**JAMAICA**

**JA-L1014**

**JAMAICA COMPETITIVENNES ENHANCEMENT PROGRAM**

**COST/BENEFIT ANALYSIS**

**RIA METHODOLOGY**

**November 2013**

**Cost Benefit Analysis:**

**Competitiveness Enhancement Program**

**JA-L1001, JA-L1010, JA-L1014.**

**Assessing the impact of the proposed reforms**

1. **Introduction.**

The objective of the program is to improve competitiveness by promoting reforms that expand access to credit, reduce distortions in the tax system, and lower business costs through more efficient land titling/registration. The concrete activities supported by this loan are detailed below and are listed in the attached Policy Matrix (see Annex II).

The program’s objective will contribute to the government’s overall objectives of promoting sustainable private sector led growth. In addition to the requirement for a macroeconomic framework congruent with the Program’s objective, the JCEP III structure is divided into five reform areas: 1. Macroeconomic Stability; 2. Competitiveness Implementation Framework; 3. Tax Reform; 4. Reduction in Budgetary Burden of State Owned Enterprises; 5. Improving Access to Finance and Financial Market Development, and 6. Reduction of Business Costs through Expedited Land Titling. For each area of intervention, the program has established targets related to changes in the relevant institutional, regulatory and legal framework, as well as procedures and/or instruments necessary to achieve the desired objectives.

Given its depth and breadth, the agreed program is structured in four independent but related operations under the programmatic policy-based loan modality. This financing arrangement is considered the most appropriate because it is a flexible and effective mechanism to support complex and long-term reforms that require sequenced actions for implementation and broader dialogue. The Board of Executive Directors approved the first operation of the Jamaica Competitiveness Enhancement Program I - JCEP-I (Loan Contract 1972/OC-JA) on April 1, 2008, and the second operation - JCEP-II (Loan Contract 2297/OC-JA) was approved on February 17, 2010. The JCEP-I Loan provides the frame of reference for the current operation under the programmatic series (PR-3251). The proposed third stage provides continuity to the agreements in the Policy Matrix of the first operation. The programmatic modality originally contemplated three operations of US$30 million each. This adjusted in the updated Country Strategy (GN-2422-3) to US $60 Million for the second and third operations. For calculation purposes the t=0 is considered to be 2008, when the set of reforms were agreed with the counterpart and started to be prepared. Some of the reforms have become effective over the 2008-2012 period and are expected to be completed in their totality in December 2013.

It is expected that with the implementation of the reforms, Jamaica’s competitiveness will be improved and business climate will be improved by reduction of transaction costs, tax distortions and by providing greater access to financial services. Broad understanding of the required reforms, acceptance by all stakeholders, and implementation of a series of legal reforms will increase the opportunities for businesses to obtain credit and to reduce the risk to lenders of extending credit beyond their circle of established and typically larger borrowers. By reducing the cost and time of the land titling and registration process, landowners, particularly those with smaller holdings, will be able to use their land as collateral for business endeavors and to make improvements in their property as a result of ownership.

The Programs direct beneficiaries will be (i) Private sector companies, in particular SMEs that are the most adversely affected by an inadequate framework for doing business and accessing finance; (ii) the informal SME sector that lacks incentives for formality and (iii) individual entrepreneurs that will benefit with increased access to finance through modernized technological and legal framework. Increased access to finance, through the secured transactions, credit information and mobile banking legislative reforms, will have a social and gender impact as they increase access to finance by SMSE's and women. By strengthening land property rights, SMEs have improved access to credit, and are encouraged to invest.

The present evaluation attempts to estimate and capture the benefits of the aforementioned reforms.

1. Background and Justification

The Bank has promoted reforms to enable private-sector-led growth in Jamaica, since the first programmatic operation approved in 2008 (JCEP I). Since then, the GoJ has been committed to carrying out the initially agreed reforms, having implemented all of the Policy Reforms agreed in the Policy Matrix to date.

The productive sector in Jamaica consists of traditional sectors such as manufacturing and agriculture (22% of GDP), which have been declining due to lack of competitiveness and loss of trade preferences. Other traditional activities such as mining (10% of GDP, mainly bauxite) and tourism and services (22% of GDP) were affected by the external crisis of 2008. Jamaica has experienced persistent low economic growth, partly as a result of sustained high levels of unproductive public spending, financed through public debt, and unproductive private investment. Private investment rates have been traditionally high, mainly due to foreign investment in tourism and bauxite. Between 2000 and 2005, investment averaged 30 percent of GDP, but economic growth was a mere 1.5 percent per annum. IDB studies attributed the problems in the quality of investment to distortions in the allocation of resources, especially those caused by the tax system.[[1]](#footnote-1) Over the last fifteen years, Jamaica’s economy has grown, on average, less than one per cent per year; significantly below the economic growth of the Latin America and Caribbean (LAC-7) average (3.9% per year)[[2]](#footnote-2). The global financial and economic crisis hit Jamaica early and hard, with the growth rates turning negative until 2010 and estimates for 2013 below 1%.

Even though Jamaica has assets that enhance private competitiveness, such as an educated work force, abundance of natural resources, and a strategic geographic location, it ranks 97st out of 133 countries in the Global Competitiveness Index (GCI) according to the Global Competitiveness Report for 2012-2013. The Global Competitiveness Index highlights the principal factors that limit business’ competitiveness as: (i) access to financing; (ii) tax regulation; (iii) tax rates; (iv) the cost of crime and violence to business; (v) the high level of informality among small businesses; (vi) inadequate supply of infrastructure; and (vii) burden of economic regulation. The Private Sector Assessment (PSA)[[3]](#footnote-3) further identified the following factors that hinder private sector development in Jamaica: (i) over-involvement of the state in the economy; (ii) distortions due to incentives and inequitable tax systems; (iii) underdevelopment of financial markets; (iv) costly and cumbersome processes for land registration; (v) excess of regulation and procedures; (vi) inefficient legal system; and (vii) inadequate infrastructure.

The general macroeconomic framework, the fiscal constraints and the high levels of debt carried by the government affect the business climate and the confidence of investors and affects productivity and growth. In addition, the lack of fluid dialogue between the public and private sector has hindered achieving consensus on how to address key issues. Jamaica has had several councils that have engaged in public-private sector dialogue on competitiveness and other related issues, and the proliferation of such councils with overlapping mandates and constituencies has hindered the achievement of strong consensus between the public and private. The JCEP operation has tackled directly the issues of: (i) public – private dialogue, (ii) tax regulation and tax rates; (iii) over involvement of the state in the economy; (iv) access to finance and (v) land registration.

Jamaica has experienced decades of stagnant growth and low productivity and has a very low competitiveness as measured by the Global Competitiveness Index. The lack of an adequate legal and institutional framework that provides for an enabling environment for private sector activity affect productivity and competiveness, in particular of SMEs. The main problems addressed by the program are highlighted below.

