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FINANCING A GLOBAL GREEN NEW DEAL



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A ROAD MAP FOR GLOBAL GROWTH AND SUSTAINABLE DEVELOPMENT



A. Introduction

This chapter outlines a macroeconomic strategy to revive global growth and strengthen industrialization in the South while reducing carbon emissions, inequalities and instability. It builds on the largely untapped power of international coordination to expand countries' policy options and, empirical analysis indicates, sets the global economy on a path that is sustainable economically, socially and environmentally. Rather than specific policy proposals,

the chapter emphasizes the macroeconomic orientation that any such proposals must support in order to achieve sustainable global growth. It starts by pointing to the structural challenges facing the global economy, then discusses necessary changes in critical policy areas and the “dividend” of international coordination. Finally, an empirical analysis charts plausible global pathways to achieve the 2030 Agenda.

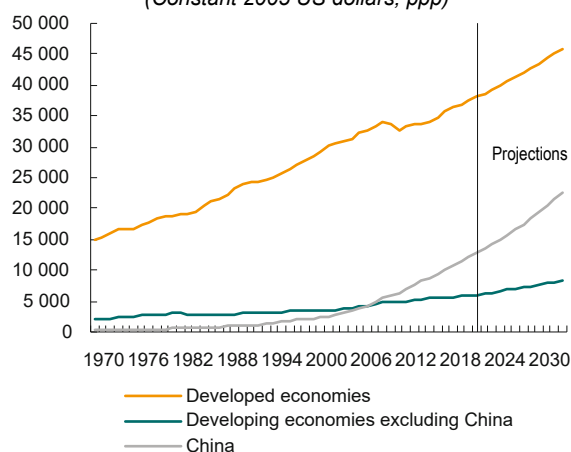
B. Regressive trends in the global economy

The global economy does not serve all people equally. Under the current configuration of policies, rules, market dynamics and corporate power, economic gaps are likely to increase. Globally, not only are levels of GDP per capita almost six times higher on average in developed countries than in developing ones, for most the absolute income gap is growing (*TDR 2016: 2*). There are exceptions to this trend,

China being the only one that somewhat affects developing country averages, but it is clear that the pattern of global growth remains highly unequal (figure 3.1).

Achieving sustainable global growth, income convergence and development requires addressing underlying structural challenges. There is, however, a good deal of disagreement on the nature of these challenges. In many policy discussions, the long-term challenges are narrowly identified with market rigidities, while “structural reforms” are equated with further liberalization in labour, product and financial markets (Lin, 2012; OECD, 2017b). However, this approach overlooks aspects of national economic structures – such as the composition of aggregate demand and production, weak labour-market institutions, market power deriving from intangible assets, and the effects of income distribution on demand – as well as the constraints arising from the asymmetric insertion of countries into international trade and financial systems. This combination has led to four big global trends that are obstructing achievement of the Sustainable Development Goals: the fall of labour's shares of global income, the erosion of public spending, the weakening of productive investment, and the unsustainable increase of atmospheric carbon dioxide.

FIGURE 3.1 GDP per capita in developed and developing countries
(Constant 2005 US dollars, ppp)



Source: UNCTAD secretariat calculations and the United Nations Global Policy Model (GPM).

Note: ppp = purchasing power parity.

1. Falling labour shares

Few global trends are as apparent as the skewing of income distribution: since the 1980s, in all regions and in almost every country, the share of national income accruing to labour has decreased and the profit share has correspondingly increased (figure 3.2). In developed countries this redistribution has been generally larger and occasionally extreme (with 10 per cent or more of GDP transferred from workers to capitalists in Australia, Italy and Japan) but the trend has been visible in developing countries as well, highlighting a global race to the bottom in labour costs. The proximate cause has been wage repression, which has prevented wages from keeping pace with the cost of living and increases in productivity. The deeper, more fundamental factors have included decreasing unionization rates, the erosion of social security, growing market concentration and the spread of outsourcing through global value chains (Izurietia et al., 2018; *TDR 2017*; *TDR 2018*), all of which have eroded labour's bargaining power.¹

While workers have received a decreasing share of total income, they have also faced more insecurity. In developed countries, the loss of bargaining power has led to the diffusion of precarious employment contracts. In many developing countries, deindustrialization and pressure for labour-market liberalization have weakened the prospect of full-time, regulated employment (UNIDO, 2013). As a result, a growing share of household spending has been financed with borrowing rather than real income. Overall, households' consumption and investment have slowed down, undermining aggregated demand, with negative consequences on business investment and productivity growth, thus reinforcing the downward

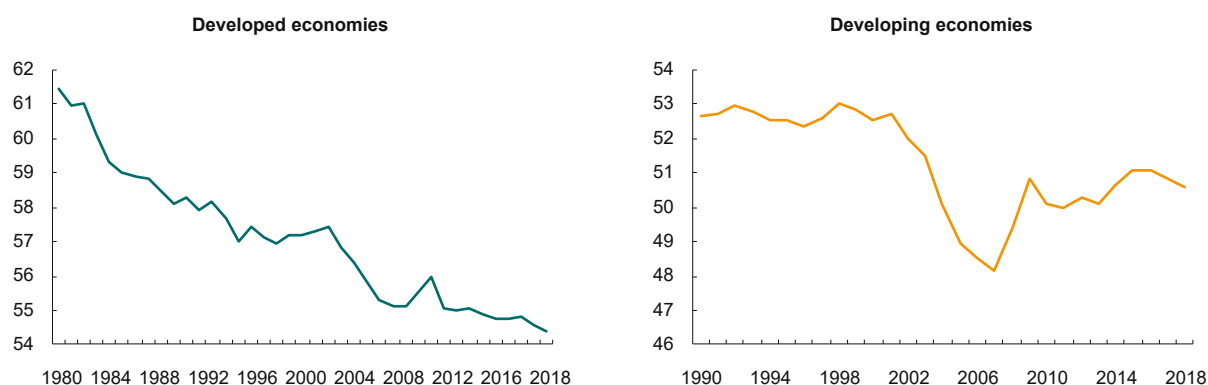
pressures on wage and employment growth. Financial crises in Mexico, East Asia, the Russian Federation, Turkey, Argentina, North America and Europe, starting in the mid-1990s, have further undermined labour shares both by depressing employment and by paving the way for export-oriented policies, with the attendant race to the bottom, as the only strategy for long-term growth.

2. The erosion of public spending

In most countries, fiscal policy has been on a tight or contractionary trajectory for several decades. The break in the markedly declining trends occurred after the shallow recession of the United States in the early 2000s, and more prominently the global financial crisis. Immediately following the Great Recession, several countries adopted fiscal stimulus packages, only to tighten sharply from 2010 (Devries et al., 2011). The contraction, which has taken the form of both spending cuts (figure 3.3) and increases in value added taxes, had the objective of reducing government debts relative to GDP. In most countries, the cuts have hit social protection systems (ILO, 2017) and public investment (Oxford Economics, 2017; OECD, 2017a; Bhattacharya et al., 2019) with further damage in terms of rising inequalities (Popov and Sundaram, 2015; OHCHR, 2013; Perugini et al., 2019), heightened insecurity and diminished prospects for future growth (Ostry et al., 2016).

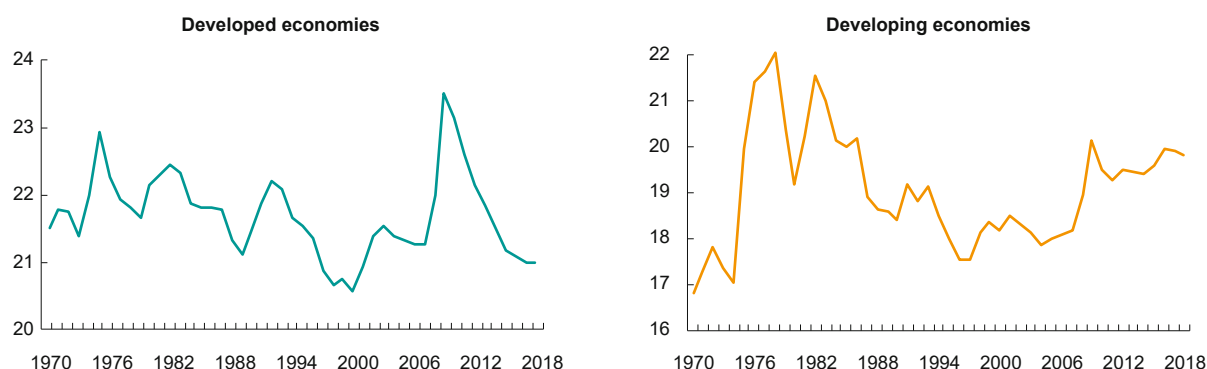
While public spending in developed and developing countries has exhibited a clear declining trend until 2008, its composition has changed (Ortiz et al., 2015). It has increasingly shifted away from social transfers (which are not accounted for in figure 3.3)

FIGURE 3.2 Labour shares
(Income from employment as percentage of GDP)



Source: UNCTAD secretariat calculations and the United Nations Global Policy Model (GPM).

