

GUIDELINES FOR THE APPRAISAL OF TAX INCENTIVES IN MADAGASCAR

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ABSTRACT

This document provides a comprehensive analysis of tax incentives in Madagascar, offering policy recommendations to enhance efficiency, revenue generation, and economic growth. It examines key tax components, including excise taxes, the Value-Added Tax (VAT), trade taxes, and corporate tax incentives, identifying inefficiencies and proposing reforms to streamline administration and improve fiscal outcomes.

The report highlights the need to simplify Madagascar's excise tax system by narrowing the taxable goods range, reducing compliance costs, and improving public welfare. It also addresses VAT inefficiencies, noting that the country's 359 exemptions undermine revenue potential and complicate tax administration. Recommendations include reducing unnecessary exemptions and enhancing compliance to boost fiscal sustainability. In trade taxation, the document advocates for optimizing import tariffs by eliminating excessive exemptions, thereby strengthening industrial growth and export competitiveness. Corporate tax incentives are assessed through Cost-Benefit Analysis (CBA) to ensure they generate genuine investment expansion and economic benefits. Additionally, the report emphasizes prioritizing public sector investments for climate resilience over private sector tax incentives, advocating for international support to address climate challenges effectively.

By streamlining tax policies and aligning them with economic and social objectives, Madagascar can enhance revenue collection, promote sustainable investment, and strengthen climate resilience. These reforms will contribute to a more efficient, equitable, and growth-oriented tax system, supporting the country's long-term development goals.

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Executive Summary

This document provides comprehensive guidelines for evaluating various tax incentives in Madagascar. The goal is to assist policymakers in optimizing the nation's tax system to better align with economic and social objectives.

Excise taxes, a crucial component of modern tax systems, are designed to generate revenue and mitigate negative externalities from the consumption of goods like alcohol, tobacco, and motor fuels. However, Madagascar's current excise tax system is overly complex, with a broad range of taxable items and numerous exemptions. The document recommends simplifying the excise tax structure by focusing on a narrow range of goods. This refinement would enhance administrative efficiency, reduce compliance costs, and ensure that the excise tax system effectively contributes to public welfare and revenue generation.

The analysis of the Value-Added Tax (VAT) system highlights the significant impact of tax exemptions and reduced rates on revenue and household expenditures. Madagascar's VAT system includes 359 exemptions, complicating tax administration and reducing potential revenue. Particularly costly are the exemptions for agricultural inputs and the mining sector. To address these issues, the document suggests streamlining VAT exemptions and improving tax administration, which would enhance compliance and increase revenue.

Trade taxes, including import tariffs, are vital for revenue generation and economic policy. Madagascar employs a range of import tariffs, but the effectiveness of these taxes is compromised by numerous exemptions and administrative inefficiencies. The guidelines recommend optimizing the trade tax system by reducing inefficiencies and unnecessary exemptions. This would support industrial growth, export competitiveness, and fiscal stability, ultimately contributing to sustainable economic development.

Corporate tax incentives are designed to attract foreign investment, promote import substitution, and address market imperfections. We emphasize the importance of using Cost-Benefit Analysis (CBA) to evaluate the fiscal and economic impacts of tax incentives. Madagascar's generous tax incentives, such as low corporate tax rates and high debt financing allowances, may not effectively promote economic growth without careful structuring. The recommendations focus on ensuring that tax incentives yield significant economic benefits and lead to genuine investment expansion.

Addressing climate change resilience and mitigation is crucial for Madagascar. However, given the country's minimal contribution to global greenhouse gas emissions, the direct local benefits of unilateral climate actions are limited. The guidelines prioritize public sector investments for climate resilience over private sector tax incentives, emphasizing the need for international support and funding to achieve meaningful impact. This approach would ensure that resources are efficiently allocated to build resilience against climate change impacts.

We recommend streamlining and simplifying the tax incentive framework to reduce administrative burdens and enhance revenue collection. By aligning tax policies with strategic economic and social goals, Madagascar can ensure that incentives effectively promote investment and growth. Additionally, focusing on public sector investments for climate resilience, supported by robust tax revenue systems, will help build a sustainable and resilient economy. Implementing these guidelines will enable Madagascar to develop a more efficient, equitable, and effective tax system, fostering sustainable economic growth and enhancing public welfare.

1. Guidelines for Appraisal of Excise Tax Incentives in Madagascar

1.1. Introduction

Excise taxes are designed to be selective and strategic. They make up an important component of modern tax systems. These selected taxes primarily serve as an easy-to-administer source of revenue. They also serve as a policy tool to mitigate negative externalities associated with the consumption of specific goods and services. These taxes are typically imposed on a narrow range of goods with limited suppliers, such as alcoholic beverages, tobacco, motor fuel, and motor vehicles. Such commodities are easy to define and with a small number of producers or importers. The essence of a modern excise tax system lies in identifying goods that, even when high tax rates are levied on them, do not lead to significant economic welfare inefficiencies. Hence, the taxed goods should not have close substitutes, and hence, the responsiveness of the quantity demanded to a change in their retail prices is small.

Some of the excise taxes are designed to address the health externalities arising from the consumption of alcoholic beverages and the use of tobacco products. As most roads are not tolled, an excise tax on the purchase price of motor vehicles and the fuel they consume are ways to recover the costs of road construction and maintenance that are necessary for the efficient and safe operation of motor vehicles. In most modern tax systems, the number of commodities subject to excise tax is usually less than a dozen.

In Madagascar, the structure and application of excise taxes have shown significant room for optimization. According to 2021 data, the excise tax system covers an extensive list of taxable items accompanied by 107 exemptions. Such a wide-ranging set of excise taxes is not appropriate when there also exists a general system of value-added taxes covering most of these same items. The existence of such a list of excise taxes contradicts the principle of administrative efficiency and non-distortionary taxation, which is the inherent objective of a modern excise tax system. These exemptions not only complicate the administration of the tax regime but also increase the compliance costs imposed by businesses that are legally required to comply with the tax system. The recommendation for Madagascar is to refine the scope of excisable goods, limiting them to those that are not only easier to tax but also play a significant role in reducing the negative externalities associated with alcohol, tobacco, motor vehicles, and fuel. This strategic limitation would align the excise tax system with the broader goals of easy administration and substantial revenue generation without compromising public welfare.

Madagascar places a great deal of reliance on obtaining revenue via its indirect taxes, particularly excise taxes and VAT. In 2021, excise taxes contributed 23% of total tax revenues, while VAT constituted 46% of the total revenues collected.

As we delve deeper into the assessment of tax incentives in Madagascar, it is important to consider the various facets: the primary aim of maximizing tax revenue, the impact on the beneficiaries of the tax incentives, and how these incentives influence the quantity of economic externalities. This multifaceted examination helps in crafting policies that not only boost fiscal soundness but also promote societal well-being.

This guideline aims to provide an overview of how one can evaluate the impacts of the excise tax incentives in Madagascar and assess their impact on the economy, public health, and income distribution. Through a detailed analysis of the existing tax structure and strategic

recommendations, this document seeks to assist policymakers in refining the tax regime to better meet the nation's economic and social objectives.

1.2. Methodology for Analyzing Adjustments in Excise Tax Coverage and Rates

The key steps and considerations for the evaluation of proposed changes to the excise tax system:

1.2.1. Revenue Impact Analysis

Because excise tax rates are applied on selected commodities with rates that are specific to each commodity, then the first step in estimating the revenue impact of any proposed tax rate change is to obtain information on the current level of quantitative production of the commodity (the tax base of the item) and its sales price.

With the information on the initial level of the sales of the item, one can then evaluate how the change in the rate of tax applicable to the excisable commodity or service will affect the revenues from the specific commodity for the initial year. This involves two steps. The first step is to estimate the change in the revenues that will arise due to the change in the tax rates based on the existing size of the tax base. Second, one needs to estimate how the quantity of sales of the item will change because the change in the excise tax rate will cause the ultimate price of the item to change. For an increase in the tax rate, we would expect that the quantity sold would decrease. For a decrease in the rate of excise tax, then we would expect the quantity of the items sold would increase as the tax-inclusive price of the item would decrease. The responsiveness of the tax base to the change in the rates of excise taxes is determined by the own-price elasticity of demand for the excisable item, and the amount the price of the item is altered by the change in the excise tax rate.

The change in tax revenues due to the changes in the size of the tax base (the quantity of the item sold) would then be used to adjust the initial estimate of the change in the tax revenues as derived from the application of the tax rate change to the current size of the tax base. Of course, the impact of a change in tax revenues in any rate of excise tax will depend on the share of total expenditures in the economy being made on the item and on the price elasticity of demand for the item.

As a change in any rate or definition of the tax base for an excisable good is not only for one year, but it is also important to estimate how this change in tax policy will affect the revenue stream over time. To estimate the impact on the revenue stream over time, we need to consider two variables. The first variable is the income elasticity of demand for the item. Income elasticities of demand for specific excisable commodities can either be estimated from cross-section data obtained from household income and expenditure surveys of Madagascar or from the existing published literature where estimates of this parameter value have been estimated by other countries at a similar level of per capita.

The second key variable is to have a projection of the expected growth in the level of consumption of the country. Such projections for Madagascar are routinely prepared by the macroeconomic authorities in the country and by international agencies such as the

International Monetary Fund, the World Bank, and the African Development Bank as inputs into the current annual and intermediate budget horizon projections.

1.2.2. Consideration of Price Elasticity and Tax Administration

Understanding the magnitude of the own-price elasticity of demand for various taxed commodities is crucial, but it's also important to distinguish between the price elasticity of the quantity demanded of the item and the price elasticity of the tax base. This is a particularly important distinction in the context where tax evasion and smuggling are feasible. For example, increasing excise taxes on cigarettes might not only reduce the quantity demanded consumption but also prompt evasion behavior like smuggling, thereby affecting the actual taxable base differently than anticipated. In this situation, the increase in tax revenues for an increase in the tax rate might be much smaller than would be the case if the degree of evasion remained constant. Also, for reductions in the tax rate, the loss of tax revenues might be much smaller than anticipated. This divergence can lead to discrepancies between expected and actual changes in tax revenue, underscoring the importance of having an effective tax administration. A robust tax administration system is essential for maximizing revenue collection and compliance, reducing the likelihood of evasion, and ensuring the efficiency of tax collection.

1.2.3. Distribution of the Burden of Changes in Excise Tax Rates and Base Definitions

Such revenue projections of excise tax changes are usually carried out initially at the aggregate level of the total sales of the item in the country. However, the analysis can be extended to consider the impacts of the policy changes on the various income groups in society. These revenue impacts on the different income groups should be measured in two dimensions. First, it is important to know by income group the proportion of the change in tax revenues that is derived from each decile or quintile of households, when they are ranked according to the level of expenditures made by the household. This is asking how the revenue loss or tax expenditure of a tax preference is benefiting each of the groups of households in the economy.

The second way the distribution of the tax revenue changes can be assessed is by expressing these changes in tax revenues by each household expenditure group as a percentage of the total expenditures made on all goods and services by the group. This ratio is known as the progressivity or regressivity of the tax burden of the tax. If this tax ratio declines as the expenditure group of the household increases, then the tax becomes regressive. Alternatively, if this ratio falls as the expenditure group increases, it is a progressive tax.

A key database required to undertake this household incidence analysis is the household Income-Expenditure surveys that report household expenditures by commodity by each household in the survey. Such surveys are conducted by almost every country in the world. The data from these surveys allow us to identify consumer spending patterns on excisable goods across different expenditure quintiles. Begin by assessing how much each group of households grouped by expenditure decile or quintile spends on these goods. This information is crucial for understanding who buys what and how significant these expenditures are relative to their total household spending. This analysis helps determine which groups are more likely to consume taxed items and how tax changes affect each expenditure group.

1.2.4. Addressing Externalities through Excise Taxes and Considering Local Contexts

Excise taxes can be used to compensate and reduce the negative externalities associated with the consumption of some commodities. In most cases, excise taxes can internalize in the consumers' decision-making the costs inflicted on the individual or society at large that are associated with the consumption of such excisable commodities. This is particularly the case in sectors such as tobacco products, alcoholic beverages, and fossil fuels that affect public health and the environment. However, the implementation of such taxes must consider the unique economic and demographic contexts of each country (Tax Foundation, 2023). For Madagascar, a nation with a minimal contribution to global greenhouse gas (GHG) emissions due to its small share of the global population and economy, the direct benefits of reducing GHG emissions through local actions are proportionately small.

Thus, the imposition of excise taxes on all fossil fuels that is motivated exclusively at reducing global GHG emissions may not be economically justifiable for Madagascar alone, given the low income of the households in Madagascar who will be paying higher prices for transportation and other essential items. At the same time, the residents of Madagascar benefit very little from the reductions in GHG emissions that they spend resources on reducing. This statement is supported by studies by OECD and Tax Foundation on tax policies in low-income countries (OECD, 2020; Tax Foundation, 2023)

In contrast, an excise tax on kerosene in such a low-income country may be a progressive tax and is an easy tax to collect because the number of suppliers at the wholesale level is very few. Hence, regardless of whether a tax on kerosene will reduce the demand for the commodity and, therefore, reduce the amount of GHG, it might be a very good addition to the excise tax system. In general, a tax on motor fuels and kerosene can be justified because it will help offset the costs of motor transport on society through the need for funds to build roads to accommodate the vehicles and for the local pollution these fuels create (OECD, 2020; Tax Foundation, 2023). In summary, an excise tax on fossil fuels tends to raise substantial revenue, and the burden will largely fall on the higher-income groups in society. These are the reasons that should motivate taxing fossil fuels in low-income countries such as Madagascar.

Moreover, incentivizing the private sector in Madagascar to undertake GHG reduction efforts through tax incentives, for example, to generate electricity using solar panels rather than diesel generators, could lead to substantial economic inefficiencies. These activities may require large financial subsidies that, without significant external funding, could divert limited national resources away from critical areas of need such as health and education (OECD, 2020). Therefore, while excise taxes can be a powerful tool for aligning individual consumption with broader societal costs, their application must be tailored to local economic realities along with global equity considerations (Tax Foundation, 2023). For Madagascar, international support and subsidies may be necessary to make such environmental initiatives feasible and beneficial, allowing the nation to participate in global sustainability efforts without compromising its developmental priorities.

