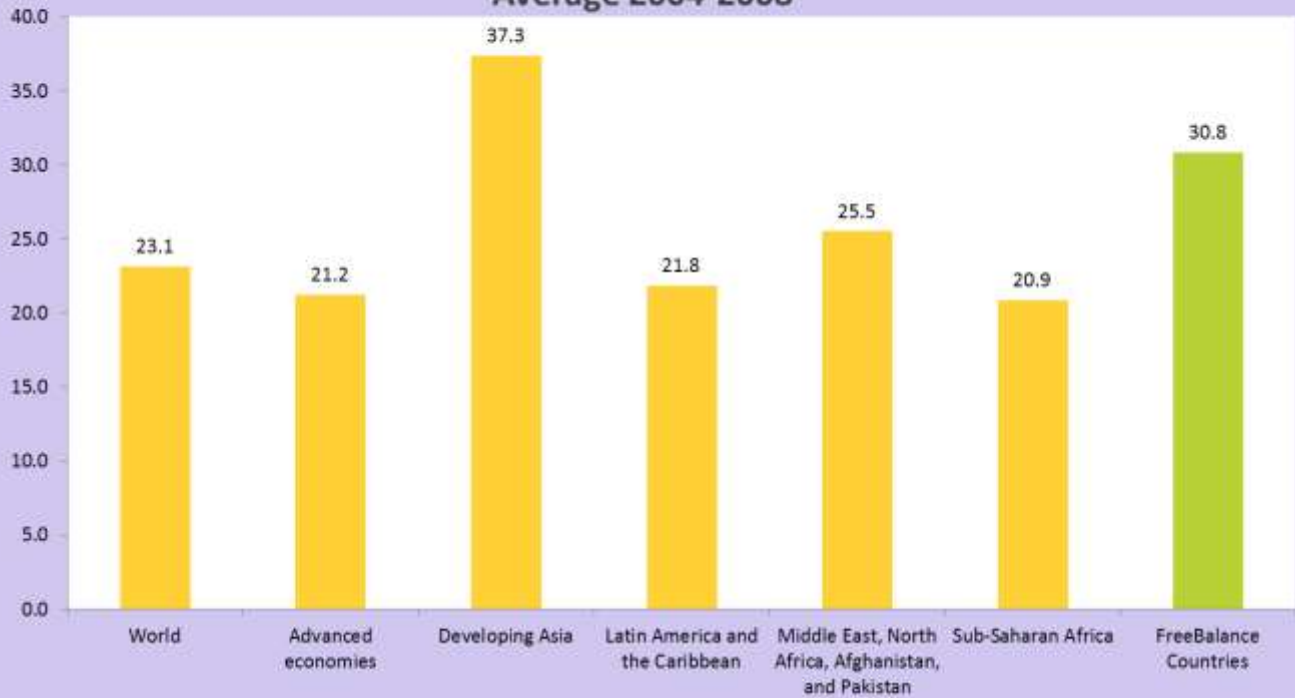
Economists tend to agree that investment is a fundamental variable for long-term economic growth but that the quality of investment can also change over time. This allows a country to do “more with less” (or the other way around). This is an area where good governance and PFM play a relevant role. Nevertheless, if there are major changes in investment levels, such changes tend to be followed by significant increases or decreases in economic growth rates.

Data from some FreeBalance government customers were incomplete and not used in the analysis of gross investment.

