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# COSTA RICA

## TECHNICAL ASSISTANCE REPORT—REVENUE ADMINISTRATION GAP ANALYSIS PROGRAM—TAX GAP ANALYSIS FOR GENERAL SALES TAX AND CORPORATE INCOME TAX

May 2018

This Technical Assistance report on Costa Rica was prepared by a staff team of the International Monetary Fund. It is based on the information available at the time it was completed in January 2018.

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# Costa Rica

# Revenue Administration Gap Analysis Program — Tax Gap Analysis for General Sales Tax and Corporate Income Tax

Junji Ueda and Miguel Pecho


**Technical Assistance Report**

**January 2018**

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# ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| BCCR | Central Bank of Costa Rica (Banco Central de Costa Rica) |
| BOP | Balance of payments |
| CIAT | Inter-American Center of Tax Administrations (Centro Interamericano de Administraciones Tributarias) |
| CIT | Corporate Income Tax (Impuesto sobre la Renta Personas Jurídicas) |
| CF | Capital Formation |
| CFC | Consumption of Fixed Capital |
| C-NTB | Current-year Net Tax Base |
| C-TB | Current-year Tax Base |
| EU | European Union |
| FAD | Fiscal Affairs Department of IMF |
| FAP | Financial Accounting Profit |
| FC | Final Consumption |
| FISIM | Financial Intermediation Services Indirectly Measured |
| FTZ | Free Trade Zones |
| GDP | Gross Domestic Product |
| GOS | Gross Operating Surplus |
| GST | General Sales Tax (Impuesto General a las Ventas) |
| IC | Intermediate Consumption |
| ISIC | International Standard Industrial Classification of All Economic Activities |
| MOF | Ministry of Finance (Ministerio de Hacienda) |
| PIT | Personal Income Tax |
| RA-GAP | Revenue Administration – Gap Analysis Program |
| RD | Definitive regime for non-free trade zone (Régimen Definitivo) |
| RE | Special regime for free trade zone (Regímenes Especiales) |
| SUT | Supply and Use Tables |
| TA | Technical Assistance |
| TB | Tax Base |
| VAT | Value-Added Tax |

# GLOSSARY

### *Terminology used in the GST gap analysis*

| | |
|---|---|
| Assessment gap | the difference between potential revenues given the current policy framework and the GST declared or assessed; a component of the compliance gap |
| C-efficiency ratio | the ratio of actual GST to potential GST if all final consumption were taxed at the current standard rate without any exemptions ($PV^R$) |
| Collection gap | the difference between GST declared or assessed and the actual GST revenue collected; a component of the compliance gap |
| Compliance gap | the difference between the potential GST given the current policy framework ($PV^C$) and actual GST revenue |
| Expenditure gap | the difference between the potential GST where most of final consumption is taxed at the standard rate, but where a set of minimal standard exemptions are maintained ($PV^{R2}$), and the potential GST given the current policy framework ($PV^C$); a component of the policy gap |
| Policy gap | the difference between the potential GST if all final consumption were taxed at the current standard rate without any exemptions ($PV^R$) and the potential GST given the current policy framework ($PV^C$) |
| $PV^C$ | potential GST revenue under current policy |
| $PV^R$ | potential GST revenue calculated by applying the standard rate to all final consumption without any exemptions |
| $PV^{R2}$ | potential GST revenue under a normative GST structure with exemptions for financial intermediation, rent, and non-market public services |

### *Terminology used in the CIT gap analysis*

| | |
|---|---|
| C-NTB | current year net tax base, showing aggregate taxable income netting out negative values, before considering deductions for carried-over losses |
| C-TB | current year tax base, showing taxable income before considering deductions for carried-over losses |
| CIT base gap | the difference between potential C-TB and declared C-TB, presenting how much taxpayers underreport their tax base, before considering deduction for carried-over losses and tax credits/additions |
| CIT gap | the difference between potential CIT liabilities and declared CIT liabilities |
| FAP | financial accounting profit/loss |
| GOS | gross operating surplus |
| TB | tax base, showing taxable income after deducting carried-over losses |

# PREFACE

In response to a request from Mr. Fernando Rodríguez Garro, Vice Minister for Revenues, the Fiscal Affairs Department (FAD), IMF, provided a tax gap analysis for the general sales tax (GST) and corporate income tax (CIT) in Costa Rica. From July 26 to August 8, 2017, a mission led by Mr. Junji Ueda of FAD, with Mr. Miguel Pecho, FAD, visited San Jose to collect data and other information required to conduct a tax gap analysis according to the IMF's RA-GAP (Revenue Administration – Gap Analysis Program) framework, and to assess the MOF's own tax gap analyses. After modeling at IMF headquarters, the mission delivered the results for the tax gap analyses for GST and CIT, and assessments of the MOF's estimates in the second visit to San Jose, with Mr. Patricio Barra, an FAD short-term expert, from November 23 to 29, 2017.

The mission expresses its sincere appreciation for the cooperation of MOF officials, especially Jorge Richard Muñoz Núñez and Oscar Guillermo Fonseca Villalobos for their kind supports to the mission by providing necessary data and information and explaining the MOF's tax gap analyses in detail. The mission also thanks officials in the Central Bank of Costa Rica (BCCR) for providing national accounts data and explanations, which were indispensable for implementing the analysis in this report.

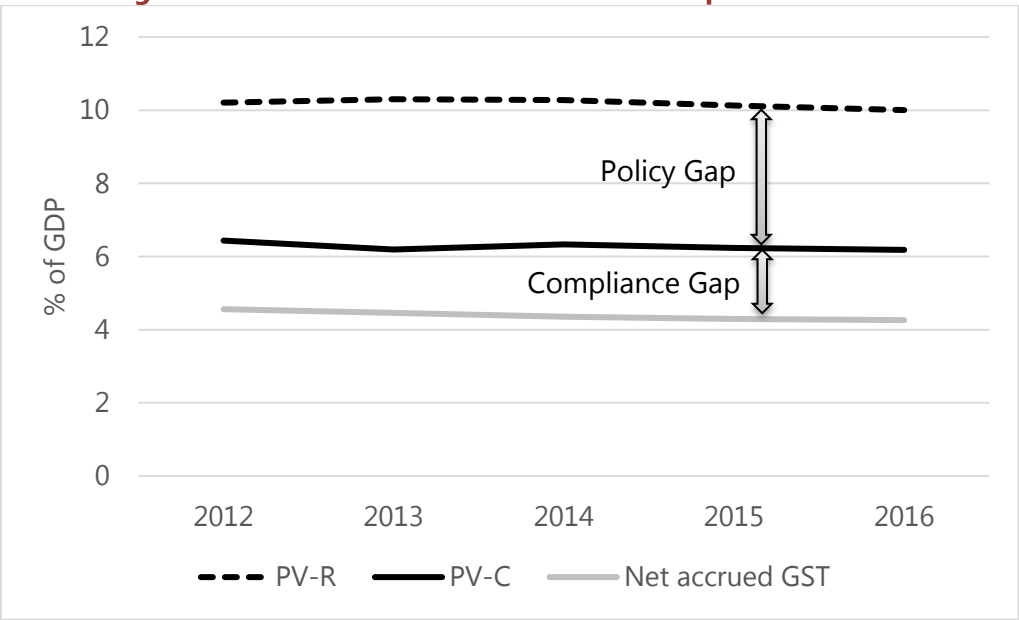
# EXECUTIVE SUMMARY

**This report presents the estimates of tax gaps for general sales tax (GST) and corporate income tax (CIT) in Costa Rica by applying the methodology of the IMF's RA-GAP (Revenue Administration – Gap Analysis Program).**

## Main findings for GST gap

**The RA-GAP GST gap methodology was used to estimate the compliance gap and the policy gap for the general sales tax (GST) in Costa Rica for the years from 2012 to 2016**. Potential GST revenue under current policy is referred to here as $PV^C$; the difference between $PV^C$ and net accrued collections is defined as the compliance gap. The difference between potential revenue under a theoretical GST structure applying the standard rate to all final consumption without any exemptions (referred to as $PV^R$) and $PV^C$ is called the policy gap (Figure 1).

**Figure 1. Potential GST Revenues and GST Gaps in Costa Rica**

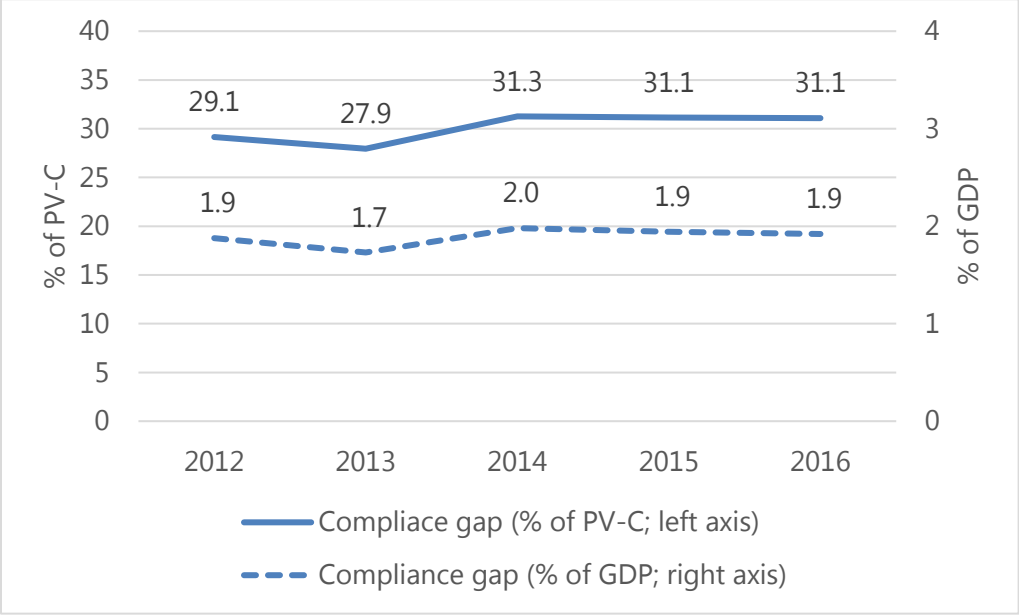



Source: Staff calculations.

**The estimated GST compliance gap in Costa Rica increased from 29 percent in 2012 to 31 percent in 2016 (Figure 2).** The compliance gap in 2016 was equivalent to 1.9 percent of GDP. The estimated compliance gap is higher than the average VAT compliance gaps of European countries and Latin American countries.[1] Large GST compliance gaps relative to GDP are observed in manufacturing (C), trade (G), and hotels and restaurants (I) (Figure 3).

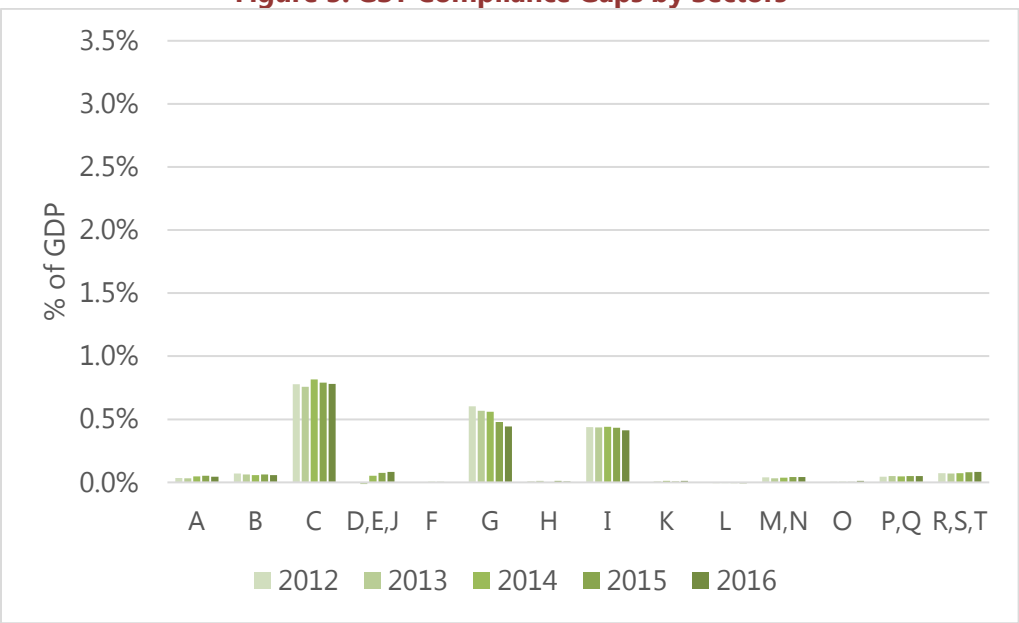
[1] The average compliance gap numbers for VAT were estimated to be between 12.8 and 14.8 percent of potential revenues in 28 EU countries in the period from 2011 to 2015 in Poniatowski et al., 2017, and 27.3 percent in 13 Latin American countries between 2006 and 2010 in CIAT, 2012.

**Figure 2. Compliance Gaps for GST in Costa Rica**




Source: Staff calculations.

**Figure 3. GST Compliance Gaps by Sectors**

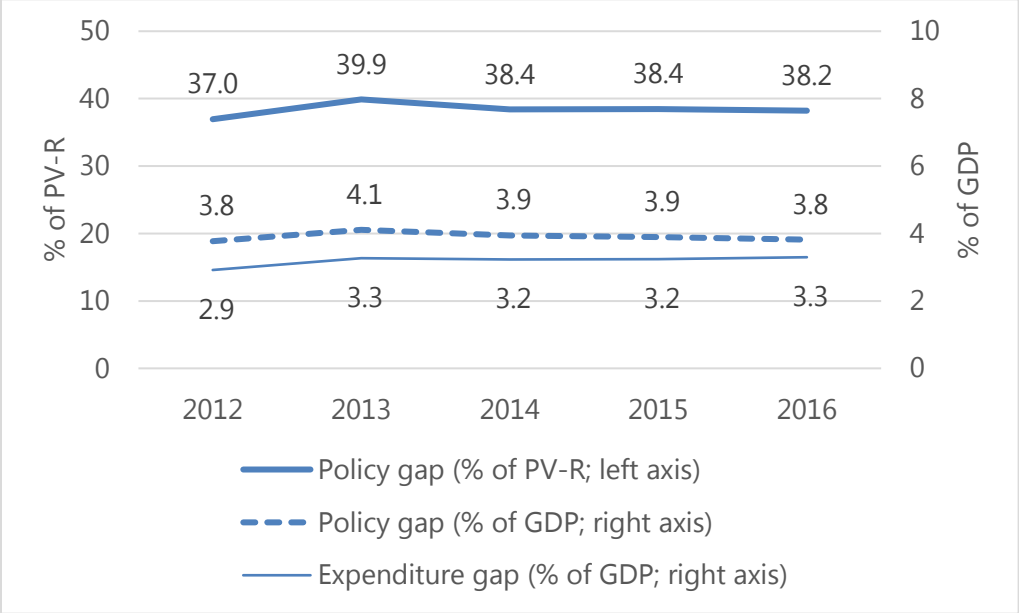



| | | | | | |
|---|---|---|---|---|---|
| A | Agriculture, forestry, fishing | H | Transportation | O | Public administration |
| B | Mining | I | Hotels, restaurants | P | Education |
| C | Manufacturing | J | Information, communications | Q | Health |
| D | Electricity, gas | K | Financial services | R | Recreational services |
| E | Water, sewerage | L | Real estate | S | Other personal services |
| F | Construction | M | Professional services | T | Activities of households |
| G | Trade | N | Administrative, support services | | |

Source: Staff calculations.

**The estimated GST policy gaps were around 4 percent of GDP from 2012 to 2016 (Figure 4).** The policy gaps relative to $PV^R$ have been between 37 percent and 40 percent. Most of the GST policy gap consist of the GST expenditure gap, showing the effects of policy choices, which suggests that the legal tax base for GST is much smaller than total final consumption due to extensive exemptions in Costa Rica. The level of the policy gap has been consistently higher than the compliance gap.

**Figure 4. Policy Gaps for GST in Costa Rica**



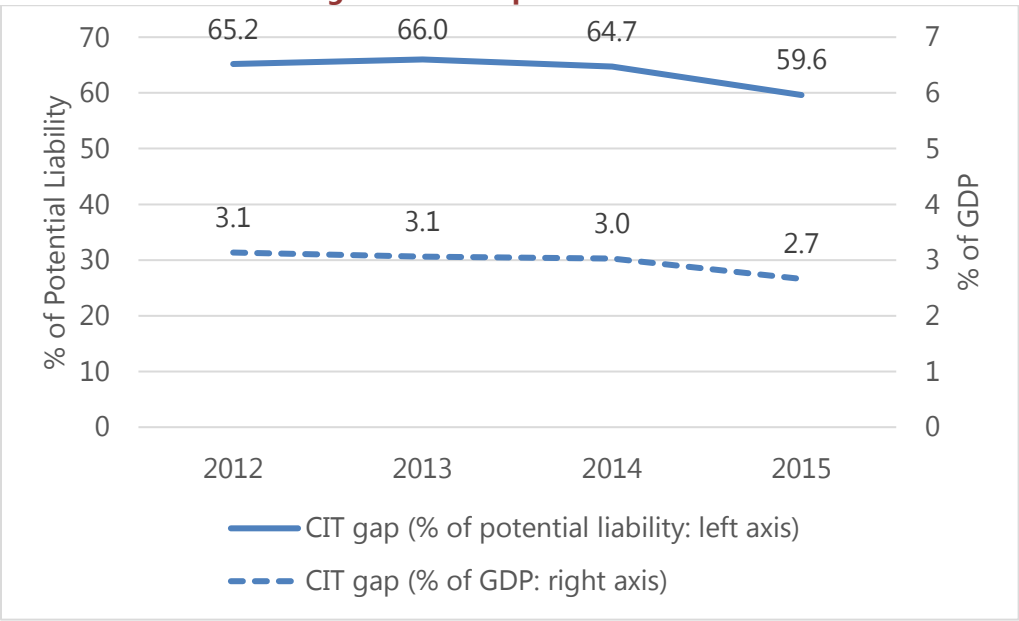

Source: Staff calculations.

## Main findings for CIT gap

**The RA-GAP CIT gap methodology was used to estimate the CIT gap in Costa Rica for non-financial corporations during the period from 2012 to 2015**. The potential CIT liability was estimated from gross operating surplus (GOS) of non-financial corporations, excluding corporations operating in the free-trade zones (FTZ), with necessary adjustments for conceptual differences between GOS and tax base/liability of CIT, and compared with declared CIT liability.

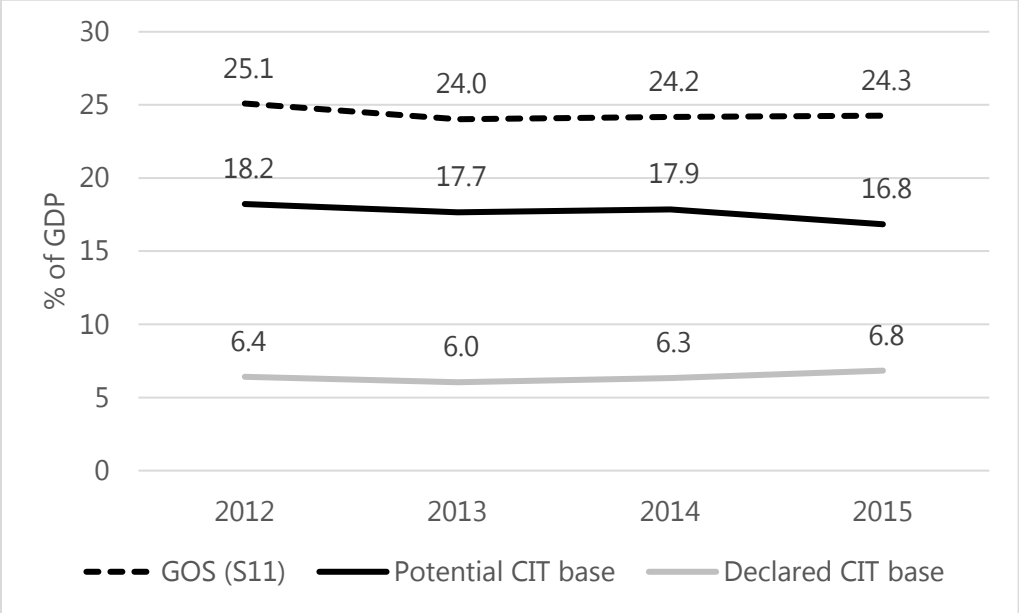
**The estimated CIT gap was slightly decreasing from 2012 to 2015 (Figure 5)**. It was 65 percent of potential base in 2012, and decreased to 60 percent in 2015. The estimated level of the CIT gap was equivalent to 2.7 percent of GDP in 2015. The estimated gap reflects an increase in the declared CIT base relative to GDP, while the estimated potential CIT base relative to GDP was slightly decreasing during the period (Figure 6).

