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**REPORT** DECEMBER 2021

# THE CENTRALITY OF MINISTERS OF FINANCE IN A CHANGING CLIMATE

## FINANCE FUNCTIONS OF A GOVERNMENT

**DILEIMY OROZCO AND MARCELA JARAMILLO**





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## About E3G

E3G is an independent European climate change think tank with a global outlook. We work on the frontier of the climate landscape, tackling the barriers and advancing the solutions to a safe climate. Our goal is to translate climate politics, economics and policies into action. E3G builds broad-based coalitions to deliver a safe climate, working closely with like-minded partners in government, politics, civil society, science, the media, public interest foundations and elsewhere to leverage change.

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## Executive Summary

The COVID crisis has reminded us of the power and responsibility of finance ministries. Ultimately, those who are responsible for the government's central finance functions are central to both current and future crisis response. As well as shaping the national economy and frequently setting the boundaries for what other ministries can do, finance ministries are influential in shaping the global financial architecture, macroeconomic norms and regulation through their positions within the networks of global economic leadership, including as shareholders of the IMF and MDBs.

As the threat of non-financial shocks grows – with climate change a key driver – finance ministries will increasingly have to assess, plan for, and respond to such shocks. However, to date, finance ministries have yet to fully internalise how climate change will reshape the tools they can deploy and the economies they will have to manage. Not only will this have implications for their mandate to protect public finances and ensure the nation's prosperity, but ultimately will also require political leadership to mediate the impacts of climate change and the transition – leadership that can ultimately only be addressed by the Ministers of Finance themselves.

Whilst finance ministries are recognising the threats posed by climate change and embarking on certain climate initiatives; they are yet to take decisive action. There are four main impediments to finance ministries effectively preparing themselves and the economies they oversee for the threat of climate change.

- > Firstly, a reluctance to challenge orthodoxy around economic activity being directed by the market is compounded by the failure of economic models to adequately model climate change impacts.
- > Secondly, even where the need for action is recognised, there is reluctance for active intervention in economic activity at the scale required and over a long-term time horizon.
- > Thirdly, finance ministries are unused to handling challenges of the level of complexity and which cut across all government departments as that posed by climate change.
- > Lastly, finance ministries do not have the specialists required to give them capacity to understand the effects of climate change and tools to reduce these risks and mitigate their impacts.



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Despite these challenges, finance ministries are well-placed to act as of today. Each crisis forces innovation, and COVID has forced unorthodox responses whilst emphasising the economic impact of non-financial risks. There are four critical areas for action: public investment management, taxation policy, government budgeting and fiscal planning. Each of these areas will be impacted by climate, but at the same time have the potential to both mitigate climate change and build resilience to its impact.

This briefing provides an overview of how climate will impact the government's central finance functions and highlights some of the potential levers for action that are available. This is not only a call to action for finance ministries, but an initial overview of how the tools available to them need to be upgraded, and how the institutions that they have influence over and the networks that they are part of should position themselves at the centre of the climate debate and drive improved economic management as the challenges they face evolve.



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## The key role of Finance Ministries within the economy and a changing climate

Economic and financial decision making within a government is of manifest significance for a nation's prosperity<sup>1</sup>. Planning and implementing the central financial functions of government – forecasting the nation's economy and finances, planning development, supervising the central bank, and debt management – represent some of the essential duties that will determine the nation's future wealth. These functions often sit within the finance ministry, which we will refer to throughout this piece although in some cases, other departments such as Planning or the Economic and the Central Bank will share these responsibilities<sup>2</sup>.

Intrinsic to delivering economic development and prosperity within countries will be addressing climate change to safeguard growth and flourish through the net-zero transition. This will require wide-ranging changes across sectors from energy to transportation through to housing, and need fundamental changes in economic structures and the management of the economy. Treating climate as sitting within an environmental silo grossly understates the scale of action required.

As decarbonisation deepens and spreads to encompass the whole economy, and as the need to build resilience against unavoidable climate impacts rises, more and more of the critical decisions on the pace and scale of climate action are primarily made at the economic wide-level rather than as part of sectoral policy in the energy, transport, and agricultural sectors. Fundamental shifts in economic activity that need to take place include:

- > Building energy systems primarily driven by modern renewable energy requires profound market and network regulation changes, which are generally controlled by economic and planning ministries.
- > Redirecting public and private finance towards clean and resilient infrastructure requires rewiring financial markets, public budgets and infrastructure planning and assessment, all overseen by finance ministries and regulators.

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<sup>1</sup> Larsson, T (1993). **The Role and Positions of Ministers of Finance.**

<sup>2</sup> IMF (2015). **The Evolving Functions and Organization of Finance Ministries.**



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- > Redesigning innovation, skills, and productivity policy to service new green markets and support a just transition is shaped by policymakers overseeing competitiveness, industry and trade, and not by environment ministries.

Many of the tools needed, from regulation and planning to funding, taxes and subsidies, will require the active participation of the finance ministries given the power they wield as architects of both the financial sector and the broader economy. Ultimately, they will also be at the core of the political economy debate at the macro level and around critical questions: Who should pay, and who benefits? Who has the economic power? And how policies can support the collective prosperity of the nation?

Finance ministries have always had, or projected, a position of power within the government. This is partly explained by their ability to shape the norms that impact economic stability. Therefore, they could have social and environmental ramifications; in short, their performance is (at least in theory) measured by the nation's future prosperity. They have a solid ability to shape spending, taxation and set the norms of the economy they work with. This makes them very efficient at running economies, designing tax, planning and controlling spending (though not necessarily always managing it, however), and overseeing sectors of the economy like finance.

The influence of the minister of finance isn't limited to the national level. These actors are also at the centre of global networks of economic leadership, including in critical institutions like the IMF, Central Banks, multilateral institutions and think tanks such as the OECD. This international perspective is also reflected in their thinking, with a strong international consensus on economic management. This consensus on economic management – and the primacy of not disrupting markets – makes it difficult for finance ministries to challenge the status quo and make system-wide changes.

As seen during the COVID crisis, finance ministries often are extremely good at crisis management, and where necessary, can bend conventional thinking to allow the economy to survive. COVID showed the limits of the traditional playbook used by finance ministries: it was not a traditional financial or economic crisis, and previous experiences were of limited use.

These non-financial crises are likely only to get more frequent. Nations will be hit by more crises that might have been perceived as being outside the direct