Cumbersome and costly tax policy and administration system

Jamaica’s tax system penalizes small businesses, distorts resource allocation and is complex and expensive to administer, both from the perspective of taxpayers as well as the processes involved in the collection of taxes[[4]](#footnote-4). The complexity and discretionality of the tax system creates uncertainty and increases transaction costs for businesses. Ad valorem stamp duties impose high costs commercial transactions particularly in property transfers and registering security interests, increasing the cost of transactions by up to 20%. The Stamp Duties Act is complicated and open to broad interpretation. Tax incentives granted to some investors create a wedge between private and social rates of return, and result in a total “tax expenditure”, i.e. tax revenue forgone[[5]](#footnote-5). Studies sponsored by the Bank[[6]](#footnote-6) show that the Jamaican tax incentives are strongly biased towards capital-intensive production technologies in a country where capital is scarce and labour is plentiful. The tax incentive structure also promotes debt financing at the expense of equity financing and can result in the crowding out of investments with a higher economic rate of return[[7]](#footnote-7). Jamaica’s corporate income tax framework is particularly distortionary and provides the wrong incentives to the private sector. Nominal rates of CIT are relatively high, but these are offset by tax incentives for preferred economic groups under 12 tax incentive acts. In addition, there is a rate differential between the CIT and the PIT (33.3% and 25%, respectively). These distortions affect resource allocation decisions between sectors and activities, promote informality and rent seeking activities, and drive a wedge between private and social rates of return. [[8]](#footnote-8). In addition, empirical evidence has shown that small firms are less likely to become formal due to the high cost of paying taxes[[9]](#footnote-9)

**Costly Tax administration.** Full compliance with all the tax laws and regulations is arduous and costly. For example, labour taxes must be paid to separate agencies at different times during the month, documentation requirements of legitimate business expense deductions are complicated and even ambiguous, and reporting requirements are occasionally duplicated. This makes doing business very costly and time consuming[[10]](#footnote-10).

State involvement in inefficient enterprises and projects

Expenditure rationalizationis essential to reduce high government debt levels and deficits, which in turn provides for fiscal space that enables tax reform. The budget needs to be reduced by divesting loss-making state-owned enterprises. In 2007, the budgetary support for state-owned enterprises was estimated at US$150 million[[11]](#footnote-11), plus an additional US$100 million for Air Jamaica. An estimated 9.83% of GDP was allocated to transfers and subsidies in 2007[[12]](#footnote-12).

**Inadequate use of private capital and expertise for financing infrastructure.** Jamaica has tried to overcome the infrastructure investment gap with PPP projects, mainly in water and transportation. However, these projects have yielded long-term negative fiscal impacts and have not met expectations. Water programs at the municipal level had to be taken over by the public sector as a result of financial difficulties. The Highway 2000 road , even though it was built in record time and met standards, required a government guarantee of a US$130 million bond issue and the assumption of all environmental and geological risks[[13]](#footnote-13). A more streamlined and technically solid PPP framework is needed to promote private investment in major projects.

Access to finance and financial market development

**Limited Access to Finance**. Access to finance by the private sector has been limited by the high ratio of public debt held by commercial banks, compared to their overall assets. This, coupled with the high costs of borrowings, has resulted in limited credit to the private sector of about 28% of GDP, and only 35% of the population has access to a Bank account[[14]](#footnote-14). In addition to macroeconomic considerations, there are several sector-level constraints on businesses’ access to financing, resulting in financial markets that inadequately support investment and entrepreneurship activities. In addition, studies done as part of the Program show that woman entrepreneurs are the most affected group by limited access to finance[[15]](#footnote-15). While Jamaica has some unique characteristics around gender dynamics, it shares many of the same issues around financial empowerment of women at the lower economic strata around inequities of employment, income, caretaker burden, and greater financial vulnerability overall. Mobile financial services begins to address some of these issues since it increases access to the remotest areas, provides control and privacy to the individual, enables new financial services to the previously unbanked, and provides efficiency gains around the replacement of cash to digital payments[[16]](#footnote-16).

Empirical evidence in similar reforms in the region suggest that the reduction of asymmetries in credit information will result in an increase in access to credit for new borrowers and firms, as well as an increase in loan size for solidarity groups[[17]](#footnote-17). In addition, the elimination of financial constraints, in particular for smaller firms, will have an increase in profits and returns to capital with a larger effect in smaller firms[[18]](#footnote-18).

**Lack of framework for Secured Transactions**. Although the Jamaican legal system allows for various forms of secured lending in Jamaica, each has restrictions on the type of collateral, the type of debtor and the type of creditor, and has different costs and procedures. Each option comes with its own set of rules for creating security, some of which are very extensive[[19]](#footnote-19). In addition, some of the options are subject to the Stamp Duty Act and some are only available to corporations, excluding smaller companies. Thus, a single and simple set of rules that would enable any corporation or entrepereneur to give or take security in the form of movable property would foster access to credit under much simpler and less costly conditions for SMEs. Commercial banks exclude substantial classes of borrowers and financial instruments that are commonplace in other countries[[20]](#footnote-20). The program supported the modernization of Jamaica’s financial with the reform of the legal framework for pledging collateral security for loans.

**Lack of Credit Information.** When the program started no formal system for Credit information was in place, such as would be provided by credit bureaus, for assessing credit applicants’ payment histories and resulting likely creditworthiness. The absence of this information increases the transactions costs of providing credit for both the financial institution and the client. It discourages lending to smaller enterprises due to the high relative cost of obtaining this information for small loans. With the Program, there are now two licensed credit bureaus, one in operation since August 2013. However, the process of collecting information and using the system will take at least a year to be in operation.

**Low banking penetration.** Only 35% of the adult population has access to a bank account[[21]](#footnote-21). Limited access to traditional financial services to the SMEs, and the need for money transfers between urban and rural areas call for the use of electronic banking services[[22]](#footnote-22). M-banking was not available in Jamaica when the first programmatic operation started, and the private sector initiatives represented only a portion of the full potential offered by mobile technologies. Regulatory gaps and restrictions have inhibited transformational m-banking offerings from emerging. Jamaica’s regulatory framework required reform before industry players can engage in m-banking, in particular by addressing money laundering issues[[23]](#footnote-23). With the Program, the regulation for mobile payments is now in place and there are two pilot projects for m-banking for microfinance that are started.

Costly and cumbersome land titling and registration

**In** Jamaica, 45% of the rural land markets have no legal title and 55% of the current titles have flawed arrangements. There are also 595 squatter settlements, of which 83% are urban[[24]](#footnote-24). Weak land property rights and burdensome registration and titling procedures hinder private investment and the use of land as collateral for financing new businesses while creating a bottleneck for investors that need space to operate their businesses. In addition, the process for registering a parcel of land for which there is no registered title includes a cumbersome number of steps and the transactions costs of transfers are extremely high, making it prohibitively costly for Jamaicans to register their land[[25]](#footnote-25). Transfer taxes and stamp duties account for about 13% of the value of the transaction, and professional fees may amount to an additional 12%. These factors limit the development of real estate markets and the value of the assets, in particular since they cannot be utilized as collateral for business endeavors. Even though the results for the benefits of having land titled and registered are difficult to measure and there have been a mix of benefits and results[[26]](#footnote-26), some randomly selected evaluation studies have shown that, landed property is not eligible for use as collateral unless it is formally registered[[27]](#footnote-27). Unregistered property is however accepted as collateral by the microfinance institutions. Therefore the exact impact of land registration on credit access may vary depending on the type of lender.