1.2.5. Monetizing the Negative Externalities from the Consumption of Excisable Items

In cases where the consumption of a commodity is associated with negative social externalities, it is important to develop estimates of the social costs that their consumption creates. Numerous estimates are available for many countries on the social health costs of tobacco use or the cost of automobile accidents and deaths caused by people driving under the influence of alcoholic beverages. Furthermore, the health costs of local pollution from the use of fossil fuels are also well documented. Such research on the quantification of the monetary value of social damages can be used through adjustment by benefit transfer techniques to Madagascar circumstances to derive monetary values for these social costs for Madagascar.

These estimates will allow policymakers to evaluate whether the levels of excise taxation of these harmful commodities are commensurate with the monetary values of damage created by their consumption. Furthermore, when considering the costs and benefits of reducing the taxes on such commodities, one needs to include the increase in the negative social externalities created by the change in the quantity demanded of these commodities that arise from the reduction in the tax rates.

1.2.6. Application to the Excise Tax System of Madagascar

Madagascar's excise tax system is far from being a modern excise tax system. A large number of goods and services are subject to excise taxation, along with an extensive list of 107 exemptions. It appears as a historical legacy of the government's fiscal system, where, in the past, revenue was raised through the application of a large number of excise taxes on specific goods and services. This was a similar situation in Nepal prior to 1995 when over 400 excise taxes were replaced by a single rate value-added tax system. Now that Madagascar also has a value-added tax system, this complex system of excise taxes and exemptions should be eliminated as it creates a tax system that is both difficult to administer and costly in terms of business compliance.

The purpose of a system of excise taxes is to tax a few easy-to-tax items at higher-than-normal tax rates and to do so in a politically acceptable manner. In most countries, this restricts the excise tax system from including a few items that fit this criterion. Hence, most of the excise tax revenue is generated by taxing a few items, such as vehicle fuels, tobacco products, and alcoholic beverages, whose consumption significantly affects public health and the environment.

The core issue lies in the broad scope of the exemptions. Such an expansive list suggests a misalignment with the foundational principles of excise taxation. Most of the exempted items could be more appropriately taxed under the general Value Added Tax (VAT) system and removed entirely from the excise tax legislation. The redundancy and overlap with VAT only add to the administrative burden and compliance costs, detracting from the potential simplicity and efficacy of the tax system.

Some excise tax exemptions in Madagascar represent the standard treatment by many countries—such as those for imported goods used personally by members of international staff or diplomatic vehicles. Another common exemption is for goods purchases through financing

provided by multilateral and bilateral international assistance. The objective should be to preserve exemptions that support diplomatic relations and international obligations while eliminating those that serve little economic or social purpose.

In light of these concerns, a strategic overhaul of the excise tax system is recommended. This reform should focus on limiting excisable goods to those that directly address public health and environmental concerns or are easy to tax due to their limited market and substantial externalities. Such a reformed system would enhance administrative efficiency, reduce compliance costs, and align more closely with global best practices.

Addressing these issues, it is crucial to recognize that excise taxes, when applied judiciously, play a vital role in moderating the consumption of harmful goods, thereby benefiting public welfare. For example, there is significant current encouragement for countries to tax the production process, which results in Green House Gases (GHG). This is known as a carbon tax. Thus, optimizing the system involves not only removing inefficient taxes but also enhancing the effectiveness of those that remain.

To conclude, the steps outlined in this report aim at a comprehensive reform of the excise tax system in Madagascar. By refining the scope of excisable goods and reducing unwarranted exemptions, the proposed measures seek to align the system with economic and social objectives more effectively. If these steps are implemented, they promise to streamline the excise tax system, bolster revenue generation, and eliminate most current excise taxes that burden the system with inefficiencies. Through these reforms, Madagascar can achieve a more balanced and effective tax structure that supports its development goals while ensuring fiscal sustainability.

2. Guidelines for the Appraisal of Tax Incentives in the VAT System

2.1. Objective of the Analysis

In undertaking a policy analysis of VAT tax incentives, there are three questions that need to be analyzed and addressed.

1. Can the industry compete in the international market if its intermediate inputs are subject to VAT taxation while the tax administration is unable to give prompt refunds?
2. Can the size and distribution of the cost of the tax expenditure across different households in society be justified as being a fair distribution of the burden of taxation?
3. Is the tax burden on households per unit of household expenditure of the tax measure under consideration affecting the income distribution of the country in a progressive or regressive manner?

The following note tries to outline a set of guidelines for analysts to follow in attempting to address these three questions.

The value-added tax (VAT) system in many countries has become the most important revenue source for their tax systems. With the introduction of the VAT system, a number of the traditional systems for taxation, such as excise taxes, turnover taxes, and taxes on international trade, were either replaced or greatly reduced in importance.

The most general form of VAT is administered on an invoice credit basis. This means that at each stage of the production process, the sales value of the items sold is subject to the rate of VAT. At the time of the sale, an invoice is issued by the supplier, from which the VAT paid on the sale can be found. The VAT value collected by the supplier on the sale of the item is remitted periodically to the government. However, the supplier is allowed to deduct all the VAT payments made during this period from the purchase of all the inputs used to produce the goods and services sold by the supplier.

In Madagascar, the standard rate of value-added tax is 20%, with a zero rate for exports. There is also a reduced rate of 5% on selected items, in particular locally produced butane gas. A large number of goods and services have been exempted from VAT.

Before considering specific types of incentives that can be given with respect to VAT, the array of what are normal or legal definitions of the value-added tax system applicable to the item in question is outlined below.

2.1.1. Classification of VAT Taxation: Four Possible Tax Credit Rules of VAT Taxation

- a. Final sales of a good or service are fully taxed. In this case, full credit is allowed for all taxes paid on inputs used to produce the item, including VAT paid on capital purchases of capital goods. If the amount due from the VAT charged to the customers on sales is larger than taxes paid on inputs, the difference is remitted by the registered taxpayer to the government. When the credits paid on inputs, including VAT on capital goods, during a taxable period are larger than the VAT that has been levied on the sales of the final output, then the government should refund the difference to the registered taxpayer.

- b. Final sales of a good under particular circumstances are taxed at a rate of zero, and at the same time, all taxes paid on inputs are credited against any tax due by the enterprise. When a substantial amount of final sales is zero-rated, usually exported goods, there is likely to be more input tax credits than taxes due on final sales in any taxable period. In this case, a refund should be issued immediately to the taxpayer's enterprise.
- c. Final sales of a good are exempt from value-added tax. When the final sales are exempt from the value-added tax, then any taxes paid on inputs cannot be refunded. In such a situation, if the exempt item is sold to another taxpayer who plans to use the item for resale, the taxes paid on the item at the first stage can never be used as a credit against VAT owed. If it is not being bought for resale, then the effective tax rate on the exempt item is determined by the amount of tax paid on the inputs purchased to produce it. Only if the item is exempt at the final stage before it is sold to a consumer will the VAT at that final stage escape from being subject to taxation.
- d. Value-added taxes levied on imports of taxable goods by customs can be credited against subsequent taxable sales of the item. If the imported item is used as an input in production, the VAT paid to Customs can be used as a credit against taxes owed from the sales of the final good. A refund should be given if the amount owed on the final sales of an enterprise is less than the taxes it paid during the period on the purchase of its inputs. If the domestic sale of the imported item is used as an input into the production and sale of an exempt product, then no credit is given for the VAT paid on the imported input.

2.1.2. Evaluation of Tax Incentives: VAT Tax Status of Item and VAT Tax Administration in Madagascar

While it would appear that the value-added tax system is subject to many tax preferences, in fact, many of the tax exemptions serve to accommodate a tax administration that is not able to administer the system for input credits in a manner that would allow the VAT tax system to operate efficiently. In Madagascar the amount of VAT paid on the purchase of inputs can be credited against VAT from the sales of output. If the output tax is not sufficient to offset the tax on inputs, then the difference is a VAT credit carried forward on the following monthly basis. However, only free zone companies, exporters, approved credit lessors, and companies making investments subject to VAT can claim a VAT refund on the outstanding balance of the input tax credits.

In the valuation of the benefits and costs of a tax incentive applied to a value-added good or service, we need to;

- First, determine the current legal tax status of the items, i.e., (1) the final sale of output is fully taxable; (2) the final sale exempt from tax is taxed at a lower rate; or (3) the final sale is zero-rated.
- Second, it must be determined if the tax administration allows the VAT tax credits paid on inputs (both intermediate inputs and capital goods) purchased either from local sources or imported to be fully deductible in the next VAT tax filing.

- Third, it should be found if the enterprise is in an excess tax credit position on a regular basis because the firm is producing goods for export.

2.1.3. Estimating the Revenue Impact of Tax Exemptions

In total there are 359 tax exemptions and other tax reductions introduced into the VAT system. Over 62 tax exemptions to the VAT have been given for the importation of medicines and also medical services. Over 150 of the value-added tax exemptions in Madagascar involve the importation of inputs used in the production of agriculture and other commodities in Madagascar. For these items, the VAT is not collected at the border. In terms of the value of the quantified tax expenditures, two of the costliest incentives are the exemption of the VAT on the importation and sale of rice and paddy and the exemption of inputs used by the mining sector.

A. Estimating Revenue Impacts of Exemption of Border VAT Border Taxation of Inputs and Capital Goods

The advantage of estimating the potential revenue impact of a VAT tax reduction of an imported item is that one has Customs import data by commodity for a recent period. Using this data for the quantity of imports of an item being considered, one can estimate the potential revenue loss or value of the tax expenditure from the exemption or lower rate. However, in some situations, the true revenue loss is much less than what one would find by simply multiplying the value of the goods imported by the change in the VAT rate applied to the item at the border.

Suppose the value-added tax was collected at the border, and the items were used in the production of goods that are sold domestically. In such a case, the tax would be used as a credit to reduce the taxes due on the domestic sale of the item. If the input is exempted from tax at the border, the enterprise should be remitting more to the government on its later sales of final goods or finished products. However, this is likely to result in a loss of revenue as the greater tax payments required at the final stage will likely result in a lower rate of tax compliance at the time of the final domestic sales. The amount of revenue loss will depend on the level of domestic compliance of the enterprises producing the final product with the tax-exempt imported input.

Alternatively, suppose the imported input is being used in the production of a good or service that is sold on the domestic market, and this final sale is also exempt from VAT taxation. In this situation the revenue loss from exempting the imported input from VAT will be equal to the full amount of the tax reduction at the border. Under the normal design of a value-added tax system, no input VAT credit would be allowed when the final good is tax-exempt. Hence, these input VAT taxes would have to be built into the sales price of the exempt items. If instead, when the imported inputs are exempt from taxation, there will be no possibility of any recapture of the VAT taxes that are exempted at the border at a later stage.

However, suppose the imported input is used to produce an item that is eventually exported. In this case, if VAT is not paid at the border, the amount of tax to be refunded when the product is exported will be lower by the same amount. In this case, if the imported item is exempted from VAT taxation at the border, the revenue loss is zero compared to an efficiently

administered system where refunds on input tax credits by zero-rated export producers are promptly refunded.

B. Revenue Implications of VAT Exemptions and Zero Rating for Exports

The revenue loss from exempting a domestic sale of a good or service is equal to the difference in the VAT that would have been paid on the sale of the output, less the amount of taxes paid on the inputs bought to produce this exempt item.

A major consideration that needs to be considered is that the compliance of small merchants in collecting VAT is typically quite low. Because of their informal nature and small volume of sales, the tax administration would not find it cost-effective to force them to follow the VAT law. Hence, even if goods and services are fully taxed in a legal sense, a considerable number of informal sales take place on which no VAT is collected. The revenue impact is like an item being exempted from the VAT at the retail level.

The compliance exemption of small informal businesses is especially important in the analysis of the income distribution of the VAT system. Low-income households tend to buy from informal retail merchants where the effective VAT rates on the goods are lower because of the exemption on the value added of the retailer.

Zero rating of export sales should not be considered a tax expenditure and does not result in a revenue loss if the VAT system is operated on the Destination principle. It is a specific provision exclusively reserved for export operations of goods and services. Under zero rating, VAT is not applied to the sale of exports, and the taxes paid on inputs used to produce these goods are refunded. This ensures that exports are free from the VAT burden while domestic sales remain subject to the standard VAT treatment.

2.1.4. Assessing the Incidence of the VAT Tax Incentives

The incidence or impact of VAT incentives is of two types. First, we should consider those border tax exemptions on inputs essential for the production of exports. If the refund system for zero-rated commodities is slow and often not transparent it will likely be impossible for exporters to operate without VAT and duty exemption on imported inputs. In studies of the impact of tax incentives of all types on export-oriented industries, the ability to obtain inputs tax-free is by far the most important policy requirement. This is why it is often required to set up duty-free export processing zones to achieve this policy outcome. Alternatively, a system of border duty exemptions or duty free factories might be implemented.

For consumer goods, the incidence of the tax exemptions and zero-rated commodities households in Madagascar, one needs to employ the consumption breakdown by household that is provided by the household income consumption survey. The effective tax rates need to be calculated both before and after-tax, and the incentive is potentially put in place. Each of the households is ranked by the level of their total consumption. Then, these two tax rates (without and with the tax incentive) are applied to the quantity of this commodity consumed by each of the households in the survey.

The results of this analysis can be expressed in two ways. First, in terms of the revenue impact on the different deciles or quintiles of households over the entire expenditure distributional ranking of the households. This informs policymakers of the distribution of cost or tax

expenditure across households. The policymakers can then assess whether the impact of this tax incentive or preference on the well-being of households is worth the financial cost to the government. The overwhelming evidence is that almost any tax expenditure that is targeted to reduce the cost of a consumption item will benefit the better-off household groups multiples of times more in absolute monetary terms than they benefit the poorer household groups in society. This is because the higher income households can afford to purchase much larger quantities of the item that is given the tax incentive.

Second, this tax impact of the VAT paid without and with the tax incentive can be expressed as a percentage of the total expenditure of each of the ranked household groups. If the change in tax collected increases as the level of total expenditures of the household increases, then we can conclude that the tax incentive has a progressive effect on the income distribution. If this ratio falls as the levels of total expenditure of the household groups increase, then this tax incentive can be viewed as being regressive.

2.1.5. The Hidden Costs of Tax Exemptions: A General Equilibrium Analysis

When a tax exemption is applied to one of two taxed commodities, X and Y, it significantly influences consumer behavior and market dynamics, similar to the effects seen with the imposition of taxes. However, the implications of a tax exemption can be particularly intricate, as they disrupt established market equilibria and can lead to unintended welfare costs.

