**INTER-AMERICAN DEVELOPMENT BANK DOCUMENT**

**JAMAICA**

**Fiscal Structural Programme for Economic Growth III**

**(JA-L1055)**

**ECONOMIC ANALYSIS**

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1. EXECUTIVE SUMMARY
   1. A broad tax reform has been implemented in Jamaica since January 1st 2013. The reform includes legislation to: (i) modernize income tax and customs tariffs; (ii) greatly reduce tax and tariff exemptions in all major taxes (except for a limited number of specific goods and services); (iii) remove most exemptions and all zero rating (except for exports in the case of the General Consumption Tax - GCT); and (iv) establish an initial prudent reduction in tax rates and tariffs.
   2. The key objectives of the tax reform are to: (i) achieve fiscal sustainability; (ii) reduce tax expenditures; (iii) promote employment; (iv) promote growth; (v) improve competitiveness; and (vi) improve income distribution.
   3. Depending on the improvements in revenue associated with these reforms, the Government will consider a phased reduction of the statutory rates of the main taxes. This reduction would be contingent upon improvements in revenue deriving from the initial reforms implemented in Fiscal Year (FY) 2013/14 and FY 2014/15.
   4. This study was prepared to estimate the economic benefits generated by the introduction of a set of fiscal reforms aimed at strengthening the country’s fiscal position as well as at achieving the sustainability of public financing and of economic growth. In this context, an Economic Analysis is used to evaluate, the expected results of the Program’s tax reform component.
   5. The study also took into consideration the successful tax administration reform in Indonesia ([India's Experience with Fiscal Rules: An Evaluation and The Way Forward](http://www.imf.org/external/pubs/ft/wp/2009/wp09175.pdf)), which has many similarities to the Jamaica case, including: (i) being developed under the country’s broader economic reform programme; and (ii) relying on compliance facilitation and compliance enforcement. The Indonesian reforms were assessed as having lessened the fiscal deficit (from 3.2% in FY2000 to 1% in FY2006) and increased tax revenues (from 9.6% of GDP in FY2000 to 11.2% in FY2006). In this regards, the Indonesia experience, provides a solid evidence that this type of reforms can support governments to decrease public debt as a result of a series of actions policies that promotes economic growth, alleviate government expenditures, and at the same time increase tax revenue.
   6. Based the results of the Revenue Impact of Tax Reform Proposals shown in Table A, the increased collections in each of the eight tax categories were programmed to be phased in according to the schedule presented. This establishes a gradual introduction of the tax reform, starting with 0.28% in FY 2013/2014, 0.38% in FY 2014/15, 0.58% in FY 2015/16, and finally full implementation 0.99% in FY 2016/17 (% of GDP).
   7. The discount rate used to calculate the Net Present Value is 12% over a period of 10 years. The Reform revenue benefits derive from the 8 intervention policies presented in chapter III, starting with a benefit of US$ 12.5 million in 2013 and ending with a benefit of US$40.7 million in 2020. The Net Present Value (NPV) was US$294.4 million and the Internal rate of Return (IRR) was 78%.
   8. The Reform Costs were estimated considering: (i) Investment costs to support the reform by strengthening the Jamaica Tax, Customs Administrations and MoF Entities (US$ 65 Million – see corresponding table detailing the investments); (ii) The hiring of a new Ministry of Finance (MoF) staff specifically to manage the reform (10 staff \* US$ 60,000, already including salaries and benefits = US$ 600,00 annually); (iii) The hiring of 50 staff (30 and 20 respectively) for the Jamaica Tax and Customs Administration aiming the strengthening of the two organization management capacity to make the reform sustainable (50 staff \* US$ 60,000, already including salaries and benefits = US$ 1.8 million annually); and (iv)The costs of tax compliance, which was calculated estimating that approximately 1.000 firms will need to adjust their filling processes (according to the World Bank Doing Business[[1]](#footnote-1) the Jamaica number of hours for compliance in Jamaica is 386 hours \* US$12 accountant hour \* 1,000 firms = total of US$ 4.4 million yearly).
2. INTRODUCTION
   1. The Government of Jamaica (GoJ) requested the Bank for support in the implementation of a set of fiscal reforms aimed at strengthening the country’s fiscal position and at achieving the sustainability of public financing and of economic growth.
   2. The present study aims to estimate the economic benefits to be generated from the implementation of a set of tax policy reforms to be introduced by the Fiscal Structural Programme for Economic Growth (FISPEG). The benefits are calculated as the increase in tax revenue net of the transfers from the private to the public sector.
   3. Experience from similar programs indicates that it is difficult to carry out a precise estimation without accounting for all the economic and financial variables affected by the Program’s activities. Analysis of the Program’s activities will allow for a partial estimation of the Program’s financial benefits in order to generate an Internal Rate of Return (IRR) and the corresponding Net Present Value of the Program’s tax policy component. Despite the aforementioned, it is possible to derive an approximate estimation by considering the results already attained by some of the activities supported by the Program.
   4. This study was prepared to estimate the economic benefits generated by the introduction of a set of fiscal reforms aimed at strengthening the country’s fiscal position as well as at achieving the sustainability of public financing and of economic growth. In this context, an Economic Analysis is used to evaluate, the expected results of the Program’s tax reform component.
   5. The study also took into consideration the successful tax administration reform in Indonesia ([India's Experience with Fiscal Rules: An Evaluation and The Way Forward](http://www.imf.org/external/pubs/ft/wp/2009/wp09175.pdf)), which has many similarities to the Jamaica case, including: (i) being developed under the country’s broader economic reform programme; and (ii) relying on compliance facilitation and compliance enforcement. The Indonesian reforms were assessed as having lessened the fiscal deficit (from 3.2% in FY2000 to 1% in FY2006) and increased tax revenues (from 9.6% of GDP in FY2000 to 11.2% in FY2006). In this regards, the Indonesia experience, provides a solid evidence that this type of reforms can support governments to decrease public debt as a result of a series of actions policies that promotes economic growth, alleviate government expenditures, and at the same time increase tax revenue.
   6. Based the results of the Revenue Impact of Tax Reform Proposals shown in the Table A, the amount of each of the eight tax categories was programmed to be implemented according to the work plan presented in the Blue Print Tax Reform Document, which establishes a gradual introduction of the tax reform, starting with 0.28% in FY 2013/2014, 38% in FY 2014/15, 58% in FY 2015/16, and finally full implementation 99% in FY 2016/17 (% of GDP).
   7. It is important to highlight that this study does not consider the indirect benefits (the results of which could only be evaluated over the long-term) related to results from social investments in sectors that contribute to poverty reduction and an increase in human capital.
   8. The Program is structured as three independent operations, each technically integrated under the programmatic modality, comprising financing resources of US$80 million in the first tranche, US$100 million in the second tranche, and an anticipated US$80 million in the third tranche.
3. ASSUMPTION AND METHODOLOGY