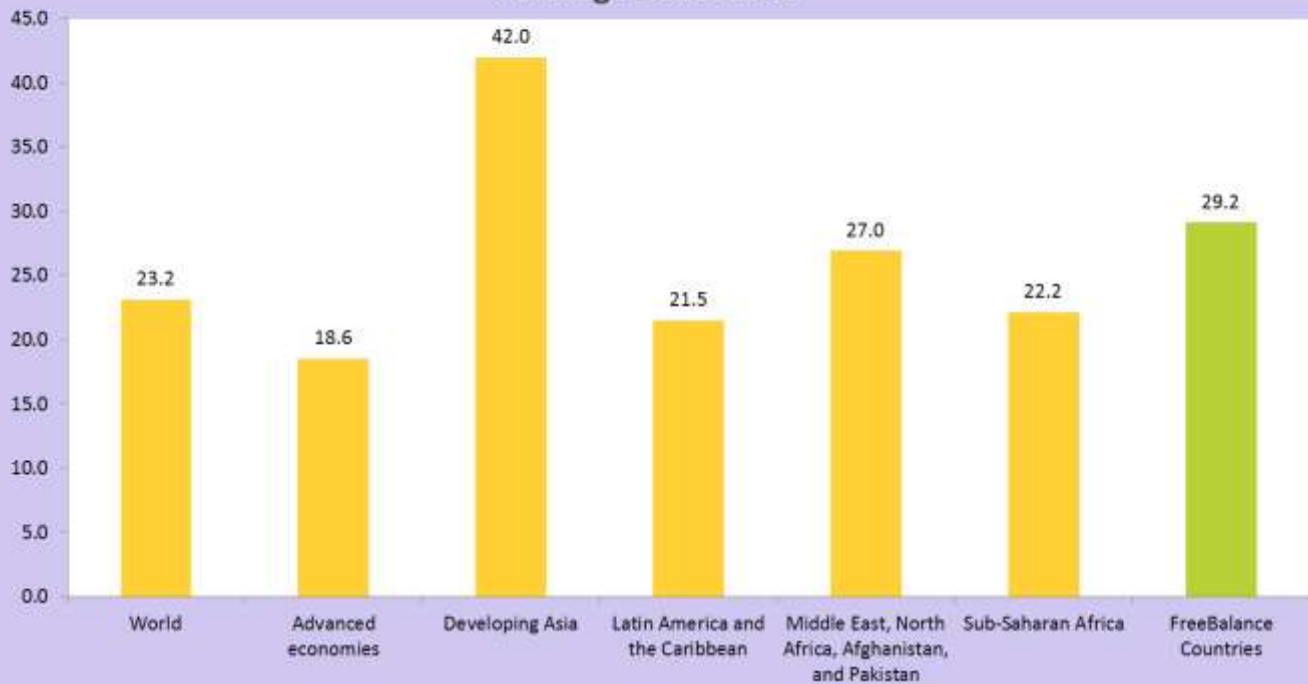


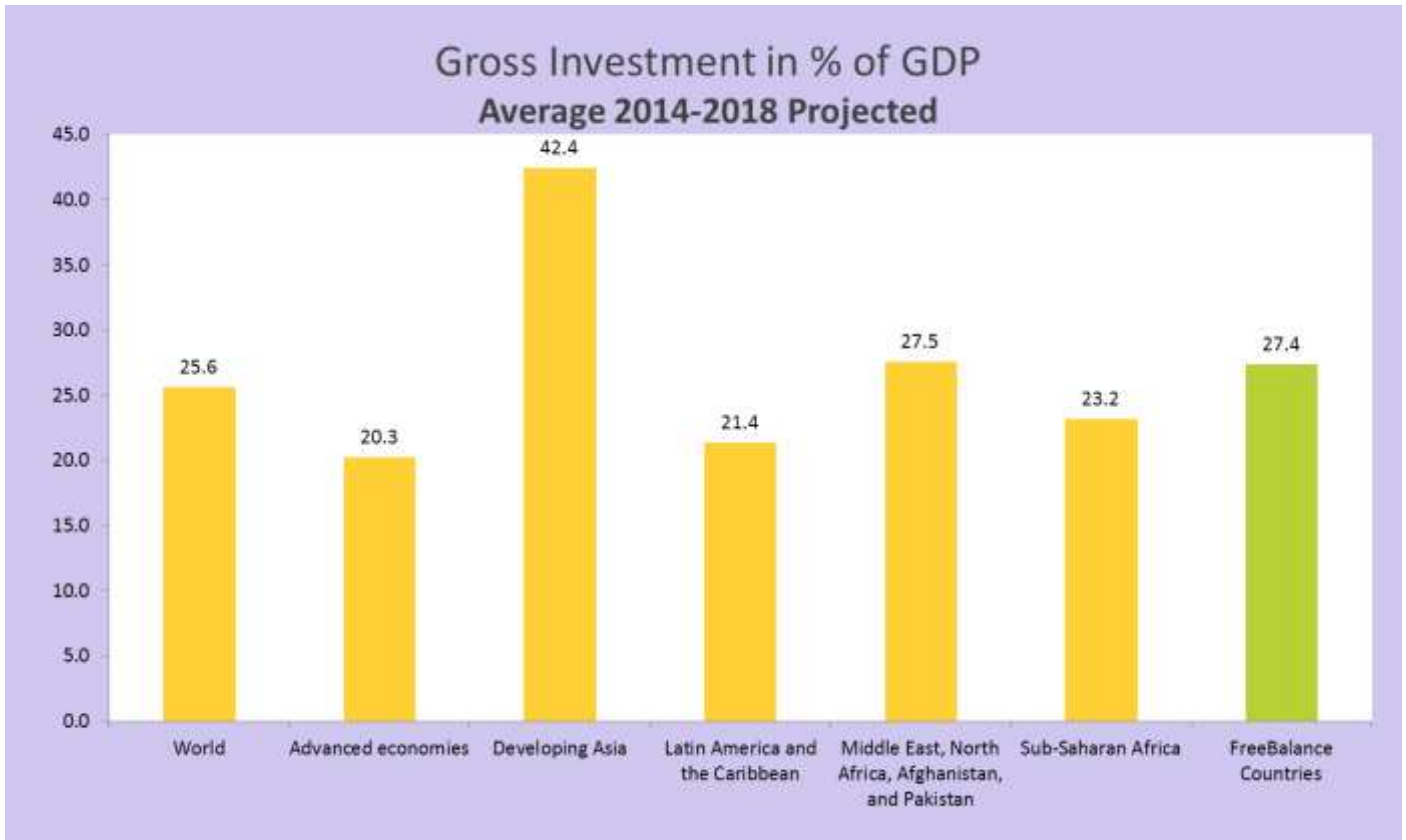


Gross Investment in % of GDP Average 2004-2008

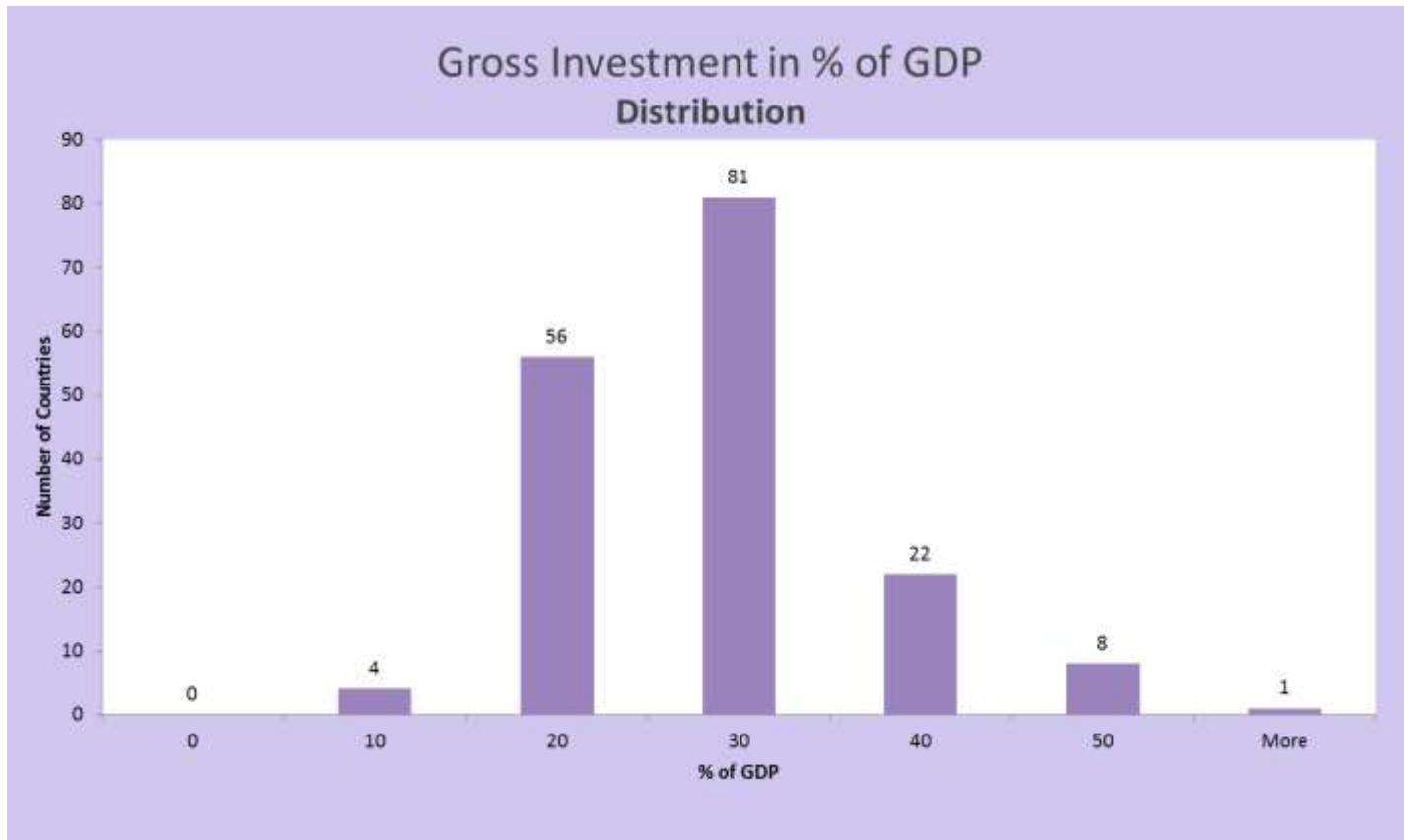


Gross Investment in % of GDP Average 2009-2013





It is interesting to note that according to recent IMF data 81 countries out of 172 are expected to invest between 20 to 30% of the GDP in 2013. This is the mode. Approximately 80% of the countries nowadays invest between 10 and 30% of the GDP. Economies like China (which invests almost 50% of its GDP) are clearly outliers that contribute to push-up the world average. Also, gross investment includes both gross private and public investments. Good PFM is one of the variables that can help directly boost public investment and, indirectly, to increase private investment.



Government Effectiveness

The six standard [World Governance Indicators](#) and the economic growth rate of 172 countries were used for a cross-sectional econometric analysis for the year 2010. In addition to the governance indicators multiple control variables were added to the analysis, selected based on the literature available on economic growth (Robert Barro 1991, Sala-I-Martin 1997). Finally, in order to increase the robustness of the benchmark scenario, seven additional specifications were added, where the number and type of control variables was changed. Results suggest that among the governance indicators used, only