Consider an exemption applied to Commodity X. This change not only lowers the cost of X relative to its previous taxed state but also shifts consumer preferences and spending behaviors, likely reducing the consumption of Commodity Y if they are substitutes. This shift can lead to a decrease in government revenue from the tax on Y, which will not be fully compensated by any increase in revenue due to higher consumption of X. Additionally, the exemption could lead to overconsumption of X, distorting the market away from its efficient allocation of resources.

The concept of welfare cost, or the excess burden, is crucial here as well. The tax exemption on X does not merely lower the price and potentially cause its consumption to increase; it also alters the relative attractiveness and pricing structure of related goods like Y. This change can introduce inefficiencies by distorting consumer choices away from what they would naturally select in a more neutral tax environment. These distortions can lead to a misallocation of resources within the economy, reducing overall economic welfare.

In scenarios where tax exemptions are applied to commodities within interconnected markets, understanding their interactions becomes critical. These interactions are complex and require consideration of how changes in the tax status of one good affect the market for another. A general equilibrium approach is useful here, capturing the cross-elasticities and substitutability between goods.

Ultimately, tax exemptions impact market dynamics and economic welfare through a series of direct and indirect effects on related markets. These effects can exacerbate economic distortions depending on the relationships between the goods and the market structure. Properly understanding these dynamics is essential for assessing the true cost of tax exemptions, demonstrating that such policies can lead to significant welfare losses and are often not advisable.

3. Guidelines for the Appraisal of Trade Tax Incentives in Madagascar

3.1. Introduction

Trade taxes, including import tariffs, play a crucial role in the economic framework of developing countries like Madagascar. These taxes are pivotal not only for revenue generation but also for their strategic use in shaping economic policies. The simplicity of levying and collecting these taxes at international borders, along with their potential to reduce import demand and promote domestic industrial development, underscores their importance.

Madagascar employs a range of import tariffs that vary based on the type of goods being imported. The country's tariff structure includes several different rates. Here are some of the key details:

1. **Tariff Range:** Madagascar's import tariffs generally range from 0% to 20%. The most common rates applied are 0%, 5%, 10%, and 20%.
2. **Different Tariff Rates:** Madagascar has four primary tariff rates:
 - **0%** for essential goods, including certain basic foodstuffs and medical supplies.
 - **5%** for raw materials and capital goods.
 - **10%** for intermediate goods.
 - **20%** for finished products.

These rates are designed to promote local industry by taxing finished goods more heavily than raw materials and intermediate products. The tariff structure aims to balance between protecting local industries and ensuring that essential goods remain affordable for the population.

Madagascar is a member of the Southern African Development Community (SADC) and the Common Market for Eastern and Southern Africa (COMESA), which means it also applies preferential tariff rates to imports from member countries, potentially lowering the effective tariffs for goods from these regions.

In Madagascar, the trade tax system presents opportunities for optimization. As of the 2021 tax year, the structure imposes various import duties, which can impact domestic prices, consumer spending, and industrial competitiveness. However, the effectiveness of these taxes is often compromised by the presence of numerous exemptions and inefficiencies in the administration. In total there are 148 exemptions or preferential rates of tariff that have been introduced into the general scheme of tariff rates.

The primary aim of this guideline is to provide policymakers with a framework to refine Madagascar's trade tax system. By drawing insights from successful international practices and tailored recommendations, this document seeks to enhance the efficiency and effectiveness of trade taxes and relevant tax incentives. The focus is on balancing revenue generation with economic development goals, minimizing deadweight losses, and ensuring that tax policies support the broader objectives of industrial growth, export competitiveness, and fiscal stability.

This guideline aims to assist policymakers in crafting a more streamlined and impactful trade tax regime. The goal is to create a tax environment that supports sustainable economic growth while maintaining fiscal responsibility and promoting social welfare.

3.2. Methodology for Analyzing Trade Tax and Relevant Tax Exemptions

The key steps and considerations for the evaluation of proposed changes to the trade tax system:

3.2.1. Assessing Impacts of Trade Taxes and Market Dynamics

Understanding the effects of trade taxes requires examining two primary scenarios: exclusive reliance on imports to supply the domestic demand for a commodity and coexistence of supply from imports with domestic production of the item. Each scenario has distinct impacts on the economy, making it essential for policymakers to grasp these dynamics.

i. Exclusive Reliance on Imports:

In a situation where a country relies entirely on imports to meet the domestic demand of an item, the introduction of tariffs on these imports will lead to an increase in domestic prices. Specifically, if the world price of a good is P , then with a tariff rate of t , the new domestic price becomes $P(1+t)$. This price adjustment causes a decrease in the quantity of imports demanded, reducing the demand for foreign exchange. The increase in the rate of tariff will impact tax revenue but will also introduce efficiency costs by changing relative consumer prices that will alter spending behavior.

ii. Coexistence with Domestic Production:

When domestic production is present, the imposition of tariffs has more complex effects. The presence of domestic producers means that not all demand is met by imports; thus, tariffs help protect these local industries. The resulting domestic price still increases, but this supports an increase in domestic production as local goods become more competitively priced relative to imports. Consequently, total consumption of the goods decreases, imports are reduced, the requirement for foreign exchange is reduced, and the government still earns revenue from the remaining imports. However, this scenario also leads to an increase in domestic production of the item, resulting in an economic efficiency cost in production as well as inefficiency due to a reduction in overall consumption. There is a transfer of wealth from consumers to producers through higher prices and to the government through the revenues from the tariff.

3.2.2. Revenue Impact Analysis

Understanding the revenue impact of changes in import duties is essential for effective fiscal management in Madagascar. Modifying import duty rates influences government revenue by affecting both the initial tax base and the resultant changes in import volumes due to price adjustments. The methodology for estimating these impacts involves several key steps.

First, policymakers need to calculate the current revenue generated from import duties by multiplying the existing import duty rate by the total value of imports of the item. The record of imports of the item made by the Customs Department will provide the information required to do this calculation. This is a starting point and needs adjustment for any exemptions or specific duties that may apply. To estimate the impact of a proposed change, they should

consider the new duty rate's effect on the existing tax base. Assuming no change in import volumes, if the duty rate increase revenue is expected to rise proportionally.

However, the elasticity of demand for imports plays a crucial role in determining actual revenue changes. Higher tariffs typically reduce the quantity of imports as prices rise, leading to a less than proportional increase in revenue. This effect depends on the price elasticity of demand; if demand is inelastic, a tariff increase will result in a higher revenue increase. This is contrasted with an elastic demand scenario, where imports would significantly decrease and revenues would fall. It's important to highlight that the own price elasticity of demand can vary significantly across different types of goods and markets.

For goods that are both imported and domestically produced, the elasticity of demand for imports tends to be higher than the own-price elasticity of domestic demand for the same good. The overall elasticity of demand for imports reflects both the domestic supply elasticity as well as the domestic demand elasticity of the item. The quantity imported is the difference between the quantity demanded of an item and the amount supplied. Both supply and demand respond to the change in domestic prices caused by the change in rate of import tariffs.

The impact of import duty changes varies depending on whether the duties are applied to inputs, intermediate goods, or final goods. Tariffs on inputs will influence production costs and the international competitiveness of the industry. Tariffs on final goods directly affect consumer prices and demand; higher tariffs typically lead to decreased import volumes, impacting tariff revenues.

Overall, changes in import duties have a significant impact on tax revenue, driven by the elasticity of demand for imports, the structure of the tariff system, and the impact on other components of the tax system.

3.2.3. Assessing the Rate of Effective Protection when there are Tariffs on Inputs of Production and Final Outputs

In the realm of trade policy, managing deadweight loss is crucial to minimize the economic inefficiencies that arise from tariffs, particularly those affecting domestic production and consumer consumption. Tariffs on imported items that compete with domestic producers provide protection to these domestic industries, invariably leading to higher prices. These higher prices both increase domestic production (even at higher costs) and reduce domestic consumption.

The efficiency of trade taxes is intricately tied to their structure, particularly in how they are applied to inputs and the outputs produced by these inputs. When tariffs are imposed on imported inputs, the production costs for domestic industries rise, potentially reducing their competitiveness in both domestic and international markets. These import tariffs on inputs will offset the incentive effect provided by the tariffs on the items that compete with the outputs of the domestic producers that use these imported inputs.

The concept of the effective rate of protection (ERP) is crucial in understanding the interaction between tariffs on inputs and outputs. Unlike nominal tariffs, which only consider the tariff rate on the final product, ERP considers the tariffs on intermediate inputs as well. This

comprehensive measure reflects the net protection that domestic industries receive to produce output. This ERP may differ significantly from the nominal tariff rates on final goods. Policymakers must consider ERPs to ensure that their tariff structures provide the intended level of protection for domestic value added. Caution must be exercised to avoid creating excessive subsidies for domestic resources to be used in the domestic production of these outputs. Therefore, a well-designed tariff structure should balance the protection of domestic industries with the need to maintain efficiency and competitiveness.

❖ Strategic Trade Policies Over Income Tax Incentives: Key Takeaways from Taiwan's Experience

In the pursuit of effective tax incentives, learning from international best practices is invaluable. Taiwan's experience, for instance, highlights the significant impact of well-structured trade policies on industrial investment and growth. While income tax holidays, accelerated depreciation, and other income tax incentives were widely employed, these tax incentives were not nearly as important as getting the trade policies correctly structured. For example, the strategic use of tax exemptions on imported inputs used in the production of exports significantly cut production costs, bolstering the global competitiveness of Taiwanese industries.

Such insights from Taiwan's strategy can guide the structuring of trade policies in other contexts, ensuring that they not only stimulate economic growth and industrial development but also maintain fairness and administrative simplicity. By adopting these proven strategies—considering local economic conditions and industrial goals—policymakers can craft policies that drive sustainable development.

3.2.4. Supporting Export-Oriented Firms

In estimations of the amount of tax expenditures in an economy, the tax exemptions given to export processing zones or duty exemptions for capital and intermediate inputs are sometimes included in the total tax expenditures (OECD, 2023). In an accounting sense, they can be viewed as preferential taxation for export-oriented enterprises. However, in terms of sound economic policy, many of these tax preferences are desirable and consistent with sound economic policy (UNCTAD, 2022).

To enhance the competitiveness of export-oriented firms, it is essential to implement tax policies that reduce production costs. Duty exemptions on imported inputs such as machinery, raw materials, and intermediate goods are critical. These exemptions lower the financial burden on producers, allowing them to maintain competitive pricing in international markets. For instance, Taiwan's fiscal policy has successfully employed carefully monitored duty exemptions on imported inputs, significantly reducing production costs and boosting export performance (Jenkins & Kuo, 2007). By adopting similar measures, Madagascar can encourage higher production volumes and enhance the competitiveness of its export sector.

Providing VAT refunds on inputs used for export production by zero rating of export sales can substantially reduce the overall tax burden. This policy creates a more favorable economic environment for exporters, enabling them to compete in global markets.

Infrastructure development incentives are also vital for supporting export-oriented firms. Establishing export processing zones (EPZs) that are largely free of taxation of both inputs as well as income taxes can create an environment conducive to industrial growth by freeing firms both from the burden of taxation and from compliance costs of the customs and tax administration systems.

However, it is important to acknowledge that EPZs are costly to build and maintain. Therefore, a sustainable approach involves eventually developing an information and systems control mechanism to allow inputs to flow to firms tax-free without the need for extensive physical infrastructure. This approach not only reduces costs but also ensures efficient and streamlined operations for export-oriented firms. Encouraging the establishment of EPZs, alongside implementing advanced control mechanisms, will attract foreign direct investment, foster the development of a local industrial base, create employment opportunities, and promote skills development (Jenkins & Kuo, 2007)

While it might appear that an export sector that is not subject to taxation is not contributing any tax revenue to the country, however, because such firms contribute foreign exchange to the economy there is an indirect source of taxation that can be very substantial. When additional foreign exchange becomes available to the banking system, it can be used to import goods. These imports are subject to both tariffs and value-added taxes that enhance the government's revenue collections. This indirect taxation effect, often associated with the Foreign Exchange Premium, has been studied and quantified in many African countries (Kuo, Salci, & Jenkins, 2015).

By combining tax policies that reduce production costs with infrastructure development incentives, Madagascar can create a dynamic and competitive export sector. This comprehensive approach will enable the country to integrate more effectively into the global economy, drive sustained economic growth and create an important source of indirect tax revenues.

4. Guidelines for the Appraisal of Tax Incentives Introduced into the Corporation Income Tax

4.1. Introduction

The standard corporate tax rate in Madagascar is 20% for companies with an annual business turnover exceeding MGA 400 million (approximately USD 88,000). Entities with turnover below this threshold are subject to a synthetic tax, which is calculated by applying a 5% rate to 70% of their turnover, effectively resulting in a 3.5% tax on total turnover. Taxpayers who are members of an Approved Management Center qualify for a 30% reduction on the calculated synthetic tax amount.

Currently, Madagascar's income tax law includes 42 distinct tax exemptions and preferences aimed at promoting specific activities. For example, companies investing in renewable energy and processing entities, along with their subcontractors, are subject to the standard corporate tax rate of 20%. In contrast, a reduced income tax rate of 10% is designated for entities operating within the health and education sectors. Additionally, non-resident companies without a permanent establishment in Madagascar are subject to a final withholding tax at the rate of 10% on Malagasy-source income.

A zero income tax rate is granted to companies for their first five years of production, followed by a 10% tax rate from Year 6 to Year 10 of commercial production. After the 10th year of effective operation, a tax rate of 15% applies until the expiration of the privileged tax regime.

This note is focused on the ex-ante appraisal of tax incentives that are designed to reduce either the taxable income, the rate of tax applied to the taxable income of corporations, or tax credits that are given to reduce the amount of taxes to be paid to the government of Madagascar.

4.2. Goals of Corporation Income Tax Incentives

Corporation income tax incentives are mainly designed to achieve one or more of the following goals;

- a. The income tax incentive is designed to reduce the tax burden on a potential private investment that is under consideration by a foreign corporation that is producing an internationally tradable good for export. The reduction in the tax on corporate profits will result in the financial net of tax return will be higher than it otherwise would be. Usually, the incentive is given with the hope that the additional investment will also result in an increase in employment.
- b. The income tax incentive is designed to reduce the tax burden on a potential private investment that is under consideration by a domestic corporation that is producing an import substitution good. The reduction in the tax on corporate profits will result in the financial net of tax return will be higher than it otherwise would be. Usually, the incentive is given with the hope that the additional investment will also result in an increase in employment.
- c. The income tax incentive is to induce the private sector to assist the government in achieving a particular policy target to overcome a market imperfection. Examples of

such goals might be to increase the production of renewable energy or to increase the employment of a type of labour that is in some way disadvantaged.