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| ***Assumption:*** *By adjusting annually the tax base according to the variation of the Gross Domestic Product (GDP) and the exchange rate, the introduction of the new Tax Reform will generate a revenue increase of 0.99% of GDP (US$141.22 million). The tax reform will include:*   1. *Establishes a new Charities Act on Tax Expenditure, introducing a 5% cap on Corporate Income Tax (CIT) and Personal Income Tax (PIT) Covenanted Donations and Donations to Charities and a JD$ 3,000 million cap on General Consumption Tax (GCT), Special Consumption Tax (SCT), Import Duties and Customs Users Fess (CUF);* 2. *Establishes the New Incentive Law, eliminating old tax expenditures in different taxes and introduces a new incentive to all sectors on labor costs and capital goods;* 3. *Introduces in CIT a cap on the interest payments deductions, a 5% cap on all donations charities, a 5% cap on losses for previous years, eliminates the tax relief incentive with grandfathering provisions, eliminates up to 30% in other tax credits, and eliminates all CIT waivers;* 4. *Introduces in PIT a cap on the interest payments deductions of about 1/3 of the current interest payment, a 5% cap on all donations charities, a 5% cap on losses for previous years, eliminates the tax relief incentive with grandfathering provisions, eliminates up to 30% in other tax credits, and eliminating all PIT waivers;* 5. *Introduces in Customs Tariffs a new tariff structure, eliminates the discretionary waivers (direct and indirect effects on GCT), and the incentive waivers;* 6. *Eliminates in GCT incentives and discretionary waivers;* 7. *Eliminates in SCT incentive tax expenditure (Ad Valorem) and discretionary waivers (Specific);* 8. *Eliminates CUF incentives and discretionary waiver; will generate a revenue increase, starting with 0.28% of GDP in FY2013/2014 and reaching its full potential in FY 2016/17.* |

Methodology Used to Calculate de Impact of Tax Reform Proposals:

* 1. The methodologies / formulas used to calculate the impacts of the eight categories of reform presented in the aforementioned Table A were developed based on the concepts used in three main studies: (i) Jamaica Dynamic Computable General Equilibrium Model (DCGEM), (ii) Jamaica CIT micro data simulation model, and (iii) Jamaica Custom duties micro data simulation model. The DCGEM is explained in details in annex I at the end of this document. Approximately 27,000 firms were included in the simulation.

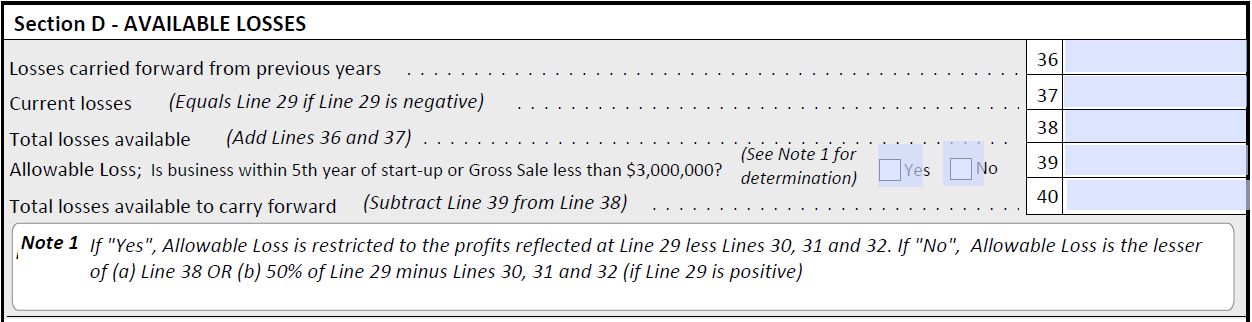
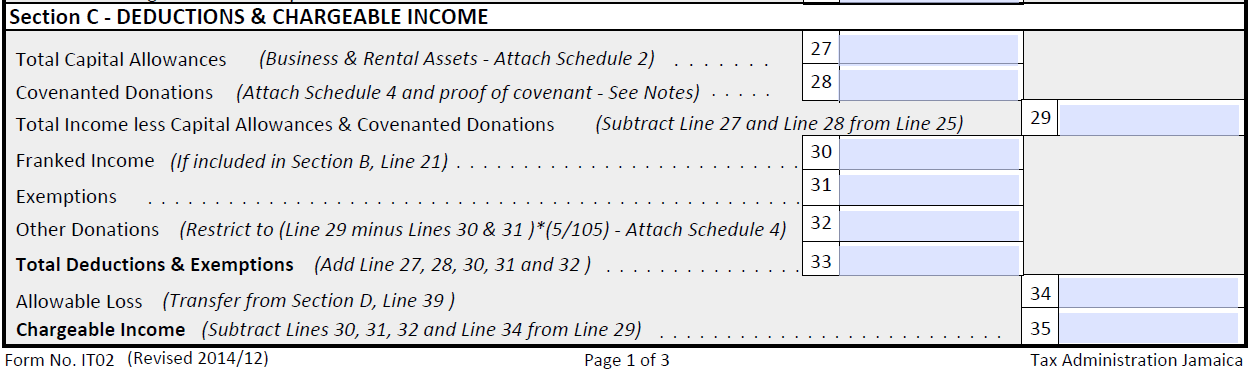


* 1. The overall impact of these tax policy reform proposals are estimated at JD$ 12,453 million, corresponding to US$ 141.2 million in FY 2016/17. Details of the calculations, corresponding to each category, are provided in the body of the report. Regarding the reforms’ implementation schedule, according to the Revenue Impact of Tax Reform Proposals table (See Table A below), the reforms will be implemented progressively in a period of four years, starting in FY 2013/14 and reaching its full implementation in FY 2016/17.