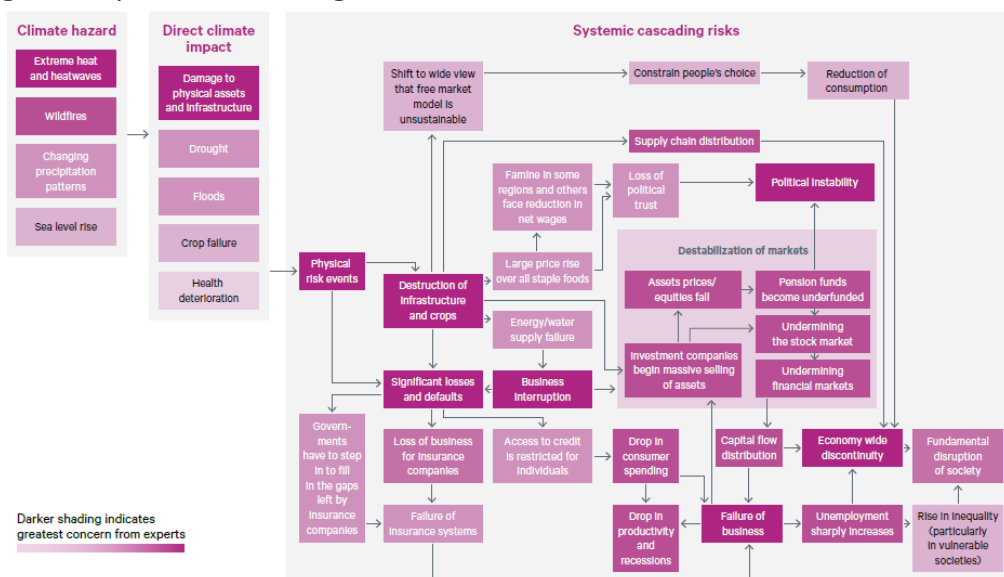


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control of finance ministries. However, the extent to which this will be the case or not depends on economic management’s role in addressing the risks that underly such crises. For example, in the case of climate change, fiscal policy and economic planning can affect emissions and a nation’s resilience to climate-related impact. This means the economic risks of climate change, both physical and transition-related, are to some extent endogenous<sup>3</sup>, and how ministries of finance respond to these risks could generate wider feedback loops.

Cognisant of this, leading macroeconomists are waking up to the threat of climate change. There is an increasing body of macroeconomic research on both the potential impact of climate change on diverse issues such as inequality and financial stability, and the benefits associated with tackling climate change by shifting to a new growth model and addressing global imbalances in savings and investment. Academics such as Adair Turner and Joseph Stiglitz, as well as central banks such as the Bank of England, Bank of International Settlements, and the European Central Bank, are increasingly vocal about the challenges and opportunities posed by climate change.

Figure 1. Systemic cascading risks



Source : Chatham House, Climate Change Risk Assessment 2021

<sup>3</sup> OBR (2019). Fiscal Risk Report



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## Challenges in protecting public finances in a changing climate.

Finance ministries are now acknowledging the risks of climate change<sup>4</sup>. However, their functions and approach have not yet been adapted to address the kind of threat it poses. Despite emerging initiatives they are still a long way away from taking commensurate action.

In broad terms, the challenges which impede finance ministries from taking more decisive action on climate change can be grouped into four broad categories:

- i) **Constrained economic thinking**<sup>5</sup> - the successes of the market-based economy has led to a great reluctance to challenge market outcomes, even when these are distorted. A related issue is problematic tail risks; many of the impacts of climate change are not linear, but instead, represent heightened probabilities of high impact disasters. The economic models that provide input into the policy decisions are not adequate for risks like climate change<sup>6</sup>.
- ii) **Aversion to active economic planning** – even where the imperative for supporting an orderly transition is recognised, finance ministries are reluctant to deviate from their traditional toolkits developed over the past forty years which are principally focussed on market signals – communicated via prices - in the near-term. A more active economic management, ie more hands-on fiscal policy, seems to be outside the current focus and toolkit (and indeed the electoral cycle) of most finance ministries.
- iii) **Complexity of a cross-cutting challenge** – climate will impact all areas of government, which hampers decisive action from any one ministry, and adds a level of complexity which the government isn't used to handling.
- iv) **Lack of capacity** – finance ministry staff have may lack knowledge of climate issues and their impacts, which is part of a vicious circle where a lack of knowledge means that the case for recruiting specialists is not understood. This is a dynamic which is only enhanced by the conservative nature of many finance ministries.

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<sup>4</sup> Coalition of Ministers of Finance (2020). **Santiago Action Plan**

<sup>5</sup> See <https://newforum.org/en/ix-new-paradigm-workshop-27-oktober-2021/>

<sup>6</sup> Vox (2018), **We are almost certainly underestimating the economic risks of climate change**

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These challenges are now being confronted in a context where ensuring the stability of markets and financial systems can lend certain inertia to decision-making, particularly given the increasingly global nature of financial markets. As such, departing from the status quo and taking the necessary measures to address the climate challenge is controversial in itself. Indeed, a paradigm shift is proving to be necessary to induce a departure from traditional methodologies for assessing risks<sup>7</sup>; future risks will be increasingly non-linear, whereas current economic risk management is grounded in linear thinking.

This is compounded by the perception that the climate change problem will only manifest itself over the long term, coupled with the fact that the economic models incorporating climate change may struggle with the inherent difficulty in addressing the uncertainty of both the timing and impact of natural disasters and the feedback loops from the extent to which other countries take climate action. This leads to the temptation to postpone decisions on climate action in favour of addressing more pressing current issues. Even the tools that finance ministries use to assess risk may be misleading them<sup>8</sup>, with an overreliance on policy-making based on a single scenario or forecast which is treated as if it were infallible.

Nevertheless, managing a crisis is not new to these stakeholders. They have always had to manage risk, but risks are now growing with globalisation and climate change leading to a greater probability of high impact 'tail risks' which are not captured by historical data and are exogenous shocks. The interconnected nature of the global economy heightens this dynamic. Finance ministries cannot prevent natural disasters, but they will need to support governments in preparing for them. At the same time, the decisions taken by finance ministries will also influence the probability of climate change and its cascading impacts - quantifying this influence is extremely difficult and more work needs to be done.

Finance ministries do not operate in a vacuum, either at the national or international level. At the national level, the shift from a silo approach to a whole-government approach is essential to confront the cross-cutting nature of non-financial threats. This might have an impact both on the budget and the

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<sup>7</sup> BIS (2019). **Research on climate-related risks and financial stability: An "epistemological break"?**

<sup>8</sup> LSE (2018). **Economic models significantly underestimate climate change risks.**



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organisation of government departments, two areas where institutional inertia is common. At the international level, the key institutions – IMF, OECD, WB - which provide economic advice and set the best practices that are widely adopted by finance ministries, also face a steep learning curve to remain relevant and meet their mandate in a world of non-linear risks. However, their members and shareholders have yet to provide them with a clear mandate to do so.

## What levers do Finance Ministries have?

To keep their economies stable in a world of non-financial shocks and an accelerating energy transition, governments and their finance functions will need to adapt and learn to manage these challenges. Governments will also have to use indirect levers, influencing international financial institutions, building coalitions and working with private sector actors. However, an important starting point is understanding their finance functions and how they will be impacted by climate.

The IMF has identified a taxonomy for government finance functions<sup>9</sup> – which typically but not exclusively sit under the finance ministries. The IMF divides these functions into three principal families: policy functions, regulatory functions, and transactional/operational functions. The IMF taxonomy shows how these functions apply across four broad areas: fiscal policy; budget management; accounting, internal control and audit; and other central finance functions.

### **BOX 1: Fiscal and financial functions of government**

According to the IMF<sup>10</sup>, the fiscal and financial functions of the government can be classified into the following three categories:

- > Policy functions are at the core of the fiscal and financial functions of government. These include devising fiscal rules, formulating tax policy, developing a debt strategy, formulating the annual budget and the medium-term budgetary framework.
- > Regulatory functions relate to the government's role in the supervision of the economy. These include supervision of line ministries (e.g. coordination of budget cycle and monitoring of budget implementation), supervision of financial institutions (e.g. regulation of institutions and

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<sup>9</sup> IMF (2015). **The Evolving Functions and Organization of Finance Ministries.**

<sup>10</sup> IMF (2015). **The Evolving Functions and Organization of Finance Ministries.**

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markets) and supervision of economic sectors such as utilities (e.g. competition and antitrust policy).