4.3. Quantifying the Impact of a Tax Incentive on the Behavior of the Firm and its Economic Value

Cost-Benefit Analysis (CBA) is the most reliable analytical tool to evaluate tax incentives' fiscal, financial, and economic impact on different stakeholders. These costs and benefits are expressed in monetary units.

To undertake an evaluation of such an incentive, one needs to set up a financial/economic model of the investment under consideration. This Excel-based model will first include all the financial variables associated with this project. The objective of the analysis is to determine the impact of this tax incentive on the financial attractiveness of the investment as measured by the financial net present value of the project or the financial internal rate of return. If data is not available for the project under consideration, then secondary information on another similar project can be found on the internet and then adjusted accordingly to fit the situation in Madagascar.

This model should include all the variables that will affect the financial and economic outcomes of the project. This will include, in addition to the corporate income tax variables, all tariffs and VAT on material inputs, outputs and capital investments. Using this analytical model, one can find out the impact of each of the tax policy variables, including the discretionary incentive under examination, on the net present value of the project and its financial and economic rate of return.

In the case of attracting foreign investments in manufacturing activities that are being marketed abroad, a tax incentive that raises the rate of return on the investment will, in the long term, be reflected in the real wages of workers in Madagascar. Incentivizing such export-oriented activities tends to both create employment and raise the wages of workers across all sectors of the economy.

Incentives that are focused on attracting investment into import-competing activities tend also to create additional employment or achieve another policy goal. The question to answer is how cost-effective this program is in terms of its economic cost and the outcomes expected from this incentive.

This analysis is undertaken in five steps:

- First, a firm is selected in a sector that policymakers have identified as potentially worthy of receiving a tax incentive (a tax expenditure is to be directed to the activity).
- Second, an analysis is done to quantify the direct fiscal cost of the tax expenditure required to accommodate the tax incentive. This study does not quantify the additional tax administration costs or compliance costs.
- Third, an analysis is then carried out to determine the likely impact of this tax expenditure on the financial profitability of the sector being incentivized.

- Fourth, to the degree that this tax incentive increases the financial profitability of the activity, an expansion of this activity may occur. An economic appraisal is done to measure if the economic benefits produced by the expansion of this activity for the economy are greater than the economic resource costs required to expand the activity in this sector.
- Finally, an analysis is carried out to show how the burden of the tax incentives (tax expenditure) is shared among the stakeholders.

4.4. The Integrated Investment Appraisal Methodology for the CBA of Corporation Tax Incentives

The following sub-section explains in detail each of the components of an integrated cost-benefit analysis (CBA).

4.4.1. Financial Analysis

The financial analysis aims to estimate each applicable incentive's potential financial value to the targeted enterprises. It determines the likely impact of this tax expenditure on the financial profitability of the investment being incentivized. This appraisal is the initial stage of the integrated analysis of the tax incentives.

4.4.1.1. Financial Cash-Flow Model

A detailed financial cash flow model is built for each representative firm. This model represents the value of the investment, production, sales, operating inputs, and other variables that are part of the firm's production activities. In calculating the firm's tax liability in base or before incentive situation, the project assets are depreciated using the straight-line depreciation method.

The financial models of the investment and operation of these firms enable us to quantitatively measure the impact of each of the selected tax incentives on the financial profitability of the firm by estimating the difference in financial profitability indicators (internal rate of return and net present values) between "without incentive" and "with incentives" scenarios.

4.4.1.2. Financial Model Analysis Indicators

The impact on the profitability of the potentially incentivized investment can be measured using the project's net present value (NPV), which equals the present value of the net operating benefits of the project less the present value of the investment costs of the project, less the present value of all taxes paid (including corporate income tax) on the operating income, plus the present value of the residual values of the project assets.

Another metric used in measuring the return on investment is the project's financial net of tax internal rate of return (IRR). It is represented as a percentage rather than as a monetary value. The financial discount rate (or the target rate of return of the firm) is a real rate expressed net of inflation.

An expansion of an activity will not occur unless the tax incentive raises the financial profitability sufficiently to induce private investors to want to increase the level of activity. Depending on the design of the tax incentive, there may be a fiscal cost but not necessarily an economic impact. For example, a tax incentive might be given to promote an investment that would have been undertaken anyway. This will happen if the incentive does not provide a large enough increase in profitability to include an expansion of the activity beyond what was already planned. Hence, there is a fiscal cost but no economic benefit or resource cost. This is simply a financial transfer from the government to a lucky recipient. Alternatively, if the incentive does increase the profitability in the sector and the incentive is designed to only go to the investor if an incremental expansion of the activity takes place, then there will be a net fiscal cost. However, if the incentive leads to an expansion of the activity, this does not necessarily mean that the incentive has a positive economic impact. It might mean that the incentive causes an economically inefficient activity to expand, thus hurting the economy.

4.4.2. Economic Analysis

The financial cost-benefit analysis examines the potential investment from the perspective of the owners of the activity, while the economic cost-benefit analysis measures the net impact of the project on the entire economy. The economic appraisal measures if the economic benefits produced by the incentivized investment for the economy are greater than the economic resource costs required to expand the activity in this sector.

When representative firms produce tradable goods, the economic estimation of tradable output or input is done in two stages. The first stage is adjusting the financial cost of the import or export of the goods for any market distortions, e.g., tariffs, taxes, subsidies, and other distortions that may exist in the market. Secondly, there is an adjustment because the economic value of the foreign exchange produced or used by this activity might be different from its financial or market value. This adjustment expressed as a percentage of its market value is known as the foreign exchange premium (Kuo, 2011). The foreign exchange premium (FEP) is the rate of indirect taxes that accrues to the government due to expenditures that can be made with the use of foreign exchange earned by the project. When applied to the border values (CIF or FOB) expressed in foreign exchange units of tradable goods, this adjustment yields values that reflect their true economic value or cost at the border.

In the case of non-tradable goods (goods and services produced and sold in the domestic market), their financial values or costs are usually distorted because of the imposition of taxes and/or subsidies. The financial prices need to be adjusted for such to arrive at the economic values or costs of the non-tradable goods.

Furthermore, as the project operating cost also includes labor, to estimate the economic opportunity cost of labor (EOCL), the financial wage must be adjusted for any distortion (personal income taxes, social security contributions, etc.). The EOCL is a critical calculation in project evaluation because it determines the value of the labor externality (LE) associated with a project (Jenkins et al., 2019).

4.4.2.1. Economic Resource-Flow Model

The economic resource flow statement is constructed with the stream over time of the economic benefits and costs of the project. These economic benefits and costs are derived by simply multiplying the financial receipts or costs by their corresponding economic conversion factors¹. The economic opportunity cost of capital (economic discount rate) is used in this part of the analysis.

4.4.3. Stakeholder Analysis

The stakeholder analysis is conducted to identify the groups that benefit from these incentives and those that bear the cost. It demonstrates the movement of tax revenue from the government to the targeted enterprises and vice versa. The government's fiscal cost (tax expenditure) is a crucial stakeholder impact.

The difference between the financial and economic value of each project's inputs or outputs represents a benefit or a cost to a party other than the financial sponsors (Jenkins, 1999). The sum of the present value of all the externalities generated by the project is derived by subtracting the present value of the financial net cash flow from the present value of the economic net benefits using the same discount rate (economic opportunity cost of capital). It is also important to know the tax incentives' net impact on each of the affected stakeholders.

In each of these analyses, the government has a trade-off between the revenue cost of the tax expenditure to the government and the benefits that the group may receive from this intervention.

4.4.4. Overview of Likely Impact of Corporation Income Tax Incentives

Madagascar has a very low corporate income tax rate and is very generous in allowing a debt-to-equity ratio in financing of 3.0. Given the low rate of tax and, at the same time, allowing for a high degree of debt financing with full interest deductibility, the potential incentive effect that any lower tax rate or deduction from taxable income can create will be greatly reduced. The next section considers the role that incentives to the corporation income tax may play in reducing greenhouse gas emissions and enhancing the resilience and mitigation of the effects of climate change.

5. Tax Expenditure Evaluation for Reducing Greenhouse Gas Emissions and Enhancing Climate Change Resilient and Mitigation in Madagascar

In Madagascar, the applicability of climate change mitigation incentives depends on the country's economic structure, legal framework, and its commitment to international climate goals. At the present time, it is very common to find international organizations and

¹ A conversion factor (CF) is the ratio of a commodity's economic price to its financial price. In other words, conversion factors translate market prices of goods and services into corresponding economic value (or economic cost) by accounting for various distortions present in the economy, such as VAT, excise tax, import tariffs, export subsidy, export tax, and other market distortions.

governments turning to the corporation income tax system to provide tax incentives for the private sector to undertake investments and make choices that help reduce carbon emissions.

5.1. General considerations

Climate change is a critical global issue primarily driven by industrialized countries, the largest GHG emitters. Madagascar, with a population of 30 million (0.4% of the world), sees limited direct benefit from its own GHG reduction efforts but contributes globally. This underscores the need for international subsidies from major emitters or global organizations to support Madagascar's climate actions.

Relying on tax incentives to encourage private-sector GHG reduction in Madagascar is economically inefficient. First, it diverts public resources from addressing climate impacts, incurring a high opportunity cost. Second, incentivizing unprofitable private investments leads to resource misallocation unless heavily subsidized by the global community.

The EU's carbon tax system, based on the carbon intensity of production, is an effective market-based approach. This system not only reduces emissions but also creates a potential tax base for countries like Madagascar. By imposing carbon charges on exports, Madagascar could collect these revenues instead of allowing the EU to tax imports at their borders—a policy Canada and others may soon adopt.

Market-based mechanisms, such as carbon pricing, offer a more effective and efficient strategy than subsidies or tax incentives. Research (Bistline et al., 2024) shows carbon fees significantly outperform tax incentives in reducing emissions while minimizing fiscal costs. For Madagascar, adopting carbon pricing can strengthen climate resilience by providing sustainable funding for critical public investments in adaptation and resilience. For Madagascar potential carbon fees may include:

- a) **Carbon Taxes:**
 - a.1. **Revenue Recycling:** A modest carbon tax on fossil fuels could be redirected to finance renewable energy or reforestation projects, which align with Madagascar's reforestation goals.
 - a.2. **Tiered Rates:** Focus on sectors like transport or mining where emissions can be better regulated.
- b) **Pollution-Based Excise Rates:** Target polluting industries, encouraging them to adopt greener practices.
- c) **Eco-Tariffs:** Madagascar could tax environmentally harmful imports like single-use plastics while promoting local sustainable alternatives.

5.2. Integrating Climate Goals in Tax Incentive Evaluation

International organizations have extensively analyzed how tax policies can address climate change, highlighting the role of taxes such as trade tax, excise tax, VAT, and CIT in promoting sustainable practices. By examining how these tax types and their associated incentives can contribute to climate goals, we can create a more targeted approach for reducing climate change impact. In this section, we review insights from international studies and best practices for each tax category, recommending strategies to integrate climate considerations into tax incentive evaluations.

5.2.1. Incorporating Climate Change into Trade Tax Incentives

5.2.1.1.Green Import Duty Exemptions

Evaluate whether exemptions on import duties for specific goods promote environmentally friendly practices. For example, prioritize exemptions for renewable energy technologies, clean stoves, and energy-efficient equipment over those for fossil-fuel-based technologies. **Tax policy department shall consider developing transparent criteria to classify eligible goods based on their carbon footprint, life-cycle emissions, and alignment with Madagascar's climate goals.** Tariff differentiation can be used to include climate considerations. Tariffs can be structured to discourage imports of high-carbon goods (e.g., coal and petroleum-based products) while reducing tariffs for green technologies and sustainable inputs. Temporary import tax relief for disaster recovery goods with climate resilience needs can also be considered. However, this measure shall only be enforced during climate induced disasters. **Tax policy department shall consider** developing a pre-approved list of climate-resilient goods eligible for expedited tax relief during climate-induced disasters.

Alternatively, excise taxes can be used as a tool for discouraging environmentally harmful consumption and promoting sustainable practices. However, a crucial consideration for Madagascar is to avoid creating trade barriers that disproportionately impact vulnerable populations. For instance, excise taxes on essential goods should be carefully evaluated to mitigate adverse social and economic consequences. Integrating climate considerations into trade tax policy requires a comprehensive cost-benefit analysis that weighs the environmental gains against potential negative impacts on various sectors and social groups (OECD, 2024).

5.2.1.2.Value Added Tax

Given the critical role of VAT as the backbone of Madagascar's tax system, any modifications to its structure must prioritize revenue mobilization and administrative simplicity. The challenges of weak tax administration and the increased compliance burden associated with differential VAT rates make such policies unsuitable for promoting green activities in Madagascar. Instead, other tax instruments, such as excise taxes and carbon pricing, should be utilized to address climate change objectives. Key recommendations:

a) Avoid VAT Incentives for Green Activities

- **Rationale:** Introducing differential VAT rates or exemptions for green products would undermine the VAT system's simplicity, reduce revenue collection efficiency, and impose significant administrative and compliance burdens, especially for small businesses.
- **Alternative:** Focus on complementary measures like carbon taxes, excise taxes, and preferential tariff rates to incentivize green investments.

b) Leverage Revenue from VAT for Climate Initiatives - use the revenue generated by the VAT system to fund climate mitigation and adaptation projects. For example:

- Expand renewable energy infrastructure.
- Enhance disaster resilience in climate-vulnerable areas.
- Invest in reforestation and sustainable agriculture.

c) Adopt Excise Taxes for Targeted Climate Outcomes - Excise taxes on carbon-intensive goods (e.g., fossil fuels, non-recyclable materials) are easier to administer than differential VAT rates and can directly target environmentally harmful behaviors. Government in turn can consider allocating excise tax revenues to reduce other taxes

(e.g., payroll or consumption taxes), enhancing social equity while funding climate programs.

- d) **Encourage Green Investments via Tariff Adjustments** - Follow OECD recommendations to use preferential tariff rates for climate-friendly imports (e.g., renewable energy equipment, energy-efficient technologies) rather than VAT incentives.