**Figure 5. CIT Gaps in Costa Rica**




Source: Staff calculations.

**Figure 6. Potential CIT Base and Declared CIT Base**




Source: Staff calculations.

## Recommendations

**A current good practice at the MOF is to have an analytical unit dedicated to estimating both the compliance gaps and the tax expenditures for major taxes, and regularly publish the results.** This is highly advantageous to analyze revenue performance of taxes, considering both the compliance and policy gaps simultaneously using the coherent data and methods. It is recommended to continue the current practice, regularly updating the estimates by incorporating newly available data.

**Adopting the RA-GAP methodology, using updated national accounts data, would help streamline and upgrade the estimation model for the GST gap and CIT gap.** The advantage of the RA-GAP method is to utilize national accounts data to estimate potential tax base and liability for GST and CIT, by fully incorporating the current policy structure, and estimate the overall gaps. Then the gaps are decomposed into individual economic activities (sectors).

**Analyses of sector compliance gaps are important sources of information for compliance risk management.** This can help strengthen the links between the analysis and operational compliance management to increase business intelligence and support designing risk-based compliance rick management in the department of tax administration in the MOF. It is highly recommended to compare the top-down estimates of the compliance gap using the RA-GAP model with internal knowledge and information about taxpayers' compliance.

**It is recommended to make further adjustments for sector allocation of actual base and liability to keep consistency with sector classification of national accounts data.** Currently, actual base and liability are classified on primary activities of individual taxpayers reported to the MOF, while national accounts use information based on classification of detailed business establishment. Therefore, it is necessary to incorporate more information from the BCCR to reflect its classification to allocate actual base and liability. It will improve the sector gap analysis, and enhance compliance risk management by considering sector-specific characteristics of taxpayers by the MOF.

# I. BACKGROUND

**1. The IMF's RA-GAP (Revenue Administration – Gap Analysis Program) provides a comprehensive quantitative analysis of the tax gap between potential revenues and actual collections.**[2] The program is conducted by the Revenue Administration Divisions of the Fiscal Affairs Department, and aims to provide an evaluation of tax gap for specific taxes. It focuses on value-added tax (VAT) and corporate income tax (CIT), with a possible breakdown by contributing factors and the distribution across economic sectors, to help revenue administrations monitor and identify sources of the gap.

**2. The main purpose of this report is to provide the estimates of the tax gaps for the general sales tax (GST) and the corporate income tax (CIT) in Costa Rica by applying the methodology of the RA-GAP.** For GST, two gaps are estimated; the compliance gap, showing the difference between the potential revenue that could have been collected given the current policy framework and the actual GST collection, and the policy gap, showing the effects of GST policy on potential revenues. For CIT, the differences between the potential CIT base and liability and the actual declared values are estimated.

**3. This report also reviews methodologies of tax gap analyses conducted by the Ministry of Finance (MOF) for GST and CIT.** The MOF has estimated and published compliance gaps for GST and CIT for the period 2010-2013, by adopting a top-down approach using relevant macroeconomic data to estimate potential revenues. Following the RA-GAP methods and results, some recommendations for possible improvements for the top-down estimations are provided.

## A. Main Feature of GST in Costa Rica

**4. The current General Sales Tax Law was enacted in 1982 in Costa Rica.** The policy design for the period covered in this report is as follows:

- **Rate:** A standard rate of 13 percent is applied to taxable goods and services except for wood (10 percent) and electricity for residence (5 percent).

- **Tax base:** There are different treatments for goods and services, and some specific treatments allowing exemptions.

  Supplies of goods are taxable except for exported goods, items consisting of basic food basket, medicines, kerosene, books, agricultural inputs, and electrical energy which does not exceed 250 kW/h. Suppliers of these goods can claim input tax credit, effectively resulting in zero-rating for these goods.

[2] In this report, potential tax revenue refers to tax collection with full compliance under specific tax policies; therefore, it is not associated with the concept of 'tax capacity' showing the maximum level of tax revenue that a country could achieve by changing tax policies, including raising statutory rate.

For services, there is a list of explicitly taxable services, including hotels and restaurants, general insurance, telecommunication, repair of goods, washing and maintenance of motor vehicles, and others. Other services are not subject to GST, while input tax credits for the purchases to provide such services are not allowed.

In addition to the general treatments above, there is an extensive list of specific regimes allowing exemption from GST stipulated by other laws than the GST Law, including: (i) purchases or imports of medical supplies and equipment, imports of machinery, equipment, and supplies for agriculture, purchases or imports of public universities; (ii) purchases or imports for investment projects under agreements with international organizations; (iii) purchases or imports by government agencies and municipalities; (iv) purchases or imports by businesses operating under Free Trade Zone (FTZ) Regime.

- **Input tax credit:** Article 14 of the GST Law sets the limitation of input tax credits for purchased taxable goods and services used for taxable sales. In general, purchases for administrative purposes recorded as indirect overhead costs, which cannot be allocated to the direct production costs, are not allowed to be claimed.

  After April 2013, the input tax credits are allowed for the following inputs:

  (i) Raw material, supplies, packages and packaging materials, machinery, equipment, parts and spares, electric energy, and other goods *used* in the production, commercialization or distribution.
  (ii) Insurance premiums for the protection of goods, machinery and supplies *used* in the production, commercialization or distribution.
  (iii) Equipment and material used in the work of waste management and quality control.

  Before April 2013, input tax credits were more restricted, only for purchases that were physically incorporated or directly used for the production. Inputs for distribution and commercialization were not allowed to be claimed.

  (i) Raw material, supplies, machinery and equipment when they were *physically incorporated or directly* used into the production/rendering of taxable goods/services.[3]
  (ii) Insurance premiums for the protection of goods, machinery and supplies when they are *physically incorporated* or *directly used* into the production/rendering of taxable goods/services.

  Excess credits can be carried forward and used to offset GST liabilities in subsequent months. If entities foresee that there will not exist enough output tax to be absorbed within following three months, they may request to use them to offset other tax liabilities (*Compensaciones*), and it is also allowed to claim refunds for any remaining excess credits. In addition, there is a scheme to give authorizations to make purchases free of GST (*Ordenes especiales de compra*)

[3] They included acquisition of packages, packaging materials, packaging and labeling, gas and electric energy.

to entities with structural excess credits positions, including suppliers of zero-rated goods, such as exporters.

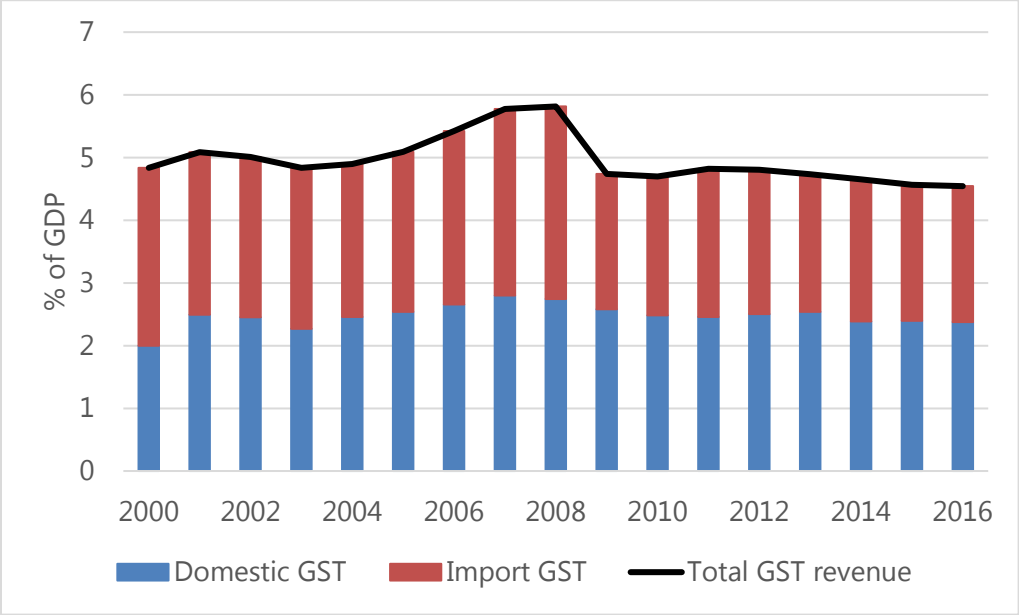
- **Threshold:** There is no quantitative threshold for registration. Entities providing goods and services as businesses are required to submit GST returns (D104). Small taxpayers in specific industries can apply to a simplified regime and submit D105.[4] GST liability for an individual taxpayer is calculated quarterly by applying factors to purchases by taxpayers.

- **Withholding:** An advance payment mechanism obligates companies processing credit/debit card payments to withhold up to 6 percent of the transaction values from their GST liable customers. The withheld customers can deduct the corresponding amount on the relevant tax declaration.

## B. Revenue Performance of GST

**5. The annual GST revenues published by the MOF are based on net cash collections during a calendar year.** The total GST revenue as a percent of GDP gradually declined from 4.8 to 4.5 percent during the period 2012-2016 (Figure 7).

**Figure 7. GST Revenues to GDP Ratio**



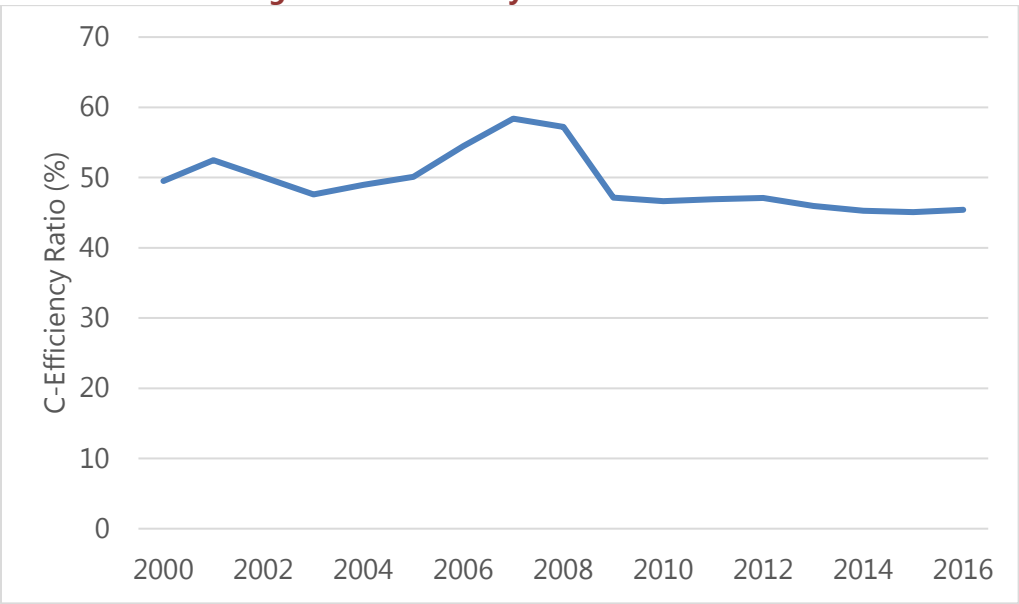

Source: Staff calculations based on data provided by MOF and BCCR.

**6. The movement of the C-efficiency ratio, calculated from the MOF revenue data, has been much the same as the ratio of GST to GDP (Figure 8).** The C-efficiency ratio, indicating the overall efficiency of the GST system, shows the ratio of actual collections to the theoretical revenues under a perfectly enforced tax levied at the standard rate on all final consumption

[4] To be qualified as a small taxpayer, (i) annual purchase of a taxpayer may not exceed 150 base salaries, (ii) number of employees may not exceed five, and (iii) fixed assets may not exceed 350 base salaries.

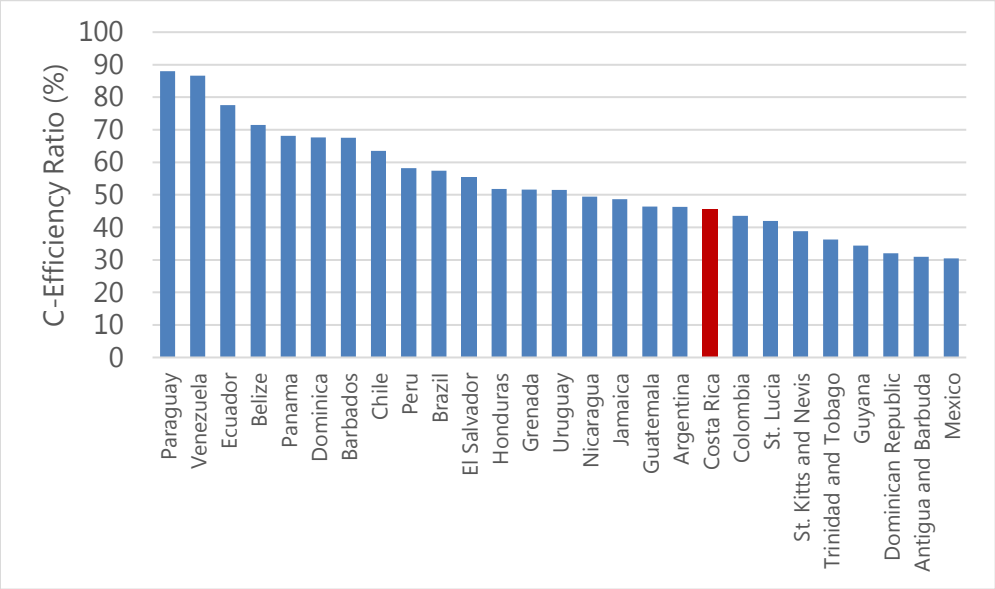
without any exemptions ($PV^R$).[5] The average of the C-efficiency ratio in Costa Rica between 2012 and 2016 was 46 percent, which is smaller than the average of Latin American and Caribbean countries (53 percent) (Figure 9).[6]

**Figure 8. C-Efficiency Ratio in Costa Rica**




Source: Staff calculations based on data provided by MOF and BCCR.

**Figure 9. C-Efficiency Ratio in Latin American and Caribbean Countries**




Source: Staff calculations.

[5] The yearly changes in the C-efficiency ratio can be decomposed into changes in the compliance gap, policy gap and cash effects. Section III.A shows the result of the decomposition.

[6] Figure 9 shows the average C-efficiency ratios between 2012 and 2015 for countries except for Costa Rica. The C-efficiency ratio of Costa Rica (46 percent) is the average between 2012 and 2016.

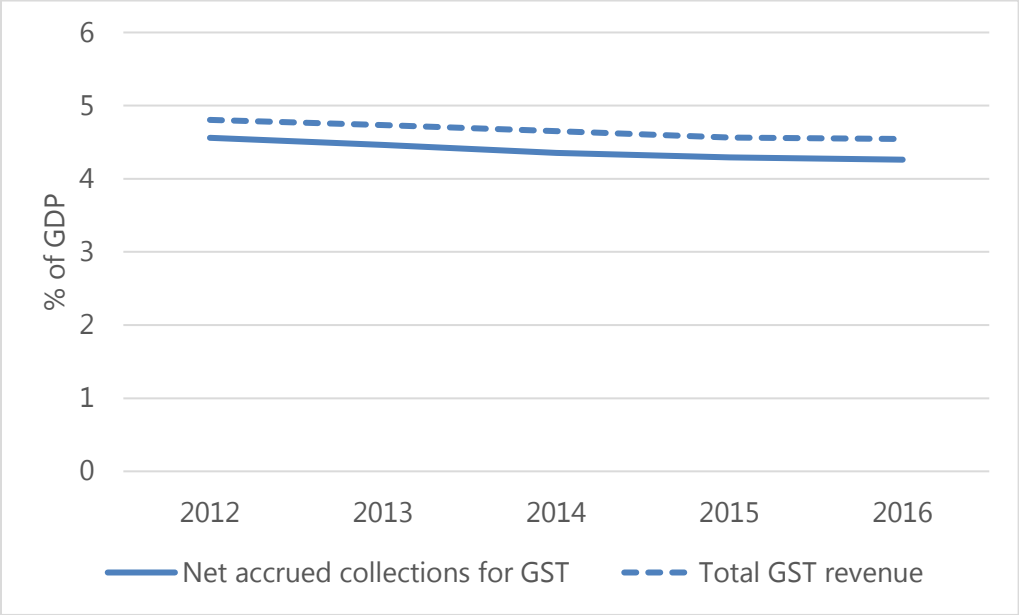
**7. To measure underlying taxpayers' compliance and revenue performance, it is necessary to see a series of net accrued GST collections.** The net accrued collection in a year measures actual payments for GST liabilities arising in the year, and assessments for excess credits created in the year.[7] Differences between total GST revenue published by the MOF and net accrued collection come from two points: 1) timing effects and 2) treatments for excess credits of GST.

**8. The timing effects show differences between net tax liabilities *arising in a year* and cash *collected in a year*.** In Costa Rica, monthly GST declarations are submitted and paid in the next month. Therefore, net accrued collection in a year is calculated by summing up declared values from February to January next year, to show declared values arising from January to December.

**9. The excess credits of GST can be used to clear other tax liabilities, but the GST revenue data published by the MOF do not consider the negative impacts by this offset.** Therefore, the MOF revenue data can be larger than the net accrued collections, which fully consider the GST excess credits as a negative contribution to net GST revenues collection. Meanwhile, the offset of the GST excess credits to other tax liabilities results in smaller values of cash collections of other taxes than the declared liabilities.

**10. In fact, the net accrued collections calculated from GST declaration data (D104) have been smaller than the revenue data by the MOF (Figure 10).** In the following sections, the net accrued collections are used as a primary series of data for the actual GST collections to calculate compliance gaps in Costa Rica.

**Figure 10. Net Accrued Collections of GST**




Source: Staff calculations.

[7] The concept of the net accrued collections was explained in detail in Hutton 2017, Section III B.

## C. Main Feature of CIT in Costa Rica

**11. Costa Rican Income Tax was introduced in 1946, and the current design of CIT dates to 1988.** Since then, the main feature of CIT policy has remained unchanged.

- **Rate:** A standard rate of 30% is applied to entities exceeding a certain threshold of gross income. Smaller entities are subject to reduced rates of 10% or 20% following the thresholds shown in Table 1.

**Table 1. Thresholds of CIT Rate Schedule, thousand CRC**

| Rate | | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|
| 10% | Up to | 45,525 | 47,451 | 49,969 | 52,710 | 52,320 |
| 20% | Up to | 91,573 | 95,447 | 100,513 | 106,026 | 105,241 |

- **Base:** Costa Rican CIT follows a territoriality principle, and taxes income from domestic source. Receipt of dividends is exempt from CIT, and interest and other financial expenses are deductible. Capital gains are exempt from gross income if they are not derived from a habitual profitable activity, or not generated by the transfer of assets subject to depreciation / amortization.[8]

- **Losses:** Industrial companies may carry forward losses for three years, and losses incurred in their first five years of operation for five years. Agricultural companies may carry forward losses for five years.

- **Exemptions:** There are several regimes for CIT exemptions applied to (i) industrial, processing and services companies under the Free Trade Zone (FTZ) Regime, (ii) non-profit organizations such as cooperatives, associations and trusts, (iii) companies under farming and forestry regimes, (iv) companies under tourism promotion regime, (v) companies engaged in the production of organic products, and (vi) State entities.

- **Threshold:** There is no quantitative threshold for registration. Entities providing goods and services as businesses are required to submit CIT returns (D101). Small taxpayers in specific industries can apply to a simplified regime and submit D105, in the same way as the GST.[9]

- **Tax period:** A tax period for CIT is one year from October 1 to September 30, with some exceptions.

[8] A transfer tax applies to the transfer of movable property subject to registration (2.5%) or the transfer of immovable property (1.5%). A municipal real property tax is levied annually on the value of real property (0.25%).