FIGURE 3.3 Government spending in goods and services (including investment)
(Percentage of GDP)



Source: UNCTAD secretariat calculations and the United Nations Global Policy Model (GPM).

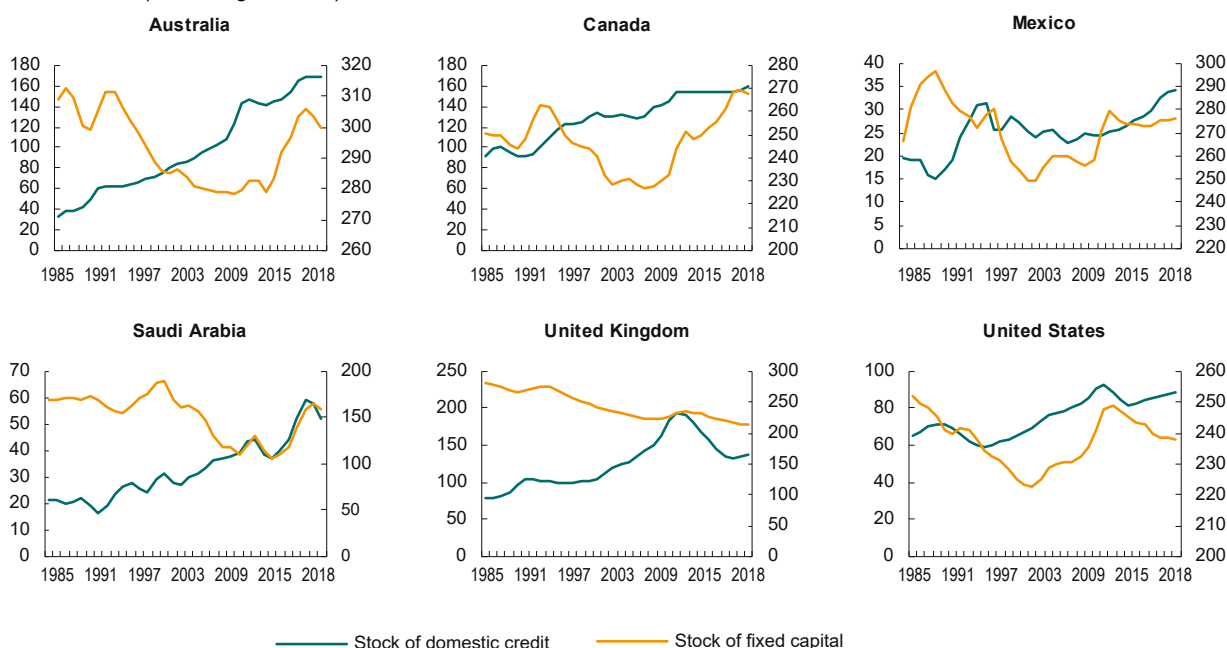
and public investment towards debt service in a widespread effort of fiscal “consolidation”. After a brief interruption in 2008–2012, when spending increased due to stimulus packages, automatic stabilizers and corporate and banking bailouts (Acharya et al., 2014; Balteanu and Erce, 2017), the declining trend appears to have swiftly returned, mainly for developed economies.

3. Weak investment growth

At least since the 1980s, credit expansion in many countries has taken off without a corresponding

accumulation of fixed capital (figure 3.4), sometimes for long periods before contracting in a credit crunch. This trend emerges in most developed and developing countries and is particularly apparent in Australia, Canada, Mexico, the United Kingdom and the United States, as well as in Saudi Arabia, South Africa and the Caribbean region. This means that in periods of expansion, credit has been used to finance speculative activities by both financial and non-financial corporations (Schularick and Taylor, 2012; *TDR 2015*: 2). Productive investment has been affected in two ways. As non-financial corporations were able to use credit to fund financial operations, they had a strong incentive to turn away from productive investment

FIGURE 3.4 Finance and fixed capital
(Percentage of GDP)



Source: UNCTAD secretariat calculations and the United Nations Global Policy Model (GPM).

FIGURE 3.5 Corporate tax cuts, 2000–2019
(19-year differences in tax rates)



Source: OECD Tax Database, Statutory Corporate Income Tax Rates, Table II.1.

because of its long maturity, low liquidity and often lower yields. At the same time, the accumulation of large financial liabilities, fuelled by credit, produced financial crises and recessions that discouraged productive investment. Overall, productive investment has not surged globally, despite repeated bouts of credit expansion, increases of the profit shares and corporate tax cuts across developed and emerging economies. With the sole exception of Chile, corporate tax rates are now lower than they were in 2000 in all OECD countries, with cuts ranging from 3 percentage points in the Republic of Korea to 22 in Germany (figure 3.5).

Infrastructure investment, which has lower yields and longer maturity, has been particularly affected (Bhattacharya et al., 2019) with negative impacts on industrialization in developing countries and productivity growth everywhere. Data show that while credit expansion has continued everywhere, in many

countries fixed capital investment has contracted. This is particularly striking in developed economies such as the United Kingdom and the United States, but it is also evident in other developed and developing countries (figure 3.4).

4. The growing stock of atmospheric carbon dioxide

Data indicate that the stock of atmospheric carbon dioxide (CO₂), which is responsible for global warming, continues to increase and that the rise of temperatures must be stopped and reversed soon in order for it not to become self-sustaining (IPCC, 2018). Technological solutions abound (Steffen et al., 2018) but their adoption on a sufficiently large scale is at odds with the prevailing patterns of economic growth. So far, market-based attempts at making carbon-heavy investment more costly than green investment have failed (Storm, 2017b).

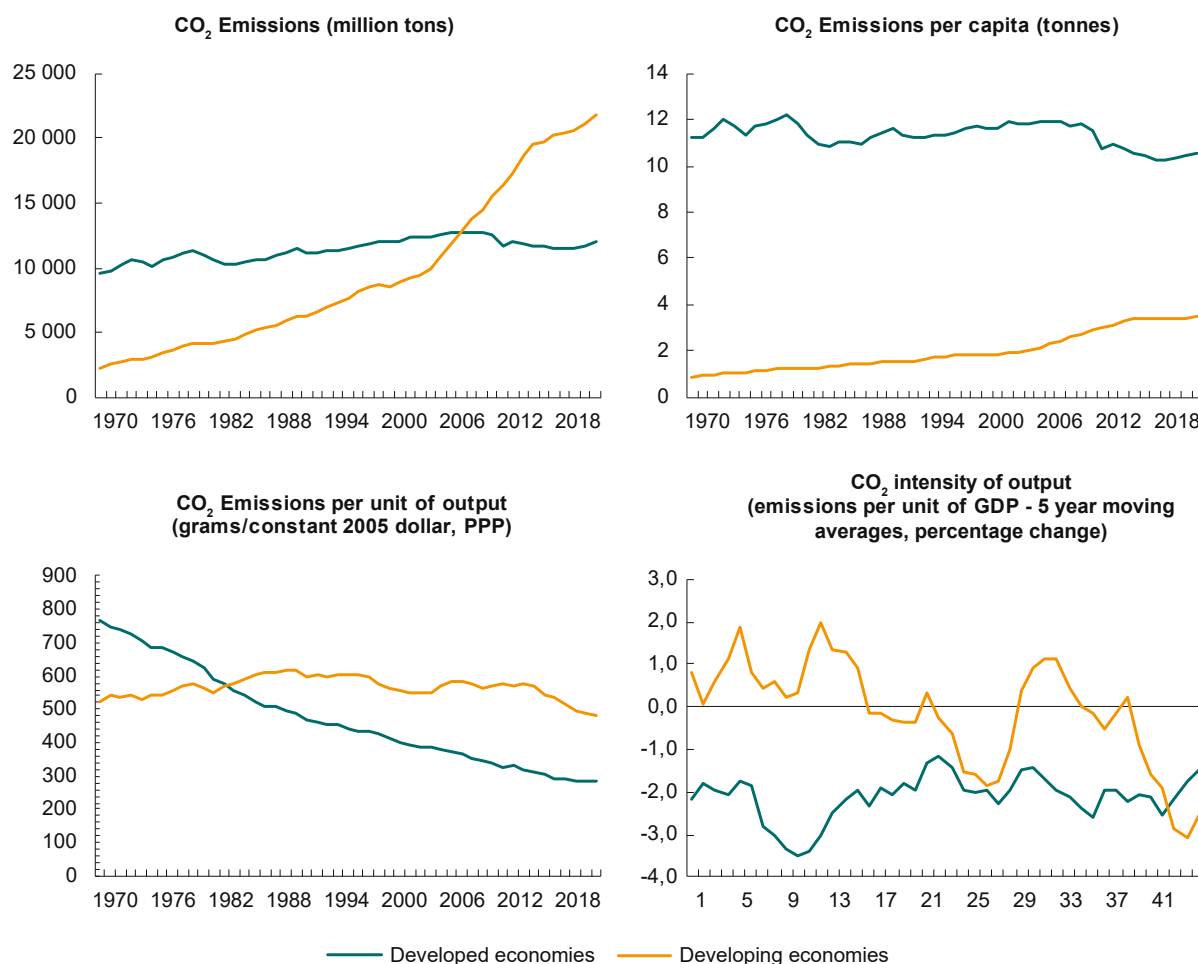
Annual carbon emissions have accelerated in developing countries and seem to have stabilized in developed countries (figure 3.6). On the surface, this seems to suggest that it is now up to developing countries to adopt the necessary standards, especially in energy efficiency, in order to stop climate change. But a closer reading of the data does not support this conclusion. On the one hand, once population size is taken into account, developing countries produce much less CO₂ than developed countries, approximately 80 per cent less in per capita terms. On the other, the carbon intensity of GDP and the growth elasticity of CO₂ indicate that developing countries, too, are becoming increasingly efficient in the use of carbon energy. Furthermore, efficiency gains in developed countries do not correspond to an actual transformation towards carbon-free consumption and investment. Rather, they are the effect of decades of outsourcing of industrial activities to developing countries (Schröder and Storm, 2018). Through international trade and the globalization of value chains, developed countries have been able to maintain their consumption patterns while moving parts of production and emissions to developing countries. Clearly, the disconnect between consumption patterns and the availability of non-renewable resources also continues to exist in developed countries.