5.2.1.3. Corporate Income Tax

Corporate Income Tax (CIT) is a cornerstone of fiscal revenue for developing countries like Madagascar, providing essential resources for public services, economic stability, and development goals. Modifications to the CIT system, especially through tax incentives, must be approached cautiously to avoid undermining the government's ability to finance key priorities. In Madagascar, where administrative capacity is limited and reliance on a few primary revenue sources like CIT and VAT is high, preserving the integrity of these tax bases is critical.

Tax policy department shall periodically conduct a systematic review of existing CIT incentives to assess alignment with climate goals. Such reviews shall focus on eliminating or phasing out incentives that promote carbon-intensive industries (e.g., fossil fuel extraction, deforestation-related activities). It is not recommended to introduce any new CIT incentives, even when an attempt is made to justify the exemption as a pro climate change mitigation intervention. The main reasons are:

- **Revenue Erosion** - CIT is a significant revenue source, and excessive or poorly targeted incentives reduce the tax base, leading to budget deficits and reduced public service delivery capacity. In Madagascar, where tax revenue as a percentage of GDP is already below the African average, further erosion would have severe fiscal consequences.
- **Administrative Complexity** - Tax incentives increase the complexity of tax administration, straining limited resources and creating loopholes for tax evasion. For a country with weak administrative capacity, this results in inefficiencies and revenue losses.
- **Misalignment with Development Goals** - Incentives often favor large corporations, including multinational enterprises, at the expense of smaller businesses and domestic industries, leading to inequitable economic outcomes. Misaligned incentives may inadvertently support environmentally harmful industries, such as fossil fuel extraction, which contradict climate and sustainability goals.
- **Lack of Transparency** - Incentives are often implemented without adequate monitoring or cost-benefit analysis, reducing accountability and allowing ineffective or redundant measures to persist.

5.3.List of Most Applicable Incentives for Madagascar

1. **Import exemptions:** Removing duties on green technologies like efficient stoves or solar panels would make sustainable solutions more accessible.
2. **Eco-tourism support:** Providing tax relief for eco-tourism developments aligns with Madagascar's unique biodiversity and economic priorities.

6. Step-by-Step Guide for Evaluating tax Incentives in Madagascar

This section provides a comprehensive, step-by-step guide for evaluating each type of tax incentive included in this report. It covers Excise Tax, VAT, Trade Tax, and Corporate Income Tax (CIT) incentives, detailing essential components such as policy objectives, data requirements, analysis methods, and decision-making indicators.

6.1. Excise tax

a) Definition of Policy Objective

The stated objective of the current excise tax incentives in Madagascar is to support economic, social, or environmental goals by reducing or exempting excise taxes on specific goods or sectors. These incentives aim to encourage investment in targeted industries, such as manufacturing or renewable energy, by lowering the production costs associated with excise-taxed inputs or products. However, while reducing excise tax rates might make production of “Green” outputs cheaper to produce an increase in excise taxes can create an incentive that will discourage the production or consumption of non-green activities that the government wishes to reduce.

From the prior discussion it is likely that excise taxes that are levied on carbon intensive activities are more effective at reducing carbon emissions than lowering the excise taxes on items that are used to reduce carbon emissions. A method is outlined below for evaluating the economic impacts of either a decrease or an increase in excise taxes on specific commodity groups.

b) Data Collection Requirements

To effectively assess excise tax incentives, the following data should be gathered:

- **Current Tax Base Data:** Quantitative data on excise goods under incentive, including production levels and market prices.
- **Revenue and Cost Data:** Information on excise tax revenues collected and potential revenue loss from incentives.
- **Elasticity Estimates:** Price elasticity of demand for each incentivized product to predict consumer response to tax changes.
- **Externality Data:** Estimates of social costs (e.g., health or environmental) associated with the consumption of goods on which the excise tax is imposed.
- **Compliance and Administration Data:** Records on the impact of incentives on tax compliance rates and administrative costs.

c) Analysis

- **Revenue Impact Assessment:** Calculate the revenue impact of excise tax incentives by evaluating both the direct revenue foregone and the broader economic effects. Examine elasticity data to determine whether the incentivized goods have elastic demand and thus may significantly impact the size of the tax base.
- **Cost-Benefit Analysis (CBA):** Conduct a CBA to weigh the fiscal cost of the incentive against the benefits, such as reduced social costs or increased sector investment. Quantify both tangible (e.g., revenue loss) and intangible benefits (e.g., public health improvements).

- **Externality Impact:** Assess if incentives align with externalities related to public health or environmental impact. For instance, lower excise on cleaner fuels could reduce health costs associated with pollution.
- **Efficiency and Compliance Evaluation:** Review how incentives affect tax compliance and administrative efficiency, as extensive exemptions could increase compliance burdens and reduce tax collection efficiency.

d) Decision-Making Indicators

Key indicators to guide policymakers include:

- **Revenue Impact:** Projected revenue foregone or gained from the incentive relative to total excise revenue.
- **Elasticity of Demand:** Responsiveness of demand to price changes due to tax incentives.
- **Cost-Benefit Ratio:** Comparison of economic benefits to fiscal costs for each incentive.
- **Social and Environmental Outcomes:** Quantified reduction in social costs (e.g., health improvements) or environmental impacts.
- **Compliance Efficiency:** Changes in administrative and compliance costs due to exemptions or reduced rates.

6.2.VAT

a) Definition of Policy Objective

The primary objective of VAT incentives in Madagascar is to support competitiveness, ensure fairness in the tax burden distribution, and minimize regressivity in income distribution. Specific incentives, such as exemptions and reduced rates, aim to reduce costs for essential goods (e.g., rice) or sectors (e.g., agriculture, exports), and enhancing affordability. Policymakers create these incentives with the objective to relieve the tax burden on low-income households, and ensure essential goods remain accessible. While these are noble objectives, they have proven elsewhere to be almost impossible to achieve by adjusting the VAT tax system alone.

b) Data Collection Requirements

To evaluate the effectiveness and impact of VAT incentives, the following data are required:

- **Sales Data:** Revenue from VAT on fully taxed, zero-rated, reduced-rate, and exempt items.
- **Customs Data:** Import volumes and values for VAT-exempt items, especially critical goods and production inputs.
- **Household Consumption Surveys:** Consumption patterns across different household income levels to assess VAT incidence.
- **VAT Refund Data:** Information on timing and compliance issues in VAT refunds, particularly for exports.
- **Tax Compliance Data:** Data on VAT compliance among small merchants and informal sectors.

- **Price Elasticities and Substitutability:** Estimates for elasticity of demand on VAT-affected items, considering both complementary and substitute goods.

c) Analysis

- **Revenue Impact Analysis:** Calculate revenue changes resulting from VAT exemptions and rate reductions by analyzing import and sales data. For exempt imports or zero-rated items, estimate how much revenue is foregone.
- **Incidence Analysis:** Using household survey data, examine the distribution of VAT burden across the different income groups. This analysis helps assess the progressivity or regressivity of VAT incentives by measuring effective VAT rates pre- and post-incentive across different expenditure levels.
- **Market Dynamics and Welfare Costs:** Identify potential distortions caused by VAT exemptions that alter consumer behavior. For example, exemptions on specific items may decrease demand for substitutes, affecting VAT revenue from these goods.
- **Export Competitiveness Assessment:** Analyze VAT exemptions and refunds for export-oriented industries. Delayed refunds can increase costs, affecting export competitiveness; hence, timely VAT refunds are essential for these sectors.

d) Decision-Making Indicators

Key indicators for evaluating VAT incentives include:

- **Revenue Loss Due to Exemptions:** Quantify potential revenue losses from exemptions, reduced rates, and zero-rated items.
- **Progressivity or Regressivity:** Measure VAT burden distribution across income levels to determine if exemptions are progressive or regressive.
- **Compliance and Administrative Efficiency:** Evaluate the effectiveness and timeliness of VAT refunds, particularly for exports, to gauge administrative efficiency and compliance impact.
- **Welfare Impact:** Assess welfare costs through shifts in consumption patterns and possible economic distortions caused by VAT exemptions.
- **Impact on Export Competitiveness:** Ensure that VAT policies support a competitive environment for export industries by minimizing refund delays.

6.3. Trade tax

a) Definition of Policy Objectives

The objective of trade tax incentives in Madagascar is to promote local industrial development, enhance export competitiveness, and generate government revenue. By strategically using import tariffs and tax exemptions, the government aims to protect emerging industries, reduce dependency on imports, and support export-oriented firms. The goal is to strike a balance between revenue generation, economic development, and minimizing efficiency losses.

b) Data Collection Requirements

To evaluate trade tax incentives, the following data is essential:

- **Import and Customs Data:** Value, volume, and categories of imported goods by tariff rate.
- **Domestic Production Data:** Production levels of domestic goods that compete with imported items.
- **Price Elasticities:** Elasticity of demand for imports to assess responsiveness to tariff changes.
- **Effective Rate of Protection (ERP):** Calculations to gauge net protection for domestic industries considering both input and output tariffs.
- **Exemption Records:** Detailed data on goods and sectors that receive trade tax exemptions, including export processing zones.
- **Foreign Exchange Data:** Foreign exchange earnings and impacts on import volume for export-oriented firms.

c) Analysis

- **Revenue Impact Analysis:** Begin with calculating current revenue from trade taxes, adjusting for any exemptions or reduced rates. Assess the potential revenue impact of adjusting tariff rates by evaluating own-price demand elasticity; inelastic goods will yield more stable revenue than elastic goods.
- **Effective Rate of Protection (ERP):** Calculate ERP to determine the net protection domestic industries receive. A well-structured ERP accounts for both inputs and outputs, ensuring that industries benefiting from protection do not face undue competition from imports.
- **Market and Welfare Analysis:** Examine the potential efficiency costs of trade tax incentives, particularly deadweight losses caused by higher consumer prices and altered consumption patterns.
- **Export Competitiveness Assessment:** Analyze the impact of exemptions on production costs for export-oriented firms. Consider indirect tax benefits from foreign exchange premiums generated through these firms' contributions to the net foreign exchange.

d) Decision-Making Indicators

Key indicators to guide policymakers include:

- **Revenue Impacts:** Quantify expected changes in revenue from adjustments to tariffs or exemptions.
- **Effective Rate of Protection (ERP):** Ensure ERP aligns with policy goals, protecting domestic industries without excessive subsidies.
- **Welfare Costs:** Calculate deadweight losses to understand the broader economic impact of trade tax policies on consumer welfare and efficiency.
- **Competitiveness Index for Exports:** Assess the effectiveness of duty exemptions in keeping export production costs competitive in global markets.
- **Foreign Exchange Contributions:** Measure the indirect fiscal benefits from foreign exchange earnings and their impact on the economy.

6.4.CIT

a) Definition of Policy Objective

Corporate income tax (CIT) incentives in Madagascar are intended to stimulate investment in critical sectors such as export manufacturing, renewable energy, and import substitution. By reducing the CIT burden, the government aims to attract foreign and domestic investment, increase employment, and address market imperfections. Specific objectives also include supporting industries that promote sustainable energy and encouraging employment of disadvantaged labor groups.

b) Data Collection Requirements

To evaluate CIT incentives, the following data is necessary:

- **Financial Data:** Cash flow projections, tax liabilities, and CIT payments of target firms.
- **Investment and Production Data:** Capital investment, production volumes, and sales figures for companies under CIT incentives.
- **Market Distortion Data:** Tariffs, subsidies, and other factors affecting the economic cost of imports and exports.
- **Labor Market Data:** Employment levels and wage information, especially for disadvantaged labor categories.
- **Foreign Exchange Premium (FEP):** Estimates of the foreign exchange premium to gauge the economic value of foreign exchange earned or spent.
- **Debt-to-Equity Ratios:** Information on the financial structure of companies benefiting from CIT incentives.

c) Analysis

- **Financial and Economic Profitability:** Build financial models to calculate the net present value (NPV) and internal rate of return (IRR) for incentivized firms. Assess profitability both with and without CIT incentives to determine the incremental impact of the tax policy on investment attractiveness.
- **Economic Resource Flow Model:** Adjust financial data to reflect economic values by accounting for market distortions and the foreign exchange premium. This model highlights the true economic impact on national resources and assesses whether the incentive aligns with broader economic objectives.
- **Cost-Benefit Analysis (CBA):** Measure the fiscal cost of the CIT incentive against economic gains, such as increased economic welfare reflected through higher wages, higher profits and indirect fiscal benefits. This CBA helps assess if the incentive's economic value exceeds its fiscal cost.
- **Stakeholder Impact Analysis:** Identify benefits to various stakeholders, including government revenue, investor returns, and labor market impacts. Determine the distribution of tax expenditure costs and benefits to ensure equitable outcomes.

d) Decision-Making Indicators

Key indicators for evaluating CIT incentives include:

- **Net Fiscal Cost:** Estimate the immediate and long-term fiscal impact of CIT incentives on government revenue.
- **Incremental Profitability (NPV/IRR):** Measure the financial profitability increase to determine if the incentive meaningfully drives investment.
- **Economic Benefit-Cost Ratio:** Compare the economic benefits of the incentive to its fiscal cost, providing a measure of cost-effectiveness.
- **Employment and Wage Effects:** Assess job creation and wage impacts, particularly for disadvantaged groups, as indicators of social benefit.
- **Environmental and Sustainability Metrics:** In cases where incentives target renewable energy or sustainability, evaluate their impact on emissions reduction and climate resilience.

7. Assessment of Tax Incentives in Madagascar: Global Benchmarking and Recommendations

This section provides a comprehensive, in-depth comparative analysis of Madagascar's tax incentive framework, benchmarking it against international best practices and recommending targeted improvements. It covers the current tax structures, including VAT, excise, and corporate income taxes, and highlights areas for legal, regulatory, and institutional reforms. Emphasis is placed on digitalization, accountability, and aligning tax incentives with national development priorities to enhance the framework's effectiveness.

7.1. Effectiveness of Tax expenditures in Developing Countries

7.1.1. Trade tax expenditures

Trade taxes, particularly import tariffs, have historically been a critical revenue source for developing countries, though their importance has diminished with trade liberalization. Key challenges associated with trade tax policies involve the use and abuse of exemptions, which can significantly erode the tax base and create economic distortions.