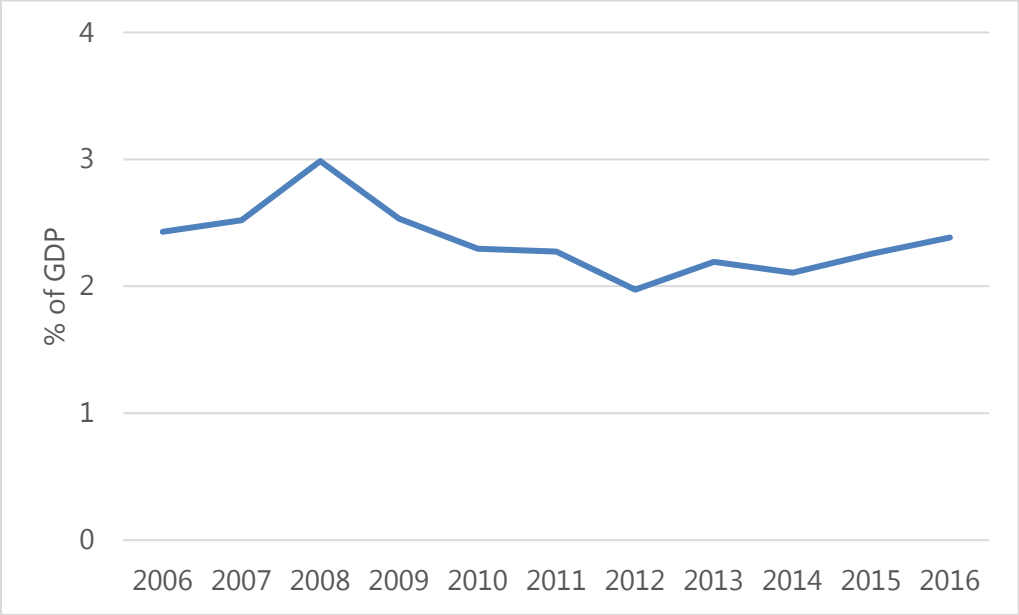
[9] To be qualified as a small taxpayer, (i) annual purchase of a taxpayer may not exceed 150 base salaries, (ii) number of employees may not exceed five, and (iii) fixed assets may not exceed 350 base salaries.

- **Withholding:** The state or its institutions, municipalities, public companies and other public entities must retain 2% of the gross product over the amounts of purchases and contracts. The withheld amounts can be credited to CIT liability. Since 2015, credit and debit card companies are required to withhold 1.77 percent of transaction values as a part of CIT liability.

## D. Revenue Performance of CIT

**12. The annual CIT revenues published by the MOF are based on net cash collections during a calendar year.** The total CIT revenue as a percent of GDP fluctuated between 2 and 3 percent during the decade. Since 2012, the CIT revenue picked up, and the ratio is 2.4 percent in 2016 (Figure 11).

**Figure 11. CIT Revenues to GDP Ratio**

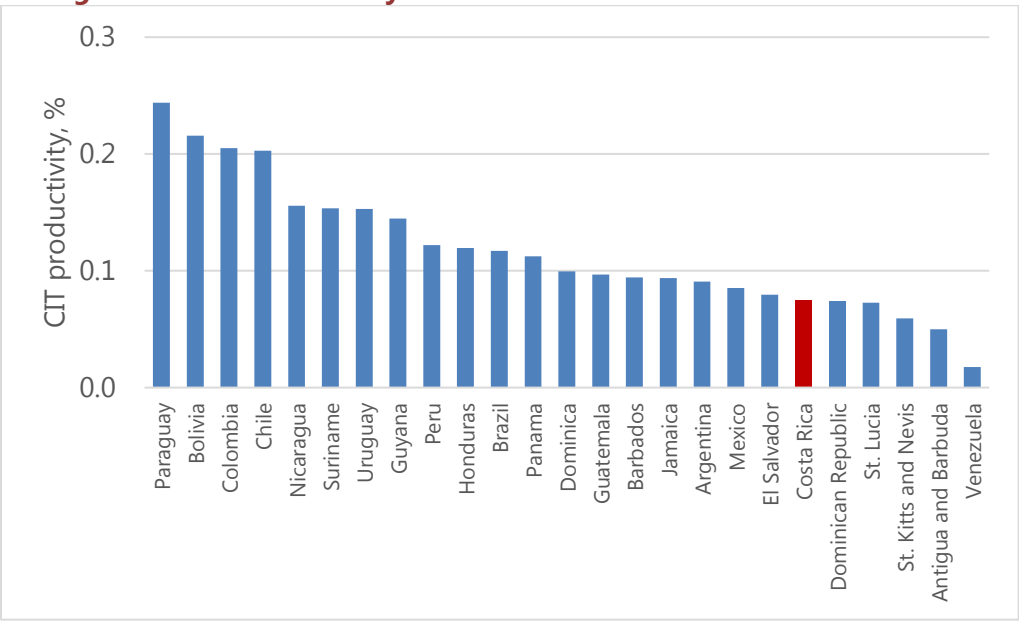



Source: Staff calculations based on data provided by MOF and BCCR.

**13. The average of the CIT productivity in Costa Rica in 2015 was 0.075 percent, which is smaller than the average of Latin American and Caribbean countries (0.12 percent) (Figure 12).**[10] The CIT productivity shows how much one percent point CIT rate can generate in CIT revenue relative to GDP, indicating a country's overall efficiency of CIT for revenue mobilization.

[10] Figure 12 shows CIT-efficiency ratios of the countries for the latest years with available data (2015 or 2016).

**Figure 12. CIT Productivity in Latin American and Caribbean Countries**




Source: Staff calculations.

**14. To measure underlying taxpayers' compliance and revenue performance compared with potential values estimated from macroeconomic data, it is necessary to consider the characteristics of the CIT revenue data.** This is because macroeconomic data show economic activity during a calendar year, while the net cash collections in a calendar year may include revenues based on economic activities in different years for the following reasons.

- **Differences between fiscal year and calendar year**: most corporations in Costa Rica have a fiscal year from October to September, and submit declarations and payments in December. For these corporations, cash payments in December in year *t* reflects economic activity between October in year *t-1* and September in year *t*.

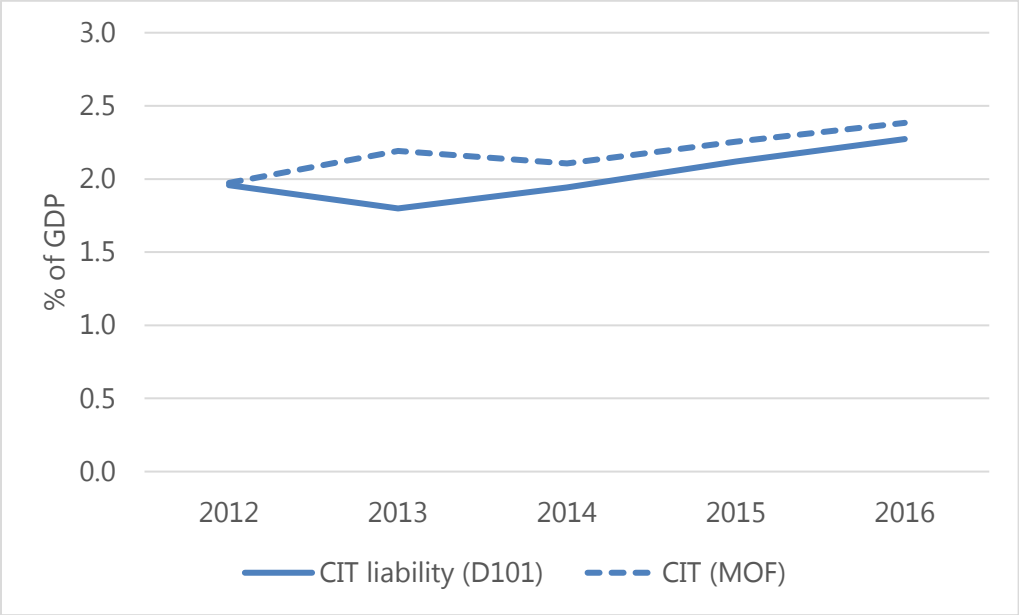
- **Differences in timing of the declarations and the payments**: several multinational enterprises have a fiscal year from January to December, and submit declarations and payments in March of the next year. For these corporations, cash payment in March of year *t* reflects economic activity between January and December of year *t-1*. Also, the advance payments by such corporations in June, September, December of year *t* reflect the results in previous years.

**15. In addition, offsets between credits and debits for different taxes may cause differences between collected cash amount recorded as CIT revenues by the MOF and declared CIT liability.** The collected cash as advance payments and withheld amounts of CIT can be used to clear other tax liabilities, such as GST and withheld PIT for wages and salaries, which should be paid by corporations, but the CIT revenue data published by the MOF do not consider the negative impacts by these offsets. Therefore, the MOF CIT revenue data can be larger than the final CIT liabilities.

**16. In the following sections, the aggregate declared CIT base and liability in D101 will be compared with potential base and liability to measure compliance gaps.**[11] The D101 declaration data for year *t* include the taxable incomes and liabilities of fiscal year between October in year *t-1* and September in year *t* for normal corporations, and fiscal year between January and December in year *t* for several multinational corporations. Although they are not perfectly matching with economic activity in year *t*, they are much better than using net cash collections because they are not reflecting the differences in timing of declarations and payments, and collected cash used for offsetting against other tax liabilities.

**17. The aggregate declared CIT liability in D101 has been smaller than the annual CIT revenues published by the MOF (Figure 13).** In addition, the yearly movements have been different from each other; the aggregate declared CIT liability decreased to 1.8 percent of GDP in 2013, and then picked up to 2.3 percent of GDP in 2016.

**Figure 13. CIT Revenue and CIT Liability (D101)**




Source: Staff calculations based on data provided by MOF and BCCR.

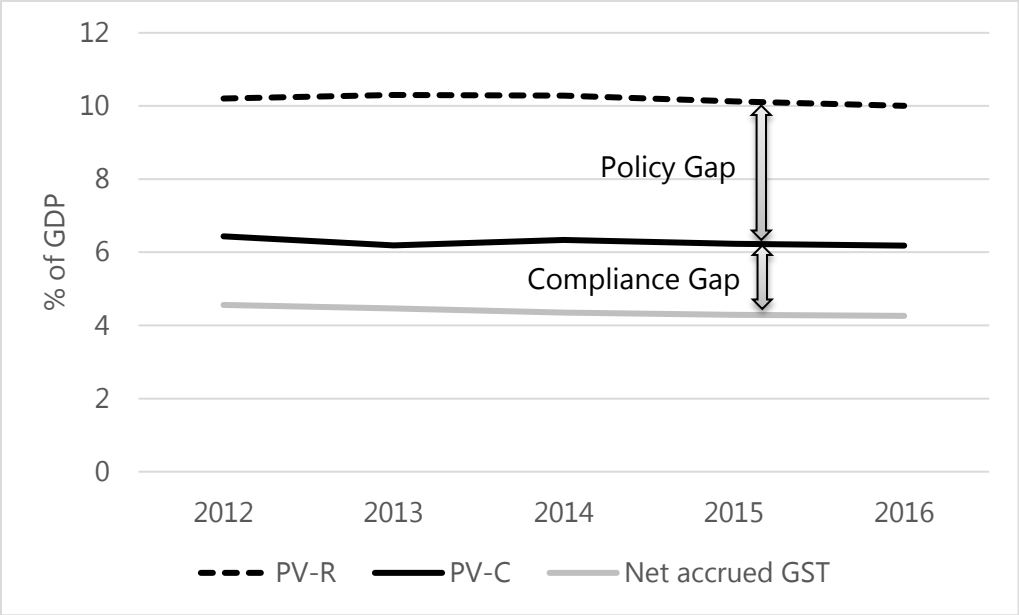
[11] The compliance gaps estimated by the MOF for the period from 2010 to 2013 also use the aggregate declared CIT liability in D101.

# II. ESTIMATION OF THE GST GAP

## A. Potential GST Revenues and Definition of GST Gaps

**18. The RA-GAP GST gap methodology was used to estimate the compliance gap and the policy gap for the general sales tax (GST) in Costa Rica for the years from 2012 to 2016.** There are various possible measures of potential GST revenues which lead to different measures of the gaps (Figure 14). Potential GST revenue under current policy is referred to here as $PV^C$; the difference between $PV^C$ and net accrued collections is defined as the compliance gap. The difference between potential revenue under a theoretical GST structure, applying the standard rate to all final consumption without any exemptions (referred to as $PV^R$), and $PV^C$ is called the policy gap. The ratio of actual GST collections to $PV^R$ is the C-efficiency ratio.[12]

**Figure 14. Potential GST Revenues and GST Gaps**




Source: Staff calculations.

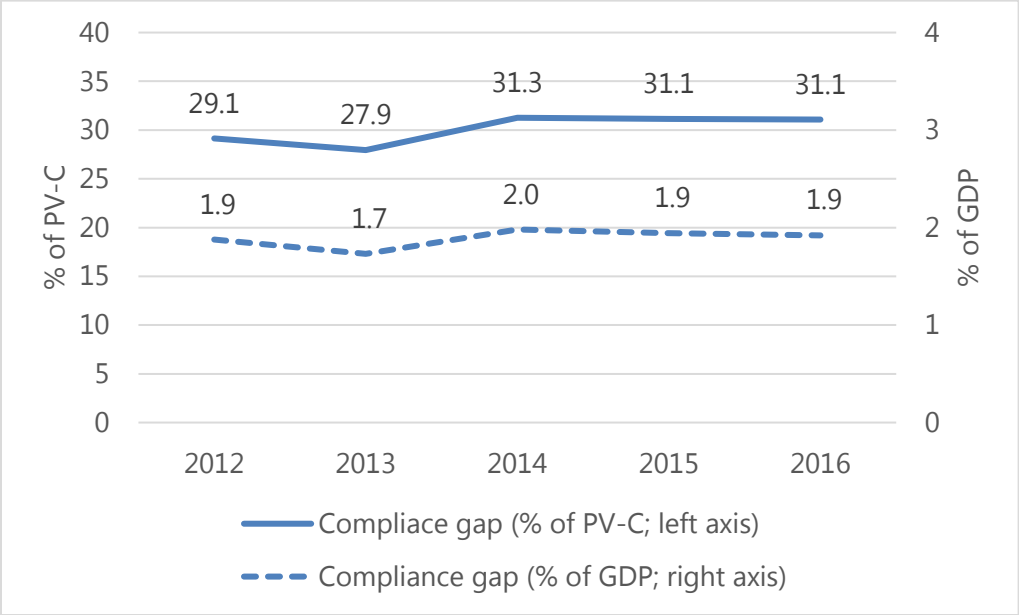
[12] In calculating the policy gap, it is assumed that taxpayers' behavior would not be different under the normative policy frameworks. The estimate should therefore not be interpreted as the additional revenues that would arise following transition to the normative policy framework. Rather, they provide quantitative indicators of the efficiency of GST policy.

## B. Estimation of GST Compliance Gap

### Estimates of GST Compliance Gap

**19. The estimated GST compliance gap in Costa Rica increased from 29 percent in 2012 to 31 percent in 2016 (Figure 15).** The compliance gap in 2016 was equivalent to 1.9 percent of GDP. The estimated compliance gap is higher than the average of European countries and Latin American countries.[13]

**Figure 15. GST Compliance Gaps**




Source: Staff calculations.

### Potential GST Revenues under Current Policy

#### *Methodology and data*

**20. The RA-GAP methodology for estimating potential GST revenues is to apply the relevant GST policy framework to the value-added for each economic sector to quantify the GST base.** This process follows the same process as individual taxpayers use to determine their individual GST liabilities. The GST liability for an individual taxpayer is determined by the amount they pay to customs on their imports, and the GST they must charge on their output sold in the domestic market, less the GST they have been charged on their inputs. The model for estimating the potential GST works with supply and use tables (SUT), estimating the tax applicable on imports, adding the tax applicable to the domestic output, and subtracting any

[13] See footnote 1.

credits for tax applicable to the intermediate demand and gross fixed capital formation (inputs) of each sector.[14]

**21. The SUTs provided by the BCCR at the time of estimation were for the years from 2012 to 2015, with 183 commodities and 138 economic activities.**[15] Therefore, for each of these years, the potential GST revenues ($PV^C$) were calculated by applying the policy parameters (rates and exemptions) for each year to the SUTs. Then, the estimated $PV^C$ for 2015 for 15 economic activities were extrapolated to 2016 by using available macroeconomic data on production, imports, and exports for the individual activities.

### *Policy parameters*

**22. Rates, exemptions, and creditable ratios applied to specific transactions presented in the SUTs were set as key policy parameters in the RA-GAP estimation model reflecting the GST policy during the period.** As for treatments for zero-rating and exemption, a list was made by matching items in the exempted and zero-rated items in the GST Law and Regulation with 183 commodity headings under SUT classification. If a commodity heading of SUT include sub-headings which are both taxable and exempted, an exemption ratio for the SUT heading was set from a ratio of exempted imports from the Customs data and other available information.

**23. For the creditable ratios, the parameters were set to reflect the Article 14 of the GST Law, considering the characteristics of transactions for specific commodities and activities.** Because the Article changed in April 2013, the ratios were set differently before and the after the change.

### *Special regimes for GST*

**24. Economic activities in the free trade zones (FTZ) were separately treated.** The SUTs provided by the BCCR record economic activities in the FTZ in separate columns with a heading of 'Regímenes Especiales' for each economic activity, and it was assumed that any activities in the FTZ and imports to the FTZ are exempted from GST in the estimation model.

**25. The effects of exemptions for local sales to specific purchasers stipulated in other laws were considered separately.** Due to limited data about classifications of transactions under the specific exemptions, it was not possible to directly incorporate them into the RA-GAP estimation model using SUTs by setting policy parameters.[16] Therefore, the aggregate values

[14] The method adopted to estimate potential GST revenues is described further in Appendix II.A.

[15] The publication of the SUT for 2016 will be in March 2018.

[16] The exemptions for imports by specific purchasers stipulated in other laws are incorporated in the policy parameters for applicable exemptions for imports by using the detailed Customs data, and the potential GST revenue reflects them.

reported in the tax expenditure analysis provided by the MOF ('*Exenciones Compras Locales Concretas*' and '*Exenciones Compras Locales Genéricas*') were subtracted from the potential GST revenue estimated from the model. This treatment assumed that there is no further downstream taxation (cascading effects) for the exempted purchases under the special regimes for domestic sales.[17]

**26. The effects of the simplified regime for GST for small taxpayers were also considered separately in estimating potential GST revenues.** The simplified regime allows small taxpayers to declare and pay their tax liabilities for GST based on their purchases. In this report, both potential and actual GST revenues excluded these small taxpayers, and the GST liability for these taxpayers each year were subtracted from both the estimated potential and actual GST revenues.

### *Estimates of potential GST revenues*

**27. The estimated potential GST revenues under the current policy framework ($PV^C$) were stable between 6.2 and 6.4 percent of GDP during the period (Figure 14).** Because the restriction on input tax credits was loosened in April 2013, the estimated potential GST revenues became slightly lower than before due to an increase in creditable inputs in the estimation model.

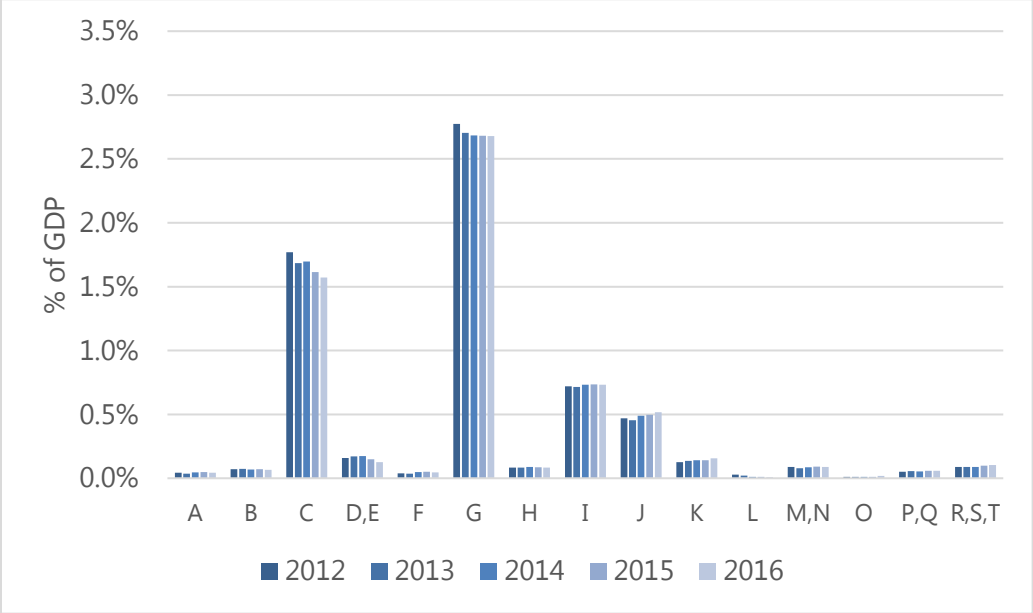
### *Potential GST revenues by sectors*

**28. Potential GST revenues $PV^C$ by sectors indicate the distribution of the GST base in Costa Rica (Figure 16).**[18] Reflecting the limited scope of the current GST system excluding major business and personal services, a large GST base was estimated in sectors with limited taxable goods and services, including trade (G), manufacturing (C), hotels and restaurants (I), and information and communication services (J). The potential revenues relative to GDP in manufacturing sector shows a decreasing trend since 2012 because the share of value-added created in manufacturing sector has decreased from 14.8 percent to 12.3 percent, while the share of value-added in services has increased in Costa Rican economy, according to national accounts data.