With the program, the conditions to facilitate Land Titling and Registration have been improved by reducing the cost and time and now an average of 1,000 titles a year have been produced (compared to a baseline of 0 titles a year). However, there are still significant bottlenecks to address in terms of the institutional and regulatory framework to further increase the number of titles produced

1. **The Program**

The objective of the program is to improve competitiveness by promoting reforms that expand access to credit, reduce distortions in the tax system and government participation in inefficient enterprises and projects, and lower business costs through more efficient land titling and registration. The activities supported by this loan are detailed below and are listed in the attached Policy Matrix.

Program structure

JCEP III has six components: 1. Macroeconomic Policy Framework; 2.Competitiveness Implementation Framework; 3. Tax Reform; 4. Reduction of Budgetary Burden for State Owned Enterprises, 5. Improving Access to Finance and Financial Market Development, and 6. Reduction of Business Costs through Expedited Land Titling. The following section describes the conditions for JCEP III disbursement and their status of compliance (see [Policy Matrix](http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=35398852) and [Means of Verification Matrix](http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=35398853)).

Component I. Macroeconomic Policy Framework

The objective of this component is to maintain an appropriate macroeconomic policy framework is congruent with the program’s objectives

Component 2: Competitiveness implementation framework

The National Competitiveness Council (NCC), in charge of leading and monitoring the public-private dialogue in areas of competitiveness, housed at JAMPRO, has continued its operation, holding regular meetings, having its last meeting on September 2013. The NCC has developed an agenda for reforms for the 2012-2015 [[28]](#footnote-28)which has been closely monitored by the Secretariat and some of the priority actions have been already completed. In July 2013, the Partnerships for Jamaica agreement was signed by the Government, Private Sector, Academia and Civil Society and the initial meetings took place in September.

Component 3: Tax reform

The GoJ has made progress towards the compliance with the conditions mentioned above as follows: (i) the amalgamation of labour tax payments has been achieved with Parliament’s approval of regulations enabling one sole payment, completing Phase I and II of the implementation process; (ii) training for officials on tax policy modeling and tax expenditure reporting has been carried out. The tax policy models have been used in preparing the GoJ’s “Growth-Inducement Strategy”; (iii) comprehensive tax expenditure report was prepared for 2009, and has been published on a yearly basis up to 2013; (iii) the new methodology for collection of income tax information was approved by MEF. In addition, a Provisional Tax Order amended temporarily the Income Tax Act as of July 2013 in which the CIT and the PIT were harmonized at the rate of 25% for unregulated companies.

The GoJ has fully complied with all the conditions for simplifying and lowering the cost of paying taxes as agreed on the initial Action Plan. In this regard, the following has been accomplished: (i) the Electronic Drop Box has been implemented and is currently in operation, procedures have been fine-tuned, and advertised; (ii) the E-payment portal is in operation, the existing software and hardware has been upgraded, and self-employed and corporate individuals can now file electronically; (iii) the Third Party Collection Project’s technical component is completed and new service providers are being evaluated in order to reduce costs; and (iv) a Forensic Data Mining Intelligence Unit has been established and statistics relating to its performance are available.

Component 4: Elimination of budgetary burden for SOEs

In addition, Cabinet approved a new institutional framework to streamline and strengthen the process of carrying out PPPs in 2012, involving a more active participation of the MEF, mandatory evaluation and assessment of fiscal contingencies and strengthening of the technical capacity of the Development Bank of Jamaica (DBJ), and program for institutional strengthening of DBJ has initiated.

Component 5: Improving access to finance

**Secured transactions framework.** The consultations with Cabinet and private sector stakeholders that are part of the agreed benchmarks of the action plan have taken place. Cabinet approved the issuance of drafting instructions and the draft Bill was prepared during 2012, including consultations with stakeholders. The Bill was tabled in Parliament in June 2013. The insolvency Bill has also been Tabled in Parliament.

**Creation of credit bureaus.** The GoJ has achieved the benchmarks of the agreed action plan as follows: (i) the Credit Reporting legislation and the legislation was put into effect on October 1, 2010 and Regulations were Tabled in 2011; (ii) the Bank of Jamaica has achieved the milestones in the Action Plan and strategy for the supervision of Credit Bureaus, including: (a) a public education campaign, (b) establishing a specialized unit for the supervision of credit bureaus under the Financial Institutions Supervisory Division, (c) methodology for implementation of the licensing process, (d) an on-going supervision plan, and (e) external due diligence. At present, the licenses for the operation of two Credit Bureaus have been granted and one Credit Bureau is in operation.

**Facilitating electronic transactions.** A Working Committee with representation from the MoFP, BoJ and the Planning Institute of Jamaica (PIOJ), was established to fast track the implementation of M-Banking. A pilot program has been initiated to facilitate electronic payment of conditional cash transfers, including the Programme of Advancement through Health and Education (PATH), National Insurance Scheme (NIS) pensions, and student transfers. The cost benefit analysis of the pilot program was carried out, and an action plan for addressing the basic regulatory issues regarding money laundering was finalized. The BoJ issued the guidelines that enable a Bank center model for providing mobile services to microfinance institutions, the Electronic Payment Retail System Guidelines and approved to pilot projects for M-Banking with the DBJ and the Jamaica Credit Union League and a pilot project is currently being implemented by the DBJ. In addition, consultations with stakeholders have taken place for initiating the implementation of mobile payments for PATH and NIS.

Parliament approved The Payment Clearing and Settlement Act in 2010. In addition to this legal foundation for a modern National Payment System, the BOJ has made progress in: (i) implementing the Real Time Gross Settlements (RTGS) mechanism; (ii) creating the Central Security Depository; (iii) creating an enabling legal framework including the approval of the Government Securities Dematerialization Bill. The BoJ currently has 99% of all government securities in electronic form. Next steps after enactment of the law will include the development of a trading platform for fixed income securities.

In addition, the MSME policy has been developed and approved by Parliament. The policy includes a series of actions in the areas of: (i) creating an enabling business environment, (ii) promoting access to finance, (iii) enhancing business development support, and (iv) fostering a culture of entrepreneurship and innovation.

Component 6: Reduction of business costs through expedited land titling

The Ministry of Agriculture has reduced land titling and registration costs by declaring all the parishes in the island as Land Administration and Management Program (LAMP) areas under the Special Provision Act, with the exception of three Parishes that are part of LAMP II. As a result of the MoA efforts, in LAMP areas, the cost of registering a new title has been reduced by around 75% and the time for registering has been reduced from seven weeks to two weeks for a typical parcel. The approval rate for titling applications under LAMP is around 88%, while the rate for those processed by the traditional process is lower (around 20-40%).