Moreover, the link between rising inequality and rising temperatures, though complicated, cannot be ignored. The threat of rising temperatures from high

levels of atmospheric carbon is in large part due to emissions from the richest 10 per cent of people in the world, while at the firm level the carbon footprint of a handful of giant corporations has dominated the rise of emissions in recent decades. There is also ample

evidence that climate change is adding to the factors discussed earlier that have led to worsening inequalities; higher temperatures are already hitting poorer countries and poorer people the hardest (Diffenbaugh and Burke, 2019).

FIGURE 3.6 Carbon dioxide emissions, 1970–2018



Source: UNCTAD secretariat calculations and the United Nations Global Policy Model (GPM).

C. Main considerations in the design of a strategic framework

The structural challenges faced by the global economy stem from a common problem: unrealistic expectations on the part of policymakers about the private sector's ability to deliver sustainable growth and development. After three decades of policy reforms that have concentrated on “price stability”, “free trade” and “free enterprise”, the evidence shows that the strategy has failed to deliver on its promises (Glyn, 2007; Palma, 2009; Storm and Naastepad, 2012: 1). Global growth has failed to return to the heights of the post-war era,

and in the vast majority of countries, growth has been erratic, economic and financial crises have persisted, productive investment has stagnated and inequalities have increased. In developed countries, economic insecurity has become the norm for many workers; while in developing countries industrialization has stalled in most, with deindustrialization taking place prematurely in some cases. The one country – China – that has visibly bucked these trends has done so by guarding its space for active state intervention.

In this context, it is essential for governments across the world to reclaim their policy space and act to boost aggregate demand. To do so, they should assume a leading role in a coordinated investment push, both by investing directly (through public sector entities) and by establishing the conditions for productive investment by the private sector. Concomitantly, governments should address inclusiveness and sustainability challenges, by redistributing income in ways that bolster growth and by directly targeting social outcomes through employment measures, decent work programmes and expanded social insurance.

Despite national variations depending on context, in all cases a wide range of policy instruments will be required, including fiscal policies, industrial policies, credit policies, financial regulation and welfare policies, as well as international trade and investment policies (*TDR 2016*). This also requires appropriate international coordination to counteract the disruptive influence of capital mobility (which can undermine any isolated expansionary strategy), contain current account imbalances and support the transition to a low-carbon economy, especially in developing countries.

Large and protracted global imbalances are not sustainable because they lead to the accumulation of external debts, a process that frequently ushers in currency crises that governments often try (or are obliged) to address unilaterally by cutting domestic spending. External deficits are eventually reduced but at the cost of recession, with lasting consequences in affected countries and on global demand, particularly when contagion occurs. A coordinated alternative, in which domestic spending is maintained in all countries but accelerates faster in surplus countries, can achieve rebalancing with limited national and global cost (UNCTAD, 2014).

Likewise, uncoordinated policies on carbon emissions have failed to stabilize the climate (IPCC, 2018). Developing countries with abundant reserves of fossil fuel will continue to tap these if development priorities depend on their extraction and users are charged market prices (as per international trade agreements) for cleaner technologies. Only multilateral coordination can bring the full value of climate stabilization to bear, promoting technology transfer and investment for a transition to a low (or zero) carbon growth path.

1. Fiscal policy: Government spending and taxation

Despite attempts at austerity in many countries, since the early 1980s, debt ratios have failed to decrease because GDP has contracted as fast as debt or faster. This underscores the crucial role of fiscal policy in the process of economic growth.

The two main arguments in favour of austerity – “expansionary contractions” and “debt thresholds” – have been shown to be untenable, flawed by wrong assumptions concerning financial markets and the effect of government spending on the economy (Boyer, 2012; Skidelsky and Fraccaroli, 2017). The argument for “expansionary contraction” assumes that public spending cuts drive down interest rates by lowering demand for funds in bond markets and that lower interest rates in turn generate higher private investment.² It further assumes that cuts to government spending have relatively little adverse effect on aggregate demand. In reality, interest rates are not that sensitive to demand for funds (Taylor, 2017) and investment is not very sensitive to interest rates (Levrero, 2019; Storm, 2017a). Meanwhile, the direct effect of government spending on output has proved to be larger than anticipated (Blanchard and Leigh, 2013; IMF, 2012; Guajardo et al., 2011; *TDR 2011*; *TDR 2017*; UN DESA, 2008, 2011: 42–43), especially during recessions and under the pressure of hyperglobalization (Capaldo and Izurieta, 2013). The “threshold” argument, which has been very popular with policymakers and media pundits (*Financial Times*, 2010) maintains that there is a universal debt-to-GDP ratio above which all countries face rising interest rates, mounting instability and recession. However, while recessions, rising interest rates and high debt levels may occur at the same time, the causality can run in all directions (Irons and Bivens, 2010) and attempts to identify the supposed threshold have been marred by errors and selective data use (Herndon et al., 2014; IMF, 2010b). Bondholders’ expectations and portfolio choices are affected by a wide range of information, which may or may not include debt-to-GDP ratios.

The lingering weakness of global growth and the flaws in pro-austerity arguments call for a reversal of course. In fact, the evidence that discredits expansionary contraction also supports straightforward expansionary fiscal policy. In such an expansion,

public spending and taxation will have different roles to play.

Government spending on goods and services is a major component of aggregate demand, averaging 20 per cent of GDP in both developed and developing countries. To put this figure into perspective, the average contributions of private consumption and investment, the other two domestic components of demand, amount to 55–60 per cent and 18–25 per cent of GDP on average. By fuelling demand for goods and services, including those produced or provided by government employees, government spending contributes to aggregate demand as much as or more than private investment.

To the extent that taxation reduces disposable income affecting private consumption and investment, it eventually causes a “leakage” of spending potential from the economy (*TDR 2018*). Private income that could be spent or saved is transferred to the government, and the effect of this transfer on aggregate demand depends on how the government uses the money. If it spends it entirely on goods and services, there is no loss of aggregate demand. Aggregate demand could even increase if the taxed income was destined to be saved and the resulting government spending leads to extra spending by the private sector. However, if the government saves the revenue (as it does, for example, when it purchases stocks under corporate bailout programmes) or uses it to pay down its debt, there is no additional spending on goods and services to compensate for the tax leakage. In these cases, aggregate demand does not necessarily increase.

In assessing whether fiscal policy contributes to stable growth of aggregate demand, a key element is the evaluation of the multiplier effects of various forms of public spending and revenue mobilization (Mittnik and Semmler, 2012; Blanchard and Leigh, 2013; Kraay, 2014). Spending that increases incomes for lower-income groups (with higher consumption propensities) as well as demand for goods from domestic firms, has the strongest effects. Public investment decisions can also contribute to building productive capacity and enhancing overall efficiency, thus encouraging private activity. Taxation has the highest potential of contributing to demand growth and economic stability when it targets high incomes (which are largely saved) and speculative activities. Indirect taxation, especially value added tax, tends to have a detrimental effect on aggregate demand

because it weighs heavily on spent income (such as the incomes of the poorest groups) rather than saved incomes (such as by the richest groups).

Furthermore, fiscal policy is critical in determining two important features of the economy: the amplitude of business fluctuations (including the duration and depth of recessions) and the longer-term growth performance. Fiscal policy stabilizes demand fluctuations through automatic and discretionary spending. In most cases, recovery from recessions would not be possible without this supportive action (Boyd et al., 2005; Cerra and Saxena, 2008). The “automatic” components are taxes and transfer payments (such as unemployment insurance payments and other social protection benefits) that act countercyclically. When the economy contracts in a downturn, tax receipts decrease and transfer payments increase. This is particularly important in developed countries where income taxation is generally present and social protection systems are relatively extensive. Public spending – on purchases and production of goods or on employment programmes (Wray, 2007) – can support the stabilizing function (as was the case, for example, in China, as well as in Germany and the United States during the Great Recession) or run against it (as was the case in Argentina, Greece, Italy, Spain and other countries after 2012), with the overall effect playing out through real and financial channels (Boushey et al., 2019). On the financial side, government deficits during recessions support business cash flows preventing businesses from losing access to credit (partially or entirely) and curtailing investment, an effect that is stronger in countries where investment finance relies more on debt. Furthermore, government debt provides savers with relatively safe financial assets, making the financial system more liquid. As Hyman Minsky put it, “the efficiency of Big Government can be questioned but its efficacy in preventing the sky from falling cannot be doubted” (Minsky, 2008: 34).