Description of all Revenue Impact of Tax Reform Proposals Categories:

General Rules

1. The Estimation was carried out considering 6,172 Jamaican firms and in some cases the calculation cannot be 100% reproduced in a simple spreadsheet. In these cases the information was imported directly from the Jamaica CIT/PIT/Customs micro data simulation models.
2. The Net Income corresponds to the Total of Incomes of the 6,172 Jamaican firms subtracting the corresponding deductions as described below:



1. Tax Expenditure presented are: (i) Statutory (determined by Law), (ii) Discretionary (determined by for example the MoF for a specific purpose), and (iii) Incentives.
2. Cap is a ceiling (amount or %) introduced in a specific tax expenditure to limit the scope of an incentive. For the calculation it will be used the old and the new caps.
3. Surplus is the amount resulted from the difference between the tax expenditure with the old and the new cap.
4. Tax base is the group of amounts (Total Income, Net Income and Tax expenditure) used from Year 2011 for estimation purpose, which are adjusted to the next years according to the variation of the GDP and the exchange rate. Beyond 2014, the GDP and exchange rate are provided by IMF Article IV 2014.
5. For the Charities and Incentives Act, the rules for calculation are defined in the corresponding regulations, some with very complex sequence and are aplyed in (i) Jamaica Dynamic Computable General Equilibrium Model (DCGEM), (ii) Jamaica CIT micro data simulation model, and (iii) Jamaica Custom duties micro data simulation model.

Charities Act

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| **Charities Act *-*** *By adjusting annually the tax base according to the variation of the GDP and the exchange rate, the introduction of: (i) a 5% cap on CIT and PIT Covenanted Donations and Donations to Charities; and (ii) a JD$ 3,000 million cap on GCT, SCT, Import Duties and CUF will generate a revenue increase of JD$188.6 million.* |

**Rules and Calculation**

* 1. According to Table 1, all 2011 tax expenditure information was collected from the document [Tax Expenditures Estimates 2009 - 2011](https://drive.google.com/file/d/0B7LkbF0DRcmJTWg5c3A0UTBvTnc/view).
  2. ***Introduction of a 5% Cap*** on charities and donation is calculated applying to each tax expenditure (CIT, CIT other bodies, and CIT), the difference between the old cap (8%) and the new cap (5%) = 3%. The additional revenue to be collected = JD$ 14.28 (JD$ 11.60 + JD$ 1.46 +JD$ 1,21).
  3. ***Introduction of a JD$ 250 million monthly cap*** on charities is calculated applying the yearly cap (JD$ 3,000 million = JD$250 million \*12) on the total of the tax expenditures regarding GCT, SCT, Specific, Import Duties, and CUF = JD$4,737.88 (JD$ 1,910.06 +JD$ 129.69 + JD$ 43.85 + JD$ 2,449.92 + JD$ 204.37). From this total is subtracted the JD$ 3.000 million cap = JD$1,737.88. It is important to explain that the objective of the Charity Act was not to eliminate the charities and donations waivers. The purpose was to set an annual ceiling of JD$3.000 million, and the entities that were not contemplated in a specific year could be included in a list for next years’ waivers. The real objective of the Charities Act was to determine which entities did not comply with the requirements to receive a discretionary waiver charity.  A preliminary joint study IDB and GoJ estimated that a maximum of 10% of the entities did not comply with the waivers requirements. In this context, a 10% spillover was applied to the amount above the cap = JD$ 173.79 (10% of JD$ 1,737.88).
  4. ***The total additional revenue to be collected*** = JD$188.06 (JD$ 14.28 + JD$ 173.79).



Tax Incentive Law

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| *Tax Incentive Law - By adjusting annually the tax base according to the variation of the GDP and the exchange rate, the elimination of the old tax incentives on CIT, PIT, GCT, SCT, Import Duties and CUF, and introduction of a new incentive to all sector labor costs and capital goods will generate an extra revenue of JD$2,315.93 million.* |

**Rules and Calculation**

* 1. According to Table 2, all 2011 tax expenditure information was collected from the document [Tax Expenditures Estimates 2009 - 2011](https://drive.google.com/file/d/0B7LkbF0DRcmJTWg5c3A0UTBvTnc/view).

**Tax incentives**

1. The gross incentive old employee is calculated based on 50%[[2]](#footnote-2) of half of the NIS contribution[[3]](#footnote-3) = JD$2,931.94 (JD$111,727.77/2\*50%).
2. The incentive new employees is 5%[[4]](#footnote-4) of the gross incentive old employees = JD$ 146.60 (JD$2,931.94 \* 5%).
3. The capital goods incentive is calculated based on 20%[[5]](#footnote-5) of the tax on capital goods[[6]](#footnote-6) = JD$ 3,425.68 (JD$ 17,128.40 \* 20%).
4. The Total incentives = gross incentive old employee + incentive new employees + capital goods incentive = JD$ 6,504.22 (JD$2,931.94 + JD$ 146.60 + JD$ 3,425.68).

***Reductions of benefits***

1. Gran fathering old regime is calculated based on 50%[[7]](#footnote-7) of tax credit old regime = JD$ 5,410.01 (JD$ 10,820.02 \* 50%).
2. Tax expenditure reduction is also calculated based on 50% of tax credit old regime = JD$ 5,410.01 (JD$ 10,820.02 \* 50%).
3. Offset not using new incentive is calculated based on 30%[[8]](#footnote-8) of Tax expenditure reduction = JD$ 1,623.00 (JD$ 5,410.01 \* 30%).

***Cap on CIT deductions***

1. Cap CIT is calculated based on 15% of the sum of total incentive and tax expenditure reduction = JD$1,787.13 ([JD$ 6,504.22+ JD$ 5,410.01] \* 15%).