LAMP I now covers eleven out of the 14 parishes in the country, and the rate of granting new titles increased from 728 in 2009 to 1300 in 2012. (A total of 4727 have been granted for LAMP I since its inception in 2006 and 427 for LAMP II.) Since the IT capacity of the National Land Agency to process cadastral maps is severely limited, the GoJ launched the LAMP II program in 2010, in which the GoJ has formed a public-private partnership with a local Jamaican firm, Geoland Title Company, and the Korea Cadastral Survey Corporation (KCSC), a non-profit Korean firm with expertise on land surveying and cadastral mapping. The private partners contribute the capital investment and technological services, while the GoJ provides the support and the local expertise with the goal of titling 12,500 land parcels in the Saint Elizabeth Parish during a two-year period

1. **Assumptions and Methodology.**

There are several challenges involving the measuring of cost and benefits of legal, regulatory and institutional policy reforms. For purposes of this paper, the CBA technique to be used to measure the improvement of a policy decision will use monetary measure of the aggregate change in individual well-being resulting from a policy decision[[29]](#endnote-1). It also assumes that individual well-being can be characterized in terms of preference satisfaction and that aggregate social well-being can be expressed as an aggregation of individual social welfare. In addition, the proposed methodology measures the first sequence of benefits, regardless of subsequent interactions and second generation effects of the reforms.

This paper also follows the guidelines of the Office of Management and Budget (OMB) that include (i) use of clear and consistent baseline assumptions, (ii) evaluation of alternatives, (iii) appropriate benefits of discounting future benefits and costs[[30]](#endnote-2). In addition, elements of the OECD methodology for regulatory impact analysis was applied, that includes, in addition to the cost and benefit evaluation, a series of guidelines on the definition of the objectives of the public policies and identification and quantification of the impacts of all the options considered, including costs, benefits and redistributive effects.

In addition, this analysis includes the application of the methodologies of only a portion of the reforms, since costs and benefits of reforms and institutional strengthening activities, such as public – private dialogue and some of the effects of tax reforms are very difficult to measure.

In addition, due to the nature of the project, that started implementing the reforms in 2008, poses the challenges of the use of time. At present, some of the reforms have been carried out and the impacts have occurred, while other are under implementation. Thus, in the present document 2008, the year where the first disbursement of the program was made was considered to be year 0.

1. **First step: estimating the economic cost of the policy reforms:**

To assess the economic cost of the policy reforms supported by the program, we estimated the needed to implement the numerous activities required to implement the reforms under the program (i.e. training, consultancies services, acquisition of equipment, project coordination, assumptions of liabilities by the GoJ, operating cost of new institutions, and others). The net benefits were them compared to the discounted amount of the four loan operations under the programmatic series. For the sake of simplicity, we did not include the financial costs associated with the service and repayment of the loans (fees and interest charges). In addition to the loans, we added up the estimated direct costs needed to implement the numerous activities required to implement the reforms under the program (i.e. training, consultancies services, acquisition of equipment, project coordination, assumptions of liabilities by the GoJ, operating cost of new institutions, and others).

The second and most challenging assessment is to estimate the expected benefits of the policy reforms supported by the program in dollar terms. As this is an ex-ante analysis, the assessment of the expected benefits resulted from the policy changes in the areas supported by the PBL seeks to quantify the dollar value of the expected benefits and then subtract the program total costs, to arrive at an economic “bottom line” estimate of the program. In effect, this economic analysis seeks to define ex-ante whether the dollar value of the benefits of the series of programmatic operations exceeds their cost. For the case of the series of JCEP programs, the net benefits are measured as the differences between situations with the policy and without the policy. In the case of JCEP, benefits were estimated in terms of reduced costs for the individuals for doing business activities such as paying taxes, lower transaction fees, efficiency gains and time savings, among others, and these were estimated to be social benefits as they have implications on the efficiency of the economy as a whole[[31]](#footnote-29). The detailed calculation of the benefits as well as the assumptions is explained in detail in section III.

The third challenge for the evaluation of this particular program, being the third of a series, is the issue of the timing of the calculation of the benefits. Since some of the reforms have already taking place, the benefits have already been accomplished and can be calculated in a historical basis. However, some of the reforms have a medium and long-term effect and the benefits have to be estimated. Although the evaluation gains in accuracy at incorporating the evaluation of the benefits and costs of already achieved reforms, the current economic evaluation is not completely ex-ante. It has however some components those are ex-post.

For purposes of the present evaluation, the most important reforms are taken into consideration, and hence the benefits from supporting activities such as training in modeling and public private dialogue are not included in the analysis.

The baseline is considered to be the state without the project intervention and the economic approach is discounting, to reflect the overall average return of capital in the economy.

1. **Assessing the economic cost and benefits of a Competitiveness Enhancement Program.**

It is expected that with the implementation of the reforms, Jamaica’s business climate and general competitiveness will be improved by reduction of transaction costs, tax distortions and by providing greater access to financial services. Broad understanding of the required reforms, acceptance by all stakeholders, and implementation of a series of legal reforms will increase the opportunities for businesses to obtain credit and to reduce the risk to lenders of extending credit beyond their circle of established and typically larger borrowers. By reducing the cost and time of the land titling and registration process, landowners, particularly those with smaller holdings, will be able to use their land as collateral for business endeavors and to make improvements in their property as a result of ownership.

The detailed assumptions, parameters and calculations are shown on Annex 1.

#### Reductions in distortions in the tax system

As many studies have shown, measuring the effects of tax reforms in the economy is a difficult task.[[32]](#footnote-30) Tax reforms are complex, have differential effect across the actors in the economy and the implications and impacts can only be seen in the long run. The lack of controlled experiments due to the nature of reforms and of the ability to measure economic changes limits the scope for evaluating these types of reforms.

However, the stamp duty land and the transfer tax are considered to be highly inefficient transactions taxes that discourages and creates perverse incentives for commercial transactions[[33]](#footnote-31). In the case of Stamp Duties and Transfer taxes, studies[[34]](#footnote-32) have shown that Stamp Duties and Transfer Taxes, create inefficiencies by raising the cost of capital and inhibiting commercial transactions. Some studies have shown that the abolition of Stamp Duties could have an effect of between 0.24% and 0.78% on GDP. However, for simplicity purposes, in the present calculation, it is assumed that the increase in welfare is greater than the decrease in revenue, by a factor of 25 at the maximum%.

For tax reform to be considered under a Cost/Benefit Analysis perspective, the costs and the benefits of a change in the tax structure should be evaluated to see if there is an improvement[[35]](#footnote-33). A reduction in a tax rate means that there is a reduction in the revenue for the government while some businesses, (in the case of stamp duties and transfer taxes) will experience an increase in welfare by the reduction. The full impact of the change will be measured as:

Marginal Social Benefit =

The program contemplates reductions in distortions in the tax system in form of reducing the stamp duties and transfer taxes that create a cost burden on business transactions. With a yearly estimate of the number transactions that are subject to stamp duties and transfer taxes, , the benefits were calculated in terms of the lower cost due to reduced fees. As part of the program implementation, Transfer Taxes and Stamp Duties were reduced by 45%, as shown on Table 1. For simplicity purposes, since the reduction of the fees was done gradually over a period of three years, the benefits are calculated on the full reduction starting the third year.