- > Transactional functions relate to the fiscal and financial operations of the government. These include tax collection, debt issuance, compilation of financial reports and internal controls and audits. Some functions combine both a policy and transactional element, for example the issuance of government debt.

While many of these functions, especially the policy ones, are carried out by the ministry of finance this can vary widely from country to country. Many functions are carried out by other bodies such as Ministries of Planning, Central Banks, tax authorities or independent regulators.

**Table 1: Central Financial Functions of a Government**

Policy Functions	Regulatory Functions	Transactional Functions
<b>1. Fiscal Policy</b>		
Fiscal policy analysis and formulation, fiscal rules	Monitoring compliance with rules, spending ceilings and performance targets	Macro-fiscal forecasting
Debt management strategy	Regulation of debt markets	Debt issuance and registry functions
Policy on taxation and other government revenues	Enforcement of tax laws	Collection of taxes, customs/excise duties and other revenues.
Policy and management of fiscal risks	Monitoring implementation of risk management policies	Issuance of guarantees
<b>2. Budget Management</b>		
Formulation of the medium-term budget framework / annual budget	Coordination of budget cycle	Estimation of budget costings
Public investment strategy and planning, policies, and guidelines	Monitoring policy implementation, gateway reviews	Execution of policies and guidelines, including investment appraisal
Budget execution – policies guidelines, instructions	Monitoring/oversight of budget execution, compliance with regulations	Execution of budget by spending agencies
Cash forecasting/liquidity management / TSA	Monitoring through cash management committee	TSA managed by central bank under government supervision
Policies on public procurement and PPPs	Monitoring of policy implementation and gateway reviews	Execution of procurement contracts and PPPs
<b>3. Accounting and Reporting Policies, Internal Control and Audit</b>		
Development of accounting policies, rules and guidelines	Coordination/monitoring compliance with accounting standards	Compilation of financial reports

Application of international standards (IPSAS, GFS)	Provision of internationally comparable fiscal data and statistics	Standardised recording of transactions, assets, and liabilities of public sector
Policies on internal control and internal audit	Monitoring compliance with standards	Execution of internal controls and internal audit
<b>4. Other Central Finance Functions</b>		
Policies on intergovernmental fiscal relations	Monitoring compliance with local government budget/finance policies and laws	Execution of local government budget / finance policies and laws
Management of government assets and liabilities	Monitoring the implementation of management framework	Provision of data by spending agencies, etc.
Policies on the financial management of SOEs	Monitoring the implementation of policy framework	Provision of data by line ministries and SOEs.
Relations with international finance organisations	Monitoring compliance with international obligations and standards	Processing of international financial transactions

Source: IMF (2015). *The evolving functions and Organisation of Finance Ministries*.

As Table 1 shows, the finance functions of a government are extensive, and most functions will be impacted to a greater or lesser extent by climate change and the energy transition. However, the impact will be uneven, and, in some cases, work must begin now to lay the foundations for dealing with upcoming crises. To understand the priority areas to address climate change, it's necessary to consider what outcomes the management of public finances should deliver. In essence, most finance ministries are concerned with keeping the economy growing steadily and unemployment low without losing fiscal sustainability.

In delivering these goals, finance ministries have a suite of levers which can broadly be captured in a fiscal triangle<sup>11</sup> of taxation, government borrowing and public spending. As these stakeholders begin to address climate change, the key areas of focus will be taxation, public investments, and debt management at the three vertices of the fiscal triangle, together with fiscal policy and budget management to determine how the equilibrium of the triangle is maintained. These levers will both affect the progress of climate change and be affected by it.

<sup>11</sup> UNDESA (2020). **Natural Capital Accounting for Sustainable Macroeconomic Strategies**



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### Taxation policy

This dynamic is perhaps clearest for taxation, which is often held up as a key tool to internalise the externalities of climate change. A less-well understood dynamic is that **the transition will also have a significant impact on the shape of tax revenues, and therefore the tax base**. This is relevant as a main objective of ministers of finance is to maintain tax revenue stable and predictable.

At a very simplistic level, through the transition, the tax base of an economy might be reshaped in proportion to the carbon intensity of government revenues and the wider economy. As carbon-intensive sectors decline – for example, fuel sales to internal combustion engines<sup>12</sup> – their associated tax revenues will also dwindle.

Both technological disruption and the transition will alter tax bases by shifting the basis on which tax revenues are raised. In order to minimise shocks, and offset unwanted distributional effects, governments should anticipate these shifts. To do so, it will be key to understand the share of the existing tax base which is exposed to the transition. From this the potential decline can be projected, and offsetting revenue sources identified.

Vehicle taxation is an instructive example here, it has been estimated to represent a revenue source as significant as 3.5% of GDP<sup>13</sup>, although taxes and duties on fuel can account for up to nearly 15% of total revenues, in some countries<sup>14</sup>. Improved vehicle efficiency – which is taking place regardless of national policies – together with the electrification of transport will lead to shrinking revenues from taxes on diesel and gasoline. This decline can potentially be offset by distance-based charging measures, which if introduced gradually and early at low levels is less likely to cause disruption or arouse serious opposition. Of course, as with any tax or incentive, there needs to be a basis to be able to review the measure to establish whether or not it is proving effective against pre-agreed KPIs.

Furthermore, there will be a significant impact either directly through border taxes or through shrinking external markets for carbon-intensive products. Therefore, gradually adjusting taxes to capture both the advancement in technology, declining costs and anticipating stronger policy commitments will be necessary to mitigate volatility in government revenues.

At the same time, the debate around how taxation can be used to speed the transition has principally been focussed on carbon pricing, which is considered as

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<sup>12</sup> International Energy Agency (2021). **Global EV Outlook 2021, Policies to promote electric vehicle deployment**.

<sup>13</sup> International Energy Agency (2021). **Global EV Outlook 2021, Policies to promote electric vehicle deployment**.

<sup>14</sup> OECD /ITF (2019). **Tax Revenues Implications of Decarbonising Road Transport, Scenarios for Slovenia**.

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a first-best solution – internalising externalities via taxes - in line with traditional economic thinking. The downfall of this approach has been the unwillingness of society to bear the cost of the externalities directly and the distributional effects that this might have<sup>15</sup>. This unwillingness coupled with the political risk associated with implementing such a policy, results in inertia<sup>16</sup>. Coordination at the international level has been slow, and most emissions from energy use remain unpriced as of 2018<sup>17</sup>.

It is increasingly recognised that there is an alternative; that “a pragmatic second-best solution is to use a combination of instruments that are equivalent to implicit pricing, ranging from taxes and subsidies to carbon pricing and trading, environmental standards and regulations, and information and awareness, etc with the involvement of all agents in the economy and across several sectors”<sup>18</sup>. This has also been recognised by G20 Leaders.

This makes a strong case for removing fossil fuel subsidies, notably subsidies or tax breaks at the producer level. These subsidies also might be diverting scarce resources from the future productive areas of the economy. In the US subsidies at the federal level in the form of tax incentives to encourage certain fossil fuels have existed since 1916<sup>19</sup>; in other words, they might be so embedded into the architecture that ministers may no longer be actively aware of them. It has been assessed that in the US some subsidies can increase returns significantly; based on 2019 market prices by 55% for oil and 66% for gas<sup>20</sup>. This is transferring revenues from the extraction of resources from the state to excess profits to the oil and gas industry. Furthermore, in countries where governments are obliged to give sovereign guarantees to support investments this is transferring the risks from the private sector onto the public balance sheet, often for long-lived assets<sup>21</sup>.