governance effectiveness has a statistically significant association with economic growth. Government effectiveness appears to have a strong economic significance on economic growth. Investment also appears positively associated with economic growth.

The methodology and statistical analysis are included in the Appendix.



Conclusions

The number of variables that affect economic growth rates and the quality of Public Financial Management are, to some extent, countless. The goal of the paper is not to establish a cause and effect analysis between the solutions provided by FreeBalance and the economic performance of government clients. But, findings of this study show that countries operating FreeBalance Governance Resource Planning (GRP) solutions have been *outperforming other countries* in their economic regions in several relevant economic indicators. This analysis found:

- Empirical evidence that strong *government effectiveness* and *investment levels* deliver significantly higher *economic growth rates*. Therefore, it is a good investment for countries improve *governance*. GRP systems are considered to be a governance investment by enabling improved efficiency, controls and decision-making.
- *Governments who use FreeBalance GRP solutions have been outperforming* other countries in their regions in multiple economic indicators and are expected to continue doing so in the future based on projections. GRP systems enable multiple year planning and management of public investments that are designed for economic improvements.
- *Governments who use FreeBalance GRP solutions have* significantly reduced *public debt*. The reduction in public debt enables governments to increase public investment while making countries more resilient to financial shocks. GRP systems enable managing public debt through improved controls, integration of debt, revenue and expenditure system, and forecasting through cash and liquidity planning tools.
- The econometric analysis on cross-sectional data on a dataset of 172 countries found that *government effectiveness* and *public investment* are strongly associated with better *economic growth* rates. This suggests that controls and performance management functions in GRP solutions can play an important role in boosting economic growth rates. Government fiscal transparency with GRP tools enabling fiscal discipline can play a role in increasing private sector investment to enable growth.

This analysis provides more evidence that GRP systems and PFM reform can improve country development outcomes. It is likely that the effective management of a portfolio of reforms results in FreeBalance government customers outperforming peer countries. Governments show commitment to reforms by acquiring FreeBalance GRP systems. These governments leverage GRP systems to enable continued governance reform.