The reduction of Stamp Duties and Transfer Taxes was calculated using the following formula

Bi =Ti x (ST2008 – ST2010) x TA I x µ

Were Bi is the estimated benefit for the year I, Ti is the number of transactions for the year I, ST2008 is the value of the Stamp Duty in the year 2008 and ST2010 is the value of the Stamp Duty in the year 2010 ant TAi is the average transaction amount on the year I, conservatively estimated in US 1,000 and µ is the coefficient that adjusts for the welfare reduction in the case not all the increase in welfare for the firms is captured by the society. The same formula was used to calculate the benefits of transfer taxes.

Table 1: Reduction in Stamp Duties and Transfer Taxes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 2008  (Baseline) | 2009 | | % Reduction |
|  | Real | Target | Effective |  |
| Stamp Duties | 5.5 | 5.5 | 4.5 | 18% |
| Transfer Taxes | 7.5 | 6.0 | 5.0 | 33% |

As for the amalgamation of labour taxes, in 2008 there were five payroll deductions, each separately administered and with separate rate and base structures[[36]](#footnote-34) which obliged businesses to issue five separate checks on a monthly basis. Companies interviewed during project preparation argued that the amount of time and effort spent on filing monthly labor taxes decreased the firms’ productivity and deterred companies for hiring formally and filing taxes for employment[[37]](#footnote-35). Small businesses that have less human resources are affected in great proportion, since they will have less time for productive activities, deterring formality as well.

Under the proposed reform, businesses have to make only one amalgamated payment with the subsequent reduction in time. For this, the methodology of using time savings to estimate consumer surplus, widely used for cost benefit analysis of transportation projects was applied[[38]](#footnote-36). Even though the methodology calls for a differentiation of income groups, a simplification by using a conservative estimate of the cost of time was used.

In this case, the benefit was estimated calculating the time savings for business for doing one sole payment instead of five, using the following formula

Time savings (i) = (H (i) – H (2008) X HR x Cii ,

Where, Time savings (i) are the value of the time savings in the year I, H(2008) are the number of hours spent in the baseline year and HR is the hourly rate. For calculation purposes, the value of time was calculated as the hourly rate of an employee that earns two times the minimum wage. Ci is the number of companies that pay taxes on a yearly basis.

These reforms do not imply significant operational or investment costs. For calculation purposes, an amount of US $200,000 is assumed to cover the costs of informing the public on the changes, and the administrative cost of adjusting to one sole payment electronically and in paper (developing new formats, etc.)

Table 2 shows the benefits over time of the reduction in transfer taxes and stamp duties, as well as the sensitivity analysis of the change in the elasticity in the change of welfare per increase in efficiency that was applied for the reduction of Stamp Duties and Transfer Taxes. For this case, the reforms became effective in 2010, although the preparatory activities started in 2008 when the Action Plan for reduction of distortions was agreed.

Due to the low cost of implementation of the reforms, the NPV, even for the case when the factor of the multiplier is 0.05%. has a positive factor of US $113.91.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TABLE 2: ASSUMPTION AND COST BENEFIT ANALYSIS OF TAX SIMPLIFICATION** | |  |  |  | | | | | | |  |  | | | |  | | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  |
| **Assumptions** |  |  |  |  | | | | | | |  |  | | | |  | | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  |
| **Assumptions related to costs and benefits of tax reforms** | | | | |  | | | | | |  |  | | | |  | | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  |
| Number of Companies that pay taxes | 50,000 |  | | |  | |  | | |  | | | |  | | |  | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |
| Amount of Stamp Duties and Transfer Taxes Transactions | 200,000,000 | USD | | |  | |  | | |  | | | |  | | |  | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |
| Number of Stamp Duties and Transfer Taxes a Year | 200 | Number of procedures | | |  | |  | | |  | | | |  | | |  | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |
| Average Value of Stamp Duty and Transfer Taxes | 1,000,000 | USD | | |  | |  | | |  | | | |  | | |  | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |
|  |  |  |  | | | | |  | | |  |  | | | |  | | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  |
| **Calculation of Benefits** |  |  |  | | | | |  | | |  |  | | | |  | | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  |
| **Components** |  | **Baseline (2008)** | **With Project** | | |  | | |  | | | |  | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |
| Tax Expenditure and Reform | Parameter | Measure | New Measure | | |  | | |  | | | |  | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |
| Reduction of Distortions of the Tax System |  |  |  | | |  | | |  | | | |  | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |
| - Reform of Stamp Duties | % of Transaction | 5.5 | 4.50 | | |  | | |  | | | |  | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |
| - Reform of Transfer Taxes | % of Transaction | 7.5 | 5.00 | | |  | | |  | | | |  | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |
| - Amalgamation of Payroll Taxes | Time Paying Taxes (hours per month) | 5 | 1 | | |  | | |  | | | |  | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |
| Simplification of Tax Administration |  |  |  | | |  | | |  | | | |  | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |
| Elasticity of Demand |  | 0.05 |  | | |  | | | | |  |  | | | |  | | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  |
| Minimun Wage in Jamaica | 101.75 | $J/hour |  | | |  | | | | |  |  | | | |  | | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  |
| Exchange Rate | 85.38 | SJ/USD | as Nov 16/2010 | | |  | | | | |  |  | | | |  | | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  |
| Number of Companies that pay taxes | 50,000 |  |  | | |  | | | | |  |  | | | |  | | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  |
|  |  |  |  | | |  | | | | |  |  | | | |  | | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  |
| Sensitivity Analysis |  | NPV (US Million) |  | | |  | | | | |  |  | | | |  | | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  |
| Change in Welfare | 0.25 | 571.00 |  | | |  | | | | |  |  | | | |  | | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  |
| Change in Welfare | 0.1 | 228.18 |  | | |  | | | | |  |  | | | |  | | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  |
| Change in Welfare | 0.05 | 113.91 |  | | |  | | | | |  |  | | | |  | | | |  | | |  | | |  | | |  | | |  | | |  | | |  | | |  |



#### simplification of tax administration

The measures taken by the Ministry of Finance and the Public Service (MoF&PS) regarding tax administration have allowed the GoJ to increase the tax revenue collection in terms of analyzing and tackling tax evaders and by increasing the collection efficiency in terms of providing electronic services to tax payers and increasing the options for paying taxes such as the establishment of third party collection kiosks.

In this area, the benefits are estimated in terms of increased tax collection. In this particular case, the analysis corresponds to new taxes that would not have been implemented if the measures had not been taken, although a sensitivity analysis is carried out to incorporate the case that tax collection could have increased due to other variables such as increased economic activity. (Although since Jamaica has experienced very low to negative rates of GDP, the case is highly improbable).

In the Jamaican case, part of the reduction of the collection costs from improved administration was being reflected in an improved capture rate[[39]](#endnote-3). However, to capture the expected change in welfare from income and labour market effects as well as improved horizontal equity would require the application of a General Equilibrium model, which in turn may have its own limitations, particularly in terms of the availability of data, as discussed in the previous chapter.

The administrative reforms taken in Jamaica broadened the net, leading to higher capture rates and increased revenue collection. Benefits are expected to come from a lower fiscal deficit and a greater provision of public goods. In this case, to fully capture the effects of the measure, a General Equilibrium model would be needed to capture the effects on the private sector. However, the model includes as benefits the information provided from the Ministry of Finance regarding increase in collections as part of the reforms.