Lastly, it is worth noting that in driving the transition, the optimal level of carbon tax or carbon pricing may not equate to that which generates the most income, but instead drives the fastest rate of change. For example, around half of EU-ETS

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<sup>15</sup> Schroeder, F (2016). **Carbon Taxes for Managing Climate Change**.

<sup>16</sup> ECB (2020). **Climate change and the macroeconomy**.

<sup>17</sup> IMF/OECD (2021). **Tax Policy and Climate Change: IMF/OECD Report for the G20 Finance Ministers and Central Bank Governors**.

<sup>18</sup> Remarks by Mr **Luiz Awazu Pereira da Silva**, Deputy General Manager of the BIS, at the conference organised by the BIS, OMFIF, the Deutsche Bundesbank and the World Bank Group, Frankfurt, 13 July 2017.

<sup>19</sup> Achakulwisut, Erickson, Koplow (2021). **Effect of subsidies and regulatory exemptions in 2020–2030 oil and gas production and profits in the United States**.

<sup>20</sup> Achakulwisut, Erickson, Koplow (2021), **Effect of subsidies and regulatory exemptions in 2020–2030 oil and gas production and profits in the United States**.

<sup>21</sup> Gaventa, J (2021). **The failure of ‘gas for development’ – Mozambique case study**

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emissions allowances from 2013-2020 were allocated for free, but still had an impact in economically disincentivising carbon emissions<sup>22</sup>.

As a first step, understanding how much fossil fuel represent in terms of subsidies and tax revenues<sup>23</sup> will help inform choices on how ministers of finance can minimise adverse effects whilst speeding the energy transition. This is throwing into sharp relief by the IEA estimation that no further new oil, gas and coal extraction projects are compatible with the 1.5 C pathway<sup>24</sup>.

Evolving the tax base to meet these impacts is a significant challenge, which will need to consider economic, social, and administrative considerations. From an economic perspective, the efficiency of taxation – minimising deleterious impacts on growth, employment, investment, and the efficiency of economic activity – is a major consideration, as of course are the volume and stability of revenues that the tax yields<sup>25</sup>. As well as administrative ease, the impact of the tax in incentivising or disincentivising certain activities is also important, as is ensuring the tax system is sufficiently flexible to evolve with fast-emerging markets and changing forms of economic activity. From a social perspective the re-distributional effects of taxation, as well as the perception of fairness and considerations such as ‘the polluter pays’<sup>26</sup> will be important in ensuring societal acceptance of these necessary changes.

To support finance ministries in undertaking this transition, more work is required to address some of the unanswered questions. For example, where will the tax revenue come from to replace revenues from carbon-intensive sectors or pay for subsidies to incentivise the transition? Which sector of the economy would be most affected through the transition, and what proportion of tax revenues does it represent? There also needs to be a discussion with the relevant line ministries to understand the accompanying measures that could encourage the adoption of different technologies such as a new transport mode.

### **Debt management**

Part of the balancing of government finances involves bridging the gaps between taxation and government spending through the management of government debt, or in other words the way countries borrow to finance their spending.

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<sup>22</sup> Andersson, M; Baccianti, C; Morgan, J (2020). **Climate change and the macroeconomy.**

<sup>23</sup> OECD (2019). **The fiscal implications of the low-carbon transition.**

<sup>24</sup> Oil Change International (2021). **IEA’s first 1.5°C model closes the door on new fossil fuel extraction.**

<sup>25</sup> OECD and International Transport Forum (2019). **Tax Revenue Implications of Decarbonising Road Transport.**

<sup>26</sup> Grantham Institute (2017). **How to make carbon taxes more acceptable.**

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This will likely play a particularly key role in delivering the public investment necessary for the transition. COVID has shown how non-financial shocks can have a direct effect on debt levels; not only because economies have been crippled by exogenous shocks but also as countries have been shut out of international capital markets or forced to pay higher premiums to borrow.

To date, most governments have paid relatively little attention to the implications of the transition, even as international investors such as Blackrock are considering biasing their investments towards countries perceived to be less climate vulnerable<sup>27</sup>. As well as the risks for countries being locked out of international markets, many countries are creditors as well as debtors. A sizeable quantity of government debt, including \$783 billion of debt issued during the COVID pandemic, is issued in bonds that will come due in 30 or more years<sup>28</sup>. In other words, creditors today are likely to be exposed to the increased impact of climate change, whilst these impacts might be priced into sovereign debt as early as 2030<sup>29</sup>.

This represents the same time horizon by when many countries will have made the transition to net zero<sup>30</sup>, whilst productivity sapping temperature increases also pose a risk to debt repayments. Investors in fossil fuel-dependent economies will need to be given confidence that the proceeds will finance investments which will still feature in a net-zero economy. In the case of the coal-intensive economies of South Africa<sup>31</sup> and Indonesia, there is the prospect of international support for restructuring debt to allow for the closure of coal assets; other fossil fuel intensive economies should also assess how their debt burdens correspond to their underlying economic assets – the effect of this is yet to be seen. It is worth noting that if a disorderly transition were to happen – ie climate policies are only introduced in 2030 - large economies, including Japan, Mexico, South Africa and Spain, might find themselves defaulting on their sovereign debt by 2050<sup>32</sup>.

Understanding these risks is an important step for ministries of finance to manage their future debt profiles. 77% of bonds currently issued do not discuss potential climate risks<sup>33</sup>, even as credit rating agencies and private investors are

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<sup>27</sup> BlackRock Investment Institute (2021). **Launching climate aware asset class return expectations.**

<sup>28</sup> Dibley, A., Wetzler, T., and Hepburn, C. (2021). **National COVID debts: climate change imperils countries' ability to repay.**

<sup>29</sup> Bennett Institute for Public Policy (2021). **Rising Temperatures, Falling Ratings: The Effect of Climate Change on Sovereign Creditworthiness.**

<sup>30</sup> Energy and Climate Intelligence Unit (2021). **Net zero emissions race 2021 scorecard.**

<sup>31</sup>See: **Joint Statement: International Just Energy Transition Partnership.**

<sup>32</sup> FTSE (2021). **Anticipating the climate change risks for sovereign bonds.**

<sup>33</sup> Dibley, A., Wetzler, T., and Hepburn, C. (2021). **National COVID debts: climate change imperils countries' ability to repay.**

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beginning to focus on these<sup>34</sup>. Understanding climate risk is particularly important for finance ministries as there is a risk of being trapped in a vicious circle, where a perception of climate vulnerability by investors undermines investments in resilience, in turn heightening the perception of vulnerability<sup>35</sup>. This is an issue where the international community might need to step in. The IMF might be starting to design a fund to fill part of the gap in the system<sup>36</sup>, but to do so effectively the IMF will need to move away from responding to crises, instead helping to prevent them from occurring.

Green bonds have typically focussed on specific projects and are effectively creating an opportunity to attract investors, and have become a go-to tool for many countries. However, there doesn't seem to be an overarching assessment of the impact of climate on creditworthiness. The fact that it has been estimated that major issuers of debt such as Japan and Spain could default on their debt by 2050 under a disorderly transition scenario shows that such an assessment is needed and is not only applicable to obviously fossil fuel-dependent economies. In the long term the number of countries receiving rating downgrades as a result of failed climate policy could exceed those downgrades in the aftermath of COVID; 80 as a result of climate against 48 from COVID<sup>37</sup>.