***Net Revenue Impact***

1. Net revenue is the offset not using new incentives + cap on CIT +Tax expenditure reduction - Total of incentives = JD$ 2,315.93 (JD$ 1,623.00 + JD$1,787.13 + JD$ 5,410.01 - JD$ 6,504.22)



Corporate Income Tax (CIT)

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| Consumption Income Tax (CIT) - *By adjusting annually the tax base according to the variation of the GDP and the exchange rate, the introduction in CIT of: (i) a cap on the interest payments deductions of about 1/3 of the current interest payment; (ii) a 5% cap on all donations charities; (iii) a 5% cap on losses for previous years; (iv) eliminating the tax relief incentive with grandfathering provisions; (v) eliminating up to 30% in other tax credits; and (vi) eliminating all CIT waivers will generate a revenue increase of JD$3,681.02 million.* |

**Rules and Calculation**

* 1. According to Table 4, all 2011 tax expenditure information was collected from the document [Tax Expenditures Estimates 2009 - 2011](https://drive.google.com/file/d/0B7LkbF0DRcmJTWg5c3A0UTBvTnc/view).

**Caps on deductions**

1. Cap on interest payment is calculated based on 1/3[[9]](#footnote-9) of 10% of the total interest payments[[10]](#footnote-10) = JD$ 1,666.67 (JD$ 50,000 \* 10% / 3).
2. Cap on donations and charities is calculated based on 3% (old cup 8% - new cup 3%) on the total of covenanted Donation + Donation Charities = JD$ 13.06 ([JD$ 350.27 + JD$85.15] \* [8% -5%]).
3. Cap on losses for previous years is calculated based on 1/3[[11]](#footnote-11) of 5% on total losses for previous years = JD$ 2,800 (JD$ 168,000 \* 5% /3).

**Eliminations of benefits**

1. Elimination of tax relief incentive is calculated based on the total of relief incentives - grand fathering + offset new incentives = JD$ 1,338.68 (JD$ 2,136.43 – JD$ 1,068.22 + JD$320.46).
2. Elimination of other tax credits is calculated based on 30% of total other tax + grand fathering + offset new incentives = JD$ 1.399.21 ([JD$ 3,205.52 \* 30%] +JD$ 480.83 + JD$ 43.27).
3. Elimination of CIT Waivers is calculated based on the elimination of all waivers = JD$ 42.50.

**Impact on revenue**

1. Total gross CIT revenue increase = cap on interest payments + cap on donation and charities + cap on losses for previous years + elimination of tax relief incentive + elimination of other tax credits + elimination of CIT waivers = JD$ 7,310.12 (JD$ 1,666.67+ JD$ 13.06 + JD$ 2,800 + JD$ 1,338.68 + JD$ 1.399.21 + JD$ 42.50).
2. Total Net CIT revenue increase = New incentive (up to 50% of CIT payable) + Minimum business tax + Reduction CIT to 25% + Charity Act = JD$ 3,681.02 (JD$ 2,007.60 + JD$ 259.33 + [-JD$ 5,882.97] + [-JD$ 13.06].



Personal Income Tax (PIT)

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| Personal Income Tax (PIT) - *By adjusting annually the tax base according to the variation of the GDP and the exchange rate, the introduction in PIT: (i) a cap on the interest payments deductions of about 1/3 of the current interest payment; (ii) a 5% cap on all donations charities; (iii) a 5% cap on losses for previous years; (iv) eliminating the tax relief incentive with grandfathering provisions; (v) eliminating up to 30% in other tax credits; and (vi) eliminating all PIT waivers will generate a revenue increase of JD$319.72 million.* |

**Rules and Calculation**

* 1. According to Table 5, all 2011 tax expenditure information was collected from the document [Tax Expenditures Estimates 2009 - 2011](https://drive.google.com/file/d/0B7LkbF0DRcmJTWg5c3A0UTBvTnc/view).

**Caps on deductions**

1. Cap on Interest payments deductions is calculated based on 1/3[[12]](#footnote-12) of 10% of total interest payment = JD$ 16.67 (JD$ 500.00 \* 10% / 3)
2. Cap on donations and charities is calculated based on 3% (old cup 8% - new cup 3%) on the total of covenanted Donation + Donation Charities = JD$ 1.21 ([JD$ 19.25 + JD$ 21.26] \* [8% -5%]).
3. Cap on losses for previous years is calculated based on 1/3[[13]](#footnote-13) of 5% on total losses for previous years = JD$ 28.00 (JD$ 1,680 \* 5% /3).

**Eliminations of benefits**

1. Elimination of tax relief incentive is calculated based on the total of relief incentives - grand fathering + offset new incentives = JD$ 8.88 (JD$ 12.69 – JD$ 6.35 + JD$ 2.54).
2. Elimination of other tax credits is calculated based on 30% of total other tax + grand fathering + offset new incentives = JD$ 5.12 ([JD$ 13.13 \* 30%] +JD$ 1.97 + JD$ 0.79).
3. Elimination of CIT Waivers is calculated based on the elimination of all waivers = JD$ 0.03.

**Impact on revenue**

1. Gross impact of PIT reform = Cap on Interest payments deductions + Cap on donations and charities + Cap on losses for previous years + Elimination of tax relief incentive + Elimination of other tax credits + Elimination of CIT Waivers + Minimum business tax = JD$ 982.19 (JD$ 16.67 + JD$ 1.21 + JD$ 28.00 + JD$ 8.88 + JD$ 5.12 + JD$ 0.03 + JD$ 922.29).
2. Total Net CIT revenue increase is the total of Gross impact of PIT reform + new incentives (up to 50% of PIT payable) + reduction PIT 25% = JD$ 319.72 (JD$ 982.19 + JD$ 11.92 + [-JD$ 674.40]).



**General Consumption Tax (GCT)**

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| ***General Consumption Tax (GCT) - By*** *adjusting annually the tax base according to the variation of the GDP and the exchange rate, the elimination of incentives and discretionary waivers on GCT will generate a net GCT revenue increase of JD$ 3,629.49 million.* |

Rules and Calculation

* 1. According to Table 5, all 2011 tax expenditure information was collected from the document [Tax Expenditures Estimates 2009 - 2011](https://drive.google.com/file/d/0B7LkbF0DRcmJTWg5c3A0UTBvTnc/view).