[17] Because the tax expenditure analysis by the MOF did not include the data on Exenciones Compras Locales Genéricas for 2015, an average after 2012 (excluding 2015) was used for 2015.

[18] The potential GST data in Figure 16 are before the adjustments for the exemptions for local sales and the effects of simplified regime because there is no sector classification data for them.

**Figure 16. Potential GST Revenues PV[C] by Sectors**




| | | | | | |
|---|---|---|---|---|---|
| A | Agriculture, forestry, fishing | H | Transportation | O | Public administration |
| B | Mining | I | Hotels, restaurants | P | Education |
| C | Manufacturing | J | Information, communications | Q | Health |
| D | Electricity, gas | K | Financial services | R | Recreational services |
| E | Water, sewerage | L | Real estate | S | Other personal services |
| F | Construction | M | Professional services | T | Activities of households |
| G | Trade | N | Administrative, support services | | |

Source: Staff calculations.

## Actual GST Collections

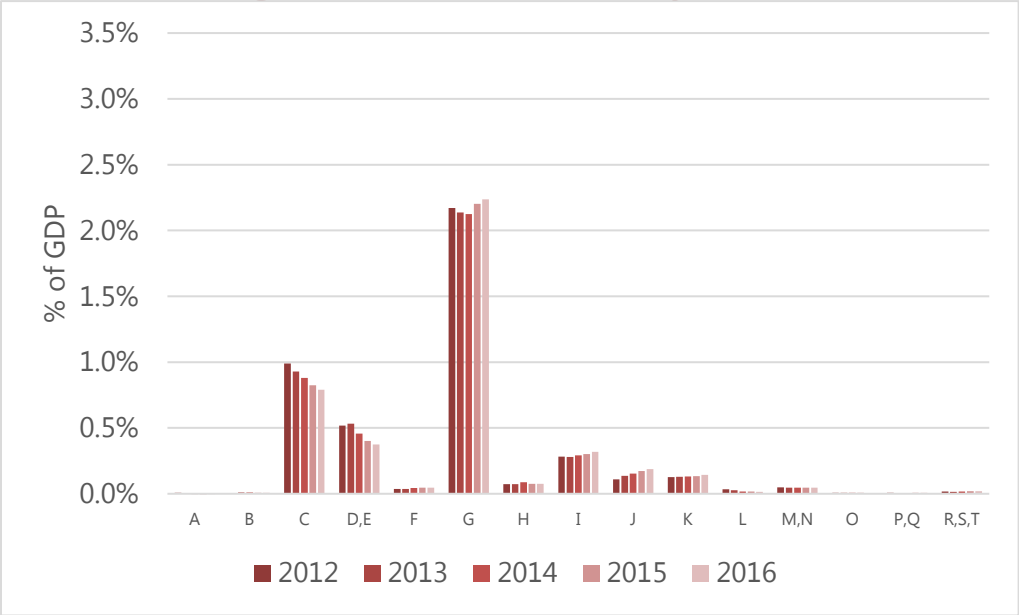
**29. As discussed in Section I, a series of the net accrued collections was used to calculate compliance gaps.** The series was calculated as the differences between debits and credits for individual taxpayers from the data of the GST declarations (D104) during a year. Further, the collection of import GST at the Customs, and the assessments by the tax administration were added, and the net increases in arrears during a year were subtracted.

**30. Actual GST collections were classified into economic activities using information of taxpayers registered to the MOF (Figure 17).**[19] Large actual GST collections were observed in trade (G), manufacturing (C), electricity, gas, and water (D, E), and hotels and restaurants (I). It should be noted that the sector classification for actual collections is classified on primary activity of individual taxpayers, and therefore there can be inconsistencies between national accounts and taxpayer registration for large taxpayers operating in multi-sectors, such as Costa Rican Institute of Electricity (ICE), which is a government-run electricity and telecommunication service

[19] The actual collection data in Figure 17 are before the adjustments for assessments and arrears because there is no sector classification data for them.

provider. In national accounts data, large business entities are divided and classified in separate activities. In comparing the actual collections with potential estimates from national accounts, such inconsistencies should be carefully considered.[20]

**Figure 17. Actual GST Revenues by Sectors**




| | | | | | |
|---|---|---|---|---|---|
| A | Agriculture, forestry, fishing | H | Transportation | O | Public administration |
| B | Mining | I | Hotels, restaurants | P | Education |
| C | Manufacturing | J | Information, communications | Q | Health |
| D | Electricity, gas | K | Financial services | R | Recreational services |
| E | Water, sewerage | L | Real estate | S | Other personal services |
| F | Construction | M | Professional services | T | Activities of households |
| G | Trade | N | Administrative, support services | | |

Source: Staff calculations.

## Decomposition of the Compliance gap – Assessment Gap and Collection Gap

**31. The compliance gaps can be decomposed into two parts, a collection gap and an assessment gap.** The collection gap is the difference between the actual collections and the total amount of GST declared or assessed as due by the tax administration, while the assessment gap is the difference between the amount of GST declared or assessed and the potential GST. These two gaps can also be referred to as the identified portion of the compliance gap (the collection gap) and the unidentified portion (the assessment gap).

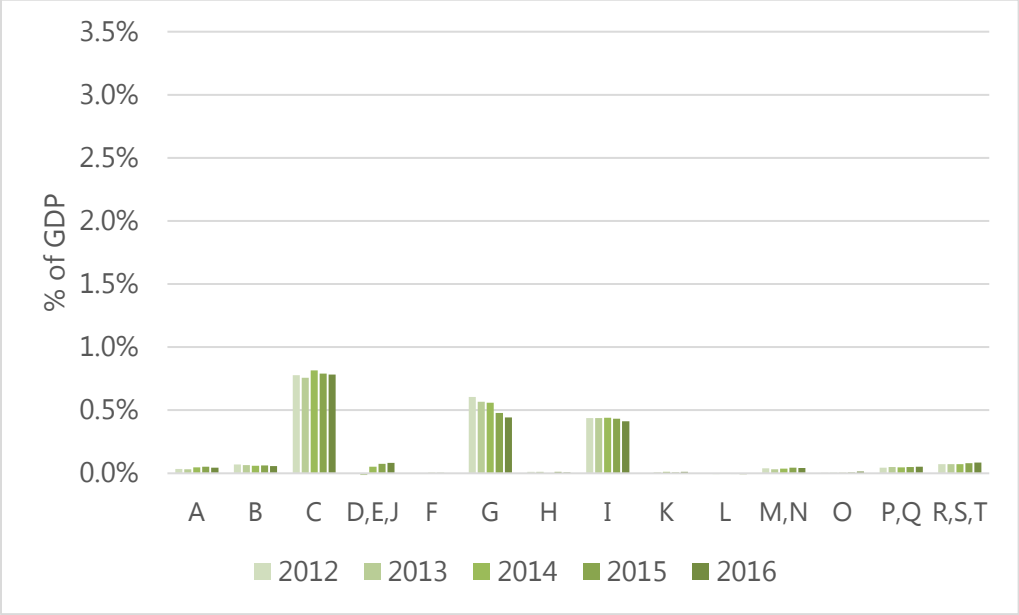
[20] The BCCR classifies economic activities based on individual business establishments, and decomposes value-added and operating surplus of a single corporation into multiple activities. A typical case is to decompose value-added and operating surplus of corporations in trade sector (G) into both manufacturing (C) and trade (G).

**32. In Costa Rica, most of the compliance gap consisted of the assessment gap.** The collection gaps of GST, which were measured by increases in arrears, stayed at the level of 0.1 percent of GDP, while the overall compliance gaps were between 1.7 and 2.0 percent of GDP from 2012 to 2016.

## Decomposition of the Compliance Gap by Sectors

**33. The differences between potential revenues under current policy ($PV^C$) and actual collections for each sector indicate the sectoral distribution of the compliance gaps (Figure 18).** Because the sector classification of potential GST revenues and actual revenues are not perfectly consistent, the estimated sector gaps may have some errors and biases, but they can nonetheless provide good insight about the source of gaps.

**Figure 18. GST Compliance Gaps by Sectors**

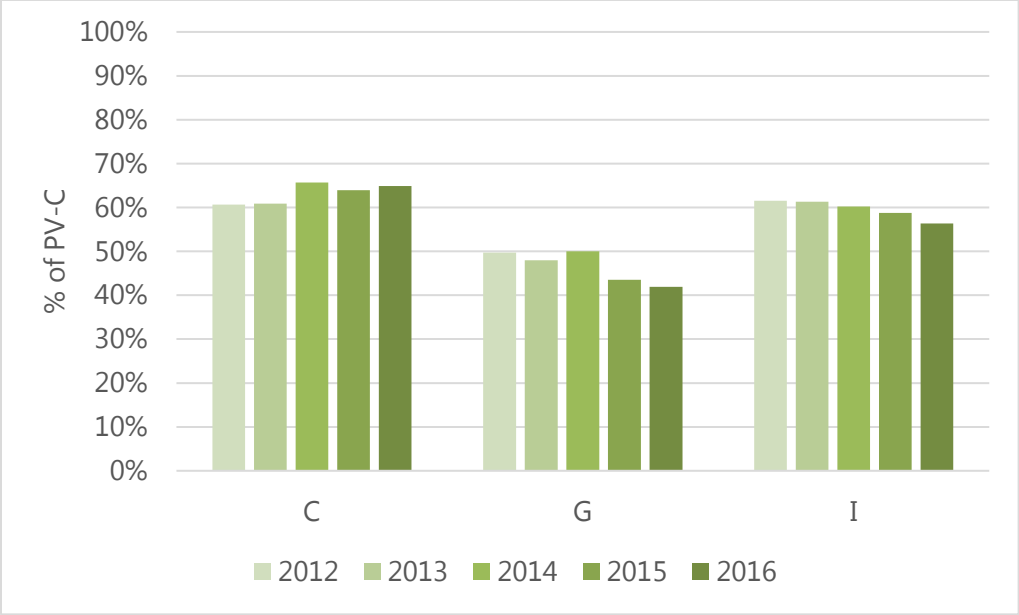



| | | | | | |
|---|---|---|---|---|---|
| A | Agriculture, forestry, fishing | H | Transportation | O | Public administration |
| B | Mining | I | Hotels, restaurants | P | Education |
| C | Manufacturing | J | Information, communications | Q | Health |
| D | Electricity, gas | K | Financial services | R | Recreational services |
| E | Water, sewerage | L | Real estate | S | Other personal services |
| F | Construction | M | Professional services | T | Activities of households |
| G | Trade | N | Administrative, support services | | |

Source: Staff calculations.

**34. Large compliance gaps relative to GDP were observed in manufacturing (C), trade (G), and hotels and restaurants (I).** More detailed sector analysis indicated that the large compliance gaps in manufacturing industry were observed mostly in food producers, including meats and dairy products, and repair services for machinery and equipment. Compliance gaps relative to domestic potential revenues for these sectors showed that the relative compliance gaps were large in manufacturing (C) and hotels and restaurants (I), while the gap was relatively smaller in trade (G) (Figure 19).

**Figure 19. GST Compliance Gaps Relative to Domestic Potential Revenues by Sectors**




Source: Staff calculations.

## Possible Sources of Errors for Estimation of Compliance Gaps

**35. Possible sources of errors for the estimated overall and sector GST compliance gaps are the following:**

- **Issues for national accounts:** Potential revenues are estimated on the assumption that national accounts data fully capture all the economic activities subject to GST, including domestic production and imports. If national accounts underestimate the economic activities and imports for some reasons, such as undervaluation of imports or omitting non-observed economic activities, compliance gaps will also be underestimated.

- **Sector allocation of capital formation:** Data on gross fixed capital formation by individual economic activities are only covering a limited period, and therefore it was assumed that the ratios for each economic activity is the same as 2012.

- **Sector allocation of inventories and exports:** Data on changes in inventory and exports by individual economic activities are not available, and therefore it was assumed that the ratios of changes in inventory and exports for each economic activity are the same as the ratio of production or imports.

- **Extrapolation to 2016:** Detailed SUTs are available up to 2015, and the estimated results for 2016 are based on an extrapolation by using macroeconomic data. Any recent SUT and macroeconomic data will be subject to revision, and estimates for potential revenues and gaps will change accordingly.

- **Issues for policy parameters:** Estimated potential revenues are dependent on the policy parameters set for exemptions and creditable ratios, some of which are based on limited data, especially for domestic sales. Therefore, any biases in parameters about taxable/non-taxable sales or creditable/non-creditable may cause errors in the estimated potential revenues and gaps.

- **Issues for sector classification:** Different sector classification due to multi-sector operations by large business entities or discrepancies between national accounts data and taxpayers' registration data may result in biases for sector compliance gaps. In addition, effects of a special regime allowing some specific entities to purchase goods and services without paying GST will affect the actual sector allocation of net GST revenues, while the allocation of the potential GST revenues does not consider the regime.

## C. Estimation of GST Policy Gap

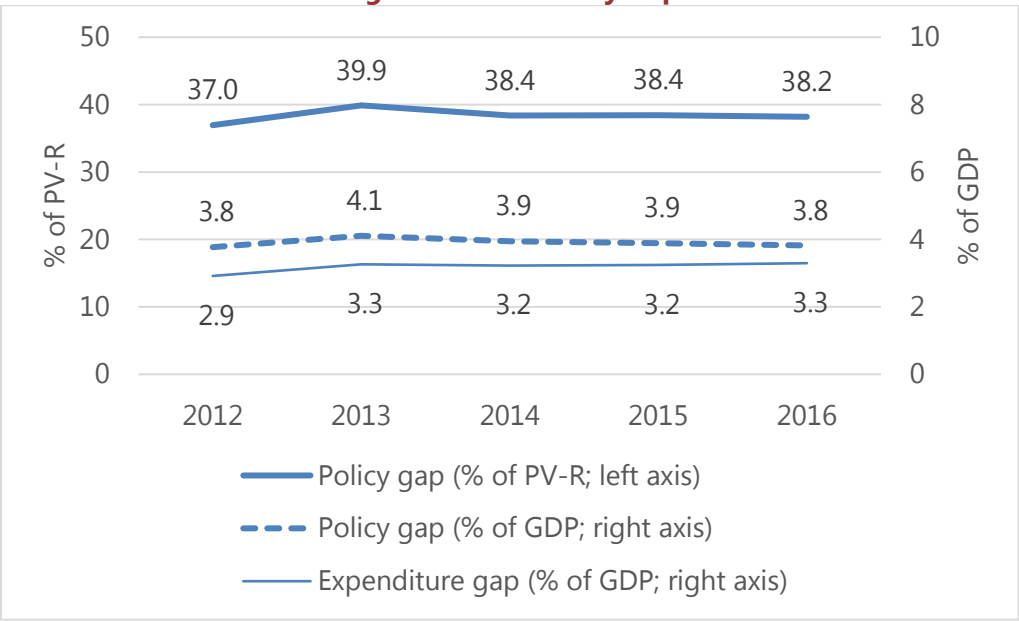
### Estimates of GST Policy Gap

**36. The policy gap is the difference between the theoretical revenue calculated by applying the standard rate to all final consumption ($PV^R$) and the potential revenue under the current policy ($PV^C$).** A policy framework for $PV^R$ would not be a feasible option to easily implement, but this is an important benchmark to measure overall efficiency of a tax system on a consistent basis in different countries, allowing comparisons with peer countries.[21]

**37. The estimated policy gaps were around 4 percent of GDP from 2012 to 2016 (Figure 20).** The policy gaps relative to $PV^R$ were between 37 percent and 40 percent, which suggests that the legal tax base for GST was much smaller than total final consumption in Costa Rica. The level of the policy gap was consistently higher than the compliance gap.

[21] Final consumption in national accounts includes consumption on which it is practically difficult to levy VAT (such as financial intermediation), imputed transactions (imputed rents for owned dwellings) and non-market transactions (such as government services, public health and education), while it does not include domestic consumption by non-residents.

**Figure 20. GST Policy Gap**




Source: Staff calculations.

## Expenditure Gap and Non-taxable Gap

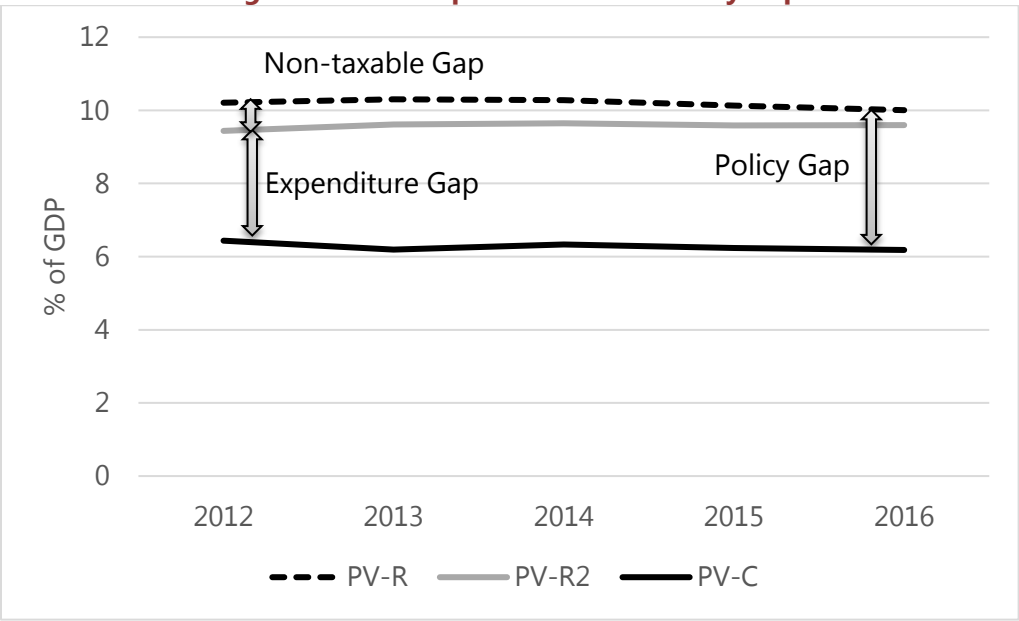
**38. The expenditure gap is defined as the difference between $PV^C$ and potential revenues under a normative GST policy structure ($PV^{R2}$) (Figure 21).** It was assumed that financial intermediation service, rent for residential property (both imputed and actual), and non-market public services are outside the scope of the normative GST policy structure. In addition, because there is another tax replacing GST for fuels, it was also assumed that fuels subject to the tax are non-taxable in calculating $PV^{R2}$. By excluding the effects of these non-taxable items (non-taxable gap), the expenditure gap is to show the effects on potential revenues by discretionary policy decisions on exemptions and reduced rates. These effects are usually recognized as 'tax expenditures'.[22]

**39. The GST expenditure gap has been stable between 2.9 percent of GDP and 3.3 percent of GDP, and accounted for most of the overall policy gap since 2012 (Figure 20).** This means that the legal base of GST in Costa Rica has been narrow mainly due to extensive exemptions for goods and services that are usually subject to VAT in other countries, as well as specific exemptions for purchasers stipulated by other laws. The estimated level of the GST expenditure gap was generally consistent with the MOF's own estimates for tax expenditure for GST, but their differences are gradually increasing.[23]

[22] In addition, the non-taxable gap reflects the effects of final consumption by non-residents; the larger consumption by non-residents results in the smaller non-taxable gap. It is not considered as a tax base of GST in calculating $PV^R$ because it is recorded as exports, not final consumption in national accounts. It is considered as a tax base of GST in calculating $PV^{R2}$.

[23] The GST tax expenditures relative to GDP estimated by the MOF, following IMF 2011, were 3.04 percent in 2012, 3.13 percent in 2013, 2.94 percent in 2014, 2.85 percent in 2015, and 2.89 percent in 2016.

**Figure 21. Decomposition of GST Policy Gap**




Source: Staff calculations.