As bond buyers increasingly consider climate change in their investment assessment, finance ministries should use the tools available to assess their climate exposure and take what quick wins exist to minimise it. For developed countries the resources required to assess this might already exist within finance ministries, since a key element for doing so is to have a more forward-looking approach to managing public finances.

### **Budget management**

Determining the dimensions of the fiscal triangle will be decisions around fiscal policy and budget management. Fiscal policy, and the associated analysis, will dictate overall decisions around tax, spending and borrowing at a macro level, whilst budget management will allocate funds between competing priorities. The transition will inevitably involve the reshaping of the economy - whether this is a process supported by the government or not - and there will be trade-offs involved with allocating funds to different sectors.

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<sup>34</sup> Fitch (2020). **Climate Change Risks Facing Sovereigns to Rise**.

<sup>35</sup> V20 Statement (2021). **Opportunities for the Resilience and Sustainability Trust to Deliver Accelerated Support for Climate-Vulnerable Nations**.

<sup>36</sup> IMF (2021). **Sharing the Recovery: SDR Channeling and a New Trust**.

<sup>37</sup> Schwartzkopff, F. and Look, C. (2021). **Sovereign Rating Cuts Coming to Those who Ignore the Climate, Bloomberg**.



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The impact of climate change on budgets might be considered when there is a hit, however, what hasn't been considered is the cumulative effect that climate change might have, as well as its uneven effects across sectors – and how this uneven impact will affect budgeting. Budgeting is also at the heart of planning and financing the transition. It basically sets out measures to support the economy to bounce back after a crisis and to prioritise spending according to national priorities.

The cross-cutting nature of climate change will inevitably involve trade-offs between different government departments and evaluating these through the lens of preparing for and delivering the transition falls outside the traditional expertise of most staff within Finance Ministries. However, these actors must increasingly take these issues into account, and technical assistance is available as international institutions are also working on these issues.

Addressing climate change will require integrating climate mitigation and adaptation measures into long-term budgeting, as annual budgets might represent too short term a rhythm to capture the effects of climate-related investments. This will be particularly important as countries navigate budgetary constraints. Allocating limited resources to support areas of the economy which will not survive the transition is unlikely to represent a good use of resources unless it is done as part of a wider effort to deliver a just transition. This nexus of economic planning and budget management is typically owned by Finance Ministries, and successfully delivering the transition will require their active engagement through correct budget allocation.

To date, efforts to understand 'where the money is going' have been centred around different climate and green tagging methodologies, supported by institutions such as the World Bank and OECD, as well as the UNDP. However, uptake has been relatively slow. For example, the OECD notes in its most recent survey at least 60% of the membership has yet to implement green budgeting<sup>38</sup>; whilst some developing countries have been using green tagging as a way to foster access to climate finance, working together with international development partners.

The IMF identified that one of the core challenges around green/ climate budgeting is that there is no single methodology or "a commonly accepted classification of the expenditures that might be beneficial or detrimental to the environment"<sup>39</sup>. Several countries are embarking on producing taxonomies to define what is and isn't green, whilst this work is being carried out at the international level by the International Platform for Sustainable Finance (IPSF)

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<sup>38</sup> OECD (2021). **Green Budgeting in OECD Countries**.

<sup>39</sup> IMF (2021). **Climate Sensitive Management of Public Finances – "Green PFM"**.

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which will develop and publish a Common Ground Taxonomy highlighting areas of agreement between existing taxonomies devised by IPSF members<sup>40</sup>.

Beyond the lack of a single methodology, climate tagging also risks oversimplifying in two ways.

- > Firstly, economic activities generate spillovers - for example, the OECD highlights how electric vehicles not only impact their own emissions characteristics but can also have positive or negative implications for wider areas such as traffic congestion or the stability of the electricity grid.
- > Secondly, a climate tagging approach risks passing over sectors that are not obviously climate-related, but which are still highly relevant. For example, health spending is often seen as being divorced from climate but improving energy efficiency and improving cooling systems in hospitals are nonetheless relevant from a climate perspective. Whilst of course there is a balance between oversimplification and overcomplication, taking a systemic view and allocating budget resources to policies – informed by measurable outcomes - will yield improved development results.

Another positive of such a system-wide approach to climate tagging would be to improve budget management. The same emphasis on outcomes, rather than a narrow measurement of line items in a budget, could be delivered through a better approach to whole government accounts; treating spending on climate resilience as an investment that will yield a cashflow (in this case, by avoiding the need for spending on catastrophe relief at a later date), rather than as a cost. Allowing spending on sustainability to be treated as an investment that can sit on the government balance sheet would at least afford it the same treatment as other less sustainable investments such as fossil-fuel power plants.

### **Public investment**

Public investment is potentially a growth-enhancing form of public expenditure and a key component in designing budgets. How public investments is designed might determine the use of valuable and scarce resources, which could have considerable repercussions for public trust and hamper growth opportunities<sup>41</sup>. Public investment is on a downward trend and in the wake of the Global Financial Crisis has fallen in 17 out of 33 OECD countries (2013 vs 2007); this is exacerbating infrastructure gaps and highlighting the need to improve the quality and efficiency of investments.

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<sup>40</sup> OECD (2020). **International Platform on Sustainable Finance Annual Report 2020**.

<sup>41</sup> OECD (2014), **Recommendation of the Council on Effective Public Investment Across Levels of Government**



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COVID has highlighted how the role of public investment is at heart of any economic recovery. The IMF calculated<sup>42</sup> that by directing public resources to green sectors would have a considerable impact on job creation. For example, public spending on traditional infrastructure can create between 2 and 8 jobs per million dollars of spending, whilst investment in R&D, efficient buildings and low carbon electricity can generate between 5 and 14 jobs for the same investment<sup>43</sup>. Furthermore, the IMF Fiscal monitors show that in this period of high uncertainty because of the pandemic, governments putting some skin in the game can boost private sector confidence and trigger additional job creation. Therefore, a high-quality public investment might crowd in the private sector as well.

Public investment shapes choices about where people live and work, influences the nature and location of private investment, and affects quality of life. Most of the problems around public investment are around project selection. This is due to different factors, from capacity, a lack of sound data to assess projects, and optimism bias<sup>44</sup>. Besides, the disconnect between national and sectoral investment strategies with budget planning and project appraisal makes it hard to determine how best to prioritise<sup>45</sup> different projects.

Public financial management is influenced by two principal groups: the finance ministries themselves and International Financial Institutions such as the IMF and the World Bank. The latter have already established diagnostics and tools to assess the effectiveness of public investment management and are beginning to integrate climate change into these already-established toolkits.

For finance ministers, the challenge is improving processes for allocating, designing and managing public investments without making them more bureaucratic and burdensome. There is considerable literature arguing how integrating climate change into existing processes – for example guaranteeing value for money across a range of different future scenarios – is likely to be less burdensome, and this approach is definitely the “first-best” solution.

However, for Finance Ministries that lack capacity – from institutional design to technical skills - a simpler set of screening questions may avoid poor public investments even if the investment assessment process is less sophisticated than in other countries. For example, a potential starting point could be that public investment directed towards new fossil-fuel related infrastructure – regardless of

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<sup>42</sup> IMF (2020). **Public Investment for the Recovery**.

<sup>43</sup> See <https://blogs.imf.org/2020/10/05/public-investment-for-the-recovery/>

<sup>44</sup> OECD (2020). **Effective Public Investment Across Levels of Government**.