Trade tax exemptions are often granted to encourage the import of capital goods and raw materials, especially for export-oriented production. While these exemptions can support economic development by reducing input costs for strategic industries, their implementation is frequently problematic. Ensuring that exemptions are appropriately targeted and utilized as intended has proven difficult, with opportunities for misuse creating vulnerabilities in the system. Such misuse can lead to revenue leaks and undermine the efficiency of trade tax systems (Tanzi and Zee, 2000).

Moreover, overly generous exemptions for certain sectors, such as import-substituting industries, may foster inefficiencies and reduce international competitiveness. By distorting resource allocation, these policies can inadvertently hinder broader economic growth and revenue stability (Khalilzadeh-Shirazi and Shah, 1991).

To address these issues, policy measures should focus on narrowing the scope of trade tax exemptions while maintaining a balance between revenue needs and developmental goals. Simplified trade tax systems, such as adopting flat ad valorem rates, have been proposed to reduce administrative complexity and minimize opportunities for corruption (Tanzi, 1982). Additionally, transitioning to domestic consumption taxes like VAT, which are less distortionary, may serve as a long-term strategy to reduce reliance on trade taxes (Khalilzadeh-Shirazi and Shah, 1991). By limiting exemptions to those with clear developmental justifications and enhancing oversight mechanisms, developing countries can mitigate the adverse effects of trade tax policies, thereby promoting economic efficiency and revenue stability.

7.1.2. Excise tax expenditures

Excise taxes serve as a targeted fiscal instrument aimed at generating revenue and influencing consumption patterns. In developing countries, however, the design and implementation of excise tax policies often face challenges, particularly with exemptions and their impact on tax efficiency.

Excise taxes in many developing countries are levied on a wide range of goods beyond those typically associated with negative externalities, such as alcohol, tobacco, and petroleum products. This broad coverage reduces their economic rationale, as many items are taxed primarily for revenue generation rather than to address external costs. Narrowing the scope of excise taxes to focus on goods with clear externalities could enhance both revenue efficiency and economic justification (Tanzi and Zee, 2000).

Exemptions from excise taxes, especially on luxury goods or energy products, can distort production and consumption decisions. While such exemptions may be introduced to alleviate the burden on specific sectors, they undermine the revenue potential of excise taxes and complicate their administration. Poorly designed exemptions contribute to inefficiencies in the tax system and create opportunities for tax avoidance (Abramovsky, Johnson, and Phillips, 2015).

Additionally, differential rates on excisable goods can lead to similar distortions, highlighting the need for streamlined and consistent policies. Eliminating unnecessary exemptions could simplify administration and improve compliance while maintaining revenue levels (Khalilzadeh-Shirazi and Shah, 1991).

To maximize the effectiveness of excise taxes, developing countries should focus on aligning their policies with behavioral objectives, such as discouraging harmful consumption, while maintaining their role as a reliable revenue source. Restricting exemptions can enhance revenue generation without disproportionately impacting low-income populations (Keen, 2012).

7.1.3. VAT expenditures

VAT is a widely adopted tax system, recognized for its efficiency in revenue collection and economic neutrality. However, its design and implementation in developing countries often face significant challenges that affect its overall effectiveness.

One of the primary issues with VAT in developing countries is its incomplete application. Sectors such as services and wholesale/retail trade are often excluded, undermining the broad-based nature of the tax and leading to cascading effects that diminish its intended benefits. Additionally, restrictive credit mechanisms, particularly for capital goods, create delays or denials in crediting taxes paid on inputs, further reducing VAT effectiveness (Tanzi and Zee, 2000).

Multiple VAT rates and exemptions for basic goods, while introduced for equity purposes, often complicate the administration of the tax. These exemptions reduce the tax base and encourage informality, thereby decreasing revenue potential. While they may provide short-term relief to low-income groups, their long-term economic and redistributive impacts warrant careful evaluation (Abramovsky, Johnson, and Phillips, 2015).

Despite these challenges, VAT remains a significant source of revenue, often accounting for about a quarter of total tax revenue in developing countries. When combined with social spending, VAT can have a distributionally neutral or even progressive impact, contradicting its perceived regressive nature. However, administrative challenges such as under-invoicing and non-compliance limit its revenue-generating capacity (Keen, 2012).

The exclusion of essential goods and services like food, healthcare, and education from VAT aims to protect lower-income groups but creates complexities in administration. Broadening the VAT base while managing exemptions could enhance both revenue performance and equity (Khalilzadeh-Shirazi and Shah, 1991).

To improve the effectiveness of VAT in developing countries, policymakers should aim to expand its coverage, streamline credit mechanisms, and minimize exemptions. Simplifying VAT systems and ensuring effective compliance mechanisms can maximize revenue potential while reducing administrative burdens.

7.1.4. CIT expenditures

CIT is a crucial component of tax policy in developing countries, contributing to revenue generation and equity. However, its effectiveness is often undermined by poorly designed exemptions, multiple tax rates, and administrative challenges.

Developing countries frequently use CIT exemptions as incentives to attract foreign direct investment (FDI), often in the form of tax holidays or reduced rates for specific sectors. While intended to promote investment and job creation, these exemptions frequently fail to deliver the anticipated economic benefits. Instead, they erode the tax base, distort market competition, and create inequities by favoring large corporations over smaller businesses (Keen, 2012; Abramovsky, Johnson, and Phillips, 2015).

Multiple CIT rates, including sector-specific rates and complete exemptions for parastatal entities, further exacerbate inefficiencies. These practices violate principles of neutrality and inclusiveness, leading to resource misallocation and tax avoidance. For example, differential rates often result in windfall gains for well-positioned firms while leaving others disproportionately burdened, weakening overall economic efficiency (Tanzi and Zee, 2000).

Weak tax administration in developing countries compounds the inefficiencies caused by exemptions and rate complexity. Poor enforcement mechanisms enable evasion and avoidance, further reducing the revenue potential of CIT. In some cases, de facto exemptions emerge due

to improperly deducted expenses or untaxed income, creating additional loopholes and inequities (Abramovsky, Johnson, and Phillips, 2015).

High statutory rates, combined with narrow tax bases, exacerbate compliance challenges. Tax systems reliant on a small pool of large taxpayers are more vulnerable to revenue fluctuations and non-compliance, undermining fiscal stability (Khalilzadeh-Shirazi and Shah, 1991).

Reforming CIT in developing countries requires broadening the tax base, reducing reliance on exemptions, and adopting simpler and more uniform rate structures. Introducing alternative minimum tax regimes, such as turnover taxes, can serve as a transitional measure in contexts with weak tax administration (Abramovsky, Johnson, and Phillips, 2015).

Additionally, enhancing enforcement capacity and compliance mechanisms can mitigate evasion and avoidance, ensuring more stable and equitable revenue collection. By aligning CIT policies with broader fiscal and developmental objectives, developing countries can improve the efficiency and fairness of their tax systems while fostering economic growth.

7.2. Assessment of the Excise Tax Incentive Framework in Madagascar

The excise tax framework in Madagascar currently exhibits significant inefficiencies due to its overly broad application. Excise taxes are imposed on an extensive list of goods and services, many of which do not align with the typical objectives of excise taxation, such as addressing negative externalities or generating substantial revenue from a few high-yield goods. This broad application is further complicated by the presence of 107 exemptions, leading to overlap with the VAT system and creating a fragmented tax landscape.

This dual approach—applying excise taxes to numerous items and then exempting many of them—introduces unnecessary administrative costs and complexity. Managing such a system requires additional resources to administer and enforce, increasing compliance burdens for both businesses and tax authorities. The result is a tax framework that is both costly and inefficient, detracting from the overall effectiveness of Madagascar’s excise tax regime. Simplifying the excise tax base to focus on a select group of high-impact goods would help reduce these administrative challenges and improve fiscal outcomes.

Legal and Regulatory Framework: Global trends emphasize the need to carefully manage excise tax incentives due to their potential to erode revenue bases and incentivize undesirable consumption patterns. Madagascar’s excise tax laws apply specific rates to discourage the consumption of items such as tobacco, fuel, and alcohol. Expanding the scope of excise taxation to include emerging categories like carbon emissions or single-use plastics, without introducing incentives that undermine these objectives, could further support Madagascar’s public health and environmental goals (Tax Foundation, 2023). Additionally, the OECD (2020) and Tax Foundation (2023) highlight those considerations like cross-border shopping and smuggling risks, particularly for excisable items, should be addressed to prevent revenue losses and maintain compliance with excise tax regulations.

Institutional Framework: To enhance the effectiveness of Madagascar’s excise tax framework, international best practices suggest maintaining simplicity, transparency, and stability within the structure. Avoiding excise tax incentives on harmful goods helps to prevent unintended economic distortions and strengthens regulatory control. Ensuring that excise tax revenues are directed toward public expenditures, such as healthcare projects, can align fiscal

policies with policy objectives more effectively, fostering public acceptance without compromising the integrity of the tax base (OECD, 2020).

Recommendations for Improvement

1. **Tax on disposable plastic items.:** To address emerging public health and environmental challenges, it is crucial to expand the excise tax base to include new categories such as plastics and non-recyclable materials. These goods generate significant negative externalities, including environmental degradation and public health costs, making them suitable targets for excise taxation. This approach aligns with the principle of taxing harm-causing agents to internalize externalities, encouraging producers and consumers to shift toward more sustainable alternatives. Including a carbon tax as part of this strategy is particularly promising, given its potential to significantly reduce greenhouse gas emissions while generating substantial revenue.
2. **Tax on the carbon content of goods production:** Carbon taxes are capable of surpassing revenues from traditional excise categories, making them a cornerstone for modern excise tax policy. Such taxes might be essential if Madagascar wishes to export its product to the EU. To ensure efficiency and compliance, these taxes should be levied early in the value chain, such as at production or importation stages, reducing enforcement costs and enhancing transparency. Moreover, it is essential to maintain the integrity of these excise taxes by avoiding incentives that may undermine their effectiveness.
3. **Simplify and Strengthen Compliance Mechanisms:** Simplify administration by applying excise taxes at early stages (e.g., importation or manufacturing) and enhance compliance measures. This approach helps avoid the need for incentives that may complicate enforcement and compliance tracking.
4. **Monitor Cross-Border and Illicit Trade Implications:** Maintain excise tax levels that discourage smuggling and account for cross-border price differences to optimize revenue without incentivizing illegal trade.

7.3. Assessment of the VAT incentive Framework in Madagascar

The Value-Added Tax (VAT) in Madagascar, like in many emerging economies, operates as a significant revenue source within the overall consumption tax framework. This section examines Madagascar's existing VAT adoption, evaluation, and monitoring structures, comparing them to international standards to highlight areas for potential improvement.

Legal and Regulatory Framework: Madagascar's VAT system is legislated to apply broadly across consumption activities, capturing value additions at each stage of production and sale. However, the legislative framework could benefit from enhanced clarity on VAT exemptions and reduced rates. These elements have been identified in OECD countries as areas prone to revenue loss due to inconsistent application (OECD, 2020). Ensuring a streamlined VAT system by standardizing exemptions and minimizing exceptions could improve revenue collection efficiency and reduce administrative costs associated with compliance.

Institutional Framework for VAT Monitoring: The administration of VAT in Madagascar falls under a centralized authority, yet the institutional structure appears limited in terms of

digital monitoring and fraud prevention systems that are becoming standard in OECD countries. Digital reporting systems, as implemented in countries like New Zealand and Norway, enable real-time VAT tracking and reduce non-compliance through automated invoicing and reporting mechanisms (OECD, 2020). Integrating such systems within Madagascar's VAT administration could improve compliance and align the framework more closely with international standards.

Recommendations for Improvement

Benchmarking Madagascar's VAT framework against international best practices reveals that simplifying tax exemptions and adopting technology-driven compliance measures can enhance VAT effectiveness. To align with OECD practices, Madagascar could consider the following steps:

1. **Simplify VAT exemptions:** By minimizing the range of VAT-exempt categories, Madagascar can improve revenue collection. Many developing countries have successfully implemented limited exemption structures, which reduce the scope for fraud and misinterpretation (OECD, 2020).
2. **Introduce digital reporting systems:** Emulating the digital VAT reporting seen in OECD countries would facilitate real-time data capture and improve audit capabilities, aligning Madagascar with global trends in VAT monitoring and enforcement.
3. **Strengthen VAT refund mechanisms:** A more robust refund system, as recommended in the OECD VAT guidelines, would support the neutrality of the tax for businesses, encouraging investment while maintaining revenue flow stability.
4. **Undertake a comprehensive assessment of the tax administration system using TADAT:** The Tax Administration Diagnostic Assessment Tool (TADAT) is an initiative by the International Monetary Fund (IMF) aimed at providing a comprehensive assessment of a country's tax administration system. Conducting a TADAT assessment would provide Madagascar with a clear understanding of its tax administration performance across key dimensions. The insights gained could guide targeted reforms to enhance efficiency, compliance, and revenue generation, aligning with international standards.

In adopting these international practices, Madagascar can create a VAT framework that promotes transparency, reduces administrative burdens, and fosters a more stable revenue base, crucial for advancing national economic objectives.

7.4. Assessment of Trade Tax Incentives Framework in Madagascar

Madagascar's trade tax structure aims to enhance industrial development and revenue generation, but administrative complexities and exemptions limit its effectiveness. This section provides an assessment of the legal, regulatory, and institutional framework for adopting, evaluating, and monitoring trade tax incentives. It benchmarks Madagascar's approach against international best practices, highlighting areas for potential improvement in alignment with OECD standards and practices.

Legal and Regulatory Framework: Madagascar's trade tax structure uses a tiered tariff system with four main rates: 0% for essential goods, 5% for raw materials, 10% for intermediate goods, and 20% for finished goods. However, the framework includes over 140 exemptions, leading to administrative inefficiencies and reduced revenue generation. In

contrast, OECD best practices prioritize simplified frameworks with targeted incentives that minimize exemptions. For example, preferential tax rates in Special Economic Zones (SEZs) across OECD countries incentivize specific sectors like technology and export-oriented industries, aligning tax relief with strategic development goals (OECD, 2022). To enhance effectiveness, Madagascar could streamline its exemptions policy and align it with trade objectives. One approach is to restrict exemptions to high-impact sectors, such as export-oriented industries, thereby encouraging investment in these areas while reducing administrative costs.