For simplicity of purposes, the benefits are estimated in the reported increases in revenue collection by the use of the new systems[[40]](#footnote-37).

The investment in the required software, hardware and training of public officials are included in the costs of the reform and are estimated in US 2 million.

In this case as well, the baseline corresponds to 2008 when the GoJ and the Program agreed on the set of measures to be implemented. In 2010 the measures were implemented and the results measured in terms of increase in collection. Since the reforms were implemented in one year, the increase in collection was reflected the same year on a one year bases. It is assumed that the collection remained stable since the implementation of the reforms, since additional increases could have corresponded to another set of reforms not included in the program.

The cost benefit analysis shows that the implementation of the reforms, in terms of new taxes collected, exceed the cost of implementing the measures, with a NPV of US $27.70 Million. Sensitivity analysis in terms that the increase in welfare is not internalized fully also showed positive values (Table 3)

**TABLE 3. COST BENEFIT ANALYSIS OF TAX ADMINISTRATION**.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Assumptions related to costs and benefits of tax reforms** | | | |  |  |
| Number of Companies that pay taxes | 50,000 |  |  |  |  |
| Increase in Revenue for Drop Box | 0.45 | $J Billion | For the year 2010 based on MoF information |  |  |
| Increase in Revenue for Forensic Service | 2.54 | $J Billion | For the year 2010 based on MoF information |  |  |
| Cost of Implementation of Measures for Reduction of Distortions in the tax System (amalgamation of labour taxes) | 200.00 | US Dollars | Corresponds to new software, training of officials. |  |  |
| Cost of Implementation of Measures for Reduction of Distortions in the tax System | 2,000,000.00 | US Dollars | Corresponds to new software, training of officials. |  |  |
| Exchange Rate | 85.38 | SJ/USD | as Nov 16/2010 |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| Sensitive Analysis |  | NPV |  |  |  |
| Increase in collection due to measures | 1 | 27.20 |  |  |  |
| Change in Welfare | 0.8 | 23.23 |  |  |  |
| Change in Welfare | 0.75 | 21.67 |  |  |  |
|  |  |  |  |  |  |
| **Cost Benefit Analysis** |  |  |  |  |  |
|  |  |  |  |  |  |
| US MILLIONS | **2008** | **2009** | **2010** | **2011** | **2012** |
| Increase in Revenue Collection |  |  | 35.02 | - | - |
| -Increase in Revenue in Drop Box |  |  | 5.27 | - | - |
| - Increase in Revenue in Forensic Service |  |  | 29.75 | - | - |
| - Cost of Implementation |  |  | 2.00 |  |  |
| TOTAL |  |  | 33.02 | - | - |
| **Net Present Value of Benefits** | **$29.48** |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| **NPV of Costs** | **$1.79** |  |  |  |  |
|  |  |  |  |  |  |
| **NET PRESENT VALUE** | **$27.70** |  |  |  |  |

#### divestiture of state owned enterprises

The GoJ has a number of inefficient state owned enterprises that create a budgetary pressure on the country’s fiscal account. In this regard, the operation includes the divestment of at least two state owned enterprises. At present, the Sugar Industry and Air Jamaica have been fully divested, so these two entities were selected for the cost benefit analysis, even though the operation called for divestiture of one SOE.

For this case, the methodology for evaluation divestiture was based on the evaluation of the social benefits of transferring the ownership from the Government to a private company[[41]](#footnote-38).

In this case, the private value is the company is the amount that the company is worth to the private buyer (Vpp), Vsp is the social value of the company under operation, αg is the shadow multiplier under government revenue and αg is the shadowmultiplier under private operation.

Since both companies were making losses, it is estimated that the Vsp is negative and the Vpp is the valueof the company that takes the losses under the assumption that with efficiency gains the companies will make profits, once the social and environmental liabilities have been removed. Since government revenue is negative as well, the assumption, without project, is that the losses would remain constant or increase due to the difficulty of Government to make efficiency adjustments. For conservative purposes, the additional benefits of introducing αp, that correspond to the efficiency gains from private participation are not included into the analysis.

Thus, the benefits from the divestiture are estimated as follows:

For the Sugar Industry, the MoF reports show that in the baseline year, 2008 the government support amounted to US $169 Million per year. However, for the process of divestiture, the GoJ took charge of the social liabilities, including the economic diversification, social resilience and environmental sustainability of Sugar Dependent Areas (SDAs), and with the support of the European Union implemented a Program for the transition[[42]](#endnote-4) with a cost of US $116 Million over a six year period. After that period, no additional support would be taken from part of the GoJ and the European Union.

In the case of Air Jamaica, the reported losses for 2008 were US $100 Million a year. The benefits of the divestiture are calculated by the elimination of budget support the amount of US $100 Million. The liabilities, including operational losses, financial liabilities, and equipment leases amounted to US $493 Million in 2008 which are assumed to be the costs of the divestiture for the GoJ. The liability payment was done by the GoJ in 2010, when the agreement was signed with the company that bought Air Jamaica. After 2010, the budgetary lines for support of the SOEs analyzed went to zero in the national accounts

The benefits of the divestiture are calculated by the elimination of government support to the industry by US 169 Million per year and the costs are estimated as the five year implementation program.

The analysis shows that the benefits of divesting State Owned Enterprises that generate losses are one of the most important in all the areas of reforms, with NPV of up to US $935.42 Million, and remaining positive even with a scenario where the efficiency gains from part of the private sector are not fully achieved by 20%.

TABLE 4: COST BENEFIT ANALYSIS OF DIVESTITURE OF PUBLIC ENTERPRISES

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Assumptions** | **Parameter** | **Measure** | **Comments** |  |  |
| **Assumptions related to divestiture of public entities** | | | |  |  |
| Budget support for Air Jamaica in 2008 | 100 | UDS Million | Based on MoF Public Bodies annual report 2008 |  |  |
| Budget support for Sugar Industry in 2008 | 169 | USD Million | Based on MoF Public Bodies annual report 2008 |  |  |
| Air Jamaica Liabilities | 493 | US Million | MEF Public Bodies Report |  |  |
| Sugar Industry Liabilities | 116 | US Million during 2008 2013 | Sugar Area Development Programme |  |  |
| **Calculation of Benefits** |  |  |  |  |  |
| **Components** |  | **Baseline (2008)** |  | **With Project** | **Comment** |
|  | Parameter | Measure | Amount (US Million) | New Measure |  |
| Reduction in Budget Support for Air Jamaica | Budget Line | US Million | 100.00 | 0 |  |
| Reduction in Budget Support for Sugar Industry | Budget Line | US Million | 169.0 | - |  |
| Air Jamaica Liabilities | Budget Line | US Million | - | 493 | Liabilities were assumed in one year at the time of divestiture |
| Sugar Industry Liabilities | Budget Line | US Million | - | 116.00 | Liabilities were assumed for a five year period |
| Sensitivity Analysis | α | NPV |  |  |  |
| Scenario 1 | 1.00 | 935.42 |  |  |  |
| Scenario 2 | 1.25 | 1367.41 |  |  |  |
| Scenario 3 | 0.80 | 594.94 |  |  |  |



#### increased access to finance

The JCEP involves a series of reforms to promote greater access to finance, including establishing legal and institutional frameworks for secured transactions, credit bureaus, electronic transactions and mobile banking.