Just as important, although underappreciated in public discussions, is the effect of fiscal policy on the economy’s longer-term growth performance, not only via ongoing support to aggregate demand but through strategic investment decisions. Supporting aggregate demand to increase employment sustains the expansion of markets for consumption and investment goods, thereby allowing firms to exploit static and dynamic economies of scale. This leads to sustained productivity growth, the most proximate determinant of long-term economic growth (Storm,

2017a). But for this process to be sustainable, it is necessary for the gains from productivity growth to be appropriately distributed, as discussed below. At the same time, the government is uniquely positioned to make the strategic investments critical to long-term growth, such as in physical infrastructure, education, public health and other investments in social protection. These investments are generally different in developed and developing countries but, when appropriately tailored to national needs, expansionary fiscal policy can be a powerful instrument of growth in all countries.

A question that is immediately raised is whether or not a country can “afford” an expansionary policy. It should be clear that fiscal space cannot be identified as a predetermined level of resources in any economy. Rather, it is dependent on past and current fiscal policy choices, such as the extent of the government’s spending, its savings and the level of its debt relative to GDP. What matters most is the flow of revenue that accrues to the government over a period of time as a result of tax and expenditure changes and their subsequent impact on GDP through the fiscal multipliers.³ While fiscal space is “endogenous” in this sense, it can still be materially constrained by limits to productive capacity, which can shift dynamically over time. If production cannot be expanded despite the presence of unemployment, typically because of bottlenecks in other factors or financing (discussed further below), there will be associated limits to the impact of fiscal policy on aggregate demand.

Therefore, expansionary fiscal policy requires a careful approach. When productive capacity is fully utilized or when firms face external constraints (such as the scarcity of foreign exchange), spending injections derived directly or indirectly from higher government spending can lead to inflationary pressures and redistribution of real income from wages

to profits⁴ with negative consequences for private spending.⁵ Another reason for caution is the fast accumulation of sovereign debt, which can lead to problematic feedback effects from interest rate hikes, high debt-servicing costs and debt levels themselves (see further, chapter IV).

These risks can be reduced when expansionary fiscal policy is part of a globally (or regionally) coordinated strategy, as discussed further below. Coordination helps to achieve domestic targets by easing external constraints while allowing for fiscal policy strategies that reflect the specific structural conditions of each economy.

Fiscal coordination is especially important for development financing. The instruments that developing countries have at their disposal to obtain funds for industrialization and welfare expansion – mainly taxation of foreign companies and high incomes, as well as export revenues – cannot work effectively if other countries do not cooperate, such as by refraining from tax competition, sharing data, granting market access and favouring long-term financing. Most of all, if each country supports the expansion of its own domestic demand, this can generate a robust growth of global demand.

However, developed and developing countries differ significantly in their abilities to contribute to a global reflation centred on public spending. Obviously, advanced economies with widely accepted currencies (especially the United States which enjoys the “exorbitant privilege” of the United States dollar standard) are better placed to finance fiscal reflation than most developing countries. This brings up the question of whether “functional finance” (and more generally “modern monetary theory”, MMT) can provide a useful framework for advancing an expansionary strategy. This is briefly considered in box 3.1.

BOX 3.1 To spend or not to spend – is that the question? Endogenous money, modern monetary theory and government deficits

Modern monetary theory (henceforth MMT) is an extension of the notion that money supply is endogenous to the workings of the economic system and the policies of the government. It follows upon the arguments about “functional finance” developed initially by Abba Lerner (1943). In its simplest form, MMT maintains that the very existence of fiat money is essentially enabled by the backing of governments that require the payment of tax obligations and other dues to the state in such currency. Therefore, government revenues are not simply a means of financing public spending; rather the public deficit or surplus is a policy tool that can be used to regulate employment and inflation levels, as governments can finance increased public spending by simply issuing money. This would not trigger inflation unless there are supply constraints that prevent output from increasing in response to increased demand. This has direct relevance when the policy objective

is that of generating an expansion of the real economy, in terms of rising employment and incomes. This is a useful antidote to excessive emphasis on fiscal austerity propounded by “deficit hawks”. And it clearly points to the possibility for policy packages that can be very different from those currently in vogue, which aim to reflate the economy by creating liquidity through quantitative easing measures but typically operate in combination with policies of fiscal austerity and/or labour-market flexibilization that simultaneously weaken aggregate demand.

The basic propositions of MMT are broadly consistent with the process of money creation in a modern economy and the associated role of fiscal policy. Also, the theory reiterates the important point that there is much more financial space for proactive fiscal stances than is generally perceived. Indeed, Keynesian economists have been arguing for a very long time that government deficits can and should be used to fight recessions, finance infrastructure, and even pay for some ongoing current expenditures that are seen to be socially valuable. Therefore there is clearly a case for implementing such a functional finance programme in the United States, where it has been strongly advocated (Bell, 1998; Wray, 1998, 2015; Mosler, 2004; Tymoigne, 2014; Mitchell, 2016; Nersisyan and Wray, 2019). Such a strategy is particularly suited to the United States as its Government is also the issuer of the global reserve currency; obviously, therefore, this requires that the United States dollar continues to be accepted as such so that the additional import demand created by domestic expansion can be easily met. There are additional concerns in the United States that would need to be addressed, such as the self-imposed limits on government debt, claims of central bank independence and the distributional tensions between labour and capital that can arise from the pattern of additional public spending. Some concerns that have been raised about MMT (López-Gallardo and Reyes-Ortiz, 2011; Lavoie, 2013; Taylor, 2019) point to issues of institutional and real resource constraints, including the possibilities of supply bottlenecks arising in particular sectors that could have inflationary consequences. Even after recognizing these issues, it is clear that, in the United States, there can be a successful functional finance strategy for full employment or a “Green New Deal”. To the extent that this then contributes significantly to global demand, it would also assist global deflation, while if the focus of public spending is on the transformation towards a green economy, there will be meaningful spillovers in terms of technology transfers and economies of scale to other countries.

However, in other economic contexts, such programmes of public spending based on money creation face tougher challenges. Other advanced economies cannot count on the same degree of acceptance of their currencies as the United States dollar, and therefore such a functional finance strategy would require much greater coordination between central banks to prevent speculative attacks and dramatic exchange-rate fluctuations. The problems are more severe for developing countries, which are generally far more externally constrained, with productive and financial structures heavily dependent on the rest of the world. It is unrealistic to expect that increased demand financed by issuing sovereign money can be fully matched by a domestic supply push. Import elasticities are typically high in developing countries, and industrialization requires imports of capital equipment and know-how that cannot be paid for in their national currencies. Insofar as such money-financed expansion leads to larger trade deficits, there would be associated increases in foreign debt that would make such countries more vulnerable. In addition, potential inflationary dynamics triggered by domestic supply constraints or induced depreciations would complicate distributional conflicts and welfare improvements. In these countries, financing a significant part of the deficit by a progressive overhaul of tax systems (including taxing the wealthy and the profits of extractive industries) is more consistent with the challenge of improving welfare. Furthermore, it is more consistent with a programme of structural transformation to rely on generating foreign exchange by expanding access to export markets and complementarily establishing regional clearing union systems and other forms of financial cooperation (see chapter IV). Finally, a formal premise of proponents of MMT is that currency sovereignty can only be maintained by flexible exchange rates. That is too high a price for most developing countries today. These countries are all too often subject to the double shock of terms of trade and exchange rate gyrations, which are mostly external and beyond their means of intervention. For these countries, capital controls and exchange rate management offer better effective policy sovereignty than flexible exchange rates in combination with functional finance.

There is the more general point that both taxation and public spending policies have significant distributional outcomes that cannot be divorced from broader social goals including those embedded in a Green New Deal. Ideally such a strategy should have a strong distributional component, which emphasizes the role of progressive taxation of both incomes and assets in reducing inequality, and identifies the patterns of spending that are most likely to generate more sustainable and equitable outcomes.

2. Investment and industrial policy

While government spending can be calibrated to work countercyclically, private investment often amplifies the business cycle, with especially negative effects during recessions. This makes an active investment policy a critical element in a strategy of economic growth and development, as discussed extensively in previous *TDRs* (1994, 1996, 2003, 2007, 2016). However, investment policies in both developing and developed countries have increasingly focused on enabling private investment and attracting external finance. This has contributed to the ubiquitous adoption of inflation targeting as a guide to macroeconomic policy, with the expectation that price stability and low interest rates would create a congenial environment for private capital accumulation. This has been accompanied by measures aimed at reducing the cost of “doing business” through deregulation, lower corporate taxes, privatizing state assets, signing investment treaties, etc.