<sup>45</sup> IMF (2015). **Making Public Investment more efficient**.



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sector - should automatically attract greater scrutiny, with this being the case regardless of whether the country is an importer or exporter of fossil fuels. Similarly, to boost adaptation, an assessment of the resilience of investments to climate shocks should be encouraged for all publicly funded infrastructure, particularly as decisions taken on allocating public resources crowd in private sector investment as well as exposing the public balance sheet to climate risks.

The long-term strategy for decarbonisation combined with national development plans should feed into the improved design of processes for public investment management. For example, the KPIs which determine which projects go ahead should be influenced by the pathways set out in the LTS and NDPs. Follow up assessments of those strategies would be crucial, as the challenges on the journey to the transition might evolve and with that the public investment strategy might need to capture where public money might be better utilised.

Integrating climate considerations into all public investment management processes will reduce the influence of lobbying at a sectoral level, although not all countries may have the capacity to undertake such a detailed review in the short run. This is an area where both Multilateral Institutions and donor countries have a play a role in supporting national governments. This could yield better results for both MDBs and governments. Mexico is a clear example of this; the Ministry of Finance—with support of the Inter-American Development Bank and the British Government—developed a set of quantitative sustainability indicators to be included across all projects' cost-benefit analysis used for their internal public investment prioritization process. This structural change will support the ministry to prioritize projects with higher environmental, social, and economic multipliers.

**BOX 2. The IDB has suggested some areas of best practice for planning future public investment.**

These include:

- > Developing baseline studies against which to scrutinise projects;
- > Providing better tools for investment programming, such as a portfolio of projects;
- > Enhancing evaluation of projects to internalise socioeconomic environmental costs, including carbon emissions, as well as factoring in the consequences of climate change;
- > Improving project execution and promoting the uptake of low carbon technology, together with a focus on full lifecycle costs, including operating and maintenance costs as tools to maintain asset quality;

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> Evaluating project outcomes to maximise the lessons learned.

### **Fiscal policy formulation**

Whilst budgetary planning and public investment represent the key tools in allocating funds across government departments and prioritisation of projects, fiscal policy determines the overall balance between taxation, spending and borrowing.

The economic models which drive fiscal policy have yet to be upgraded to factor in the impacts of climate change, at both a macro level as well as understanding the effects on different sectors of the economy. Threats to productivity from increased temperature are well-understood but yet to be incorporated in most models, whilst the impact of extreme weather events on the economy is less well-understood. At the same time, understanding the implications of the threats and opportunities arising from the transition – both at a macroeconomic level and within sectors of the economy such as the labour markets – is still nascent. Nevertheless, prudential regulators are increasingly conducting or planning to conduct stress testing in the financial sector to account for climate risks.

This lack of a solid foundation for modelling the economic impacts of climate change and the energy transition is only amplified by the scale of the potential shocks stemming from natural disasters, which are predicted to become more frequent because of climate change. Economic models provide the key information that policymakers need to make tough decisions, such as who will benefit, who will lose, and how to compensate potential losers?

At the moment, economic models are failing to account for uncertainty and sizeable downside risks and disregard the potential for climate ‘tipping points’. Historically they have also failed to capture the rapid cost-reductions in renewable technology, broadly failed to address opportunities in the energy transition beyond electricity generation, struggled to capture improving energy efficiency and disregarded the social and health benefits of the transition. In this context, it is unsurprising that economists have not been at the forefront of addressing the climate crisis. This could also demonstrate the need for a more active role around public investment and policies<sup>46</sup>.

A compelling example of the fat tail risks that models struggle to capture is the impact of Hurricane Maria on the Dominican Republic in 2017, which was estimated to have caused damage equating to over 220% of GDP<sup>47</sup>. Whilst the nature of climate-related disasters means that they cannot be predicted, it is

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<sup>46</sup> Roberts, D (2018). **We are almost certainly underestimating the economic risks of climate change.**

<sup>47</sup> See <https://reliefweb.int/report/dominica/dominica-impact-hurricane-maria-disaster-profile-january-2018>





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clear and has been accepted that they will take place. Therefore, both national budget allocations and the international financial architecture must also have the flexibility to allow for unforeseen climate disasters. This must involve both the ability to access finance to build back better, but also mechanisms to limit the deleterious impact of exogenous shocks – for which the country bears limited responsibility – on overall fiscal balances.

Effective fiscal policy planning should capture medium-term trends in the economy to enable decisions around savings and investment, as well as prioritising spending. However, there is a gap emerging at the national level between the macroeconomic implications of both climate change impacts and the wider energy transition, and conventional macroeconomic modelling which informs much fiscal policy currently. There needs to be more proactive management of fiscal risks to ensure that governments are able to meet their fiscal objectives in line with their development plans. Failure to identify some of the risks can leave countries vulnerable with big blind spots, and exposed to fiscal shocks that might have a disruptive effect on the economy and might undermine credibility and long-term sustainability.

To operationalise climate considerations within fiscal policy, a first step would be to move away from a single, central projection of economic development and instead base fiscal policy on a range of macroeconomic scenarios, with scenarios capturing the impact of a range of risks, including climate impacts. One potential approach to this would be to identify potential climate risks and how likely they are to take place. Once the risks and probabilities have been identified, their potential impact on different areas of government revenues and spending should be quantified based on analysis of public accounts.

To identify the risks, it is worth considering<sup>48</sup>:

- > Risks emerging from inside government, for example, a sovereign guarantee to support the financing of a potential stranded asset;
- > Risks stemming from outside government, such as an external economic shock;
- > Event-driven non-financial risks that materialise suddenly, such as hurricanes;
- > Risks that accumulate gradually, such as stranded assets as a result of the transition.

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<sup>48</sup> OBR (2017). **Fiscal Risk Report. Presented to Parliament by the Economic Secretary to the Treasury by Command of Her Majesty.**

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In order to develop an approach to managing fiscal risks, current best practice can be seen from the UK approach<sup>49</sup>, which is illustrated below:

Figure 2: Example of an approach to managing fiscal risks.



Source: adapted from *UK approach to managing fiscal risk*

One principal result of this analysis, where it has been undertaken, is that the biggest fiscal threat from climate change is the potential for climate change to lower economic growth, and therefore government revenues. Although less dramatic, slower growth represents a slow-burn crisis with profound implications – this gives governments scope to act and adjust fiscal policies accordingly, but also risks that governments will delay action until it is too late. Below there are some examples of how climate might have macroeconomic implications.

Figure 3: Examples of Macroeconomic Risks to Climate Change

Type of shock/impact	Physical risks		Transition risks	
	From extreme weather events	From gradual global warming		
Demand	Investment	Uncertainty about climate events	'Crowding out' from climate policies	
	Consumption	Increased risk of flooding to residential property	'Crowding out' from climate policies	
	Trade	Disruption to import/export flows	Distortions from asymmetric climate policies	
Supply	Labour supply	Loss of hours worked due to natural disasters	Loss of hours worked due to extreme heat	
	Energy, food and other inputs	Food and other input shortages	Risks to energy supply	
	Capital stock	Damage due to extreme weather	Diversion of resources from productive investment to adaptation capital	Diversion of resources from productive investment to mitigation activities
	Technology	Diversion of resources from innovation to reconstruction and replacement	Diversion of resources from innovation to adaptation capital	Uncertainty about the rate of innovation and adoption of clean energy technologies

Source: **Bank of England**

<sup>49</sup> OBR (2017). **Fiscal Risk Report. Presented to Parliament by the Economic Secretary to the Treasury by Command of Her Majesty.**



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Efforts to identify fiscal risks also crystallise more theoretical questions around what fiscal space or fiscal rules are trying to deliver for the economy, and whether they need to be rethought in an era of increasing potential for non-financial risks. This is something that is under lively discussion at the EU level in the context of the Stability and Growth Pact<sup>50</sup>. It is also relevant to the IMF as the institution has been championing fiscal efficiency; however, they have yet to consider what fiscal efficiency might mean in a world where investing in resilience to non-financial shocks will yield economic benefits.