1. Only incentives and discretionary waivers are considered on GCT reform.

**Eliminations of benefits**

1. Elimination of incentives are calculated based on the total incentives acts = JD$ 1,307.62
2. Elimination of discretionary waivers are calculated based on the total discretionary waivers = JD$3,924.11

**Impact on revenue**

1. Total gross revenue increase is calculated based on the introduction of new incentive law + tariff reforms + SCT and CUF = JD$ 1,532.18 (JD$ 653.81 + JD$ 229.08 + JD$649.29)
2. Total net GCT revenue increase is total of elimination of incentives + elimination of discretionary waivers - gross revenue increase = JD$ 3,699.55 (JD$ 1,307.62 + JD$3,924.11 - JD$ 1,532.18).



**Customs Tariffs**

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| ***Customs Tariffs -*** *By adjusting annually the tax base according to the variation of the GDP and the exchange rate, introducing in Customs Tariffs: (i) a new tariff structure, (ii) eliminating the discretionary waivers (direct and indirect effects on GCT) and the incentive waivers, will generate a decrease in revenue collection of JD$ 431.13 million.* |

**Rules and Calculation**

* 1. According to Table 6, all 2011 tax expenditure information was collected from the document [Tax Expenditures Estimates 2009 - 2011](https://drive.google.com/file/d/0B7LkbF0DRcmJTWg5c3A0UTBvTnc/view). (See also table Summary in the excel calculation).

**Impact on revenue**

1. The direct effect is calculated based on the impact in the tariff structure + discretionary waivers + incentives waivers = JD$1,291.50 (JD$ 544.53 + JD$ 646.17 + JD$ 100.80)
2. The increase in GCT tax is calculated based on the impact in the tariff structure + discretionary waivers + incentives waivers = JD$ 229.08 (JD$ 3.70 + JD$ 223.58 + JD$ 1.80)
3. The gross impact is the sum of direct effect + increase in GCT tax = JD$ 1,520.58 (JD$1,291.50 + JD$ 229.08)

**Tax Incentives**

1. Import duties incentives is the incentives from the new tax incentive law on import duties = JD$ 1,951.71.

***Impact on revenue***

1. Total net revenue is the difference between the gross impact – incentives = -JD$ 431.13 (1,520.58 - JD$ 1,951.71.)



**SCT Reform Impact**

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| ***Special Consumption Tax (SCT) -*** *By adjusting annually the tax base according to the variation of the GDP and the exchange rate, eliminating SCT incentive tax expenditure (Ad Valorem) and discretionary waivers (Specific), will generate a SCT net revenue increase of JD$ 1,493.02 million.* |

* 1. According to Table 6, all 2011 tax expenditure information was collected from the document [Tax Expenditures Estimates 2009 - 2011](https://drive.google.com/file/d/0B7LkbF0DRcmJTWg5c3A0UTBvTnc/view).

**Tax Incentives**

1. The total of incentives is calculated based on the total of SCT incentives + GCT incentives = JD$ 1,914.18 (JD$ 1,643.07 + JD$ 271.11).

**Discretionary waivers**

1. The total discretionary waivers is calculated based on the total of SCT discretionary waivers + GCT discretionary waives = JD$ 398.99 (JD$ 311.29 + JD$ 87.70).

**Impact on revenue**

1. The total Gross revenue increase is the sum of the total incentives + total discretionary = JD$ 2,313.17 (JD$ 1,914.18 + JD$ 398.99).
2. The Net Revenue increase is the difference between the total gross revenue – discount = JD$ 1,493.02 (JD$ 2,313.17 – JD$ 820.15).



**CUF Reform Impact**

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| ***Customs User Fess (CUF) - By*** *adjusting annually the tax base according to the variation of the GDP and the exchange rate, eliminating CUF incentives and discretionary waivers will generate an impact on CUF and GCT revenue of JD$ 1,347.59 million.* |

* 1. According to Table 6, all 2011 tax expenditure information was collected from the document [Tax Expenditures Estimates 2009 - 2011](https://drive.google.com/file/d/0B7LkbF0DRcmJTWg5c3A0UTBvTnc/view).

**Incentives**

1. The total GCT incentives is calculated based on the total of Incentive tax expenditure + GCT petrol incentives = JD$ 2.134.64 (JD$ 1,832.31 + JD$ 302.33).

**Discretionary**

1. The total GCT discretionary is calculated based on the total od discretionary tax expenditure +GCT discretionary waivers = JD$ 136.60 (JD$ 117.25 + JD$ 19.35).

**Impact on revenue**

1. The total gross revenue is total of incentives and discretionary GCT elimination = JD$ 2,271.24 (JD$ 2.134.64 + JD$ 136.60)
2. The total net revenue is the difference between the total gross revenue and the discount = JD$ 1,347.59 (JD$ 2,271.24 – JD$ 923.65)