Appendix: Methodology and Results

The basic methodology used consisted of running cross-sectional regressions of the form of:

$$\gamma = \alpha + \beta x_1 + \beta x_2 + \dots + \beta x_n + \epsilon$$

Where γ is the vector of rates of economic growth and x_1, \dots, x_n are vectors of explanatory variables and the variables used where:

- Rule of Law
- Governance Effectiveness
- Voice & Accountability
- Political Stability & Absence of Violence
- Control of Corruption
- Regulatory Quality
- Gross Investment in % of the GDP
- Human Development Index
- Cost of Living
- Output Gap
- Sub-Saharan Countries Dummy
- Latin America & Caribbean Dummy

Also, robust standard errors were used in order to account for the likely possibility of heteroskedasticity. In this case, heteroskedasticity means that the variance of the errors conditional of x might not be constant.

In order to analyze the statistical association between governance indicators on economic growth several variations were considered. 8 scenarios were considered. This includes a benchmark scenario (1) and 7 additional specifications. In (1) every variable is included (all 6 governance indicators and 6 control variables). In (2), (3), (4), (5), (6), (7) and (8) certain control variables are removed. This is done in order to increase the robustness of results.

- a) Our dependent variable (Y) is the 2010 economic growth rate and is presented as a level variable.
- b) Governance Indicators (all 6) are presented as log variables. This results in a level-log functional form. $\Delta y = (\beta_1 / 100) \% \Delta x$
- c) Control Variables are presented as level variables. In this case, a level-level functional form where $\Delta y = \beta_1 \Delta x$

Among the dependent variables analyzed in the *baseline scenario*, only effectiveness, HDI and Investment are statistically significant at standard levels (1%, 5% or 10%). In *alternative scenarios* Voice & Accountability also becomes significant but only at 10% level (it is not considered in the analysis).



2010 Economic Growth Rate	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Investment % of GDP	0.1048743*** (0.354896)		0.107456 *** (0.034133)				0.1076713*** (0.0342465)	0.1045832*** (0.0346958)
Sub-Saharan Countries Dummy	-0.5123516 (0.8916706)	-0.8548641 (.8814639)	-0.6218991 (0.8869556)	-0.650977 (0.8761983)	-0.839982 (0.880836)	-0.6391178 (0.8768601)	-0.6055955 (0.8881008)	-0.5256083 (0.8899493)
Latin America & Caribbean Dummy	-0.2917022 (1.162323)	-0.3685646 (1.089234)	-0.2093897 (1.670984)	-0.5355478 (1.120345)	-0.3655661 (1.092035)	-0.5307304 (1.123334)	-0.2058785 (1.12553)	-0.2976078 (1.159214)
Logarithm of Political Stability	-0.5522363 (1.702964)	0.4372995 (1.734066)	-0.3925426 (1.670984)	0.080232 (1.731241)	0.4323661 (1.736536)	0.0796961 (1.735283)	-0.399434 (1.6739)	-0.549899 (1.698963)
Logarithm of Governance Effectiveness	14.15204 ** (6.018634)	15.39664 ** (5.97813)	14.31627 ** (6.065074)	14.91913 ** (5.899483)	-15.43809 ** (6.002374)	14.96438 ** (2.632139)	14.35825 ** (6.088313)	14.10506 ** (5.996089)
Logarithm of Voice & Accountability	-3.724614 (2.507419)	-4.766683 * (2.677924)	-3.865557 (2.52486)	-4.543104 * (2.620077)	-4.715496 * (2.68848)	-4.496723 * (2.632139)	-3.809259 (2.538086)	-3.77228 (2.493223)
Logarithm of Regulatory Quality	-1.155239 (3.716595)	-3.027123 (3.799602)	-0.9759289 (3.691326)	-3.049113 (3.801978)	-3.141633 (3.810882)	-3.158451 (3.815293)	-1.093726 (3.700834)	-1.041822 (3.705969)
Logarithm of Rule of Law	-5.868626 (6.504375)	-4.436235 (6.599678)	-5.798618 (6.370202)	-5.001582 (6.75351)	-4.26961 (6.570562)	-4.835517 (6.726781)	-5.62396 (6.346281)	-6.046465 (6.526396)
Logarithm of Control of Corruption	-0.7893531 (5.44)	-2.55626 (5.095967)	-1.348836 (4.857598)	-0.8832979 (5.671711)	-2.776248 (5.068274)	-1.113353 (5.64324)	-1.590615 (4.840138)	-0.5399136 (5.456712)
Human Development Index	-8.807235 *** (3.357767)	-9.89372 *** (3.154433)	-9.615269 *** (3.181905)	-8.386558 ** (3.328452)	-9.818737 *** (3.143615)	-8.332373 ** (3.329446)	-9.534885*** (3.18748)	-8.86488 *** (3.355027)
Cost of Living Index	-0.7185193 (1.377596)			-1.470137 (1.390301)		-1.45299 (1.392551)		-8.86488 (3.355027)
Output Gap in % of GDP	-0.1849389 (0.2645039)				-0.1775388 (0.3042868)	-0.169916 (0.296459)	-0.1890064 (0.2667662)	
R ²	0.2312	0.1766	0.2282	0.1820	0.1781	0.1834	0.2299	0.2296
Number of observations	172	172	172	172	172	172	172	172