Institutional Framework: The institutional landscape for tax incentive administration in Madagascar involves multiple bodies, but coordination challenges limit efficiency. OECD countries with effective tax incentive frameworks often rely on centralized agencies that coordinate closely with the finance and trade ministries, investment promotion agencies, and SEZ authorities (OECD, 2022). This model promotes transparency, accountability, and consistency, essential for reducing discretionary decision-making and enhancing investor confidence. To improve Madagascar's institutional framework, a dedicated agency could be established to manage all aspects of trade tax incentives. This agency would focus on:

- Streamlining administrative processes, including the issuance and tracking of tax incentives.
- Developing a transparent system for monitoring and evaluating the impact of incentives on investment, employment, and trade growth.
- Reducing redundancies by centralizing data collection and reporting.

Recommendations for Improvement

To align Madagascar's trade tax incentives with international standards and enhance economic outcomes, the following actionable recommendations are suggested:

1. **Implement Sector-Specific Exemptions:** Limit exemptions to sectors that directly contribute to economic growth and align with national development priorities, such as export-driven industries. This targeted approach follows best practices seen in economies with robust SEZs, reducing the revenue loss from broad exemptions.
2. **Establish an Integrated Monitoring System:** Create a centralized agency tasked with evaluating the effectiveness of trade tax incentives. This agency should employ cost-benefit analysis (CBA) and establish performance indicators to assess the impact on trade volumes, revenue, and industrial development.
3. **Adopt a Revenue Impact Assessment Model:** Develop an economic model that regularly assesses the revenue implications of trade tax changes, considering the price elasticity of demand for imports. By predicting revenue outcomes under various policy scenarios, this model can provide data-driven insights for policymakers.
4. **Encourage Compliance through Simplified Procedures:** Simplify the application and reporting processes to reduce the compliance burden on businesses. This would involve developing online portals for tax filing, streamlining documentation, and implementing risk-based compliance strategies as seen in OECD practices.
5. **Enhance Transparency with a Public Database of Incentives:** Establish a public database that details all current trade tax incentives, including eligibility criteria, application procedures, and expected outcomes. The database should also include

impact assessments to ensure transparency and allow investors to make informed decisions based on reliable data.

7.5. Assessment of Corporate Income Tax (CIT) Incentives Framework in Madagascar

Madagascar's corporate income tax (CIT) structure is comparable to regional standards, as it offers a lower rate for smaller businesses while maintaining a moderate statutory rate for larger corporations, aligning with the international approach of tiered tax rates based on company size. However, there is room to optimize incentives targeting innovation and investment, which are not yet fully leveraged.

Legal and Regulatory Framework: According to OECD recommendations, effective tax rates (ETRs) and provisions such as accelerated depreciation are essential for fostering investment in priority sectors (OECD, 2023). Moreover, the introduction of the Global Anti-Base Erosion (GloBE) Rules by the OECD and G20, which establish a minimum ETR of 15% for large multinational enterprises (MNEs), poses challenges for Madagascar's current CIT framework. Tax incentives that reduce MNE ETRs below 15% could trigger a 'top-up tax' from other jurisdictions, undermining Madagascar's appeal as an investment destination (OECD, 2022).

Under the GloBE framework set by the OECD/G20, large multinational enterprises are expected to pay a minimum effective tax rate of 15%. This rule is intended to prevent tax base erosion by setting a floor on how low effective tax rates can go for multinational corporations, ensuring that these firms contribute a minimum level of tax globally, regardless of where their profits are located. When Madagascar offers tax incentives that drop the effective tax rate of these firms below 15%, it might attract MNEs initially. However, due to the GloBE rules, other jurisdictions where these MNEs have tax obligations can impose a top-up tax to bring their effective tax rate back to the 15% threshold. As a result, Madagascar's lower tax rates lose their effectiveness as an incentive since multinational firms would end up paying the same or higher tax amounts overall. This situation could make Madagascar less attractive as an investment destination, as multinational companies might look for locations where they can benefit from incentives without triggering extra taxes elsewhere. Therefore, aligning CIT incentives with GloBE rules and focusing on substance-based income exclusions can make Madagascar's framework more resilient to international tax pressures.

Institutional Framework: Currently, Madagascar's CIT incentives rely heavily on profit-based mechanisms, a common approach among least-developed countries aiming to attract foreign direct investment (FDI) (UNCTAD, 2022). While effective in some cases, profit-based incentives lack direct ties to tangible investments, which are essential for sustainable economic growth. The OECD's 2023 Corporate Tax Statistics reveal that many jurisdictions, including high-growth economies, favor expenditure-based incentives that link tax relief to actual investments (OECD, 2023). Developed countries increasingly favor expenditure-based incentives, such as accelerated depreciation, R&D tax deductions, and targeted investment allowances, rather than broad tax holidays or rate reductions. This approach supports innovation and long-term investment without eroding the tax base significantly (OECD, 2022a). Madagascar's current framework, without substantial measures targeting expenditure, limits its ability to enhance investment quality and economic resilience.

Recommendations for Improvement

To align with global standards and maximize the benefits of CIT incentives, Madagascar could shift from profit-based to expenditure-based incentives, such as accelerated depreciation, investment allowances, and R&D credits, which would attract foreign investment while supporting sustainable development in sectors like manufacturing and infrastructure. Additionally, combining direct tax incentives (e.g., R&D credits) with indirect support, such as grants, could enhance economic substance by focusing on payroll and tangible asset investments, aligning with OECD guidance. Introducing an Allowance for Corporate Equity (ACE) would further balance debt and equity tax treatments, fostering a neutral tax environment. Clear, measurable criteria for incentive eligibility would improve governance and transparency, linking tax relief to tangible economic benefits and minimizing risks associated with profit shifting and base erosion.

7.6. Global Benchmarking

According to OECD (2022b), International experience highlights that tax incentive frameworks in OECD and partner economies are increasingly tailored to balance investment promotion with robust regulatory oversight. Key criteria observed in effective frameworks include (1) clear eligibility requirements, (2) periodic evaluations of impact, and (3) responsive mechanisms to adapt to changing economic needs. For instance, several countries maintain reduced or stable corporate income tax rates while simultaneously tightening incentives to promote specific goals, such as environmental sustainability. Additionally, countries like the United States and European Union members have applied targeted tax relief measures to stimulate investment without sacrificing revenue integrity by employing minimum statutory tax rates and limiting base erosion through robust international tax agreements.

Madagascar's existing framework may benefit from adopting a similar results-based approach to remain competitive. Comparative analysis suggests the importance of embedding periodic evaluations within the incentive framework to allow adjustments based on performance outcomes and alignment with national economic goals. Moreover, Madagascar could benchmark its incentive framework against the VAT systems in OECD economies, which utilize standardized rates while carefully managing exemptions to minimize tax avoidance risks. Effective VAT structures in these economies ensure compliance and broad revenue generation, while selective incentives support critical sectors without undermining the tax base.

To enhance Madagascar's tax incentive framework, legal and regulatory adjustments can be made to increase transparency and accountability. Establishing clear definitions for eligible activities and required documentation would reduce ambiguities and limit potential abuses. Furthermore, international best practices suggest incorporating anti-abuse rules within the tax code to deter aggressive tax planning. By clarifying legal terms and specifying qualification criteria for tax incentives, Madagascar can ensure that incentives target intended sectors effectively, aligning with national development priorities.

Additionally, expanding Madagascar's regulatory oversight for tax incentives would align with OECD recommendations for balanced fiscal governance. Regular reviews, including sunset clauses, could be instituted to ensure that all tax incentives undergo periodic re-evaluation, based on performance criteria and fiscal impact assessments. This approach would help Madagascar retain only high-impact incentives and phase out underperforming measures.

Strengthening institutional frameworks around tax incentives can reinforce accountability and administrative efficiency. Madagascar could consider establishing a dedicated tax policy unit

within the Ministry of Finance to oversee incentive programs, drawing on models used in OECD countries. Such a unit would be responsible for conducting cost-benefit analyses, publishing regular impact assessments, and ensuring cross-ministerial coordination for strategic alignment with broader economic goals.

Moreover, creating a centralized digital platform for tax incentive applications and reporting could improve transparency and streamline administrative processes. Digital reporting tools, as seen in many OECD countries, enable efficient data collection, which is essential for monitoring compliance and assessing impact. By adopting a data-driven approach, Madagascar can strengthen institutional capacity to manage tax incentives effectively, adapt to evolving economic conditions, and maintain transparency with stakeholders.

To further strengthen Madagascar's institutional framework for tax incentives, digitalization should be a central focus. Establishing a centralized digital platform for tax incentive applications and reporting can greatly enhance transparency and streamline administrative procedures. A digital platform would not only simplify data collection but also facilitate real-time monitoring of compliance and impact assessment, which aligns with the OECD's emphasis on digital transformation for administrative efficiency in tax governance (OECD, 2024).

7.7.Recommendations for Digitalization:

Digital Data Collection and Reporting: Implementing a digital data collection system would enable automated, timely data processing and reduce manual errors. This approach mirrors best practices observed in OECD countries and aligns with innovations in Latin America, where electronic invoicing (EI) systems have been adopted widely. For example, countries like Brazil and Mexico have implemented robust EI systems that not only improve compliance but also provide real-time data for tax authorities, enabling better revenue tracking and fraud prevention (Barreix & Zambrano, 2018). Furthermore, Kenya's adoption of the Tax Invoice Management System (TIMS) exemplifies a successful digital approach. TIMS integrates trader systems such as electronic tax registers, point-of-sale systems, and billing systems with Kenya Revenue Authority's (KRA) iTax platform, ensuring real-time monitoring and accurate issuance of electronic tax invoices. This system has significantly enhanced VAT compliance by minimizing errors, reducing fraud, and enabling more efficient revenue tracking (Chiaji et al., 2024).

Enhanced Transparency and Accessibility: Digital platforms can increase transparency by making information on tax incentives and compliance accessible to the public and stakeholders, aligning with OECD recommendations for greater visibility in tax administration. Latin American countries like Chile and Argentina have demonstrated success in this area through EI systems that facilitate pre-filled tax returns and automated compliance checks, significantly reducing administrative burdens for both taxpayers and tax administrations (Barreix & Zambrano, 2018). Kenya has demonstrated this through its online tax filing systems and automated VAT assessments. These systems allow taxpayers to file and pay taxes electronically, ensuring ease of access and fostering trust between taxpayers and tax authorities by reducing errors and providing real-time data (Chiaji et al., 2024).

Efficient Compliance Monitoring: Through digital tracking systems, Madagascar's Ministry of Finance can effectively monitor compliance with tax incentives, utilizing data-driven insights for policy adjustments that address dynamic economic conditions. Latin America

offers a proven model, as demonstrated by Uruguay's adoption of digital tools for real-time transaction monitoring and Ecuador's innovative use of electronic payroll systems to integrate tax and social security data, enhancing compliance and efficiency (Barreix & Zambrano, 2018). Kenya's experience with TIMS highlights the benefits of digital monitoring. By detecting discrepancies between reported VAT inputs and outputs and enabling automated assessments, TIMS has proven to be a vital tool in improving compliance, curbing tax evasion, and broadening the tax base (Chiaji et al., 2024).

These measures would ensure that Madagascar's tax administration is better equipped to manage incentives in line with global digitalization standards, ultimately contributing to improved economic resilience and a more robust fiscal framework.

8. Conclusions and Policy Recommendations

The ambitious goal of bolstering Madagascar's infrastructure against climate change necessitates careful investment planning, which is prominently financed from public sector tax revenues. In the landscape of developing countries, indirect taxes such as the Value-Added Tax (VAT), excise taxes, and import duties often form the backbone of the tax revenue system. This reliance is pronounced in nations like Madagascar, where income tax contributes a small share of total tax revenue.

The utility of these indirect taxes lies in their ability to generate significant public funds, for financing the development and maintenance of climate-resilient infrastructure. VAT, with a broad base, is a critical source of revenue that can be strategically utilized to support public sector investments essential for adapting to climate variability. Excise taxes and import duties further supplement these revenues, providing a fiscal space for the government to allocate resources towards climate adaptation and resilience initiatives.

It is here that the current policy of offering extensive tax exemptions is dangerous, as it significantly undermines the potential of the tax system to mobilize sufficient revenues to fund critical public sector investments to create resilience against the damage of climate change.

While these incentives have been designed to stimulate sector-specific activities, they usually culminate in a significant diminution of the public sector's fiscal capacity. This erosion is particularly detrimental at this time, as all the expenditures required to address the impacts of climate change—ranging from building resilient infrastructure to implementing adaptive environmental policies—must be undertaken by the public sector.

This reality underscores a critical paradox; the short-term economic allure of tax exemptions intended to elicit a private sector response can, paradoxically, undermine the long-term sustainability and resilience of the public sector infrastructure. It is the taxes paid by the private sector that form the backbone of the public sector's ability to finance these imperative climate change responses. Therefore, the indiscriminate application of tax exemptions and incentives to the private sector, which aims to stimulate economic activity, erodes the very financial resources the public sector crucially needs to make the necessary expenditures to mitigate and adapt to the impacts of climate change. This highlights the urgent need for a balanced fiscal policy that judiciously leverages the contributions of the private sector to support the public

sector's critical role in climate resilience, ensuring that tax policies are strategically aligned to enable the public sector to fulfil its indispensable responsibilities in combating climate change.

The systemic flaws inherent in the tax incentive framework exacerbate this paradox. This broad-brushed approach often leads to tax evasion, tax avoidance and corruption. The intended economic or social outcomes are overshadowed by exploitative practices that bleed the government of significant revenue. Such practices divert essential funds from public services and investments critical to climate resilience, presenting a formidable challenge in aligning tax policies with national resilience objectives.

The complexity of targeting tax incentives for specific purposes further compounds this issue. A wide range of materials and equipment, such as concrete, steel, and motors, while essential for projects aimed at enhancing climate resilience, are employed across hundreds of other activities within the economy. This extensive usage across both targeted and non-targeted uses makes end-use tax incentives highly problematic and often counterproductive. It is challenging to ensure that the incentives precisely support climate-resilient infrastructure development without inadvertently subsidizing a wide array of other economic activities. Such misalignment not only undermines the intended support for climate resilience but also contributes to inefficient allocation of limited fiscal resources, exacerbating the challenges in crafting tax policies that effectively prioritize and support essential public services and investments in climate resilience.

Together, these sector analyses illuminate the multifaceted implications of tax policies on Madagascar's resilience to climate change. They underscore the necessity of prioritizing public sector investments in key areas over tax exemptions that may hinder the country's ability to finance these essentials.