These policies have generally achieved their immediate objective of increasing profitability for private capital, but they have failed to mobilize productive investment on the scale of earlier decades, let alone to the extent necessary for full employment and structural change (UNCTAD, 2018). Instead, they have allowed corporate profits to flow increasingly to the financial sector, confirming critics’ warnings about the replacement of a robust profit-investment nexus with the rise of rent-seeking behaviour (*TDR 2003*; *TDR 2016*; *TDR 2017*).⁶ The unheeded lesson is that sustained growth and structural change require the “directional thrust” of the state (Wade, 2014) through government investment and the management of private investment, both these activities are critical in supporting productive diversification and technical progress (IMF, 2018).

A long tradition of empirical research has shown that not all economic sectors have the same potential for generating higher incomes and improving living standards, especially in developing countries. The positive development experiences of the early post-war decades and the negative ones of the “lost decades” of the 1980s and 1990s have, in particular, confirmed the critical role of the industrial sector because of its extensive backward and forward linkages to the rest of the economy.⁷ The expansion of the service sector, while also a feature of successful modern economies, is more often a marker of development than a cause, as demand from the industrial

sector often drives its growth, even in cases such as the boom in India of digital services (Ghose, 2014).

Actual experiences of industrialization (and premature deindustrialization) have highlighted the role of the state in devising comprehensive industrial policies to resolve a range of critical challenges (Storm and Naastepad, 2005; *TDR 2016*). These include a familiar list of coordination challenges arising from market failures and the disconnect between private and social returns; the failure to take advantage of dynamic gains linked to increasing returns to scale; the damage from wasted resources due to excessive competition leading to price wars, bankruptcies and socially costly reallocation of resources; and the threat of sclerosis from resistance to changes that generate temporary unemployment and lost profits.

Aggregate investment generates the resources it requires by driving up aggregate income and profits, and therefore saving.⁸ It is not constrained by the existing flow of saving in the economy, but it does require that future savings are made available *ex ante* through credit creation or other forms of financing. Although aggregate saving responds to investment spending, the extent and manner in which households, businesses, the government and external resources contribute to such savings matters, and have both growth and distributional consequences. Similarly, the ways in which the financial system channels credit to productive and other investments can make a difference, especially for long-term investment (chapter VI). But establishing financing options that are conducive to long-term, innovative and productive investment involves regulating interest rates, the allocation of credit and the flow of foreign direct investments (FDIs), all of which require some degree of capital controls and management of exchange rates (chapter IV and V). Given the high dependence of all economies on international capital markets, an industrial policy capable of directing growth on a sustainable path requires an appropriate financial policy.

Investment in industrial capacity should go hand-in-hand with investment in infrastructure. Owing to its large scale and its “crowding-in” effect on other investments (i.e. its stimulus effect on new economic activities and expansion of existing ones) public sector infrastructure investment plays an important role in every economy.⁹ The strategic role and social value of infrastructure investment mean that its revenues

are hard to appropriate fully for individual investors, so government involvement is necessary for it to take place at the desired level (Aghion and Howitt, 2006). However, over recent decades infrastructure spending has been insufficient in many countries (*TDR 2018*). One reason has been inadequate financing, especially when governments face pressures to cut budgets and their policy sovereignty is challenged. To mobilize private capital, most countries have experimented with various forms of public–private partnerships but, as discussed in the previous chapter, many of these entail an unbalanced distribution of revenues and risks, with the former mostly accruing to private investors and the latter mostly borne by governments. Non-market financing options, such as long-term loans by national development banks, are more effective in funding strategically important investment in the interest of sustainable development (see chapter VI).

3. Investing in the green transition

Investment in infrastructure provides a unique opportunity to transition to a less carbon-intensive, or “decarbonized”, global economy. Climate protection requires a massive new wave of investment, not only in infrastructure, reinventing energy and other carbon-emitting sectors, as soon as possible (Steffen et al., 2018; IPCC, 2018). New low-carbon technologies must be created, installed and maintained in all countries (Bovari et al., 2018; Millar et al., 2017; Geels et al., 2017; Steffen et al., 2018; Fankhauser and Jotzo, 2018), especially given the presence of carbon-intensive globalized value chains.¹⁰

There are numerous opportunities for investment in energy efficiency and renewable energy supply, many of them already cost-effective at today’s prices¹¹ and many that have not been commercialized yet but are equally necessary for the complete decarbonization of the global economy.¹²

For developing countries, green investment raises both challenges and opportunities that were not available for developed countries when they industrialized. Although all countries have to install new infrastructure, most developed countries are likely to have older and inefficient infrastructure installed. In the context of energy infrastructure two prominent examples are peak facilities and long-distance electricity transmission.

Rising incomes imply a shift towards residential patterns of electricity demand in high-density urban areas where most of this century’s growth in population, incomes and infrastructure will occur. Air conditioning and lighting both require a surge in energy output late in each day, which is met by “peaking” facilities that sit idle most of the time. High-income countries have generally gone through the process of developing peaking facilities sufficient to meet the maximum demand experienced on the grid. Many developing countries, in contrast, are still planning and creating their energy systems. As a result, the available resource savings from clean energy are greater in some developing countries: in developed countries, adoption of a new technology such as energy-efficient light bulbs can avoid the fuel costs, but not the capital costs, of existing peaking facilities. In developing countries, the same technology choice can avoid capital costs, as well as fuel costs, of new peaking facilities.

Similarly, delivering energy to remote communities, via an urban-centred national grid, entails the substantial expense of long-distance transmission. Again, many developed countries, including Canada and the United States, have already invested in these long-distance connections. In this context, clean energy can avoid the fuel costs and emissions associated with fossil fuels, but not the (already sunk) capital cost of running the wires so far into the countryside. For physically remote communities that lack grid connection, greater savings may be available. So-called “microgrid” systems, linking small-scale power sources to local customer demand, provide improved community energy services but do not attempt the larger investment required to link to a unified national grid (IRENA, 2018a).

Indeed, the optimal energy system for a large country may involve a microgrid structure, regardless of density or income. In this case, developing countries can skip the expensive stage of developing a single national grid, and leap ahead to a decentralized, microgrid-based structure. Just like cell-phone technology has allowed developing countries to “leapfrog” over the expense of creating a landline network (Aker and Mbiti, 2010), microgrid technology allows them to leapfrog over the expenses of creating and extending a unified national grid.

This “green” investment push is an opportunity for a “Global Green New Deal”, recasting the Depression era’s signature policy on a global scale with the

potential of generating income and employment growth as well as climate stabilization, cleaner air and other environmental benefits. Income distribution will also improve as many of the jobs created by green investment are inherently local to the area where investment occurs (ILO, 2018). This process can drive developed countries closer to full employment and help achieve better conditions of work in developing countries.

Estimates of the employment impact of the green transition vary, with detailed analyses pointing to a net gain of 18 million jobs across sectors, once both job creation and job destruction have been taken into account (ILO, 2018). The energy sector in particular is likely to be a major engine of job creation. Global employment in renewable energy industries reached 10.3 million in 2017 (IRENA, 2018b). There was ample opportunity for further employment growth, as existing jobs are concentrated in the minority of countries that have promoted renewable energy to date. And more can be done to expand clean energy and employment, even in countries that have already begun to adopt renewables. In the European Union, the shift towards clean energy from 1995 to 2009 created 530,000 new jobs, unevenly distributed by country; one third of the new jobs were due to transboundary effects of one European Union country's policies on another (Markandya et al., 2016).

Employment created by clean energy includes both the labour required for construction and installation, and jobs in basic materials industries that supply the energy sector (Pollin, 2015). A 2011 study estimated material requirements for the United States to generate 20 per cent of its electricity from wind power by 2030, finding a need for increased annual consumption of 6.8 million tons of concrete and 1.8 million tons of iron and steel (Wilburn, 2011).

Energy efficiency creates jobs via a different mechanism. When efficiency measures reduce or replace energy consumption, they frequently lower household energy costs. In all but the richest households, this releases some part of incomes for increased spending on other goods and services, indirectly creating jobs across many sectors of the economy.

Input–output analyses find that both renewable energy and energy efficiency create many more jobs than fossil-fuel industries – almost three times as many jobs per million dollars of spending, in one

recent study (Garrett-Peltier, 2017). For the United States, the inefficiency of the current energy system and the plummeting costs of clean energy imply that it is possible to achieve an 80 per cent reduction in greenhouse gas emissions (GHG) by 2050, with no net increase in energy costs and a substantial increase in employment (Ackerman et al., 2015). Of the 550,000 net new jobs created in that scenario, more than three quarters are in construction and manufacturing. An input–output analysis for Africa, based on more fragmentary data, suggests similar potential for job creation from clean energy, with more ambitious GHG reduction scenarios generating lower costs per job (Cantore et al., 2017).

As clean energy initiatives and GHG reduction policies lead to ample job creation, it is tempting to see them as potential foundations for local industrial development. India, for example, embraced the solar industry in 2011, and set up incentives for domestic production. However, this ran afoul of World Trade Organization rules, which prohibit favourable support to domestic producers. If trade rules continue to trump environmental and development concerns, it will be difficult to realize the full potential for a Global Green New Deal. Tradable components of green investment, including photovoltaic cells and modules, can be monopolized and exported by low-cost producers, such as China at present. However, much of the employment created by clean energy is inherently local, either in construction and installation jobs that cannot be traded away, or in manufacturing of massive components, as in wind turbines, that are prohibitively expensive for long-distance transportation (ILO, 2018).