1. ESTIMATION OF THE BENEFITS

**BASE SCENARIO**

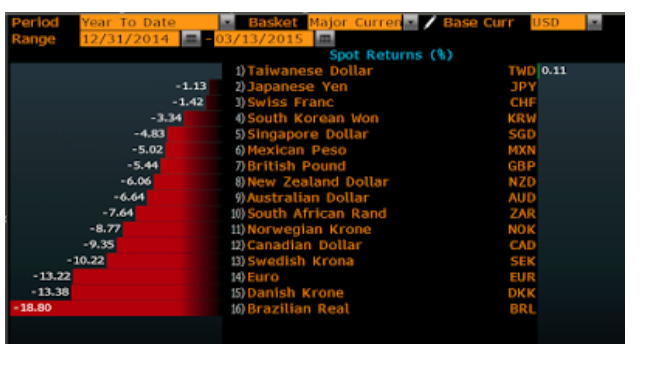




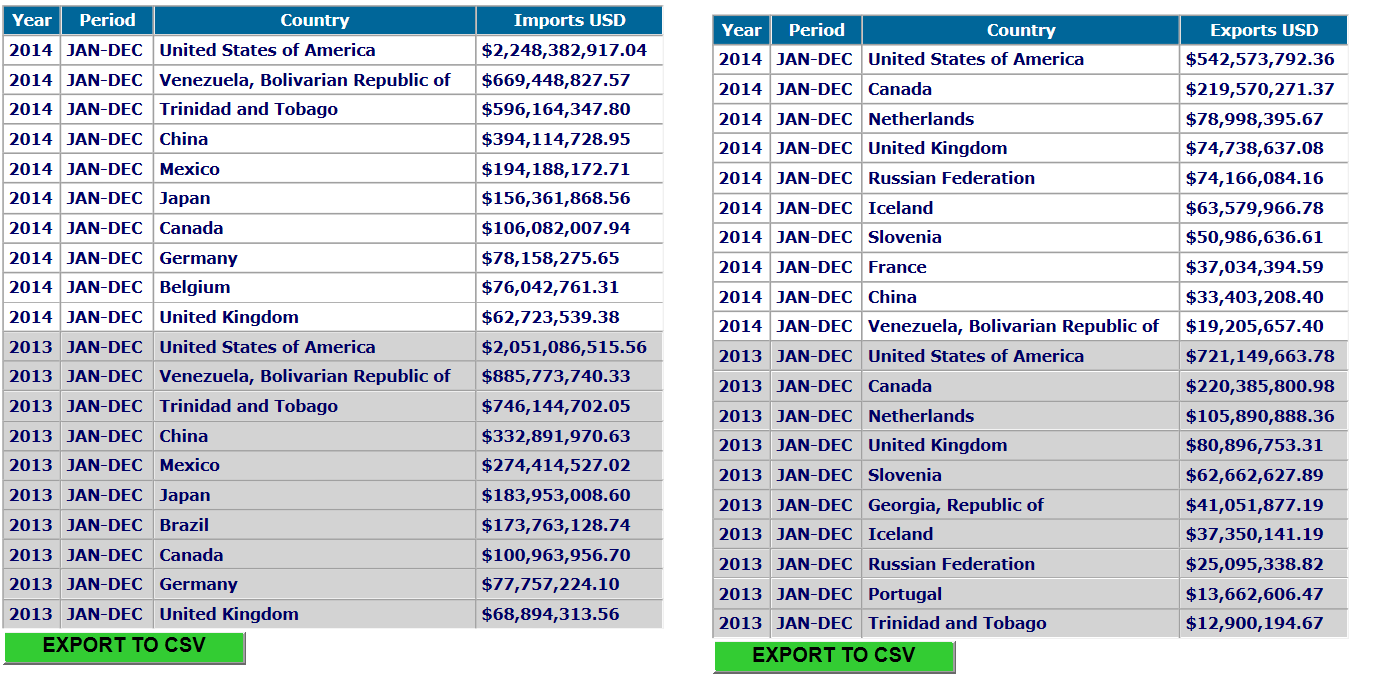
* 1. The discount rate used to calculate the Net Present Value is 12% over a period of 10 years. The Reform revenue benefits derive from the 8 intervention policies presented in chapter III, starting with a benefit of US$ 12.5 million in 2013 and ending with a benefit of US$40.7 million in 2020. The Net Present Value (NPV) was US$294.4 million and the Internal rate of Return (IRR) was 78%.
  2. The Reform Costs were estimated considering: (i) Investment costs to support the reform by strengthening the Jamaica Tax, Customs Administrations and MoF Entities (US$ 65 Million – see table detailing the investments); (ii) The hiring of a new Ministry of Finance (MoF) staff specially to manage the reform (10 staff \* US$ 60,000, already including salaries and benefits = US$ 600,00 annually); (iii) The hiring of 50 staff (30 and 20 respectively) for the Jamaica Tax and Customs Administration aiming the strengthening of the two organization management capacity to make the reform sustainable (50 staff \* US$ 60,000, already including salaries and benefits = US$ 1.8 million annually); and (iv)The costs of tax compliance, which was calculated estimating that approximately 1,000 firms will need to adjust their filling processes (according to the World Bank Doing Business[[14]](#footnote-14) the Jamaica number of hours for compliance in Jamaica is 386 hours \* US$12 accountant hour \* 1,000 firms = total of US$ 4.4 million yearly).

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| **Investment Costs to support the Reform** | |
| **Description** | **Costs** |
| **Tax Administration** |  |
| * 1. **Strengthening the institutional capacity**   (i) a management reporting model; (ii) a central asset, facilities and inventory management system; (iii) a new HR model; (iv) a new internal audit model; (v) a comprehensive training program and a new training center; and (vi) a budget planning and execution process Reengineering. | 4,509,500 |
| * 1. **Strengthening enforcement and taxpayer’s services**   (i) tax administration processes and procedures; (ii) taxpayer’s assistance based on ICT processes and associated hardware and software; and (iii) the e-library system that will eliminate paper form archives. | 1,258,000 |
| * 1. **Modernization physical and technological infrastructure**   (i) Web based integrated tax administration system; (ii) ICT infrastructure platform; (iii) Web portal; (iv) document management system; (v) telecommunication infrastructure platform; (vi) data warehouse; (vii) technological platform to prevent misuse of the computer applications; (viii) integrated interface of the payment system; and (ix) office facilities and fixtures. | 27,628,800 |
| **Customs Administration** |  |
| **2.1 Institutional Strengthening.**  (i) the transition to an executive agency (Jamaica Customs Agency); (ii) the business process reengineering; (iii) the customs automation processes; (iv) the upgrade of the infrastructure and equipment; and (v) strengthening of internal affairs. | 12,984,300 |
| **2.2 Control: Support Risk Management and Enforcement.**  (i) Risk, Case and Valuation Management Program; (ii) Intelligence and Investigations model; (iii) an enhanced post clearance audit system; (iv) a surveillance and fiscal security system; and (v) a customs laboratory to support classification and valuation of merchandise. | 3,915,800 |
| **2.3 Trade Facilitation.**  (i) readiness assessment of the stakeholder agencies; (ii) design of the Electronic Single Window (ESW) system, including assistance to other government agencies; and (iii) the implementation of the ESW in selected agencies. | 2,500,000 |
| **Debt Management** |  |
| **3.1 Strengthening Debt Management operation**.  (i) Strengthening Front Office operation that will implement a new front office model including its corresponding procedure manuals, and the technological infrastructure; (ii) Implementation of Middle Office operations that will establish a new middle office, comprising a new business model and manuals; (iii) Strengthening the Back Office operations by implementing: (a) new back office model, comprising a new business model and corresponding manuals; and (b) new user-friendly Web page; and (iv) Modernizing the Public Enterprise Debt Management that will implement new regulations, business processes, and a financial analysis model. | 1.487,800 |
| **Treasury** |  |
| 4.1 **Strengthening Treasury Operations**  (i) Implementation of a central cash management and payment system; and (ii) Modernizing the technological and physical infrastructure. | 4,899,500 |
| **Project Management** |  |
| (i) Personal; (ii) audit; (iii) evaluations; (iv) contingency. | 5,816,300 |
| **Total** | **65,000,000** |