### **Networks and Coalitions.**

A combination of limited resources, lack of capacity and a conservative approach to spending even within the finance ministry mean that these stakeholders should leverage the know-how and financial support from a wider range of partners, including the international institutions in which they are shareholders. Some ministries of finance have recognised this, and the G20 has explicitly called for more work to understand the macroeconomic costs and benefits as well as the distributional impacts<sup>51</sup> of climate action. The presence of finance ministries within, and influence over, powerful institutions and networks has yet to be fully utilised.

However, not all coalition nor networks are successfully delivering the know-how at the pace of change that these stakeholders are craving. A key example pointed out during the interviews is that the proliferation of networks could serve as a distraction from real action. There is a potentially capable international coalition to support finance ministries in developing the required know-how – consisting of the IMF, OECD, MDBs and others - but this has yet to be fully exploited. The limited use of this coalition reflects in part a lack of clear objectives; knowledge transfer adds little value without linking it to outcomes, as pointed out during the interviews.

The Multilateral Development Banks have the know-how with regard to designing a project pipeline, working closely with the National Development Banks, and in many cases they have already supported countries developed long term strategies. However, in some cases the relationship between MDBs and finance ministries might be only transactional, with limited efforts from finance ministries to exploit MDB's knowledge and capacities across the wider remit of economic management. For example, interviews carried out by E3G identified potential lack of capacity and skills within finance ministries to take climate into account in

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<sup>50</sup> Humphreys, C. (2021). [Climate action and Europe's fiscal debate](#).

<sup>51</sup> G20 (2021). [G20 Rome Leaders' Declaration](#).

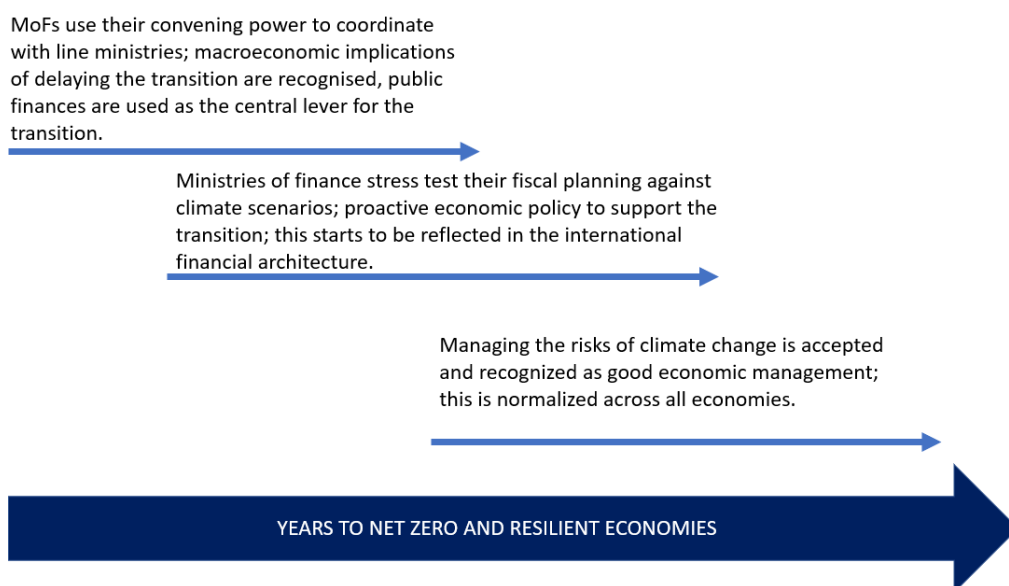


decision-making – this is an area where MDBs have been building significant capacity in order to ensure their alignment with the Paris Agreement.

The limited use of this capacity-building coalition reflects both a lack of interest and awareness by finance ministries, and failings of actors within the coalition. For example, in the case of the MDBs these institutions have the capacity to both build capacity and finance projects within countries but a lack of clear guidance from their stakeholders has limited their effectiveness. Meanwhile, the IMF is making progress in covering climate issues thanks to clear direction from the Fund’s Managing Director, but this has yet to fully mainstream within the institution.

This shortfall reflects the failure within both finance ministries and international institutions to make the explicit link between climate and development. The reality is that climate change itself poses a significant threat to poverty reduction in many regions, whilst the energy transition brings both opportunities and threats to economic growth. The V20 coalition of vulnerable countries has made this explicit link, but it is yet to be widely recognised.

#### Figure 4: Illustration of the Evolution of Finance Ministries Response to Climate Change



Source: Author’s depiction



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## Considerations - how Finance Ministries can work with other government departments

Safeguarding economic development will require coordination between finance ministries and line ministries. Sectoral experts within line ministries will be key in selecting, identifying projects for public funding and therefore reducing exposure to potential stranded assets and increasing resilience. Given the cross-cutting nature of climate change, stronger collaboration between line ministries, directed by finance ministries, would be necessary. This is essential as decisions at the sectoral level have implications for public finances, whilst finance ministries will also need to have a better understanding of the sensitivity of different areas of the economy to climate impacts.

Beyond interactions between individual line ministries, finance ministries have the capability to take an overview of the economy and its development, and the convening power to ensure alignment between line ministries. Finance ministries should ensure that the budget allocation requests from individual line ministries are compatible with the broader direction of economic development, and in allocating budgets between competing ministries should use assessment criteria aligned with their wider economic visions which encompass the transition. In the context of decarbonising the economy, individual line ministries will need to lead at a sectoral level – however, the coordination supplied by ministries of finance will ensure that sectoral strategies interlock to deliver both decarbonisation and economic growth.

As decarbonisation deepens, a whole-of-government approach will be essential to manage the developing challenges and opportunities the transition poses. For this, it is essential there is a strategy that delineates the decarbonisation process at a sectoral level, which can then inform the scale of finance needed and the balance between public and private sector participation. This will also facilitate the identification of changes to the regulatory framework and new regulations required. All this needs to take into consideration individual countries circumstances. This is something that tends to be undervalued, and the finance ministries should encourage the development of long-term decarbonisation strategies which can capture the evolution of the national economy, as well as the trade-offs and the low-hanging fruit through the transition -the diagram at the end of this section highlights step by step the process of designing long-term strategies.

The long-term strategy is a process that encourages co-design across governmental departments, and relevant stakeholders, **their starting point is based on the development goals of the countries and their socioeconomic**

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**context.**<sup>52</sup> Several countries are formulating these strategies, which can help translate net-zero emissions and climate resilience goals into roadmaps of technological deployment, timeframes and policy options across sectors of the economy<sup>53</sup>.

Long-term strategies (LTS) help crystallise the trade-offs in a country's development pathway, and because they take into account different scenarios they facilitate a more open and transparent discussion around the steps towards decarbonisation; this will both support greater buy-in from line ministries and also foster greater public awareness and understanding of the measures being taken. These strategies could include macro cost-benefit analysis of transition pathways<sup>54</sup>, investments prioritised in specific technologies and clarity about which ones should be phased out or completely avoided, costs/investment estimations and identification of those requiring a financial solution, policy and regulatory changes required (for example incentives uptake of electric vehicles and public transport, which can impact on fiscal revenues coming for the transport sector).