4. Financing investment: Credit creation, financial regulation and climate insurance

The decoupling of credit creation and productive investment suggests that expanding the latter requires careful regulation of credit, both to support productive activities and to avoid fuelling destabilizing ones.

Productive investment, especially in infrastructure, is mainly long-term investment that requires the financial system to reliably make future savings available *ex ante*, especially in the form of long-term credit.¹³ The financial requirements can be significant. For example, studies indicate that rapid decarbonization

of the economy would require additional investments of 1–2 per cent of GDP for several decades (Williams et al., 2014; Agora Energiewende, 2018; Pollin, 2018). This is a small amount when seen as insurance against disastrous losses (Ackerman, 2017) but it is enough to strain corporate and government balance sheets in many countries. Although stopping climate change has no real cost, as it would extend and improve the global economy's productive life indefinitely (Rezai et al., 2012), inadequate financing can prevent the necessary investments (Baer et al., 2009; Mazzucato and Semieniuk, 2018).¹⁴

Overall, successful financing strategies require some degree of planning. As discussed in chapter VI, national development banks and other direct credit institutions are usually better placed to support long-term finance. Central banks can help by functioning as lenders of last resort and by monitoring the banks' leverage and lending practices (including any lending targets).

Sustainable global growth requires that financial regulators, including central banks and financial market authorities, curb destabilizing financial trades and return finance to its socially useful function of funding productive investment (Storm, 2018). From the standpoint of implementation, and as discussed in later chapters, the challenge is that this "productivist" approach to finance requires complementary policies on many fronts, including international capital controls (IMF, 2010a, 2011), exchange rate management, subjecting bank mergers to financial stability and establishing international protocols to resolve sovereign debt crises in order to avoid predatory financial behaviour.

In sum, appropriate credit policies stimulate investment by mitigating its risks. But there are sources of uncertainty that these policies alone cannot eliminate. The exchange rate is a primary one, especially for developing countries where manufacturing requires imports of raw materials and intermediates. In these countries, exchange-rate hedging can help reduce currency mismatch and, if demand growth is strong, it can boost investment. If, however, aggregate demand is flagging, no financial instrument on its own can stimulate investment. Although credit and exchange-rate policies can address critical bottlenecks, if the economy suffers from insufficient aggregate demand, the only way to stimulate growth is to directly tap a source of real spending (*TDR 2015*).

5. Income redistribution

The distribution of income between wages, profits (and rents) and taxes is the result of a bargaining process shaped and driven by government policies.¹⁵ It is key to economic growth for two reasons. First, it determines wage income relative to profit income and rents. As workers have lower saving rates than capitalists and rentiers, redistribution towards labour generally drives up consumption spending. In principle, this may or may not lead to higher growth and employment, depending on the web of dynamic interrelations between demand and distribution. In practice, with the global economy lacking sufficient demand for at least a decade, redistribution is necessary to reflate growth and create more jobs. Second, wages are not only a major determinant of production costs but also impact on technical progress, as the labour share is effectively the average unit cost of labour faced by a country's firms. Higher unit labour costs provide a powerful incentive for firms to invest in labour-saving technology – which temporarily allows higher profit shares, until wages are renegotiated – and higher-end product varieties that command higher profit margins (Storm and Capaldo, 2018). Thus, in the medium term, income redistribution can trigger positive dynamics that lift the constraints on supply posed by pre-existing technical frontiers.

Particularly in developing countries, supply-side constraints (related to the scarcity of factors of production) are a major obstacle to the expansion of output and to strategies of structural change. But supply-focused responses that aim at alleviating the constraint by expanding the availability of the scarce factor can backfire because of their adverse effects on distribution. Relative prices, including the terms of trade between manufactures and primary commodities as well as the relative prices of tradable and non-tradable goods, are of great significance in the development process. Uncoordinated changes in these prices can constrain spending for one or more groups of workers, thereby constraining aggregate demand, generating inflationary spirals or both. The challenge is that in these cases fiscal and monetary policies do not provide solutions and therefore restoring or increasing aggregate demand to the full-employment level would require addressing underlying structural problems (Ros, 2013: 259).

6. International trade and investment agreements

International trade can be a powerful driver of economic development. International treaties can help to unlock this power, but if they are poorly designed, they can also be detrimental to growth, employment and development (Capaldo, 2015; Capaldo and Izurieta, 2018; Izurieta et al., 2018; Kohler and Cripps, 2018). Their ultimate effect depends on whether they enhance the channels through which trade supports development or subordinate trade flows to foreign investment flows and international capital markets.

The Havana Charter, which proposed an international trade organization to manage international trade in the post-war world, saw a central role for trade as an instrument of industrialization and employment generation. Exports support economic development through two main channels: by expanding aggregate demand, with associated improvements in productivity because of economies of scale and scope as well as innovation; and by providing a source of foreign exchange, which enables the purchase of capital goods, raw materials and intermediate inputs from abroad that might otherwise be the cause of bottlenecks to investment. More recently, however, a single-minded focus on export-led growth and the perceived advantages of trade liberalization have been used to justify regulatory changes in external trade as well as in investment and finance. This is reflected in the current trend towards “comprehensive” bilateral and plurilateral trade agreements¹⁶ that include chapters on investment, finance and intellectual property rights as well as health, labour and environmental standards. These provisions undermine national policy sovereignty by constraining governments’ choices on industrial policy, public investment, financial regulation and other critical policy areas (*TDR 2014*). International agreements that seek to expand growth and development through international trade can, in fact, curtail them because of their negative effects on income distribution and policy space. They also deflect attention from important aspects of trade regulation, such as the definition of acceptable trade barriers. Public dissatisfaction with the outcomes generated by such agreements has led to growing opposition (for example, in the case of the Trans-Pacific Partnership (TPP) in the United States, of the Comprehensive Economic and Trade Agreement (CETA), in Belgium and of the Transatlantic Trade and Investment Partnership

(TTIP) in the European Union). A more sensible approach to take advantage of international trade and contain its risks is to negotiate trade agreements that deal exclusively with trade provisions, mainly tariffs, subsidies, quotas and preferential purchases, leaving investment and finance to separate agreements. These would take into account the specific social, economic and developmental requirements of trade partners at varying levels of per capita income and employment diversification.

International investment can be a source of foreign exchange and a conduit of technology transfer with positive effects on industrialization. But negotiations of comprehensive agreements often exaggerate these benefits and downplay the risks. For example, countries seeking access to foreign markets for their exports and trying to ease the foreign exchange constraint may agree to measures of financial liberalization that they would not otherwise seek. But such liberalization may undermine the industries that trade negotiations are meant to bolster; and it may do so without attracting the expected FDI. In practice, FDI has proven to be at best a modest source of foreign exchange, for at least two reasons. First, the payments made to establish new activities often take the form of credit from affiliated companies already present in the country, which do not involve transfers of foreign exchange. Second, FDI that leads to functioning industrial operations eventually leads to outflows of foreign exchange too, because of imports of intermediates, royalties and technical fees, and profit repatriation (Ocampo et al., 2009: 3).

7. International coordination for growth, industrialization and crisis response

Reflationary strategies cannot work as intended without explicit international coordination. Whereas uncoordinated policies ignore global aggregation effects and run into multiple constraints (such as unsustainable external deficits and pressing trade-offs between emission reduction and development priorities) coordination can expand policy space and align the incentives faced by different countries.

By contrast, straightforward export-led growth promises lower-hanging fruits. Cutting unit labour costs is the main instrument, which all countries today are encouraged to use. This may pay off in the medium term, but at the cost of longer-term problems. Cutting unit labour costs means undermining real

wage growth and, eventually, aggregate demand. Even if a country initially succeeds in expanding exports and export-oriented employment, wage stagnation means that domestic demand will lag behind, making growth dependent on continuous expansion of foreign markets. Furthermore, this strategy provokes competitive responses from other countries in a global race to the bottom. As labour costs are cut globally, finding expanding markets to sustain growth becomes increasingly hard. Countries may or may not succeed in increasing export shares, but they surely incur steep costs in the form of redistribution from wages to profits, slower growth, higher instability and diminished prospects for industrialization.

Medium-term gains are not an automatic prospect either, as competitive export-led growth is not a fair game in the neo-liberal era. Short-term gains from exploiting static comparative advantages are within reach only for countries whose productive systems do not need the inputs that the current international legal framework for trade and investment restricts, such as technology transfer and public investment in infrastructure. In addition, volatile cross-border capital movements can lead to undesired exchange rate movements that work against medium-term goals of export promotion. In the current framework of international rules, it is rare for deficit countries to switch to surpluses without going through recession. As a result, current account imbalances tend to last and accumulate into unsustainable external debts, posing a recurring global challenge. This makes international policy coordination inevitable, but in the perverse form of bailout programmes with strict policy conditions. In such a context, it makes sense for all countries, but especially for developing countries, to invest politically in establishing forms of coordination that preserve their policy sovereignty while supporting global aggregate demand and financial stability (Helleiner, 2014, 2019).