1. SENSITIVITY ANALYSIS
   1. Three scenarios were considered for the sensitivity analysis:
2. The US$ X Jamaica exchange rate pace increases due to the recent improvements in the USA economy. The following graphic provides an overview about the recently USA Dollar Performance (<http://globaleconomicanalysis.blogspot.com/2015/03/major-currencies-vs-us-dollar-2015.html>)



1. The Jamaica economic growth pace decreases due to the main trading country is the USA. In 2014 Jamaica imported US$ 2.2 billion and exported only US$ 542 million from and to USA respectively. As a result of the USA dollar increase, the imported products in Jamaica will become more expensive. In addition, the Jamaica GDP in dollar will have a negative impact. (<http://statinja.gov.jm/Trade-Econ%20Statistics/InternationalMerchandiseTrade/TradeRankine.aspx>).



1. Occurrence of both Scenarios.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sensitivity Analysis Summary** | | | | |
| **Indicators** | **Base Scenario** | **Scenario 1: The US$ X Jamaica exchange rate pace increases, due to the recent improvements in the USA economy.** | **Scenario 2: The Jamaica economic growth pace decrease due to the main Jamaica trading country is the USA** | **Scenario 3: Occurrence of both scenarios.** |
| Net Benefit (Present Value) US$ million | 294.4 | 274.9 | 244.6 | 225 |
| Internal Rate of Return (%) | 78 | 75 | 71 | 68 |

* 1. The results of the simulations do not modify the findings regarding the viability of the Program, as the Net Present Value of the accumulated benefits remains positive in each of the three different scenarios:

**SENSITIVITY 1**





**SENSITIVITY 2**





**SENSITIVITY 3**





**ANNEX I**

**A Dynamic Computable General Equilibrium (DCGE)** models are a class of economic models that allow economists to systematically analyze the most important policy challenges and economic shocks in an inter-temporal basis. Their structure is similar to the structure of Computable General equilibrium (CGE) models with the added feature of being dynamic to allow the impact analysis of a given policy or shock to be traced over a number of years. This feature is especially important when analyzing policies that are introduced over given period of years.

The DCGE is an “economy-wide” model because it describes the behavior of producers and consumers and the linkages among them. Producers are depicted by 3 Cobb-Douglas production functions (primary, secondary and tertiary sectors) and consumers by a 10 consumption category Linear Expenditure System (LES). The income generated by factors of production (capital and labor) and other sources of income (remittances from abroad, transfers, and other sources of income) is discriminated by income distribution categories (quintiles). This structure allows the analysis of policy impact on poverty levels and income distribution as well as on sector economic growth and employment.

The main dynamic elements of the model are the annual level of investment in each sector together with population growth and sectorial employment. Sectorial investment is discriminated between public and private investment. The closure of the model is done through the equilibrium between savings and investment and equilibrium between each sectorial production function and its corresponding sectorial demand. In the latter case, equilibrium is guaranteed by the capital utilization factor embodied on each Cobb-Douglas production function.

To conduct experiments with the DCGE model, the analyst first elaborates a base scenario of the Jamaican economy based in most recent performance (calibration of the model). Then defines alternative policy scenarios and measures the differences between the alternative scenarios and the base scenario to draw conclusions on the impact of the proposed policies on economic growth, poverty levels, income distribution, tax revenue, etc. Hence, the model is not a forecasting model but instead a model that allows to study the impact of alternative policy scenarios on a given economic path (the base scenario). The proposed model structure is based in a similar model implemented for the government of Cape Verde that is currently being used as an analytical tool to define its medium term macroeconomic framework.

The model has been implemented utilizing the software package “Eviews 7” and consists of 10 blocks, namely: 1) Population; 2) Production; 3) Income; 4) Consumption; 5) Prices; 6) External Sector; 7) Fiscal Sector; 8) Public debt; 9) Monetary sector; and 10) Equilibrium block. Macro data (statistical information) for the period 1980 – 2011 has been obtained from various government sources. The information received has allowed the implementation of the DCGEM for Jamaica that was used to assess the impact of the incentives and waivers schemes on the Jamaican Economy. In this regards STATIN has been the main source of information together with the MOF and the BOJ.

A first version of the model has been implemented and presented to the Tax Incentives Study Working Group. The model encompasses 10 blocks that interact with each other to generate general equilibrium solutions on a yearly basis. The DCGEM has been the main analytical tool used to assess the impact of incentives and waivers on economic growth, unemployment, poverty, and income distribution. The structure and logical framework of each of the 10 blocks of the model is briefly described in the following paragraphs.

(i) Population Block. This component describes population dynamics grouped by age brackets (0 – 4 years, 5 – 9 years, up to 80 to + years) to model evolution of the working age population, the labor force, and total population depending upon net survival rates by age bracket, net fertility rates and expenditure on health.