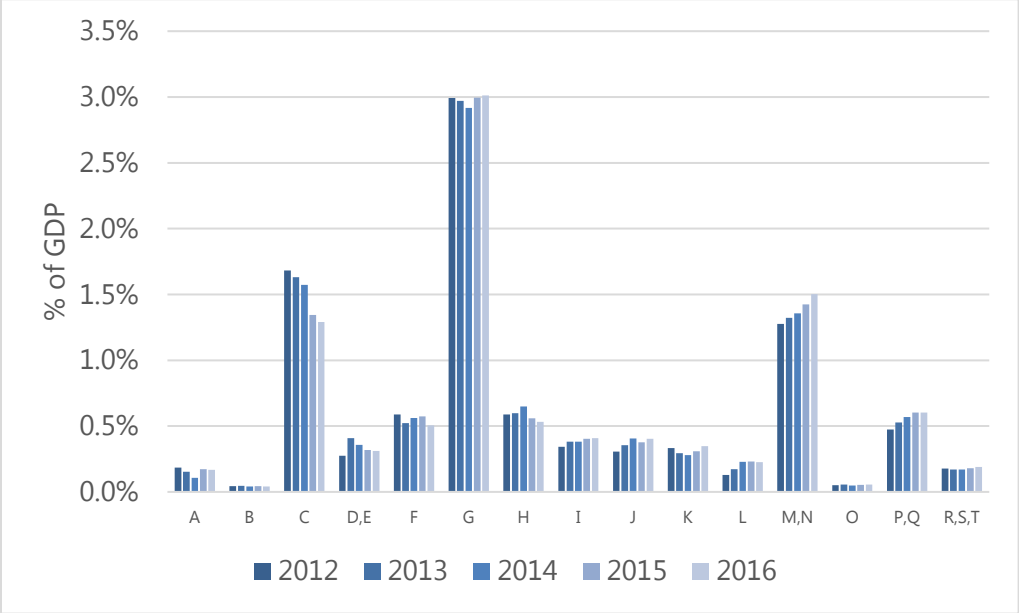
## Sector Potential GST Revenues under Reference Policy Framework

**40. The potential revenues under a normative GST structure ($PV^{R2}$) can be estimated for individual economic activities by using the RA-GAP model (Figure 22).** The estimated $PV^{R2}$ in each sector illustrates how policy changes will affect the distribution of the potential tax liability across sectors by considering both changes in output tax and input tax credit.

**41. The estimated amounts for $PV^{R2}$ were much larger than $PV^{C}$ mainly in service sectors.** In particular, $PV^{R2}$ was large in business services (M, N), construction service (F), and transportation service (H). This means that changes of the current GST to a full-fledged VAT system with broader base will increase tax liabilities in service sectors, which are currently out of the scope of taxation. In manufacturing (C) and trade (G), the estimated $PV^{R2}$ values were not significantly different from $PV^{C}$ because a full-fledged VAT system is expected to increase both output tax and input tax credit in these sectors.

**42. Managing a full-fledged VAT system requires further efforts of the revenue administration.** The additional revenues are expected to be collected from the sectors which are currently out of the scope of the GST system, and enhancing appropriate registration, filing, and payment would need additional efforts because the sectors include many small- and medium-sized enterprises that are relatively difficult to control. Therefore, a tax reform to modernize the current GST system to a full-fledged VAT system requires combined and coordinated efforts with a revenue administration.

**Figure 22. Potential GST Revenues PV[R2] by Sectors**




| | | | | | |
|---|---|---|---|---|---|
| A | Agriculture, forestry, fishing | H | Transportation | O | Public administration |
| B | Mining | I | Hotels, restaurants | P | Education |
| C | Manufacturing | J | Information, communications | Q | Health |
| D | Electricity, gas | K | Financial services | R | Recreational services |
| E | Water, sewerage | L | Real estate | S | Other personal services |
| F | Construction | M | Professional services | T | Activities of households |
| G | Trade | N | Administrative, support services | | |

Source: Staff calculations.

# III. ISSUES ON GST GAP ESTIMATION

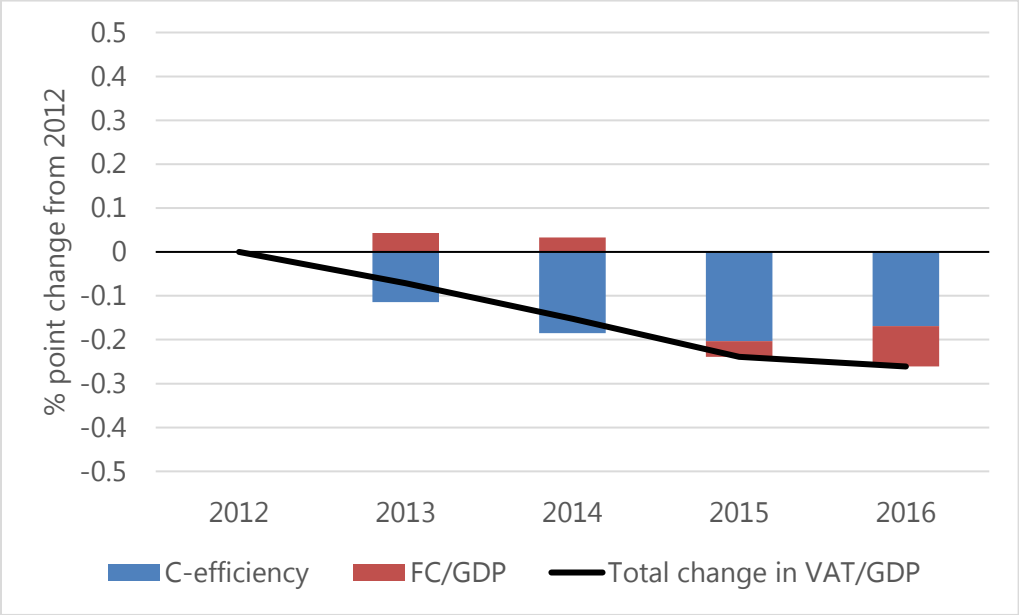
## A. Analysis of GST Revenue Performance

**43. The estimates for the GST gaps can provide deeper insight about the overall GST revenue performance discussed in Section I.** First, yearly changes in the ratio of the actual GST revenue to GDP can be decomposed into three factors; the changes in the GST statutory rate ($\tau^{GST}$), the ratio of final consumption (FC) to GDP, and the C-efficiency ratio. It follows the identity below:

$$\frac{GST}{GDP} = \frac{GST}{FC} \times \frac{FC}{GDP}$$
$$= \tau^{GST} \times \frac{FC}{GDP} \times \left[ \frac{GST}{\tau^{GST} \times FC} \right]$$

**44. The recent decline of the GST-GDP ratio after 2012 can be explained by the declining C-efficiency ratio (Figure 23).** This means that the growth rate of GST revenue has been lower than the growth rate of final consumption. After 2015, the decline of the ratio of final consumption to GDP negatively contributed to the GST revenue performance. There was no change in the statutory rate.

**Figure 23. Changes in GST Revenues to GDP Ratio from 2012**



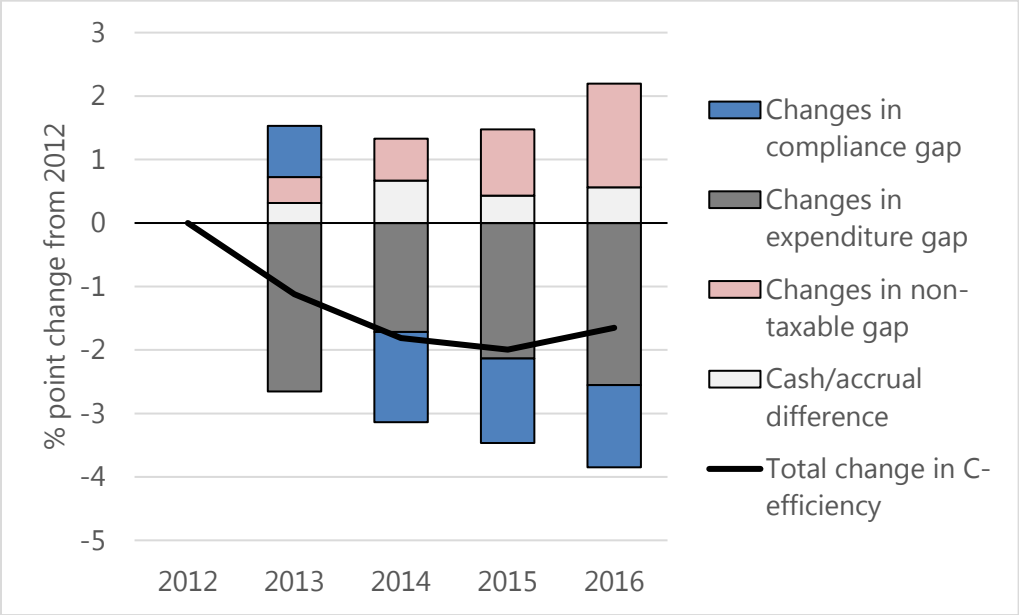

Source: Staff calculations.

**45. Annual changes in the calculated C-efficiency were analyzed using the estimated compliance and policy gaps.** The results of the analysis in the previous sections can be used to decompose year-on-year changes in C-efficiency ratios calculated on cash collections into four components:

- compliance gap changes (smaller gap results in higher efficiency),
- expenditure gap changes (smaller gap results in higher efficiency),
- non-taxable gap changes (smaller gap results in higher efficiency), and
- the difference between cash collections and net accrual collections (when cash collection growth is higher than accrual collection growth, efficiency becomes higher).

**46. Changes in C-Efficiency Ratio from 2012 were decomposed into the above four factors (Figure 24).** It shows that the negative changes in C-efficiency ratio since 2012 were mainly attributable to an increase in the expenditure gap, and an increase in the compliance gap after 2013. The decrease in the non-taxable gap has contributed to partially offset the effects of increases in the expenditure gap and the compliance gap during the period. The positive contribution of the difference between cash and accrual means that the growth rate of cash collection of GST was higher than the net accrued collection.

**Figure 24. Changes in C-Efficiency Ratio from 2012**




Source: Staff calculations.

## B. Recommendations for Improving GST Gap Estimation

**47. The MOF has published its own estimates for compliance gaps for GST since 2014.** The recent publication in December 2015 covers the period from 2010 to 2013, using a top-down approach with demand-side data.[24] The procedure of estimating overall compliance gaps seems to follow standard practices for the top-down approach with demand-side data, starting from final consumption by households, excluding consumption for exempted goods and services, and adding non-deductible GST for intermediate consumption and capital formation. Also, it considers the effects of other special treatments for GST.

**48. A current good practice at the MOF is to have an analytical unit dedicated to estimating both the compliance gaps and the tax expenditures for major taxes, and regularly publish the results.** This is highly advantageous to analyze revenue performance of taxes, considering both the compliance and policy gaps simultaneously using the coherent data and methods. It is recommended to continue the current practice, regularly updating the estimates by incorporating newly available data.

**49. Adopting the RA-GAP methodology, using updated national accounts data, would help streamline and upgrade the estimation model for the GST gaps.** Because the base year of the national accounts data was updated to 2012 with new compilation methods and data, it is mandatory to use the recently published SUTs and other national accounts data to estimate potential tax base. The advantage of the RA-GAP method is to utilize the data in annually published SUTs to estimate overall and sector potential GST revenues simultaneously, by fully incorporating the current GST policy structure.

**50. Analyses of sector compliance gaps are important sources of information for compliance risk management.** This can help strengthen the links between the analysis and operational compliance management to increase business intelligence and support designing risk-based compliance risk management in the tax and the customs administration departments in the MOF. Therefore, it is highly recommended to compare the top-down estimates of the compliance gap using the RA-GAP model with internal knowledge and information about taxpayers' compliance.

**51. It is recommended to make further adjustments for sector allocation of actual base and liability to keep consistency with sector classification of national accounts data.** Currently, actual base and liability are classified on primary activities of individual taxpayers reported to the MOF, while national accounts use information based on classification of detailed business establishment. Therefore, it is necessary to incorporate more information from the BCCR to reflect its classification to allocate actual base and liability. It will improve the sector gap

[24] See Ministerio de Hacienda, 2015.

analysis, and enhance compliance risk management by considering sector-specific characteristics of taxpayers by the MOF.

### *Issues on estimating potential GST revenues*

**52. To improve the estimation of the potential GST revenues further, there are several technical issues to be addressed by the MOF:**

- Make the assumptions used in the estimation model for potential revenues more explicit and understandable, especially for the ratio of exemptions for individual heading of the commodities, so that assumptions for policy parameters can be easily reviewed and modified.

- Systematically manage and retrieve necessary data to quantify purchaser specific exemptions in local market from individual GST returns and other information under specific regimes for GST exemptions.

- Improve the allocation of the potential tax base into sectors, especially by using individual exports data recorded by the Customs, keeping the consistency with aggregate national accounts data.

- Keep consistency between the official tax expenditure analysis and the compliance gap estimation. For that purpose, it is recommended to use the same policy parameters and the data set to estimate the impacts of exemptions in the estimation of both the compliance gap and the tax expenditure.

### *Issues on treating actual GST collections*

**53. There are several recommendations about the treatment of actual GST collections:**

- Make a series of net accrued GST collections based on declarations for debits and credits in a systematic way. This is a necessary procedure to check the underlying trend of GST revenue performance, excluding the effects of offsetting against GST liabilities in subsequent periods and other tax liabilities using excess credits.

- Monitor carried-over excess credits to avoid an insidious increase in future liability for the government.

- Explicitly quantify and monitor GST collection arrears to appropriately evaluate the GST revenue performance. This enables a decomposition of the overall compliance gaps into the assessment gaps and the collection gaps.

# IV. ESTIMATION OF THE CIT GAP

## A. Potential CIT Revenues and Definition of CIT Gaps

**54. The IMF's RA-GAP (Revenue Administration – Gap Analysis Program) methodology for CIT gap is based on the top-down approach.** This aims to estimate the potential tax base and revenues from existing macroeconomic data with thorough considerations for theoretical differences between the coverage of statistical macroeconomic data and the actual tax base of CIT, and then compare the estimated results with actual declarations and revenues. Although the top-down estimates of gaps will have margins of errors, this method has the advantage of using existing data without additional costs, and provides a primary evaluation of overall noncompliance in a country.

**55. The top-down approach requires a basic condition that the macroeconomic data are compiled independently of declared tax base and liability.** In Costa Rica, national accounts data are compiled by the BCCR using various statistical survey data, and declared tax returns are not the initial source of production and value-added.[25] This assures that the comparison between potential CIT base from national accounts data and actual declaration can provide meaningful CIT gap estimates.

### Framework for Estimation

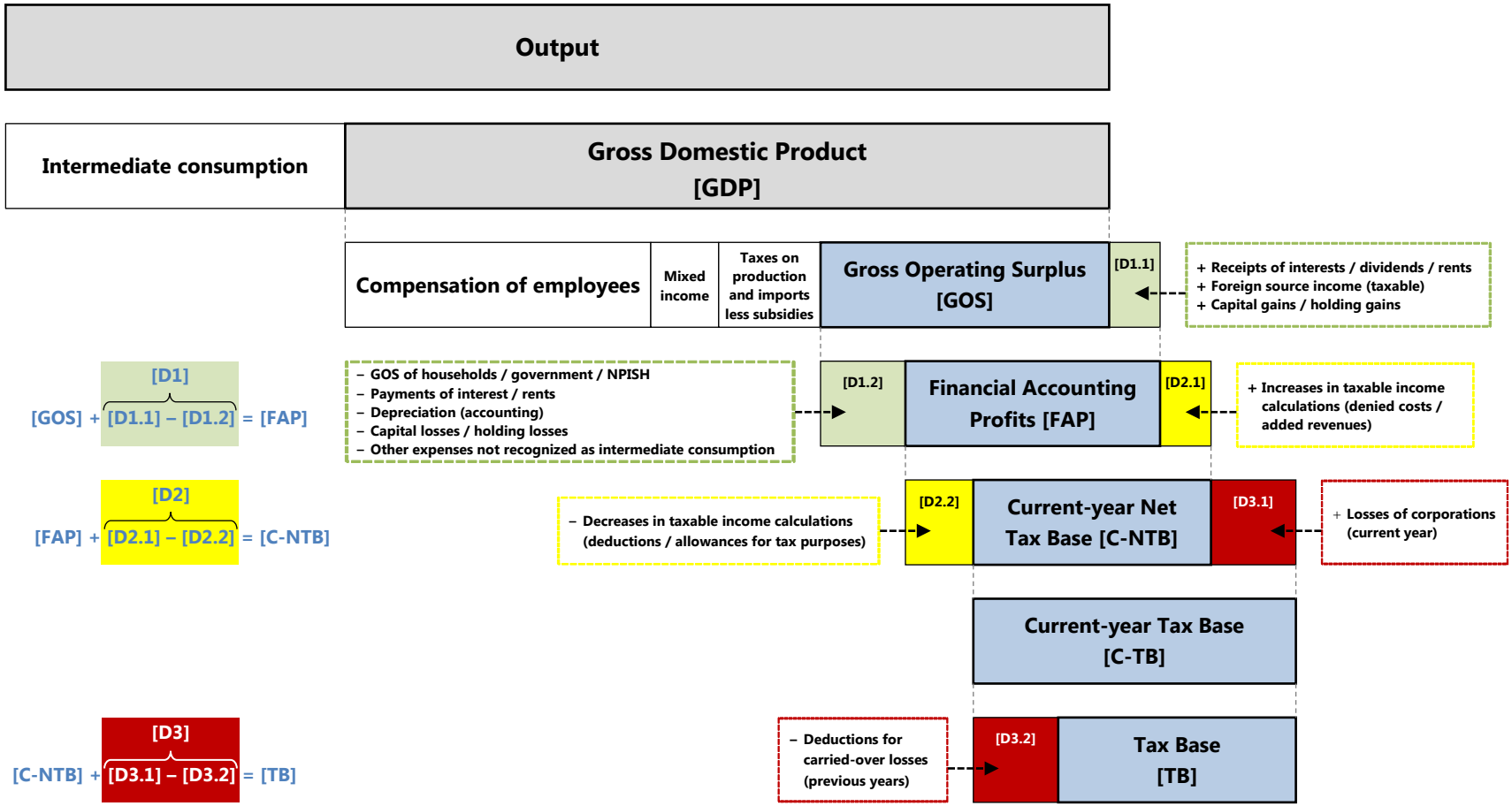
**56. Gross operating surplus (GOS) of corporations in national accounts is an appropriate starting point to estimate the potential CIT base in a country.** GOS of corporations shows the magnitude of domestically generated value-added by corporations that is not allocated to employees through compensations or to governments through taxes on production and imports. Therefore, it is conceptually close to EBITDA (Earnings before interest, tax, depreciation and amortization) of domestic corporations.

**57. To estimate potential CIT base, several conceptual differences between the tax base (TB) and GOS need to be considered.** They are shown in Figure 25, categorized into three types:

- differences between GOS in national accounts and aggregate financial accounting profit (FAP) of CIT taxpayers,
- differences between aggregate FAP and aggregate current year net tax base (C-NTB), and
- differences between aggregate C-NTB and aggregate TB, which takes into account current year losses and effects of carried-over losses.

[25] See BCCR, 2016.

## Figure 25. Theoretical Relationship between GOS and CIT Tax Base




Source: RA-GAP analytical framework for CIT gap.

**58. The differences between GOS and FAP come from conceptual differences in the calculation methods for operating surplus and accounting results.** GOS is calculated from output by subtracting intermediate consumption (IC), compensation of employees (COE), taxes on production and imports minus subsidies of corporations, while FAP is calculated as the difference between revenues/incomes and expenses/costs. For instance, if there are any conceptual differences between output in national accounts and revenues/incomes in financial accounting, adjustments are needed to reflect such differences. Typical examples are receipts of interest, dividends, and rent from land and natural resource, which are not recorded as output in national accounts.

**59. The differences between FAP and C-NTB come from mandatory adjustments made to financial accounting profits in calculating the tax base for CIT.** There may be both positive and negative adjustments, reflecting non-taxable incomes/revenues and non-deductible costs/expenses. They are declared in CIT returns by taxpayers.

**60. The differences between C-NTB and TB come from asymmetric treatments for positive tax base (profit) and negative tax base (loss) in calculating the tax base for CIT.** Corporations are not allowed to claim direct reimbursement for losses arising in a tax period; they need to carry over losses, and deduct carried-over losses from profits in later tax periods. Therefore, the CIT base before deducting the carried-over losses (C-TB) should be calculated from aggregating positive taxable incomes created by profit-making corporations during the tax period. Meanwhile, GOS, FAP, and C-NTB are aggregated values considering both profits and losses, and the current losses have already been offset. Therefore, C-TB needs to be derived by adding back the absolute value of aggregate losses recorded in a current year to C-NTB.

**61. By deducting the amount of carried-over loss from the potential C-TB (gross) to the extent that the CIT legislation allows, the potential tax base (TB) is derived.** The potential CIT liability is estimated by multiplying it by CIT statutory rates and adjusting tax credits and additional liabilities which have not been considered in the calculation of the tax base.