Therefore, international coordination has at least three constructive functions. First, it helps to counteract the pressure that international capital mobility puts on domestic policies. Agreed standards for capital controls, if widely adopted, are instrumental in reducing capital flight in the face of economic and financial tensions, as well as the related pressures on exchange rates. Coordination mechanisms can also provide buffers to withstand pressure on exchange rates when the latter does occur. Second, and more

fundamentally, international coordination can shield against protracted current account imbalances while preserving global demand, such as through mechanisms requiring that all countries expand domestic spending, while surplus countries increase their spending faster (Keynes, 1929; UNCTAD, 2014). In clearing unions, mechanisms to “recycle” external surpluses can be implemented through rules that stabilize thresholds, notional currencies to measure the imbalances, and lending mechanisms to clear them. Clearing unions are particularly useful for developing countries, as they offer an effective solution to the problem of financing likely external deficits. Third, as noted in chapter V, coordination on tax policies can be hugely effective in increasing fiscal revenues for all countries.

Coordination is also and obviously an essential prerequisite for the global success of climate action policies. Uncoordinated environmental policies have failed and will continue to fail to stabilize the climate or to halt environmental degradation (IPCC, 2018). Unless they have feasible alternatives, developing countries with abundant carbon energy will continue to tap it when facing pressing development priorities and more imminent challenges such as food insecurity. Under current standards in international trade and investment treaties, transfers of green technology are generally seen as infringing intellectual property rights, thereby bringing climate policy negotiations to a stalemate. While many developed countries have become more energy-efficient, they continue to support a trading system that provides (and enforces) low-cost and low-standards manufacturing goods (Schröder and Storm, 2018). Clearly, only explicit coordination can align the incentives faced by each country based on negotiated support for adoption of the necessary energy use standards.

National growth strategies have a greater chance of success if they are globally consistent. Crisis response is also more effective and efficient when it is coordinated. On the one hand, crises (economic, financial, environmental) often hit different countries at different times, making it more efficient, overall, for the countries that have been spared to take on some of the burden of crisis response. For example, foreign exchange reserves are a “leakage” from global demand but they are also a critical buffer during a currency or balance-of-payments crisis. If a credible commitment to mutual foreign exchange assistance can be made, for example through formal

currency swap agreements or through institutions that pool and lend reserves, currency crises can be contained with less accumulation of reserves and a smaller burden for developing countries (chapter V) and for the global economy. This was the idea that inspired the Bretton Woods system. Likewise, developed countries can support the expansion of policy space in developing countries to support their ability to invest in climate stabilization.

As a supporting mechanism for a long-term growth strategy and as a crisis-response instrument, international coordination is more efficient the larger the number of countries that participate. But in some cases, smaller coordination arrangements are also beneficial – as shown, for example, by the many regional funds, regional payment systems and exchange-rate agreements established to contain the risks of exchange-rate fluctuations (chapter IV).

D. Laying out the midterm strategy in empirical terms

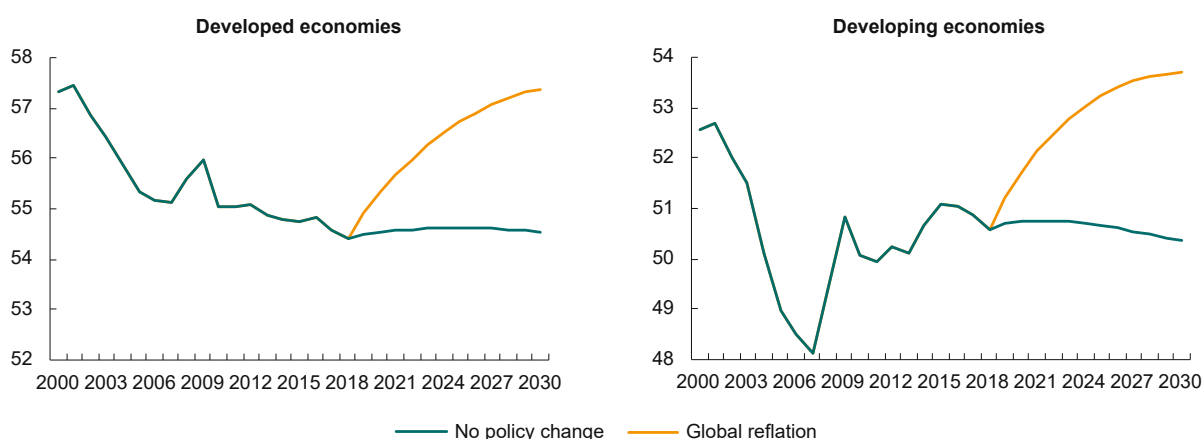
In order to make the previous discussion more concrete this section provides an empirical assessment of how the global economy may fare by 2030. First, it is necessary to consider where current policies will lead, based on observed trends. Second, alternative outcomes can be outlined that reflect the policy changes described in section B.

If the current policy stances continue, the global economy from here to 2030 will face slower growth and higher instability. As labour shares across the world continue on their decreasing path, household spending will weaken, further reducing the incentive to invest in productive activities. At a minimum, this will mean lacklustre employment creation and stagnant wages in developed countries as well as slow (or negative) expansion of domestic markets in developing countries. Both outcomes will worsen as governments keep engaging in the global race to the bottom, promoting more cuts to labour costs. Aggregate demand expansion will slow down further,

as governments continue to reduce social protection benefits and abstain from infrastructure investment, which will also make supply constraints tighter. In the meantime, unchecked credit creation will continue to fuel destabilizing financial transaction while failing to stimulate private productive investment. Finally, lacking sufficient investment and international agreement on technology transfer, carbon emissions will continue to increase overshooting the Paris target.

In stark contrast with current trends, this section examines the possible outcomes in terms of growth, employment, labour incomes and carbon emissions of an internationally coordinated policy package consisting of income redistribution, fiscal expansion and state-led investment centred on economic development, social protection and green technology. The outcomes presented are realistic within the range of options that emerge from robust estimates of the effects of each policy.

FIGURE 3.7 Labour shares: Income from employment as percentage of GDP, 2000–2030



Source: UNCTAD secretariat calculations and the United Nations Global Policy Model (GPM).

1. Income redistribution

In order to reverse the regressive trend in income distribution, labour shares will have to recover towards the higher levels of the mid-1990s. This can be achieved gradually in the medium term through labour-market regulation that supports employees' compensation while limiting profit markups. Raising minimum wages, strengthening collective bargaining institutions and increasing employers' social security contributions are the primary instruments. In practice, data suggest that it is realistic for labour in developed countries to regain by 2030 at least half the income share lost since the late 1990s while shares can grow faster in developing countries to drive up domestic demand more significantly and minimize labour cost competition with developed countries (figure 3.7).

As discussed in the previous section, increases in the labour shares will drive up GDP growth mainly by supporting household spending and, indirectly, business investment. International coordination is critical to induce all countries to adopt the necessary policies. Without coordination, countries that raise the labour share would face the prospect of reduced competitiveness, even if only in the narrow sense of labour cost levels, which would probably be enough to dissuade them from such policies.

Realistic estimates of the expansionary effects of labour share increases are given by the coefficients in table 3.1, which are consistent with the findings of other empirical research (Lavoie and Stockhammer, 2013; Stockhammer and Onaran, 2013; Storm and Naastepad, 2012: 5). The coefficients indicate the increases in GDP that follow a 1 per cent increase in the labour share, without taking into account any feedback effects from other countries. Thus, for example, in the United States a 1 per cent increase in the labour share is estimated to drive up GDP by 0.38 per cent. Coordinated policies would have stronger effects beyond these figures.

2. Fiscal expansion

In order to sustain global demand, government spending will have to continue to expand in both developed and developing countries, but the components of spending will play different roles in different contexts. In general, in developed countries, spending on goods and services will have to expand more significantly in order to meet the need for public investment,

TABLE 3.1 Effects of labour share increase on GDP, selected countries
(Percentage change in GDP after an increase of 1 per cent in the wage share)