(ii) Production Block. This block is comprised of three Cobb Douglas Production Functions corresponding to the Primary, Secondary, and Tertiary sectors of the Jamaican economy. For each production function, capital stocks and labor employed have been estimated to obtain capital-output and capital-labor ratios. Data for the period 1980 – 2011 have been used to estimate each production function. Factor elasticities for Capital and Labor, and Total Factor Productivity have been estimated and analyzed for each economic sector. This block will determine employment levels in each of the 3 sectors and the economy-wide unemployment level.

(iii) Consumption Block. Five Linear Expenditures System (LES) consumption functions have been estimated corresponding to each of the Quintiles included in the model. Income elasticity for each quintile and price elasticity for each of the 11 categories of consumption reported in the Household Expenditure Survey have been estimated for the period 1989 – 2010. This block allows for measuring the impact of changes on relative prices (changes of indirect tax rates) and income (changes on direct tax rates) on income distribution.

(iv) Income Block. This component describes the income distribution among the quintiles of each of the 9 types of income considered in the model (wages for each sector, operating surplus for each sector, pensions, remittances and other income). Income distribution for each quintile has been obtained from the expenditure distribution of the Jamaica Survey of Living Conditions and by adding a savings estimation for each quintile. These values have been reconciled with the values for each category of income so as to obtain data consistency between the expenditure side (consumption) and the National Income side. This block is crucial to studying the impact of removing preferential tax treatments on poverty and income distribution.

(v) Prices Block. This block comprises price indices for each of the 11 categories of consumption, for each of the 3 GDP deflators (primary, secondary and tertiary), deflators for investment, exports, and imports. This component also describes the exchange rate, average wage for each sector, and interest rates. The price indices of the 11 categories of consumption are explained in terms of international price indices (USA price index), exchange rate, and domestic public sector borrowing requirements (public sector credit). The nominal exchange rate is adjusted to maintain purchasing power parity (PPP). Average wages and interest rates are exogenous to the model. GDP deflators are weighted averages of the 11 consumption categories of price indices and adjustment factors to preserve equilibrium conditions between nominal supply and demand.

(vi) Fiscal Sector Block. This block describes each of the government receipts by tax type and the main items of government expenditures to explain the financing gaps (surplus/deficit) and the nature of financing requirements (domestic/external debt). It also encompasses the fiscal expenditures by Ministry to discriminate the allocation of public capital expenditures between the three different economic sectors of the model. It also takes into account expenditures on education and health that link improvements in the Total Factor Productivity parameter of the three Cobb Douglas production functions and on the net survival rates in each of the age brackets of the population component of the model.

(vii) External Block. This component covers both exports and imports of goods and services and the main items of the Balance of Payments. Exports and Imports of goods and services are modeled on current and constant terms to link with the demand side of GDP. The exchange rate and terms of trade play an important role in the dynamics of this component.

(viii) Monetary Block. This block comprises the Net International Reserves linked to the BOP block, the Public and Private Credit aggregates and other items of Total Liquidity including the Monetary Base, M1, M2 and M3.

(ix) Debt Block. This block links with the Fiscal Sector Block to describe the debt dynamics, both external and domestic, and including amortization, interest payments, and new loans. It allows for estimation of debt/GDP ratios and its impact on risk levels.

(x) Equilibrium Block. This component encompasses three different equilibrium conditions that guarantee a consistent closure of the model making possible the conditions of a general equilibrium model. The first condition is the equilibrium between total investment and savings. This condition guarantees that the level of total investment is equal to the three different sources of savings, namely external, fiscal (government) and private savings. The second equilibrium condition is the equilibrium between the Real GDP on the production side and the Real GDP on the demand side. This equilibrium is realized at the level of each of the economic sector contemplated in the model. The equilibrium is guaranteed by the Capital Utilization factor in each of the three Cobb Douglas Production Functions. The third equilibrium condition is the equilibrium between nominal GDP on the production side and nominal GDP on the demand side. This equilibrium is realized through the adjustment of the price deflators of the three economic sector of the model.

The logical framework of each block of the model is presented below together with some econometric results of the main equations of the model (production and consumption functions, and price indices equations). An analysis of the evolution of TFP for each sector and global GDP is also presented.

A complete specification of the model with its database, equations, estimation procedures, baseline and 11 scenarios results, and graphing procedures in Eviews 7 format is available upon request.

1. [WB Doing Business](http://www.doingbusiness.org/~/media/GIAWB/Doing%20Business/Documents/Special-Reports/Paying-Taxes-2015.pdf) [↑](#footnote-ref-1)
2. The 50%, half of NIS was defined in terms of budget limitations. This is a policy decision; it was selected based on model simulations. More than 50% would mean to much money given as a tax credit. [↑](#footnote-ref-2)
3. The information was provided by the Ministry of Finance. [↑](#footnote-ref-3)
4. The 5% for new employees was defined as the average of new employees entering each year to the formal labor force. [↑](#footnote-ref-4)
5. The same applies to 20% of the value of imported capital goods. Higher than 20% would mean to much money given away. [↑](#footnote-ref-5)
6. The information was provided by the Ministry of Finance. [↑](#footnote-ref-6)
7. The reductions % were estimated assuming that a 50% of the firms will opt for staying with the old incentive regime (grandfathering). [↑](#footnote-ref-7)
8. A 30% reduction was assumed for the taxpayers remaining in the old regime, since these taxpayers by law could not receive the incentives in NIS deductions nor the 20% reduction on imported capital goods. [↑](#footnote-ref-8)
9. According to CIT simulation model, only 1/3 of the firms in 2011 presented interest payments received. [↑](#footnote-ref-9)
10. The information was provided by the Ministry of Finance. [↑](#footnote-ref-10)
11. According to CIT simulation model, only 1/3 of the firms in 2011 presented losses in previous years. [↑](#footnote-ref-11)
12. According to CIT simulation model, only 1/3 of the firms in 2011 presented interest payments received. [↑](#footnote-ref-12)
13. According to CIT simulation model, only 1/3 of the firms in 2011 presented losses in previous years. [↑](#footnote-ref-13)
14. [WB Doing Business](http://www.doingbusiness.org/~/media/GIAWB/Doing%20Business/Documents/Special-Reports/Paying-Taxes-2015.pdf) [↑](#footnote-ref-14)