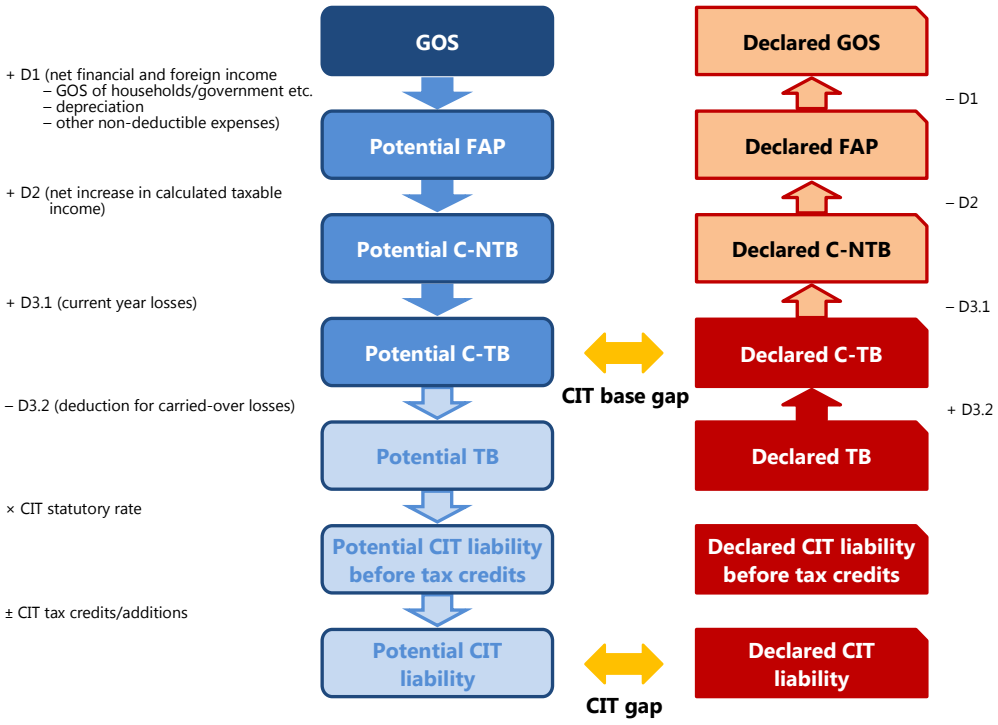
## Concept of the Gap

**62. The procedures to estimate the potential CIT base and liability is summarized in Figure 26.** Several measures show the potential CIT base and liability (*potential measures*) on the left-hand side in Figure 26, starting from the GOS in the national accounts. They can be compared with the measures that are built on the actual declared values by taxpayers (*declared measures*) on the right-hand side in Figure 26. As primary measures for CIT compliance, two indicators are adopted in the RA-GAP framework; *CIT base gap*, calculated as the difference between potential C-TB and declared C-TB, and *CIT gap*, calculated as the difference between potential CIT liability and declared CIT liability.[26]

[26] In most countries, the level of the CIT base gap to the potential base is smaller than the level of the CIT gap to the potential liability because the potential and actual CIT bases used in the CIT base gap calculation are before deducting carried-over losses and tax credits.

**63. The RA-GAP framework proposes to use not only the CIT gap, but also the CIT base gap to understand the trend and changes in taxpayers' noncompliance.** The CIT gap is expected to show the relative magnitude of the effects of underreported taxable income to the potential tax liability for each year. However, the CIT gap has deficiency in detecting yearly changes of taxpayers' compliance because the potential tax base and liability is affected by deductions for carried-over losses. Even if underreported incomes and economic activities are the same from year to year, the calculated CIT gap can fluctuate due to the size of deductions for carried-over losses from previous years. Therefore, to understand the effects of underreported incomes for each year, it is necessary to see the yearly changes in the CIT base gap.

**Figure 26. RA-GAP Framework for CIT Gap**




Source: RA-GAP analytical framework for CIT gap.

**64. It should be noted that the top-down estimates for CIT gaps do not try to directly measure tax avoidance or BEPS (base erosion and profit shifting) of corporations.** The estimated gap does not show how much national income, that should have been sourced in a country, are transferred to other countries by legal means because such activities are usually reflected in national accounts data as well.[27]

[27] See OECD, 2015 in detail.

## Scope of CIT Gap Estimation

**65. It is important to determine the appropriate scope of the CIT gap analysis, especially the target segments.** The reasonable scope depends on the coverage of CIT legislation for business entities, and availability of detailed data. Then appropriate GOS data should be retrieved from national accounts, while adjusting GOS by subtracting incomes of entities exempted from CIT.

**66. In this report, the CIT gap analysis in Costa Rica focused on non-financial corporations (S11).**[28] This was because estimating the potential CIT base by using national accounts data is more difficult due to some complications for financial corporations (S12), general government (S13), and non-profit institutions (S15). For financial corporations, the economic value-added calculated as the financial intermediation services (FISIM) and the net insurance premiums can be significantly different from their taxable incomes reflecting capital gains/losses and changes in financial reserves, and therefore more careful treatments are needed to apply the top-down approach to provide appropriate estimates.[29] For general government and non-profit institutions, there is no sufficient data to specify taxable entities and quantify taxable incomes of public entities classified in S13 and non-profit institutions classified in S15.[30]

**67. In addition, the analysis in this report excluded corporations operating in the free trade zones (FTZ).** There is a wide range of corporate tax incentives given to them, including exemptions of profits from CIT.[31] It is naturally expected that compliance in declaring profits and CIT liabilities would be different between FTZ corporations and corporations subject to CIT, so separate analyses would be desirable.[32] Because the national accounts data and CIT declaration data distinguish FTZ corporations (under 'Regímenes Especiales') from others, it is possible to exclude them. This report therefore focuses on measuring non-compliance of non-financial corporations without FTZ corporations.

**68. The estimation period of the CIT gap analysis was set to be from 2012 to 2015 based on availability of national accounts data.** Data on gross operating surplus (GOS) and property incomes of non-financial corporations are available only from 2012 to 2015.

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[28] In accordance with the international standard defined by the System of National Accounts (SNA 2008), any domestic economic entities engaging in transactions with other entities are classified into five institutional sectors, labelled S11 to S15: (S11) Non-financial corporations; (S12) Financial corporations; (S13) General government; (S14) Households; (S15) Non-profit institutions serving households (NPISH).

[29] The aggregate CIT liabilities of financial corporations account for 12-15 percent of the total CIT liability during the period.

[30] Gross operating surplus recorded in households (S14) is imputed rents for owner-occupied dwelling. Because they are not subject to tax, they should not be considered in estimating potential base of CIT in Costa Rica.

[31] See section I and OECD, 2017, Chapter 2.

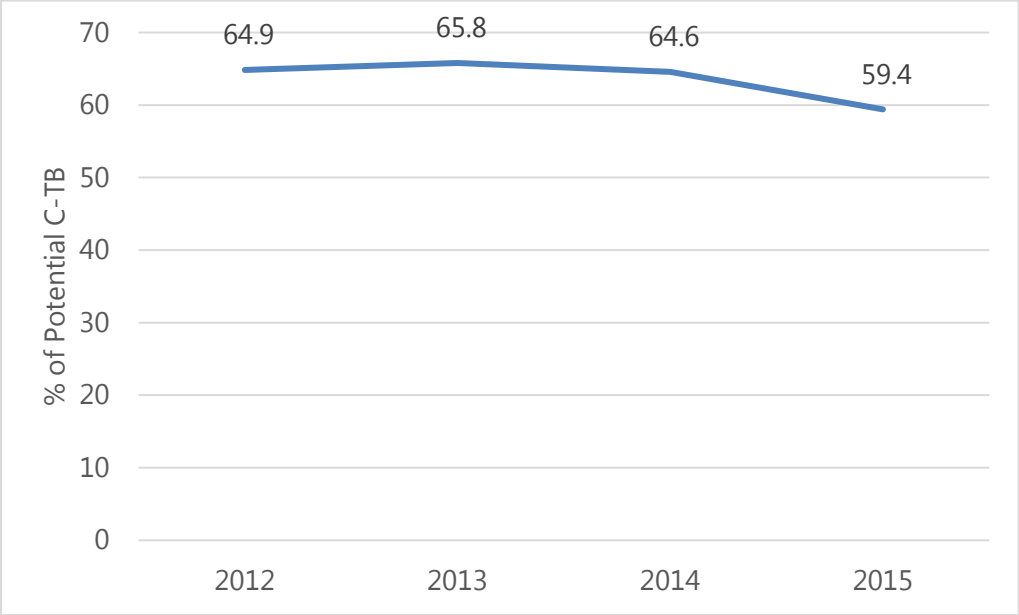
[32] It is understood that firms in the free zones differ in many aspects from firms that mainly produce for the domestic market in terms of employment of skilled workers, wages, ownership and investment. See Saborío, 2015.

## B. Estimation of CIT Base Gap and CIT Gap

### Estimates of CIT gaps

**69. The estimated CIT base gap for non-financial corporations slightly decreased from 2012 to 2015 (Figure 27)**. It was 65 percent of potential base in 2012, and decreased to 59 percent in 2015. A decrease of the gap in 2015 may be a result of introducing a withholding mechanism, although it needs further analyses to quantify its impact.

**Figure 27. CIT Base Gaps**

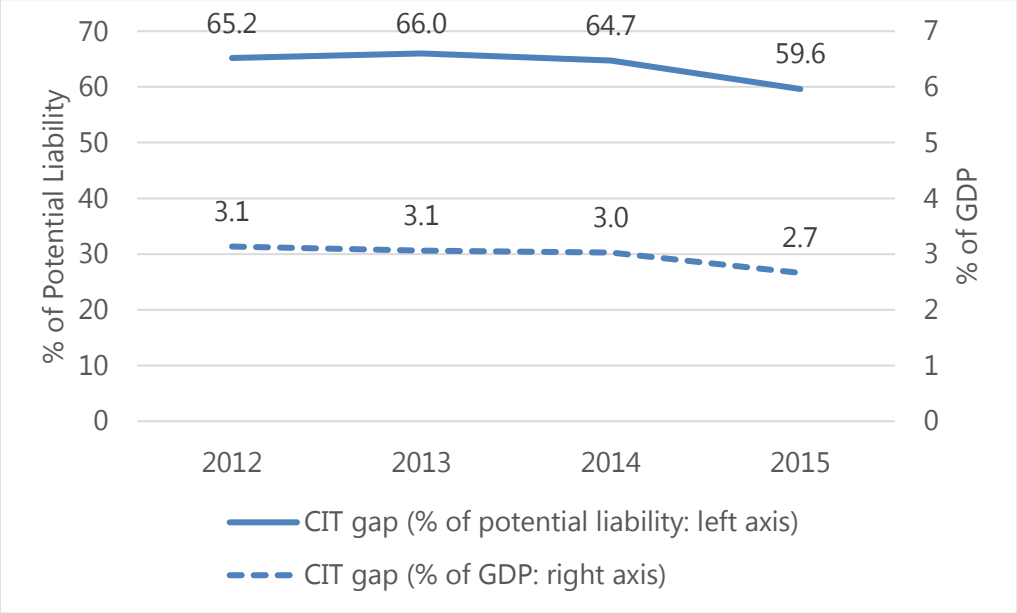



Source: Staff calculations.

**70. The estimated level of the CIT gap was equivalent to 2.7–3.1 percent of GDP during the period (Figure 28).** The CIT gap relative to potential CIT liability follows the base gap closely because the share of deductions for carried-over losses on tax bases are very small due to the tight restrictions on carrying losses forward in Costa Rica. Because the estimated CIT gap in this report is for only non-financial corporations excluding the FTZ corporations, the level of the gap cannot be compared with the level of the CIT gap estimated by the MOF for the period between 2010 and 2013, using data for all corporations.[33]

[33] Brockmeyer and Hernandez, 2016, estimated the compliance gap for CIT using third-party information collected from reported business transactions (D151) and withholding (D150 and D153), and resulted in 19 percent of declared CIT liability being underdeclared in 2012. This is a part of the overall non-compliance verified by the third-party information. The estimated CIT gap in this report was much larger than the verified part, which suggests that the non-compliance unverified by the third-party information would be also large.

**Figure 28. CIT Gaps**




Source: Staff calculations.

## Potential Measures

**71. Every step for estimating the potential CIT base and liability by using national accounts and tax return data (D101) is shown in Table 2.** The data used in each step and relevant technical issues are described in the following paragraphs.

### *Scope of the analysis*

**72. To exclude the effects of the FTZ corporations, the GOS for 'Regímenes Especiales' (RE) was subtracted from the total GOS of non-financial corporations.** According to national accounts data, the GOS for RE accounts for 8.1-8.7 percent of the total GOS of non-financial corporations during the period.

### *Differences between GOS and FAP*

**73. Receipts and payments of property incomes were considered to adjust GOS to FAP.** The receipts of property incomes include interest, distributed income of corporations (dividends), other investment income, and rent, and the payments of property incomes include interest and rent. The data for aggregate receipts and payments of property incomes by non-financial corporations were retrieved from national accounts data.[34]

[34] To keep consistency with the GOS calculation, receipts and payments of interest should not include any margin that represents an implicit payment for the services (FISIM) provided by the financial service providers in providing loans. Operating surplus is calculated by considering FISIM; financial corporations are deemed to produce financial services (FISIM) when providing loans and deposits, and purchases of FISIM by other sectors are treated as intermediate consumptions.

**74. Depreciation is one of the major sources of the conceptual differences between GOS and FAP.** Because national accounts in Costa Rica provide aggregate data on consumption of fixed capital (CFC) based on the historical cost, it was assumed that the CFC represent annual depreciation of assets for corporations.

**75. Some other adjustments need to be made to estimate potential FAP.** Net payments of current and capital transfers, other current taxes, and social benefits were subtracted with an assumption that they consist of net expenses to calculate financial accounting profit of corporations. R&D expenses were also subtracted because they are not recognized as intermediate consumption, while most of them are recognized as immediate cost to calculate financial accounting profit.[35] Because the CIT system in Costa Rica follows territorial principle, no adjustments are made for foreign source incomes to estimate potential FAP and tax base.

### *Differences between FAP and C-NTB*

**76. The difference between potential FAP and net current-year taxable incomes (C-NTB) was estimated by using declared non-taxable incomes and non-deductible costs in D101.** Non-taxable incomes to be subtracted from potential FAP consist of a part of interest, dividends, and others, and they were estimated from a data set of declared non-taxable incomes by large corporations.[36] In addition, the amount of deemed profit of corporations under the simplified regime was subtracted to exclude small taxpayers from the analysis.[37]

### *Differences between C-NTB and TB*

**77. The estimated potential C-NTB needs to be converted to the current-year potential tax base (C-TB) by adding aggregate current year losses.** Because there is no other reliable data on the aggregate losses of corporations or the distribution of corporate incomes in Costa Rica, it was necessary to rely on tax return data to quantify the aggregate current year losses.

**78. The potential tax base was calculated by deducting carried-over losses.** Because data on deductions for carried-over losses are only available for large corporations, it was assumed that the ratio of carried-over losses to taxable income for smaller corporations is the same as the large corporations.

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[35] In addition, it was assumed that other deductions for allowances or reserves, which are not recognized as intermediate consumption, could be estimated from declared non-deductible costs of corporation.

[36] Declared non-taxable incomes (C34 of D101) include effects of returns and discounts, which have been already reflected in the estimation of GOS. So, the effects of returns and discounts were excluded by using the data for large corporations.

[37] The deemed profit was calculated by dividing the tax liability of corporations under the simplified regime by 10 percent rate applied to the small corporations.

### *Potential CIT liability*

**79. The potential CIT liability was calculated from the potential CIT base multiplied by the effective CIT rate.** Because there are three different CIT rates depending on the amounts of sales, an effective average rate was calculated by taking the ratio of aggregate declared CIT liability before considering tax credits to aggregate declared taxable income for each year.[38] Finally, aggregate CIT credit was subtracted by using data on declared CIT credits, and the potential CIT liability was calculated.

**80. Potential CIT liability was estimated to be between 4.5 percent and 4.8 percent of GDP during the period (Table 2).** The estimated potential base (C-NTB) decreased from 18.2 percent of GDP in 2012 to 16.8 percent of GDP in 2015, which was in line with a decline of the ratio of GOS to GDP during the period (Figure 29).

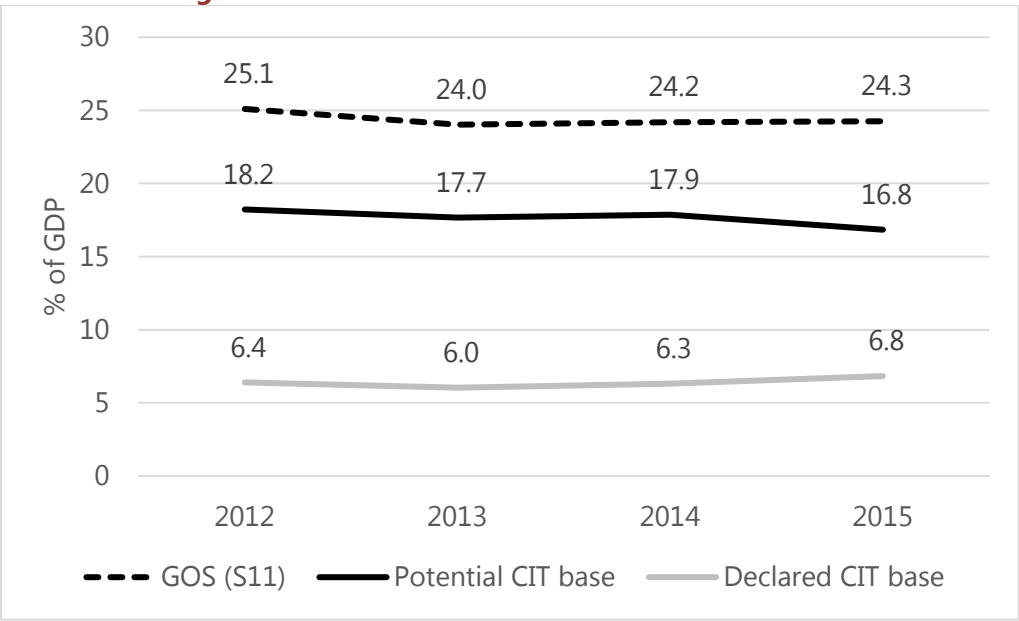
[38] This assumed that individual tax returns use appropriate CIT rates based on their sales. However, a recent research pointed out that firms around the thresholds for the differentiated CIT rates are adjusting declared sales to stay below the thresholds (Bachas and Soto, 2017). This means that the calculation of the effective rate may underestimate the potential CIT liability.

## Table 2. Steps for Estimating Potential CIT Base and Liability, % of GDP

| | Year | | | |
|---|---|---|---|---|
| | 2012 | 2013 | 2014 | 2015 |
| Gross operating surplus (S11) | 25.1 | 24.0 | 24.2 | 24.3 |
| [-] Gross operating surplus for Regímenes Especiales | 2.0 | 1.9 | 2.0 | 2.1 |
| Gross operating surplus for Régimen Definitivo | 23.1 | 22.1 | 22.2 | 22.2 |
| [+] Net receipts of property incomes | 0.3 | 1.3 | 1.2 | 0.8 |
| [-] Depreciations | 4.3 | 4.2 | 4.0 | 4.0 |
| [-] Other net payments of transfers and net deductions | 3.8 | 3.5 | 3.9 | 4.7 |
| Potential FAP | 15.3 | 15.6 | 15.5 | 14.3 |
| [+] Non-deductible costs | 1.5 | 1.4 | 1.4 | 2.0 |
| [-] Non-taxable incomes | 2.5 | 1.9 | 2.2 | 2.1 |
| [-] Profit under simplified regime | 0.0 | 0.0 | 0.0 | 0.0 |
| Potential C-NTB | 14.2 | 15.1 | 14.6 | 14.2 |
| [+] Current year loss | 4.0 | 2.6 | 3.2 | 2.6 |
| Potential C-TB | 18.2 | 17.7 | 17.9 | 16.8 |
| [-] Deduction for carried over loss | 0.1 | 0.1 | 0.0 | 0.1 |
| Potential TB | 18.1 | 17.6 | 17.8 | 16.8 |
| [x] Effective CIT rate to TB | 27.7% | 27.6% | 27.6% | 27.7% |
| Potential CIT liability before subtracting tax credits | 5.0 | 4.9 | 4.9 | 4.7 |
| [-] Tax credits | 0.2 | 0.2 | 0.2 | 0.2 |
| Potential CIT liability | 4.8 | 4.6 | 4.7 | 4.5 |

Source: Staff calculations.

**Figure 29. Potential CIT Base and Declared CIT Base**




Source: Staff calculations.