LTS design is generally led by Ministries of Environment or institutions traditionally in charge of climate policy that have technical knowledge of the area. Finance ministries have tended to have a 'hands-off' approach when it comes to climate change, focussing on just a 'number' to understand the costs of the transition. A better approach would be to engage with the line ministries, particularly the ministry of environment, to translate the broader aims of decarbonisation into a deliverable plan which can lead to action.

Ownership from the Ministries of Finance is important, as they are one of the most influential actors within government. The transition is not only about spending, but also about identifying the necessary regulations, providing certainty to the citizens and clear signals to the private sector that the government is committed to delivering. History has shown that ministries of finance tend to be assessed ultimately on economic stability, prosperity, and the state of public finance. Tomorrow, how effectively they guide the economy to the challenges posed by the transition will ultimately be the key metric on which they are assessed<sup>55</sup>.

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<sup>52</sup> IDB-DDPLAC (2019) **Getting to net -zero emissions, Lessons from Latin America and the Caribbean.**

<sup>53</sup> Article 4 of the Paris Agreement call all Parties to formulate and communicate long-term low GHG emission development strategies (LTS)

<sup>54</sup> IDB (2020). **The Benefits and Costs Of Decarbonizing Costa Rica's Economy: Informing the Implementation of Costa Rica's National Decarbonization Plan under Uncertainty.**

<sup>55</sup> E.g., reduced energy prices, improved quality of public transport and associated reduction in accidents, congestion and air pollution, costs of public transport for lower income families, increased productivity in agriculture, ecosystem services provided by forests, water consumption, creation of green jobs and brown jobs lost and fiscal sustainability.



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### **BOX 2: The Decarbonisation Roadmap**

The Costa Rican Decarbonization Plan<sup>56</sup> provides a typical example of a roadmap for implementation: it includes more than 70 targets for 35 different government agencies and line ministries to implement by 2023, such as aligning sectoral development plans with the decarbonization plan; updating the design of public transportation markets to enable profitable business models for bus drivers acquiring electric buses; updating the payment for ecosystem service scheme to finance large-scale reforestation by the private sector; building an electric passenger train; or investigating options to manage the fiscal impact of phasing out fossil fuel consumption.

A comprehensive roadmap like this one is essential to mainstream decarbonization into government action and clarify what Paris-Aligned projects/investments look like in the country for international climate and development finance and a private sector.

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<sup>56</sup> IDB (2020). **The Benefits and Costs Of Decarbonizing Costa Rica's Economy: Informing the Implementation of Costa Rica's National Decarbonization Plan under Uncertainty.**

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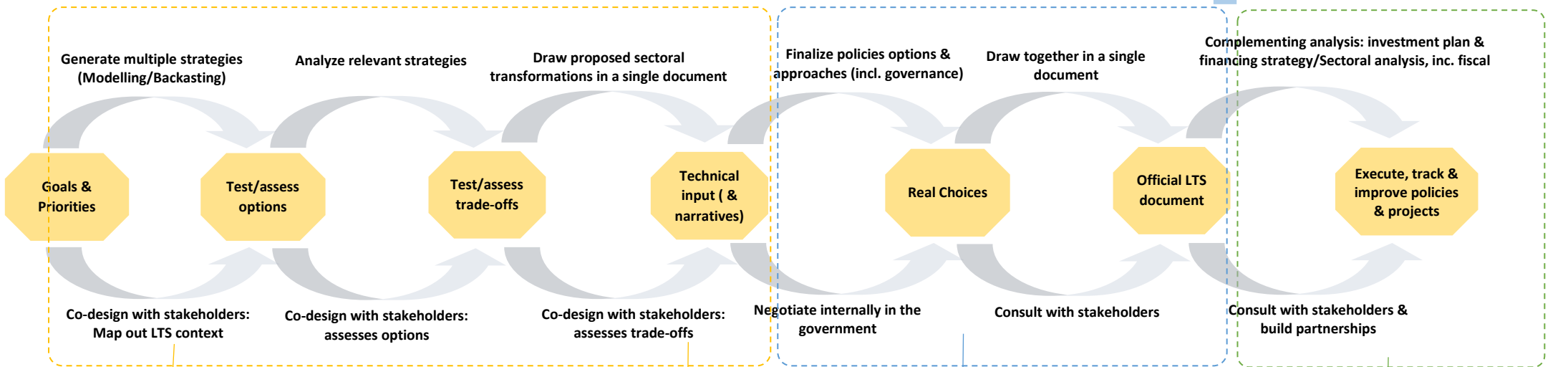
Figure 5: Process for the elaboration of Long-Term Decarbonisation Strategies

Local capacity building academic teams and policy makers

**Technical level\***  
 Technical team & technical stakeholders (line ministers, sectors experts, civil society, private sector)

**Decision makers level**  
 Directors and ministries / stakeholders' representatives/ Technical team + projects lead as required to inform negotiations

**Official public consultations process**  
**Implementation & Governance**  
 coordinates & tracks progress. Each line minister implements.



Capture line ministers' and stakeholders':

- Policy levers: what they could do/policy, regulations, plans: new or building/expanding on existing ones)
- How success will look from their point of view, beyond GHG emissions reduction.
- What would be some good targets for 2030 and 2050 in each sector
- Data and models they use or are available (to build on existing data, models that they trust).
- Uncertainties and risk

Considering development cost/benefits. Complement with policy analysis and storylines/ narratives per sector and economy wide.

Use technical tools/ analysis to inform conversations. Define governance for LTS implementation.

Deepen the analysis in priority areas that need further details (jobs impacts, fiscal impacts and policy options to manage them), investment plan and financing strategy.

\* Although this is mainly a technical and policy discussions, it requires political engagement of decision makers. This can be done in dedicated meetings to inform key milestones/progress of analysis (Bilaterally or in existing committees). Including at the launch of the design process, to explain the planned analysis and request attentive participation/inputs from relevant staff under each line ministry.





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## To conclude

Finance ministers aren't using the tools they have. Some of the existing networks in place may not be best for accelerating action but can help to exchange knowledge. The playbook for responding to the climate crisis has yet to be written - or at least a playbook relevant for finance ministers.

Finance ministries are recognizing the impacts of climate change in the abstract, but by internalizing both the impact of climate change on their existing operations, and the power they have to mitigate and adapt to these effects, finance ministries can safeguard public finances and economic growth. The transformation of the economy will require pushing the boundaries of the traditional finance ministry stance; climate change is not just an environmental crisis but also one that will reshape economic activity. Actively managed, the transition also has the capacity to deliver higher productivity and improved social outcomes, but to seize these opportunities finance ministries will have to play a more active role within their economies whilst leveraging external assistance.

The transition – planned or unplanned – will entail multisectoral transformations, including in technologies, standards, processes and behaviours across wide-ranging sectors from power generation and transport to industry, agriculture and others. However, this is not something that the ministries of finance need to do on their own. Environmental ministries could be their close allies, whilst a support network from the international community – encompassing IFIs, NGOs and academia – could help. The role of finance ministries as shareholders of IFIs, as well as their outsized role in fora such as the G20, means that they have much of the network for support and coordinated action in place. What is lacking is the political drive to effect change.