Empirical evidence shows a strong link between financial depth and national economic growth, and furthermore, research suggests that financial development generates pro-poor growth and has a greater impact on poor households and small enterprises[[43]](#endnote-5). In Jamaica, it is estimated that 35% of the population has access to Bank accounts and 21% of the adult population has access to credit[[44]](#endnote-6) In addition, low income economies show a higher rate of penetration of mobile telephony than commercial Bank accounts[[45]](#endnote-7). Furthermore these measures have been shown to be pro-poor in addition to being pro-growth, but the scope of the impact on the GDP depends on the particular set of variables and it is challenging to predict the increase in productivity based on the approval and implementation of a set of laws that tackle barriers on access to finance and promote a reduction in risks and cost. Ample literature is available on these issues[[46]](#endnote-8) that shows a positive relationship between increasing access to finance and GDP growth, but with variations according to the country, the size of the economy, the size of the firms.

Empirical evidence in similar reforms in the region suggest that the reduction of asymmetries in credit information will result in an increase in access to credit for new borrowers and firms, as well as an increase in loan size for solidarity groups[[47]](#footnote-39). In addition, the elimination of financial constraints, in particular for smaller firms, will have an increase in profits and returns to capital with a larger effect in smaller firms[[48]](#footnote-40).

Similarly, Mobile telephony provides new opportunities for economic growth, not only by providing financial services, but also providing a wider set of externalities[[49]](#endnote-9). A number of studies done concluded that a 10% rise in mobile subscribers in emerging markets will lead to a .6% to 1.2% increase in GDP in those markets due to the productivity gains associated with communication as well as new jobs.[[50]](#endnote-10) The studies further noted that the effect mobile telephony has on GDP is greater in emerging markets where connectivity is critically dependent on mobile telephony.

For calculation purposes, a proxy of the elasticity of increasing access to finance of a conservative elasticity of 0.001 (0.10%) was used as the effect in employment creation that was used. The assumption that increase in employment creation will have a 1% effect on GDP growth was used, with an overall compound elasticity of 0.02 % of GDP, with sensitivity analysis of up to 0.01% of GDP.

However, since the reforms in all the areas related to access to finance were implemented gradually during the 2008-2012 period, and some are still to be implemented in 2014, and to reflect the fact that the benefits are experienced in the medium and long term, the benefits for the implementation period (2010-2014) were calculated at half of its potential, reaching its full potential in the year 2015. It was also assumed that the increase in productivity was sustained for a period of three years to gradually decrease to a 10% of the elasticity to reflect a stabilization of the new actors after a period of time.

Regarding the implementation costs, an initial amount of US 0.3 million yearly for the years of implementation is estimated basically to include the cost of the drafting of the new law, expert consultants to support the reform and the implementation of a registry for Secured Transactions. The operational costs of the registry are estimated in US 200,000.

As shown on Table 5, the sensitivity analysis shows positive NPV of up to US $193 Million, remaining positive even under a reduction of the elasticity up to 10%.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **TABLE 5: COST BENEFIT ANALYSIS OF INCREASED ACCESS TO FINANCE** | | | |  |  |
| **Assumptions related to increase productivity to increased access to Finance** | | | |  |  |
| **Assumptions** | **Parameter** | **Measure** | **Comments** |  |  |
| GDP | 14,600,000.0 | USD Billion |  |  |  |
| Increase productivity | 0.10% | Yearly | using the revealed information for m-banking as a proxy and taking a conservative approach |  |  |
| Productivity Increase | 14,600.0 | USD Million |  |  |  |
| Elasticity | 1 |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| **Calculation of Benefits** |  |  |  |  |  |
| **Components** |  | **Baseline (2008)** |  | **With Project** | **Comment** |
| Tax Expenditure and Reform | Parameter | Measure | Amount (US Million) | New Measure | New Measure |
| Increase in Access to Finance |  |  |  | Total | Total |
| -Increase In Productivity of Access to Finance | % of GDP Increase | US Million | - | 14.60 | Full Value at Implementation |
| Increase in Access to Finance |  |  |  | First Five Year | First Five Year |
| -Increase In Productivity of Access to Finance | % of GDP Increase | US Million | - | 7.30 | Under Implementation |
| Increase in Access to Finance |  |  |  | Rest of the Period | Rest of the Period |
| -Increase In Productivity of Access to Finance | % of GDP Increase | US Million | - | 1.46 | Marginal Increase |
|  |  |  |  |  |  |
| Sensitivity Analysis | Elasticity | NPV |  |  |  |
| Scenario 1 | 0.20% | 193.35 |  |  |  |
| Scenario 2 | 0.15% | 108.76 |  |  |  |
| Scenario 3 | 0.10% | 48.34 |  |  |  |



#### reduction in the cost of land titling and registration

Developing countries have made efforts on improving the land property right system of their countries, based on the precept that increased security in the land title will improve productivity by increasing access to finance, investment and land productivity[[51]](#footnote-41). In particular, empirical evidence shows that relationship between land registration and credit access is based on the use of registered property to secure credit; the strength of this relationship will therefore depend on whether or not borrowers are required to provide collateral, and in many cases due to the underdeveloped finance markets for unsecured transactions, registered property is fundamental for access to credit of SMEs.. Different studies have shown that between 50% and 80%of credit providers will not approve a small enterprise credit proposal if collateral is not provided[[52]](#footnote-42).

Since the productivity effects are difficult to measure and occur mainly in the long run, the calculation of benefits will be based on the reduction of inefficiencies in terms of time and cost of registering a title. The indirect effects on productivity will not be taken into account. Even though the benefits are in general for all the land owners of unregistered land, SMEs will have an additional benefit in terms of access to finance.

The Land Administration and Management Programme, LAMP, which began its operations in 2001, has GoJ secured the passage of The Registration of Titles Cadastral Mapping and Tenure Clarification (Special Provisions) Act of 2005. The principal aim of this legislation is to remove some of the legal impediments that are hindering applicants from successfully making applications to register land. These impediments include cost, establishing root of title and issues related to subdivision. Under this act, the *Transfer Tax and Stamp Duty are waived as well as all as all fees and charges including Transfer Tax on death.* This is of crucial importance as many persons in Jamaica seek to title lands that they have inherited from family members “generational or family” lands. Such lands cannot be titled without the estate duties relating to such properties being settled and under the provisions of the Registration of Titles Act root of title cannot be established without evidence that the duties have been paid. Estimates from the LAMP program show that the cost of registering a 1,000 square meters parcel with a market value of $ 1 Million, drops from J$144,250 to J$ 34,800.

The declaration of a geographical location as a LAMP project area allows for speedier processing of applications. On average LAMP applications are approved within two (2) weeks from the date of lodgment at the Titles Division of The National Land Agency. Further the time period for filing objections after approval has been reduce from seven (7) to six (6) weeks which impacts on the total processing time. On average the total processing time from date of lodgment to date title is issued is four (4) months.