## Actual Measures

**81. A panel dataset of tax returns for anonymized CIT taxpayers was prepared for the period from 2012 to 2016 by the MOF.** The dataset contains comprehensive CIT return data following declaration forms for each specific year. The actual CIT base and liability were retrieved from the dataset, excluding financial corporations, governmental entities, and the FTZ corporations for each year.[39]

**82. The aggregate declared value of the current year CIT base has increased from 6.4 percent of GDP in 2012 to 6.8 percent in 2015 (Figure 29).** The aggregate CIT liability for the corporations increased from 1.7 percent of GDP in 2012 to 1.9 percent in 2015, which grew faster than the CIT base.

**83. It should be noted that the declared CIT base and liability for a year does not perfectly match with economic activities during a calendar year.** The ideal measures for declared CIT base and liability should be the ones arising from economic activities in a calendar year because potential base is calculated for a calendar year based on national accounts. However, as discussed in Section I, the tax period for most Costa Rican taxpayers deviate from the calendar year, and follows the normal financial year starting in October and ending in September.

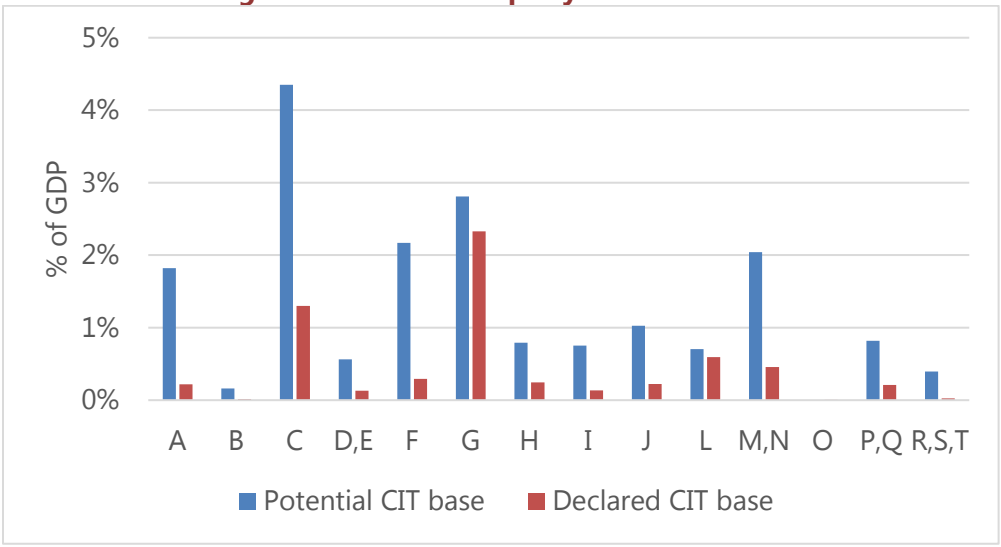
[39] Classification of taxpayers into institutional sectors (S11-15) followed information provided by the BCCR. Because information on the classification for institutional sectors (S11-15) was not perfectly available for individual taxpayers, it was assumed that taxpayers without information of institutional sector classification by the BCCR be included in S11.

## Sector CIT Base Gaps

**84. Annual GOS data for economic activities are published by the BCCR, and potential CIT base for each sector can be estimated by using the data.** However, some of the data necessary to adjust GOS to CIT base and liability, such as property incomes and transfers, are not provided for each economic activity. Therefore, the estimation for sector CIT base and liability needs several assumptions for the allocation of the items, and the estimated results below at the sector level should be used with great caution.

**85. The comparison between the estimated potential CIT base by sectors and the declared CIT base by sectors shows large gaps in most sectors in 2012 (Figure 30).** In particular, the gaps were large relative to GDP in manufacturing (C), construction (F), Agriculture, Forestry and Fishery (A), and business services (M, N). It should be noted, however, that the estimated sector gaps may have some errors and biases because the sector classification of potential CIT base and the declared CIT base are not perfectly consistent due to several reasons discussed for the sector GST compliance gaps.[40]

**Figure 30. CIT Base Gaps by Sectors in 2012**




| | | | | | |
|---|---|---|---|---|---|
| A | Agriculture, forestry, fishing | H | Transportation | O | Public administration |
| B | Mining | I | Hotels, restaurants | P | Education |
| C | Manufacturing | J | Information, communications | Q | Health |
| D | Electricity, gas | K | Financial services | R | Recreational services |
| E | Water, sewerage | L | Real estate | S | Other personal services |
| F | Construction | M | Professional services | T | Activities of households |
| G | Trade | N | Administrative, support services | | |

Source: Staff calculations.

[40] To keep consistency of sector classification between national accounts and tax registration, it is necessary to reallocate actual liability based on activities of business establishments; for example, it is necessary to reallocate partial liability from trade sector (G) to manufacturing sector (C) for business establishments that should be classified into sector C, although the primary activity of the whole corporation is sector G. It would result in higher gap in trade sector (G) and lower gap in manufacturing sector (C).

## Possible Sources of Errors for Estimation of CIT Gaps

**86. Possible sources of errors for the estimated overall and sector CIT gaps are the following:**

- **Issues for national accounts data:** As discussed for GST, the potential base and liability are estimated on the assumption that national accounts data fully capture all the economic activities, including transactions and transfers of incomes subject to tax. If national accounts underestimate them for some reasons, such as underestimation of non-observed economic activities or missing income transfers, CIT gaps will also be underestimated. Further, past national accounts data are subject to revisions, which inevitably result in revisions of the estimated CIT gaps.

- **Estimation of potential measures by using tax return data:** Adjustments using Some adjustments in calculating potential tax base and liability were made by using tax return data, especially for non-taxable incomes, non-deductible costs, losses, and tax credits, with an assumption that there is no difference between their real values and the declared values. However, there are incentives for taxpayers to declare values that reduce their tax liabilities. Therefore, these factors are likely to create systematic biases in the estimated potential CIT base and liability causing the gap estimate to be too low.

- **Limitation of data for mitigating conceptual differences:** Because only large corporations submit D101 tax return with detailed items, some of the adjustments were estimated by using the data on large corporations, such as for non-taxable incomes (interest and dividends), non-deductible costs and deductions for carried-over losses. Also, there is no detailed information about the contents of non-taxable incomes and non-deductible costs, and therefore the adjustments from GOS to FAP could not rely on detailed components of such incomes and costs. They may cause unquantifiable biases in the estimation of potential CIT base and liability.

- **Sector classification of tax return data:** because information on the classification for institutional sectors (S11-15) was not perfectly available for all individual taxpayers, the exclusion of entities classified into S12-S15 would not be perfect. Also, possible different classifications for economic activities between national accounts data and taxpayers' registration data due to multi-sector operations by large business entities may result in biases for the sector CIT gaps.

- **Differences for a period:** while the potential CIT base and liability are based on GOS and other statistical data for calendar year *t*, most of CIT tax return data for year *t* contain data reflecting economic activities from October in year *t-1* to September in year *t*.

# V. ISSUES ON CIT GAP ESTIMATION

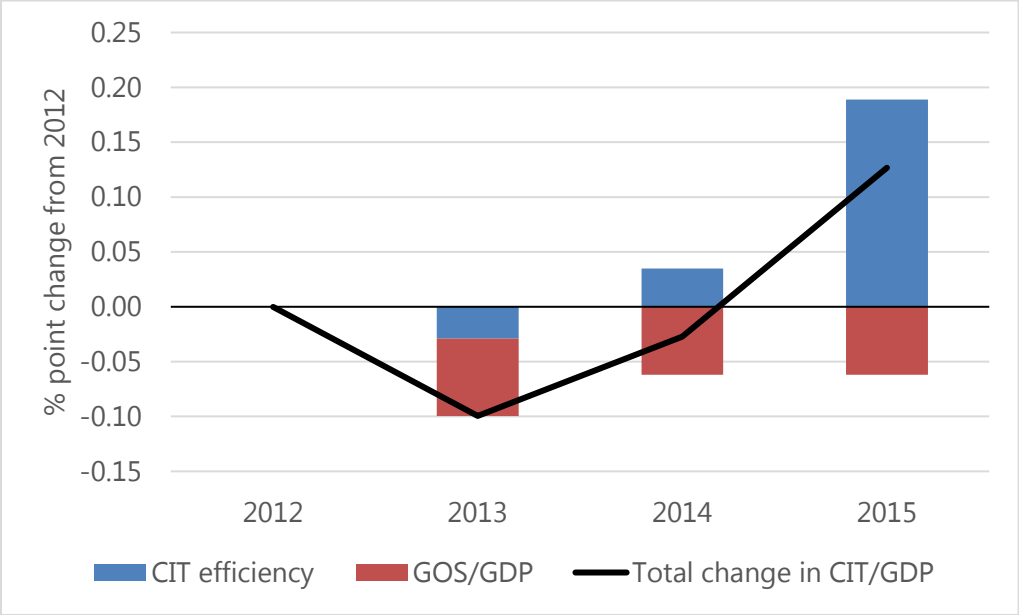
## A. Analysis of CIT Revenue Performance

**87. The estimates for the CIT gaps can provide deeper insight about the overall CIT revenue performance.** The yearly changes in the ratio of the actual CIT revenue to GDP can be decomposed into three factors; the changes in the CIT statutory rate ($\tau^{CIT}$), the ratio of gross operating surplus (GOS) to GDP, and the CIT-efficiency ratio. It follows the identity below:

$$\frac{CIT}{GDP} = \frac{CIT}{GOS} \times \frac{GOS}{GDP}$$
$$= \tau^{CIT} \times \frac{GOS}{GDP} \times \left[ \frac{AC}{\tau^{CIT} \times GOS} \right]$$

**88. The recent movement of the CIT liability for non-financial corporations (S11) can be explained by both the CIT-efficiency and the GOS-GDP ratio (Figure 31).** In 2013, the decline of both the CIT-efficiency and the GOS-GDP ratio resulted in lower CIT liability relative to GDP. Since 2014, an increase in CIT efficiency ratio for S11 contributed to the increase in the CIT liability relative to GDP. The CIT-efficiency ratio for S11 increased from 21.9 percent in 2013 to 24.8 percent in 2015.

**Figure 31. Changes in CIT Liability of S11 to GDP Ratio from 2012**



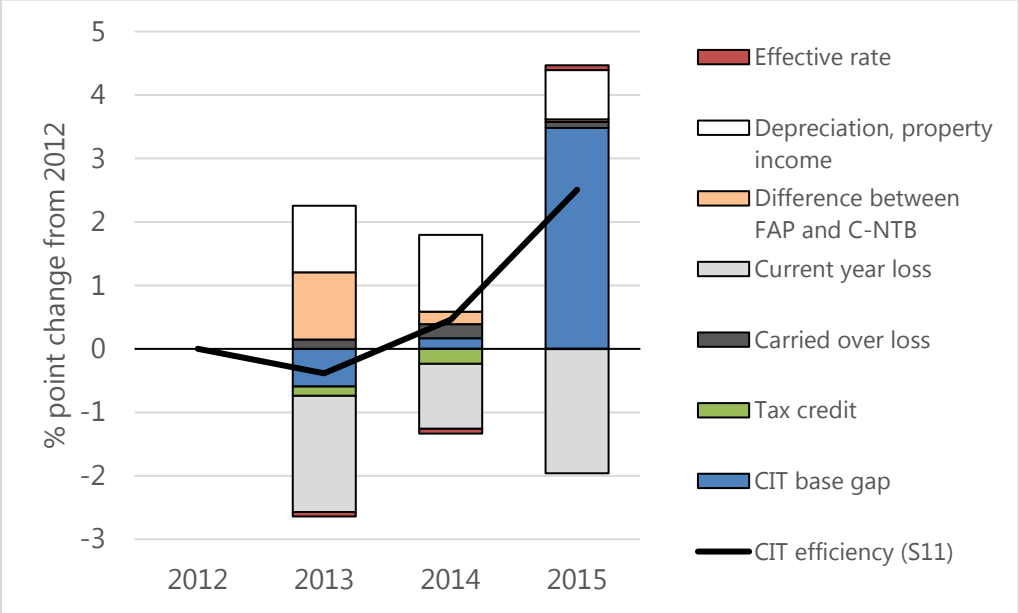

Source: Staff calculations.

**89. Yearly changes in the CIT-efficiency ratio can be further decomposed into several factors.** They include the effects of changes in:

[1] CIT base gap (smaller gap results in higher efficiency).
[2] Property incomes and depreciation (smaller differences between GOS and FAP mean higher efficiency).
[3] Deductions for carried-over losses (smaller deductions mean higher efficiency).
[4] Current year losses (larger current losses mean higher efficiency[41]).
[5] Differences between FAP and C-NTB (smaller differences mean higher efficiency).
[6] Tax credits (smaller tax credits mean higher efficiency).
[7] Effective rate (larger effective rates mean higher efficiency).

**90. The recent increase in the CIT-efficiency ratio is mainly attributable to a decrease in the CIT base gap (Figure 32).** Other positive contributions to the CIT-efficiency ratio comes from smaller differences between GOS and FAP, due to smaller depreciation and net payments of property incomes, and from smaller differences between FAP and C-NTB, due to smaller non-taxable incomes. A decrease in current year losses and an increase in tax credit negatively contributed to the CIT-efficiency ratio. The effective CIT rate has been stable and not affecting the CIT-efficiency ratio.

**Figure 32. Changes in CIT-Efficiency Ratio of S11 from 2012**




Source: Staff calculations.

[41] This is because the smaller losses mean the smaller gross taxable income for the same amount of net taxable income.

## B. Recommendations for Improving CIT Gap Analysis

**91. The MOF has published its own estimates for CIT gaps since 2014.** The recent publication in December 2015 was for the period from 2010 to 2013, using a top-down approach, covering all the corporations subject to CIT.[42] It used aggregate net operating surplus (NOS) in national accounts data, and subtracted declared non-taxable incomes and tax expenditures for CIT to estimate the potential CIT liability. The estimated liability was compared with the declared CIT liability.

**92. It is recommended to adopt the RA-GAP methodology, using updated national accounts data to estimate CIT gaps.** Because of the update of the national accounts data, it is necessary to use the recently published integrated economic table to estimate potential CIT base and liability. In addition, further adjustments proposed in the RA-GAP model will improve the estimation for the potential CIT base/liability and the CIT gaps.

**93. Limiting the scope to non-financial corporations (S11) will make the analysis more focused and unaffected by possible sources of biases.** Considering the technical difficulties in estimating CIT base and liability from national accounts data for financial corporations, it is more straightforward to estimate CIT gaps for non-financial corporations.[43] Also, the conceptual differences between operating surplus and taxable base are significant for entities classified into general governments (S13) and non-profit institutions (S15).[44]

**94. As discussed for the GST compliance gaps, detailed analyses of sector gaps should support better compliance management.** It is recommended to compare the top-down estimates of the compliance gap using the RA-GAP model with internal knowledge and information about taxpayers' compliance. In addition, for CIT, a bottom-up approach to estimate gaps by using results of random/operational audits for specific segments will provide valuable complementary information to the top-down estimates. They are expected to contribute to strengthening the links between the gap analysis and operational compliance risk management in the tax administration.

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[42] See Ministerio de Hacienda, 2015.

[43] Because the number of financial corporations are limited, and most large financial corporations are subject to regular audits, using the results of operational audits would be better approach to quantify the CIT gaps for them.

[44] Gross operating surplus recorded in households (S14) is imputed rents for owner-occupied dwelling. Because this is not subject to tax, it should not be included as a potential base of CIT.

### *Issues on potential CIT base and liability*

**95. To improve the accuracy of the analysis, it is desirable to perfectly identify institutional sectors (S11-S15) for individual taxpayers.** Because the institutional classification for economic entities is determined by the BCCR, further collaboration between the MOF and the BCCR is recommended to achieve consistent information.

**96. Further data and analyses on the conceptual differences between GOS and taxable income will improve the estimation of potential CIT base/liability and CIT gaps.** Especially, more detailed information about the contents of non-taxable incomes and non-deductible costs for all the corporations will contribute to appropriately quantifying the necessary adjustments.

**97. In addition, there are several technical issues to be noted by the MOF.** Further analysis of the distribution of taxable income and current year losses would be beneficial, especially for many continuously loss-making corporations. In addition, having better data on deductions for carried-over losses will be helpful to analyze the differences between current-year tax base and tax base.

### *Issues on actual CIT declarations*

**98. To understand the CIT revenue performance, it is recommended to further analyze the relationship between CIT declarations and CIT cash collections.** The analysis should consider: the source of differences between cash collections and declared CIT liability, including arrears (the collection gaps); the effects of differences between fiscal year and calendar year; the differences in timing of the declarations and the payments; and the effects of offsetting of collected advance payments and withheld amounts to other tax liabilities.

**99. It is necessary to seek consistency of classifications for economic activities between national accounts and revenue administration.** It will help improve the sector gap analysis by having more consistent data between potential CIT base/liability and declared CIT base/liability.

# Appendix I. Data Tables for Included Figures

### Data for Figures 1 and 14. Potential GST Revenues and GST Gaps, % of GDP

| Year | PV-R | PV-C | Net accrued GST |
|---|---|---|---|
| 2012 | 10.2 | 6.4 | 4.6 |
| 2013 | 10.3 | 6.2 | 4.5 |
| 2014 | 10.3 | 6.3 | 4.4 |
| 2015 | 10.1 | 6.2 | 4.3 |
| 2016 | 10.0 | 6.2 | 4.3 |

### Data for Figures 2 and 15. Compliance Gaps for GST in Costa Rica

| Year | Compliance gap (% of PV-C; left axis) | Compliance gap (% of GDP; right axis) |
|---|---|---|
| 2012 | 29.1 | 1.9 |
| 2013 | 27.9 | 1.7 |
| 2014 | 31.3 | 2.0 |
| 2015 | 31.1 | 1.9 |
| 2016 | 31.1 | 1.9 |

### Data for Figures 3 and 18. GST Compliance Gaps by Sectors, % of GDP

| Sector | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| A | 0.03% | 0.03% | 0.05% | 0.05% | 0.04% |
| B | 0.07% | 0.06% | 0.06% | 0.06% | 0.06% |
| C | 0.78% | 0.76% | 0.82% | 0.79% | 0.78% |
| D, E, J | 0.00% | -0.05% | 0.05% | 0.07% | 0.08% |
| F | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| G | 0.60% | 0.57% | 0.56% | 0.48% | 0.44% |
| H | 0.01% | 0.01% | 0.00% | 0.01% | 0.01% |
| I | 0.44% | 0.44% | 0.44% | 0.43% | 0.41% |
| K | 0.00% | 0.01% | 0.01% | 0.01% | 0.01% |
| L | 0.00% | -0.01% | -0.01% | -0.01% | -0.01% |
| M, N | 0.04% | 0.03% | 0.04% | 0.04% | 0.04% |
| O | 0.00% | 0.00% | 0.00% | 0.01% | 0.01% |
| P, Q | 0.04% | 0.05% | 0.05% | 0.05% | 0.05% |
| R, S, T | 0.07% | 0.07% | 0.07% | 0.08% | 0.08% |

### Data for Figures 4 and 20. Policy Gaps for GST in Costa Rica

| Year | Policy gap (% of PV-R; left axis) | Policy gap (% of GDP; right axis) | Expenditure gap (% of GDP; right axis) |
|---|---|---|---|
| 2012 | 37.0 | 3.8 | 2.9 |
| 2013 | 39.9 | 4.1 | 3.3 |
| 2014 | 38.4 | 3.9 | 3.2 |
| 2015 | 38.4 | 3.9 | 3.2 |
| 2016 | 38.2 | 3.8 | 3.3 |

### Data for Figures 5 and 28. CIT Gaps in Costa Rica

| Year | CIT gap (% of potential liability: left axis) | CIT gap (% of GDP: right axis) |
|---|---|---|
| 2012 | 65.2 | 3.1 |
| 2013 | 66.0 | 3.1 |
| 2014 | 64.7 | 3.0 |
| 2015 | 59.6 | 2.7 |

### Data for Figures 6 and 29. Potential CIT Base and Declared CIT Base, % of GDP

| Year | GOS (S11) | Potential CIT base | Declared CIT base |
|---|---|---|---|
| 2012 | 25.1 | 18.2 | 6.4 |
| 2013 | 24.0 | 17.7 | 6.0 |
| 2014 | 24.2 | 17.9 | 6.3 |
| 2015 | 24.3 | 16.8 | 6.8 |