Government Effectiveness: results state that for every 1 percentage increase in government effectiveness is, everything else constant, on average, is associated with a 0.14 percentage point increase in the economic growth rate.

Human Development Index (HDI): results show that for every 1 percentage point in the HDI index is, on average and everything else constant, is associated with a 0.088 percentage point decrease in the economic growth rate. Therefore, a country that has a 0.9 HDI, which is a very high HDI, is expected to, on average, have 1.76 percentage points less of an economic growth rate than a country with a relatively high HDI of just 0.7. In simple terms, less developed countries are, ceteris paribus, expected to grow faster than more developed countries. Barro (1991) found evidence that it is, on average, easier for countries with lower income per capita to grow at faster rates than higher income per capita countries. This, together with a high correlation of income per capita with life expectancy and levels of schooling might explain much of this tendency of less developed countries growing faster than highly developed.

Investment: results show that for every percentage point of GDP increase in Investment is, on average and everything else constant, is associated to an increase of 0.105 percentage point of the economic growth rate. Therefore, if there were two sets of similar countries, one investing 30% of its GDP and another investing just 20%, if the first group registered an average growth of 4% a year, it is reasonable to expect the second group to grow about 3% a year. Without surprise, this result highlights the importance of investment on economic growth.



Cross-Sectional Analysis Results and Limitations

It appears that only governance effectiveness, HDI and Investment are statistically significant at standard levels (1%, 5% or 10%). In alternative scenarios, Voice & Accountability levels become also significant at the 10% level. Even though only one governance indicator appears as statistically significant, its economic significance appears to be very large: a 1 per cent increase in governance effectiveness being associated with a 0.14 percentage point increase of the economic growth rate.

A more complete study would be a *panel data* research (combining cross section and time series analysis) to include data of previous years. A panel data specification would better deal with the omitted variable bias, since first differencing the model would eliminate individual specific non time varying unobservable, which may be correlated with the error term.

The fact that certain governance indicators are not statistically relevant in this research does not necessarily mean they do not impact economic growth. This could be explained by the focus on a single year and data quality.

References

Barro, Robert J. "Economic Growth in a Cross Section of Countries." Quarterly Journal of Economics May 1991

Sala-I-Martin. " I Just Ran Two Million Regressions". American Economic Association May 1997

IMF World Economic Databases (April 2013 & October 2012):

<http://www.imf.org/external/pubs/ft/weo/2013/01/weodata/index.aspx>

UNDP: <http://hdr.undp.org/en/>

World Wide Governance Indicators: <http://info.worldbank.org/governance/wgi/index.asp>



About FreeBalance



FreeBalance is a For Profit Social Enterprise (FOPSE) software company that helps governments around the world to leverage robust Government

Resource Planning (GRP) technology to accelerate country growth. Proven FreeBalance GRP products and focused methodology supports financial reform and modernization to improve governance, transparency and accountability. Good governance is required to improve development results. FreeBalance ensures high success rates for governments under stress to those in the G8 and enables governments to improve performance and comply with government goals. Unlike other Commercial Off-the-Shelf (COTS) vendors, FreeBalance is socially responsible as core, customer-centric and focused 100% on government.

The FreeBalance Accountability Suite is a comprehensive fully web-based Government Resource Planning software suite that supports the entire budget cycle and strengthens governance by improving budget transparency, fiscal control and predictability. The proven Suite integrates transactions with content and collaboration through innovative Government 2.0 technology and links budget controls with objectives to enable governments to improve performance, transparency and comply with government goals. Unlike other Commercial Off-the-Shelf (COTS) software, the FreeBalance Accountability Suite is proven in government implementations around the world, programmed for government and progressively activated to adapt to current and changing government context.

FreeBalance i^3+qM is an integrated product development, implementation and sustainability services methodology designed for Government Resource Planning to ensure long term implementation success.

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