LAMP is currently operating in the parishes of St. Catherine, St. Thomas, St. Elizabeth, Clarendon and in limited areas in the parishes of St. James and Manchester to facilitate work being undertaken by the National Irrigation Commission in these parishes. LAMP therefore is operating in thirteen out of the Fourteen (14) parishes, while the 14th is being carried out under the PPP approach. In Jamaica and is titling around 1,000 titles a year. Even though it’s in the process of implementation a new PPP approach in partnership with a Korean surveying firm with the goal of titling 12,500 titles in two years, for calculation purposes the figure of 1,000 titles a year is used.

The benefits are thus calculated by accounting the cost and time savings for registering a title under a LAMP declared area, using the following formula:

BLTi =( CLTi-CLT2008) x NTi + (TLTi-TLTi2008) X VNTi

CLTi = Cost of regitering1000 square meters (¼ acre) of land with market value $1,000,000.00.

NTi= Number of titles registered per year

VTTi = Value of the time processing a Title.

The incurred costs are mainly from the education and awareness program, aimed at disseminating the benefits of the program in order to promote participation, which amounted to US $70.000.

The analysis included a sensitivity analysis to show the elasticity of increasing the benefits by increasing the number or titles that are registered in a year up to 50%. In the base case the NPV of the measure amounts to US $10.68 Million, as shown on Table 6.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TABLE 6: COST BENEFIT ANALYSI OF LAND TITLING AND REGISTRATION** | | | | | | |  |  |
| **Assumptions** | **Parameter** | | **Measure** | | **Comments** | |  |  |
| **Assumptions related to Lam Titling and Registration** | | | | | | |  |  |
| Cost of Issuing a Title | 144,250 | | $J | | Cost of regitering1000 square meters (¼ acre) of land with market value $1,000,000.00 | |  |  |
| Time for Issuing a Title | 30 | | Days | |  | |  |  |
| Cost of Issuing a Title under LAMP | 34,800 | | $J | | Cost of regitering1000 square meters (¼ acre) of land with market value $1,000,000.00 | |  |  |
| Time for Issuing a Title | 10 | | Days | |  | |  |  |
| Number of Titles a Year | 1,000 | | Titles | |  | |  |  |
| Exchange Rate | 85.38 | | SJ/USD | | as Nov 16/2010 | |  |  |
| **Calculation of Benefits** |  | |  | |  | |  |  |
| **Components** |  | | **Baseline (2008)** | |  | | **With Project** | **Comment** |
|  | Parameter | | Measure | | Amount (US ) | | New Measure |  |
| Cost of Issuing a Title | Cost of regitering1000 square meters (¼ acre) of land with market value $1,000,000.00 | | US | | 0 | | 1,689,505.74 | Yearly benefit of price reduction on an average title |
|  |  | |  | |  | |  |  |
| Sensitivity Analysis | | α | | NPV | |
| Scenario 1 | | 1.00 | | 10.68 | |
| Scenario 2 | | 1.25 | | 13.4 | |
| Scenario 3 | | 1.50 | | 16.11 | |



1. **Calculation of Cost/Benefit.**

For each one of the areas discussed above, the estimated net benefits were calculated and projected over a 10-year period. The net value of the benefits was then compared to the discounted value of the four JCEP operations. Table 7 shows the consolidated Cost/Benefit Analysis for the operation. The NPV of the benefits of the program is US 1,642.27 Million discounted at a 12% rate. The NPV of the cost is US $ 634.75 Million. The cost benefit ratio of the operation is 2.59.



1. **Risk Assessment and Scenario Analysis**

One of the main risks of the economic evaluation is the risk that the implementation of a policy does not produce the expected benefits and of the miscalculation of benefits. Due to the program being halfway through implementation some of the benefits of the measures have already been realized such as in the case of Tax Administration, Tax Policy and Land Titling and Registration. Regarding the policy measures related to access to finance, the effect of all the regulatory and legal measures in deepening the financial access is yet to be experienced and measured. Finally, the effects of many of the policies may have a set of indirect effects that could be more accurately measured with a General Equilibrium Model. However, the building and application of a GE model for the operation is not a realistic option in terms of costs and information availability.

In addition, a sensitivity analysis of the main variables was carried out to ensure that the program still has a favorable rate of return, even though in this case some of the benefits have already been achieved.

1. **Conclusions and Recommendations**

The Net Present Value of the NET Benefits, discounted at a 12% rate is US $1,007.51 Million. The Cost Benefit Ratio of the Program is 2.58, showing the implications of the reform. It is to be noted, that some reforms may have more impact than others, but a more detailed impact analysis would need to be carried out to verify the direct and indirect impact.

A sensitivity analysis of the main variables showed that if there were significant reductions in the parameters that are projected, (since most of the reforms have already been complied), the net present value of the operation will still be positive. Even with a 20% reduction in the estimated benefits and a 20% increase in the estimated costs, the NPV of the operation remains at a positive value of US $522.11 Million.

|  |  |  |
| --- | --- | --- |
| SENSITIVITY ANALYSIS | Parameter | NPV  US Million |
| Decrease in Benefits | 0.2 | 679.06 |
| Decrease In Benefits | 0.35 | 432.72 |
| Increase in Costs | 0.2 | 880.56 |
| Increase in Costs | 0.35 | 785.35 |
| Decrease in Benefits + Increase in Costs | 0.2 | 552.11 |

In addition, an additional scenario, in which the amount of IDB financing was included into the NPV calculations, shows that the NPV of the IDB financing amounts to US $ 899 Million



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2. The LAC-7 is comprised of Brazil, Mexico, Argentina, Chile, Peru, Colombia, Venezuela and Ecuador. These countries account for about 92% of the LAC Region’s total GDP. [↑](#footnote-ref-2)
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7. It is estimated that around 200,000 tax waivers have been issued. [↑](#footnote-ref-7)
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9. Does it pay to register for taxes? The impact of formality on a firm Profitability. McKenzie, Syhabou Sakho. Journal of Development Economics. 2010 [↑](#footnote-ref-9)
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18. Experimental evidence in Returns to Capital and Access to Finance in Mexico. 2008. McKinsey and Woodruf. Oxford University Press. Through a randomized control trail experiment, the study found that financially constrained firms can increase their return to capital (10-20% for small to medium sized firms) when given access to capital. Furthermore, the results show how constraints on finance affect productivity. [↑](#footnote-ref-18)
19. Holden, Paul, Welsh Allen (2008) Policies and Options for Secured Transactions [↑](#footnote-ref-19)
20. Welsh., Allen (227) Implementation of Regulatory Reform in Secured Transactions: Action Plan [↑](#footnote-ref-20)
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22. Several studies have found that implementing m-banking schemes has a positive impact on countries’ economic growth and improves access to finance for the unbanked population. [↑](#footnote-ref-22)
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28. The last agenda for reforms include the coordination and monitoring of the agenda for reforms that are included in this Program, such as access to finance, reduction of the cost of doing business, paying taxes (electronic filing and amalgamation), opening and closing a businesses, property registration as well as others that are included in the Doing Business Report such as getting electricity, trading across borders and enforcing contracts. The detailed Matrix and its follow up is included in the Means of Verification matrix. [↑](#footnote-ref-28)
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