### Data for Figure 7. GST Revenues to GDP Ratio, % of GDP

| Year | Import GST | Domestic GST | Total GST Revenue |
|---|---|---|---|
| 2000 | 2.8 | 2.0 | 4.8 |
| 2001 | 2.6 | 2.5 | 5.1 |
| 2002 | 2.6 | 2.5 | 5.0 |
| 2003 | 2.6 | 2.3 | 4.8 |
| 2004 | 2.4 | 2.5 | 4.9 |
| 2005 | 2.6 | 2.5 | 5.1 |
| 2006 | 2.8 | 2.7 | 5.4 |
| 2007 | 3.0 | 2.8 | 5.8 |
| 2008 | 3.1 | 2.7 | 5.8 |
| 2009 | 2.2 | 2.6 | 4.7 |
| 2010 | 2.2 | 2.5 | 4.7 |
| 2011 | 2.4 | 2.5 | 4.8 |
| 2012 | 2.3 | 2.5 | 4.8 |
| 2013 | 2.2 | 2.5 | 4.7 |
| 2014 | 2.3 | 2.4 | 4.7 |
| 2015 | 2.2 | 2.4 | 4.6 |
| 2016 | 2.2 | 2.4 | 4.5 |

## Data for Figure 8. C-Efficiency Ratio in Costa Rica

| Year | C-Efficiency Ratio (%) |
|---|---|
| 2000 | 49.5 |
| 2001 | 52.5 |
| 2002 | 50.0 |
| 2003 | 47.6 |
| 2004 | 49.0 |
| 2005 | 50.1 |
| 2006 | 54.5 |
| 2007 | 58.4 |
| 2008 | 57.2 |
| 2009 | 47.2 |
| 2010 | 46.6 |
| 2011 | 46.9 |
| 2012 | 47.1 |
| 2013 | 45.9 |
| 2014 | 45.3 |
| 2015 | 45.1 |
| 2016 | 45.4 |

## Data for Figure 9. C-Efficiency Ratio in Latin American and Caribbean Countries

| Country | C-Efficiency Ratio (%) |
|---|---|
| Paraguay | 88.0 |
| Venezuela | 86.6 |
| Ecuador | 77.5 |
| Belize | 71.5 |
| Panama | 68.1 |
| Dominica | 67.7 |
| Barbados | 67.5 |
| Chile | 63.5 |
| Peru | 58.2 |
| Brazil | 57.4 |
| El Salvador | 55.3 |
| Honduras | 51.8 |
| Grenada | 51.6 |
| Uruguay | 51.5 |
| Nicaragua | 49.5 |
| Jamaica | 48.6 |
| Guatemala | 46.4 |
| Argentina | 46.3 |
| Costa Rica | 45.8 |
| Colombia | 43.6 |
| St. Lucia | 42.0 |
| St. Kitts and Nevis | 38.8 |
| Trinidad and Tobago | 36.3 |
| Guyana | 34.4 |
| Dominican Republic | 32.1 |
| Antigua and Barbuda | 30.9 |
| Mexico | 30.4 |

## Data for Figure 10. Net Accrued Collections of GST, % of GDP

| Year | Net Accrued Collections of GST | Total GST Revenue |
|---|---|---|
| 2012 | 4.6 | 4.8 |
| 2013 | 4.5 | 4.7 |
| 2014 | 4.4 | 4.7 |
| 2015 | 4.3 | 4.6 |
| 2016 | 4.3 | 4.5 |

## Data for Figure 11. CIT Revenues to GDP Ratio, % of GDP

| Year | CIT Revenues |
|---|---|
| 2006 | 2.4 |
| 2007 | 2.5 |
| 2008 | 3.0 |
| 2009 | 2.5 |
| 2010 | 2.3 |
| 2011 | 2.3 |
| 2012 | 2.0 |
| 2013 | 2.2 |
| 2014 | 2.1 |
| 2015 | 2.3 |
| 2016 | 2.4 |

## Data for Figure 12. CIT Productivity in Latin American and Caribbean Countries

| Country | CIT Productivity (%) |
|---|---|
| Paraguay | 0.244 |
| Bolivia | 0.216 |
| Colombia | 0.205 |
| Chile | 0.203 |
| Nicaragua | 0.156 |
| Suriname | 0.153 |
| Uruguay | 0.153 |
| Guyana | 0.145 |
| Peru | 0.122 |
| Honduras | 0.119 |
| Brazil | 0.117 |
| Panama | 0.112 |
| Dominica | 0.100 |
| Guatemala | 0.097 |
| Barbados | 0.094 |
| Jamaica | 0.094 |
| Argentina | 0.091 |
| Mexico | 0.085 |
| El Salvador | 0.080 |
| Costa Rica | 0.075 |
| Dominican Republic | 0.074 |
| St. Lucia | 0.073 |
| St. Kitts and Nevis | 0.059 |
| Antigua and Barbuda | 0.050 |
| Venezuela | 0.018 |

### Data for Figure 13. CIT Revenue and CIT Liability (D101), % of GDP

| Year | CIT Liability (D101) | CIT (MOF) |
|---|---|---|
| 2012 | 2.0 | 2.0 |
| 2013 | 1.8 | 2.2 |
| 2014 | 1.9 | 2.1 |
| 2015 | 2.1 | 2.3 |
| 2016 | 2.3 | 2.4 |

### Data for Figure 16. Potential GST Revenues by Sectors, % of GDP

| Sector | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| A | 0.04% | 0.03% | 0.05% | 0.05% | 0.04% |
| B | 0.07% | 0.07% | 0.07% | 0.07% | 0.07% |
| C | 1.77% | 1.68% | 1.70% | 1.61% | 1.57% |
| D, E | 0.16% | 0.17% | 0.17% | 0.15% | 0.13% |
| F | 0.04% | 0.04% | 0.05% | 0.05% | 0.05% |
| G | 2.77% | 2.70% | 2.68% | 2.68% | 2.68% |
| H | 0.08% | 0.08% | 0.09% | 0.09% | 0.08% |
| I | 0.72% | 0.72% | 0.73% | 0.74% | 0.73% |
| J | 0.47% | 0.45% | 0.49% | 0.50% | 0.52% |
| K | 0.13% | 0.14% | 0.14% | 0.14% | 0.16% |
| L | 0.03% | 0.02% | 0.01% | 0.01% | 0.01% |
| M, N | 0.09% | 0.08% | 0.09% | 0.09% | 0.09% |
| O | 0.01% | 0.01% | 0.01% | 0.01% | 0.02% |
| P, Q | 0.05% | 0.06% | 0.05% | 0.06% | 0.06% |
| R, S, T | 0.09% | 0.09% | 0.09% | 0.10% | 0.10% |

## Data for Figure 17. Actual GST Revenues by Sectors, % of GDP

| Sector | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| A | 0.01% | 0.00% | 0.00% | 0.00% | 0.00% |
| B | 0.00% | 0.01% | 0.01% | 0.01% | 0.01% |
| C | 0.99% | 0.93% | 0.88% | 0.82% | 0.79% |
| D, E | 0.52% | 0.53% | 0.46% | 0.40% | 0.38% |
| F | 0.04% | 0.04% | 0.04% | 0.05% | 0.05% |
| G | 2.17% | 2.14% | 2.12% | 2.20% | 2.24% |
| H | 0.07% | 0.07% | 0.09% | 0.07% | 0.08% |
| I | 0.28% | 0.28% | 0.29% | 0.30% | 0.32% |
| J | 0.11% | 0.14% | 0.15% | 0.17% | 0.19% |
| K | 0.13% | 0.13% | 0.13% | 0.13% | 0.14% |
| L | 0.03% | 0.03% | 0.02% | 0.02% | 0.02% |
| M, N | 0.05% | 0.05% | 0.05% | 0.05% | 0.05% |
| O | 0.01% | 0.01% | 0.01% | 0.01% | 0.01% |
| P, Q | 0.01% | 0.01% | 0.01% | 0.01% | 0.01% |
| R, S, T | 0.02% | 0.02% | 0.02% | 0.02% | 0.02% |

## Data for Figure 19. GST Compliance Gaps Relative to Domestic Potential Revenues by Sectors, % of PV-C

| Sector | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| C | 60.7% | 60.8% | 65.7% | 63.9% | 64.9% |
| G | 49.7% | 48.0% | 50.0% | 43.5% | 41.9% |
| I | 61.5% | 61.3% | 60.2% | 58.8% | 56.4% |

## Data for Figure 21. Decomposition of GST Policy Gap, % of GDP

| Year | PV-R | PV-R2 | PV-C |
|---|---|---|---|
| 2012 | 10.2 | 9.4 | 6.4 |
| 2013 | 10.3 | 9.6 | 6.2 |
| 2014 | 10.3 | 9.6 | 6.3 |
| 2015 | 10.1 | 9.6 | 6.2 |
| 2016 | 10.0 | 9.6 | 6.2 |

### Data for Figure 22. Potential GST Revenues $PV^{R2}$ by Sectors, % of GDP

| Sector | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| A | 0.19% | 0.15% | 0.11% | 0.17% | 0.17% |
| B | 0.04% | 0.05% | 0.04% | 0.04% | 0.04% |
| C | 1.68% | 1.63% | 1.57% | 1.34% | 1.29% |
| D, E | 0.27% | 0.41% | 0.36% | 0.32% | 0.31% |
| F | 0.59% | 0.52% | 0.56% | 0.57% | 0.51% |
| G | 2.99% | 2.97% | 2.92% | 2.99% | 3.01% |
| H | 0.59% | 0.60% | 0.65% | 0.56% | 0.53% |
| I | 0.34% | 0.38% | 0.38% | 0.40% | 0.41% |
| J | 0.31% | 0.36% | 0.41% | 0.38% | 0.40% |
| K | 0.33% | 0.29% | 0.28% | 0.31% | 0.35% |
| L | 0.13% | 0.17% | 0.23% | 0.23% | 0.23% |
| M, N | 1.28% | 1.32% | 1.36% | 1.42% | 1.50% |
| O | 0.05% | 0.06% | 0.05% | 0.05% | 0.06% |
| P, Q | 0.47% | 0.53% | 0.57% | 0.60% | 0.60% |
| R, S, T | 0.18% | 0.17% | 0.17% | 0.18% | 0.19% |

### Data for Figure 23. Changes in GST Revenues to GDP Ratio from 2012, % point change from 2012

| Year | C-efficiency | FC/GDP | Total change in VAT/GDP |
|---|---|---|---|
| 2012 | - | - | - |
| 2013 | -0.11 | 0.04 | -0.07 |
| 2014 | -0.18 | 0.03 | -0.15 |
| 2015 | -0.20 | -0.04 | -0.24 |
| 2016 | -0.17 | -0.09 | -0.26 |

### Data for Figure 24. Changes in C-Efficiency Ratio from 2012, % point change from 2012

| Year | Change in compliance gap | Change in expenditure gap | Change in non-taxable gap | Change in cash/accrual difference | Total change in C-efficiency |
|---|---|---|---|---|---|
| 2012 | - | - | - | - | - |
| 2013 | 0.81 | -2.65 | 0.41 | 0.32 | -1.12 |
| 2014 | -1.42 | -1.72 | 0.66 | 0.67 | -1.81 |
| 2015 | -1.33 | -2.13 | 1.04 | 0.43 | -2.00 |
| 2016 | -1.29 | -2.55 | 1.63 | 0.56 | -1.65 |

### Data for Figure 27. CIT Base Gaps

| Year | CIT base gap |
|---|---|
| 2012 | 64.9 |
| 2013 | 65.8 |
| 2014 | 64.6 |
| 2015 | 59.4 |

### Data for Figure 30. CIT Base Gaps by Sectors in 2012, % of GDP

| Sector | Potential CIT base | Declared CIT base |
|---|---|---|
| A | 1.82% | 0.22% |
| B | 0.16% | 0.01% |
| C | 4.35% | 1.30% |
| D, E | 0.56% | 0.13% |
| F | 2.17% | 0.29% |
| G | 2.81% | 2.33% |
| H | 0.79% | 0.25% |
| I | 0.75% | 0.13% |
| J | 1.03% | 0.22% |
| L | 0.71% | 0.59% |
| M, N | 2.04% | 0.46% |
| O | 0.00% | 0.00% |
| P, Q | 0.82% | 0.21% |
| R, S, T | 0.39% | 0.03% |

### Data for Figure 31. Changes in CIT Liability of S11 to GDP Ratio from 2012, % point change from 2012

| Year | CIT efficiency | GOS/GDP | Total change in CIT/GDP |
|---|---|---|---|
| 2012 | - | - | - |
| 2013 | -0.03 | -0.07 | -0.10 |
| 2014 | 0.03 | -0.06 | -0.03 |
| 2015 | 0.19 | -0.06 | 0.13 |

### Data for Figure 32. Changes in CIT-Efficiency Ratio of S11 from 2012, % point change from 2012

| Year | Effective rate | Depreciation, property income | Difference between FAP and TB | Current year loss | Carried over loss | Tax credit | CIT base gap | CIT efficiency (S11) |
|---|---|---|---|---|---|---|---|---|
| 2012 | - | - | - | - | - | - | - | - |
| 2013 | -0.07 | 1.05 | 1.06 | -1.83 | 0.15 | -0.15 | -0.59 | -0.39 |
| 2014 | -0.07 | 1.21 | 0.19 | -1.03 | 0.22 | -0.24 | 0.17 | 0.46 |
| 2015 | 0.08 | 0.78 | 0.04 | -1.96 | 0.10 | 0.00 | 3.48 | 2.51 |

# Appendix II. Application of RA-GAP Model to Costa Rica

## A. RA-GAP Model for Potential GST Revenues

Potential GST revenues ($PV^C$, $PV^{R2}$) were estimated from a model of the GST base using statistical data and policy parameters reflecting current/normative GST legislation in Costa Rica. The RA-GAP model is designed to estimate the taxable base for individual sectors by considering taxable imports and domestic output, less input tax credits applicable to intermediate consumption and capital formation.

The values of imports, outputs, and intermediate consumption by individual sectors for specific commodities were retrieved from supply and use tables (SUT) and import matrices, provided by the BCCR for the period 2012 to 2015. Aggregate purchases of capital goods (gross fixed capital formation) for specific commodities were allocated to individual sectors by using an allocation made by the BCCR for 2012.[45] Aggregate exports and changes in inventories for specific commodities were allocated to individual sectors by using the ratios of production and imports by sectors.

By applying policy parameters regarding GST rate, exemptions, and zero-rating for specific commodities and individual sectors, potential GST revenues were calculated from 2012 to 2015. The estimated potential revenues aggregated to 15 sectors in 2015 were extrapolated to 2016 by using growth of value-added, imports, and exports of these sectors as well as aggregate growth of capital formation from 2015 to 2016.

### GST rate

In calculating $PV^C$, a standard rate of 13 percent was applied to taxable goods and services, except for woods and electricity for residence to which reduced rates of 10 and 5 percent respectively was applied for the period. An effective rate for trade margin (trade service provided by wholesalers and retailers) was calculated by taking a weighted average of taxable and non-taxable goods with trade margin.

In calculating $PV^{R2}$, a standard rate of 13 percent was applied to all the taxable goods and services.

### GST exemptions and zero-rating for specific commodities

In calculating $PV^C$, a list of exemptions and zero-rating for imports and domestic sales for specific commodities was made to reflect policies by matching individual treatments of exemption and zero-rating, stipulated in the GST Law and Regulation, with commodity headings under SUT classification. If a commodity heading of SUT may include sub-headings which are both taxable

[45] See Saborío et al., 2016.

and exempted/zero-rated, a ratio of zero-rating and exemption for the SUT heading was set from a ratio of zero-rated or exempted imports from the Customs data and other available information.

In calculating $PV^{R2}$, only financial services (NP146, NP147, NP148), rent for residential property (NP153), non-market output and output for own final use (output of AE086UF, AE087UF, AE088UF, AE109UF, AE114UF, AE136, AE086NM, AE114NM, AE124, AE125, AE126, AE127NM, AE128NM, AE130NM), and fuels (NP073, NP074, NP075) were set to be exempted from GST.

### GST taxable ratio for individual sectors

In calculating $PV^{C}$, it was assumed that any activities by all the sectors except for the ones classified into the special regime for free trade zone (Regímenes Especiales) were fully taxable.

In calculating $PV^{R2}$, it was assumed that all the sectors are fully taxable.

### Restrictions on input tax credits

In calculating $PV^{C}$, creditable ratios for purchase of specific goods and services by individual sectors were set by following the Article 14 of the GST Law, and considering the characteristics of transactions.

In calculating $PV^{R2}$, it was assumed that any purchases of taxable goods/services are fully creditable.

### GST exemptions for specific purchasers

In calculating $PV^{C}$, aggregate values of GST exemptions for specific purchasers stipulated by other laws were subtracted from the potential GST revenue estimated from the RA-GAP model. These values were retrieved from the tax expenditure report provided by the MOF ('*Exenciones Compras Locales Concretas*' and '*Exenciones Compras Locales Genéricas*').

## B. Data Used in the RA-GAP Model

### Data for estimating potential revenues of GST and CIT

- Supply and use tables, 2012-2015 (BCCR; downloaded in August 2017)
- Import matrices, 2012-2015 (BCCR; provided in August 2017)
- Integrated economic accounts, 2012-2015 (BCCR; downloaded in August 2017)
- National accounts of Costa Rica 2012-2016, base year 2012 (BCCR; downloaded in August 2017)
- Balance of payments data, 2010-2016 (BCCR; downloaded in June 2017)
- Imports and exports data, 2012-2016 (MOF; provided in August 2017)

- Direct purchases in the national territory by non-residents 2012-2015 (BCCR; provided in October 2017)

### Actual GST and CIT revenues and declaration data

- Total Revenue of Central Government (INGRESOS TOTALES DEL GOBIERNO CENTRAL), 1990 – 2016, http://www.hacienda.go.cr/contenido/12840-detalle-de-los-principales-ingresos-del-gobierno-central, downloaded in September, 2017
- GST declaration data (D104) 2012-2016 (MOF; provided in August 2017)
- CIT declaration data (D101) 2012-2016 (MOF; provided in August 2017)
- Total GST and CIT revenues from the simplified regime 2012-2016 (MOF; provided in August 2017)
- Import GST data 2012-2016 (MOF; provided in August 2017)

# Appendix III. Tax Expenditure Report and Non-compliance Report Published by MOF

## Tax expenditure report

Since 2010, the MOF has published an annual tax expenditure report. The latest report published in August 2017, covers the period from 2010 to 2016. It presents estimates of revenue foregone for main taxes with several components. The average tax expenditure for the period 2010–2016 is estimated to be 5.09 percent of GDP in total.

The report presents the legal basis for the different exemptions, reduced rates, credits, and other special tax provisions. It also explains the methodology adopted for the estimates, and describe data sources.

**Table 3. Tax expenditures in Costa Rica, % of GDP**

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|
| GST | 2.94 | 2.97 | 3.04 | 3.13 | 2.90 | 2.83 | 2.89 |
| CIT | 0.80 | 0.70 | 0.77 | 0.77 | 0.80 | 0.75 | 1.15 |
| Other incomes | 0.96 | 1.00 | 0.99 | 1.10 | 1.07 | 1.04 | 1.05 |
| Others | 0.32 | 0.34 | 0.30 | 0.28 | 0.26 | 0.26 | 0.25 |
| Total | 5.02 | 5.01 | 5.10 | 5.28 | 5.03 | 4.88 | 5.34 |

Source: Ministerio de Hacienda, 2017.

## Non-compliance report

The MOF published its first compliance gap report in 2014, and more recent in December 2015, covering the period from 2010 to 2013. It covers GST, CIT and PIT, following a top-down approach.

**Table 4. Non-compliance Ratio in Costa Rica, % of GDP**

| | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|
| GST | 2.36 | 2.30 | 2.31 | 2.36 |
| CIT | 4.33 | 4.18 | 4.06 | 4.23 |
| PIT | 1.52 | 1.50 | 1.44 | 1.63 |

Source: Ministerio de Hacienda, 2015.

### *GST gap*

Supply and use tables and household expenditure's survey data are used to calculate potential tax base. Potential tax base considers taxable final consumption and intermediate consumption not entitled to claim input tax credit, i.e. destined to the production of exempted goods or not "physically incorporated" neither "directly used" into the production/rendering of taxable goods/services. Adjustments are made to add non-resident's consumption on the territory and

subtract potential taxable base associated to the simplified GST regime. Cash collection is used as actual collection for the estimate of the compliance gap.

### *CIT gap*

Starting with GDP figures, different categories of gross value-added are subtracted to get a net operating surplus. Then, additional adjustments are made to estimate potential liability. The adjustments involve correcting for: deductions of carried-over losses from previous periods, other non-taxable incomes, non-deductible costs, and the effects of different exempt regimes. Declared CIT liability is used as actual collection in estimating the gap.

### *PIT gap*

Household expenditure's survey data are used to calculate potential tax base and liability, considering wages and salaries for labor income and mixed-income for business income, corrected for underreporting factors provided by the INEC (Institute of National Statistics and Census). Also, pension and other retirement incomes are added, and adjustments are made to subtract non-taxable income and reflect tax allowances and family credits. Cash collection is used as actual collection to estimate the gap.

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