Even if the private sector could plan a role in climate change resiliency investments, policymakers must recognize that incentivizing the private sector to make investments in one sector invariably comes at the expense of less private sector investments in other sectors, underscoring the need for judicious application.

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Appendix

Categorization of Existing Tax Exemptions in Madagascar

1. Excise tax

Excise taxes should focus on a limited range of goods that pose significant public health costs or are a potential income elastic tax base that can be a good source of revenue. Key items for excise taxation include **tobacco and alcoholic beverages, and motor fuels like gasoline, diesel, and kerosene**. These goods, due to their negative externalities and high revenue potential, should be taxes without exemptions.

The items that have to be included in the excise tax in Madagascar are categorized below. This categorization aligns with excise tax principles by focusing on items that have significant *public health, environmental impacts, or high revenue potential*.

For other goods, excise taxes (and corresponding exemptions) should be avoided *to reduce unnecessary complexity and administrative costs* within the tax system. Since excise taxes target only a few items, and given that green technologies are excluded from this list, no green incentives are integrated within the excise tax structure.

Items that Should Be Included in Excise Tax

Alcoholic Beverages:

Ananas avec addition d'alcool (Pineapple with alcohol)

Agrumes avec addition d'alcool (Citrus with alcohol)

Poires avec addition d'alcool (Pears with alcohol)

Abricot avec addition d'alcool (Apricots with alcohol)

Cerises avec addition d'alcool (Cherries with alcohol)

Pêches avec addition d'alcool (Peaches with alcohol)

Fraises avec addition d'alcool (Strawberries with alcohol)

Cœurs de palmiers avec addition d'alcool (Palm hearts with alcohol)

Airelles rouges avec addition d'alcool (Red cranberries with alcohol)

Mélanges avec addition d'alcool (Mixed fruits with alcohol)

Autres avec addition d'alcool (Others with alcohol)

Tobacco and Tobacco Products:

Tabacs non écotés (Unstripped tobacco)

Tabacs partiellement ou totalement écotés (Partially or fully stripped tobacco)

Déchets de tabac (Tobacco waste)

Tabac à fumer (Smoking tobacco)

Tabacs homogénéisés ou reconstitués (Homogenized or reconstituted tobacco)

Fossil Fuels and Motor Vehicles:

Véhicules (Vehicles)

2. VAT

When designing VAT policies for inputs used in export-oriented production, policymakers should prioritize minimizing distortions and ensuring fair competition. According to the Destination Principle of Taxation, VAT is imposed on goods at the point of consumption. This means that imports are taxed while exports are zero-rated, allowing exporters to claim refunds on the VAT paid for their inputs. This approach ensures that goods compete on an equal footing in international markets by removing the tax burden from exports.

If VAT exemptions are applied to imported inputs but not to domestically produced inputs, it creates a distortion in the supply chain. Producers may favor imported inputs over domestic ones to reduce tax liabilities, potentially harming domestic industries. However, even exempting both imported and domestic inputs can lead to inefficiencies, as domestic producers of exempt inputs cannot claim credits for the VAT they paid on their own inputs. This embedded tax becomes an unrecoverable cost, increasing production expenses and resulting in a cascading tax effect.

VAT system should ideally be as broad-based as possible to maximize efficiency and ensure stable revenue collection. However, certain items are inherently difficult to tax due to their unique nature or administrative challenges. These challenges, combined with social and economic considerations, often lead to exemptions for specific categories of goods and services. Exempting essential goods and services such as basic food items, healthcare, and education can help address practical difficulties in taxation while also ensuring that VAT does not disproportionately impact access to fundamental needs.

Similarly, education and educational materials are generally exempt to promote access to knowledge and skills, which are crucial for long-term economic development.

We recommend exempting the following items from VAT:

- **Health and Medical Services:** Health and medical services, including hospital care, prescription medicines, and essential medical supplies, are often exempt from VAT due to their critical role in maintaining public health and the complexity of applying VAT consistently across a diverse range of providers. This is particularly challenging in public or non-profit healthcare systems, where services are not primarily structured for commercial purposes.
- **Education and Educational Materials:** Covering school tuition, textbooks, and other learning tools to support equitable access to education.
- **Public Transport services:** To encourage environmentally friendly travel options and maintain affordability for the general public. Besides, public services such as public transportation are challenging to tax due to their essential nature and the potential public backlash against increasing their costs.

- **Basic Unprocessed Food Products:** Such as staple grains, vegetables, and other essential food items that form the dietary base of households. Besides, goods from small-scale or subsistence farming can be hard to tax due to informal trade practices, lack of documentation, and difficulty in tracking production and sales.

The detailed list of recommended VAT exemptions is provided below. Other items should not be exempt from VAT.

2.1.TVA

Health and Medical Services

Importation et vente des médicaments (Import and sale of medicines)

Prestations fournies dans le cadre de la profession de la santé (Health professional services)

Importation et vente de matériels, équipements et consommables médicaux (Import and sale of medical supplies, equipment, and consumables)

Education and Educational Materials

Ecolages payés en rémunération des cours d'enseignement général, technique ou professionnel (Tuition fees for general, technical, or vocational education)

Frais de formation entrant dans le cadre du développement de la formation professionnelle et supportés par le fonds de gestion dédié par le Ministère de l'Enseignement Technique et de la Formation Professionnelle (Training expenses in professional training development)

Importation et vente de livres, brochures et imprimés à caractère éducatif et scolaire (Import and sale of books, brochures, and educational and school publications)

Importation et vente de papier journal Édition et vente de journaux et périodiques, à l'exclusion des recettes provenant des insertions de publicité et d'annonces. (Importation and sale of newsprint Publishing and sale of newspapers and periodicals, excluding revenue from advertisements and announcements)

Frais de formation organisée par les chambres de commerce, relative à l'accompagnement de leurs membres à développer leurs activités (Training expenses organized by chambers of commerce to support their members in developing their activities)

Frais de formation engagés par l'Agence Nationale de Développement de l'Industrie pour ses opérations de développement de l'apprentissage, conformément à la loi sur le développement de l'industrie (Training expenses incurred by the National Agency for Industrial Development for apprenticeship development, in line with the industry development law)

Agricultural and Basic Food Products

Importation et vente des intrants à usage exclusivement agricole (Import and sale of inputs exclusively for agricultural use)

Importation et vente de semence de pomme de terre, de semence de maïs, de semence de blé et de semence de soja (Import and sale of seeds for potatoes, corn, wheat, and soy)

Importation et vente de lait et compléments diététiques pour nourrissons et enfants en bas âge (Import and sale of milk and dietary supplements for infants and young children)

Importation et Vente locale de maïs (import and Local sale of corn)

Importation et vente de Froment (blé) et méteil (Import and sale of wheat and rye)

Importation et vente de riz, de paddy (Import and sale of rice and paddy)

2.2.TVA impact

Health and Medical Services

Dons de matériels et équipements médicaux (Donation of medical materials and equipment)

Matériels, équipements et consommables médicaux spécifiques ayant un lien direct avec la maladie (Specific medical materials, equipment, and consumables related to diseases)

Sérums, vaccins et produits biologiques préparés par l'Institut Pasteur de Paris (Serums, vaccines, and biological products prepared by the Pasteur Institute of Paris)

Articles à usage médico-chirurgical en plastique (Plastic medical-surgical items)

Penicillines et leurs dérivés à structure d'acides pénicillaniques; leurs sels (Penicillins and their derivatives; their salts)

Streptomycines et leurs dérivés; sels de ces produits (Streptomycins and their derivatives; their salts)

Tétracyclines et leurs dérivés; sels de ces produits (Tetracyclines and their derivatives; their salts)

Chloramphénicol et ses dérivés; sels de ces produits (Chloramphenicol and its derivatives; their salts)

Erythromycine et ses dérivés; sels de ces produits (Erythromycin and its derivatives; their salts)

Autres antibiotiques (Other antibiotics)

Agricultural Inputs and Basic Food Products

Denrées alimentaires (Food items)

Millet de semences (Millet seeds)

Fertilisants borates (Borate fertilizers)

Graines de coton de semence (Cotton seeds)

Seigle de semence (Rye seeds)

Avoine de semence (Oat seeds)

Semence de sorgho à grains (Sorghum seeds)

Arachides de semence (Peanut seeds)

Orge de semence (Barley seeds)

Haricots verts de semence (Green bean seeds)

Autres semences animales, non comestibles, destinées à la reproduction (Other non-edible animal seeds intended for reproduction)

Méteil de semence (Mixed grains for seed)

3. Import duties

As we mentioned in the report, exempting **educational and health-related goods** from import duties aligns with promoting essential public services and addressing critical social needs. These goods contribute directly to improving public welfare by enhancing access to education and healthcare. Imposing import duties on such items increases their cost, disproportionately affecting low-income households and limiting access to essential services. By maintaining exemptions, Madagascar can support equitable development and ensure these vital sectors remain affordable and accessible, consistent with its broader social objectives.

Basic food products should also remain exempt to ensure affordability for the population, particularly low-income households. As highlighted in the report, essential goods like food are critical for maintaining social welfare. Import duties on basic food products would raise consumer prices, disproportionately impacting vulnerable groups and exacerbating food insecurity. Similarly, exempting **agricultural inputs** helps lower production costs in the agricultural sector, enhancing food security and supporting rural livelihoods. This aligns with the goal of fostering economic development in Madagascar's significant agricultural sector while promoting fiscal stability.

Therefore, we recommend exempting the following items from import duties: Educational and Health-Related Goods, Basic Food Products, and Agricultural Inputs.

The detailed list is provided below. Other items should not be exempt from import duties.

Health-Related Goods

Dons de matériels et équipements médicaux (partie code additionnel 122) (Donations of medical materials and equipment)

Articles et appareils d'orthopédie, y compris les ceintures et bandages médico-chirurgicaux et les béquilles (Orthopedic articles and devices, including medical-surgical belts and crutches)

Instruments et appareils pour la médecine, la chirurgie, l'art dentaire ou l'art vétérinaire (Instruments and devices for medicine, surgery, dental, or veterinary use)

Mobilier pour la médecine, la chirurgie, l'art dentaire ou l'art vétérinaire (Furniture for medical, surgical, dental, or veterinary use)

Préservatifs (Condoms)

Articles et appareils d'orthopédie, y compris les ceintures et bandages médico-chirurgicaux et les béquilles; attelles, gouttières et autres articles et appareils pour fractures; articles et appareils de prothèse; appareils pour faciliter l'audition aux sourds et autres appareils à tenir à la main, porter sur la personne ou à implanter dans l'organisme, afin de compenser une déficience ou une infirmité (Orthopedic articles and devices, including medical-surgical belts and crutches; splints, gutters, and other articles and devices for fractures; prosthetic articles and

devices; hearing aids for the deaf and other handheld, wearable, or implantable devices to compensate for a deficiency or disability)

Mobilier pour la médecine, la chirurgie, l'art dentaire ou l'art vétérinaire (tables d'opération, tables d'examen, lits à mécanisme pour usage clinique fauteuils de dentistes, par exemple); fauteuils pour salons de coiffure et fauteuils similaires avec dispositif à la fois d'orientation et d'élévation; parties de ces articles: Mobilier pour la médecine, la chirurgie, l'art dentaire ou l'art vétérinaire (tables d'opérations, tables d'examen, lits à mécanismes pour usage clinique, par exemple). (Furniture for medical, surgical, dental, or veterinary use (operation tables, examination tables, clinical-use beds, dentist chairs, for example); barber chairs and similar chairs with both orientation and elevation mechanisms; parts of these articles: Furniture for medical, surgical, dental, or veterinary use (operation tables, examination tables, clinical-use beds, for example).)

Educational goods

Livres, brochures et imprimés similaires, même sur feuillets isolés (Books, brochures, and similar printed materials, even on isolated sheets)

Journaux et publications périodiques imprimés, mêmes illustrés ou contenant de la publicité (Printed newspapers and periodicals, illustrated or containing advertisements)

Albums ou livres d'images et albums à dessiner ou à colorier, pour enfants (Picture books and drawing or coloring albums for children)

Instruments, appareils et modèles conçus pour la démonstration dans l'enseignement (Instruments, devices, and models for educational demonstration)

Basic Food Products and Agricultural Inputs

Denrées alimentaires (Food items)

Riz à l'exclusion du paddy (Rice excluding paddy)

Froment (blé) et méteil (Wheat and rye)

Extraits de malt; préparations alimentaires de farines, gruaux, semoules, amidons, féculés ou extraits de malt (Malt extracts; food preparations of flours, groats, semolina, starches, or malt extracts)

Pommes de terre, à l'état frais ou réfrigéré de semences (Fresh or refrigerated potato seeds)

Haricots verts de semence (Green bean seeds)

Orge de semence (Barley seeds)

Avoine de semence (Oat seeds)

Maïs de semence (Corn seeds)

Millet de semence (Millet seeds)

Seigle de semence (Rye seeds)

Engrais minéraux ou chimiques azotés (Nitrogenous mineral or chemical fertilizers)

Engrais minéraux ou chimiques phosphatés (Phosphatic mineral or chemical fertilizers)

Engrais minéraux ou chimiques potassiques (Potassic mineral or chemical fertilizers)

Engrais minéraux ou chimiques contenant deux ou trois des éléments fertilisants : azote, phosphore et potassium (Mineral or chemical fertilizers containing two or three fertilizing elements: nitrogen, phosphorus, and potassium)

Insecticides, fongicides, herbicides, inhibiteurs de germination et régulateurs de croissance pour plantes (Insecticides, fungicides, herbicides, growth inhibitors, and plant growth regulators)

Graines, fruits, et spores à ensemercer (Seeds, fruits, and spores for sowing)

Produits d'origine animale, non dénommés ni compris ailleurs ; animaux morts des Chapitres 1 ou 3, impropres à l'alimentation humaine (Animal-origin products not otherwise specified or included; animals from Chapters 1 or 3, unfit for human consumption)

4. Green incentives

As we mentioned in the report, to effectively reduce CO₂ emissions, taxation on carbon is more impactful than tax incentives. While tax incentives may encourage environmentally friendly behaviors, they are often economically inefficient for achieving significant reductions in emissions. A high carbon tax directly targets fossil fuel consumption by increasing the cost of carbon-intensive activities, thereby incentivizing businesses and consumers to shift to cleaner alternatives.