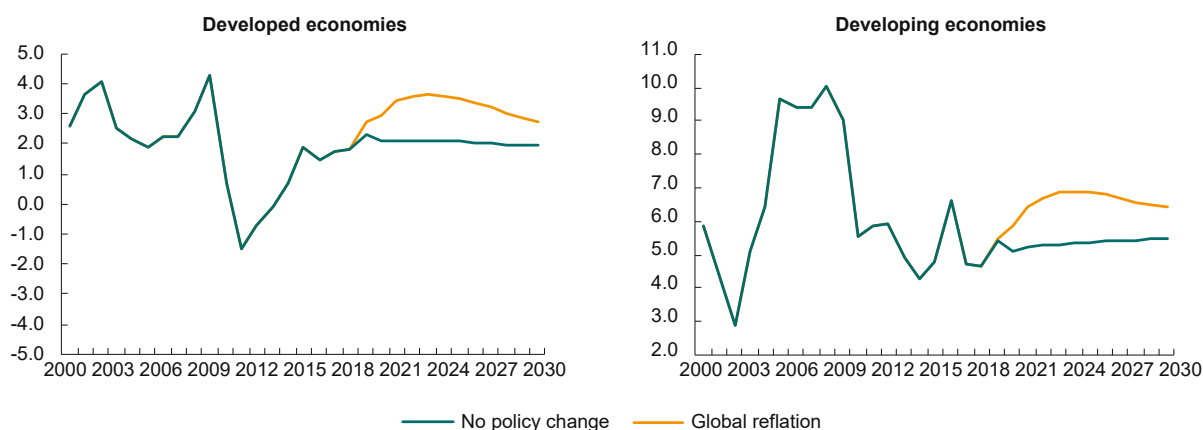
Argentina	0.32
Australia	0.30
Brazil	0.34
Canada	0.28
Caribbean	0.28
China	0.26
France	0.30
Germany	0.26
India	0.23
Indonesia	0.29
Italy	0.30
Japan	0.34
Republic of Korea	0.22
Mexico	0.24
Other Union Europe	0.28
Russian Federation	0.31
Saudi Arabia	0.21
South Africa	0.25
Turkey	0.21
United Kingdom	0.27
United States	0.38
North Africa	0.19
Other Africa	0.23
Other Transition Economies	0.22
Other Developed Economies	0.25
Other East Asia	0.20
Non-European Union Europe	0.25
Other South America	0.32
Other South Asia	0.47
Other West Asia	0.20

Source: UNCTAD secretariat calculations and the United Nations Global Policy Model (GPM).

Note: Figures indicate effects produced within one year of wage-share increase; *other East Asia* includes the Democratic People's Republic of Korea, Hong Kong (China), Malaysia, Mongolia and Singapore; *Non-European Union Europe* includes Norway, Serbia and Switzerland; *Caribbean* includes Costa Rica, the Dominican Republic and Jamaica; *Other European Union* includes Croatia, Estonia, Greece, the Netherlands, Norway, Portugal, Spain and Sweden; *Other West Asia* includes Iraq, Lebanon and the United Arab Emirates; *North Africa* includes Algeria, Egypt, Libya, Morocco and Tunisia; *Other transition economies* includes Georgia, Kazakhstan and Ukraine; *Other developed countries* includes Israel and New Zealand; *Other South America* includes Chile, Colombia, Ecuador and Peru; *Other South Asia* includes Afghanistan, Bangladesh, the Islamic Republic of Iran and Pakistan; *Other sub-Saharan Africa* includes Angola, the Democratic Republic of the Congo, Kenya, Nigeria and sub-Saharan African countries excluding South Africa.

FIGURE 3.8 Government spending in goods and services, 2000–2030

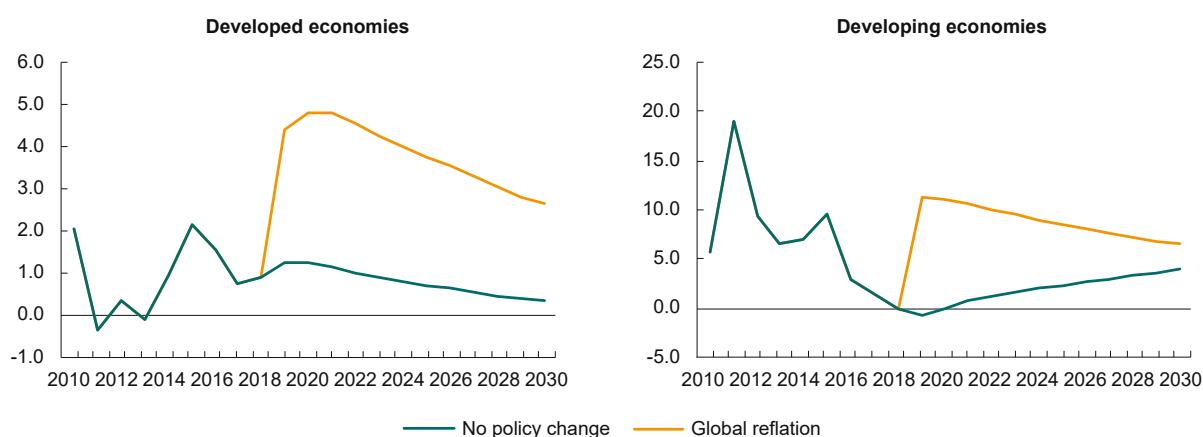
(Constant 2005 US dollars, ppp year-on-year percentage change)



Source: UNCTAD secretariat calculations and the United Nations Global Policy Model (GPM).

FIGURE 3.9 Government spending on transfers and other payments, net of subsidies, 2010–2030

(Constant 2005 US dollars, ppp year-on-year percentage change)



Source: UNCTAD secretariat calculations and the United Nations Global Policy Model (GPM).

especially in green infrastructure (figure 3.8). The strategy laid out here points to an average increase of 2 per cent of GDP as a plausible figure. Government transfers (such as pensions for government employees, unemployment benefits, funding of public health-care systems, food subsidies, subsidies to production etc.) will also need to increase to meet the needs of ageing populations (figure 3.9). This is in stark contrast with the picture that would result from the current declining trend in government transfers. In developing countries, government transfers will have to increase at a faster rate in order to offset protracted austerity and to establish stronger social protection systems. Spending on goods and services in these countries will have to continue growing in absolute terms but will have to slightly decline as a share of GDP in order to

minimize inflationary pressures and pressures on public budgets.

Estimates of government spending multipliers indicate that such an expansion would partially pay for itself by generating higher GDP and (everything else being equal) higher tax revenue (table 3.2). But in all countries, tax policy will have a significant role to play to support redistribution – through higher marginal rates of income taxes, both personal and corporate – and to ensure that government deficits are sustainable (figure 3.10). Estimates of direct taxation multipliers (table 3.2) indicate that a rise in progressive taxation has little negative effect on aggregate demand and, conversely, that tax cuts have little positive effect (which are negligible when they benefit only corporations and the wealthy). More progressive

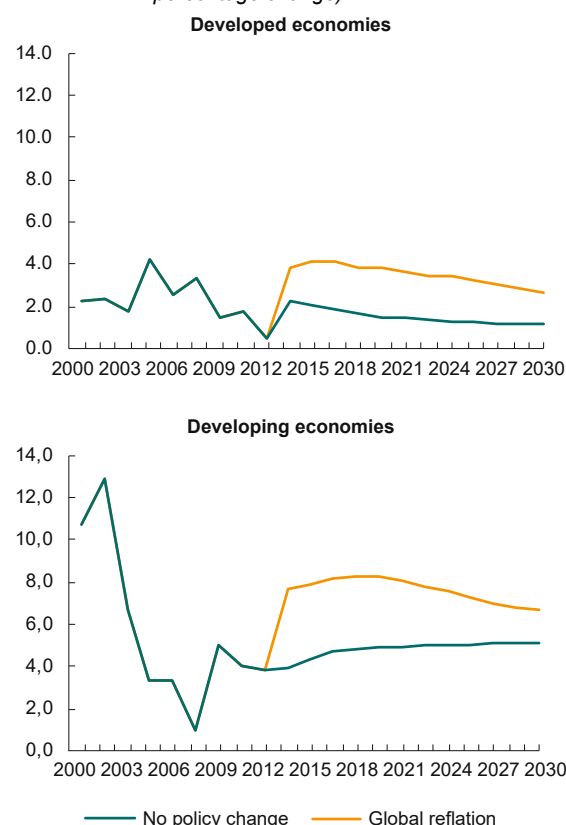
TABLE 3.2 Fiscal multipliers (increase of GDP following a \$1 billion increase in government spending in goods and services or a \$1 billion cut in direct taxes) (Millions of dollars)

	Government Spending	Direct Taxation
Argentina	1,618	204
Australia	1,525	122
Brazil	1,671	189
Canada	1,360	73
Caribbean	1,522	207
China	1,724	206
France	1,340	80
Germany	1,291	85
India	1,505	223
Indonesia	1,779	252
Italy	1,408	154
Japan	1,646	181
Republic of Korea	1,315	129
Mexico	1,428	212
Other European Union	1,326	104
Russian Federation	1,602	145
Saudi Arabia	1,282	102
South Africa	1,469	209
Turkey	1,421	207
United Kingdom	1,374	119
United States	1,752	218
North Africa	1,316	141
Other Africa	1,455	203
Other transition economies	1,442	183
Other developed economies	1,391	124
Other East Asia	1,181	114
Non-European Union Europe	1,302	88
Other South America	1,606	183
Other South Asia	1,489	192
Other West Asia	1,297	104

Source: UNCTAD secretariat calculations and the United Nations Global Policy Model (GPM).
Note: See table 3.1.

direct taxation is, therefore, compatible with an expansion of government spending and a gradual decline of government deficits in both developed and

FIGURE 3.10 Total tax revenue, 2010–2030 (Constant 2005 US dollars, ppp year-on-year percentage change)



Source: UNCTAD secretariat calculations and the United Nations Global Policy Model (GPM).

developing countries. International coordination is as important in this area as it is for redistributive policies, as the possibility of tax competition can easily dissuade governments from raising direct taxes. In addition, as discussed in box 3.1, countries that issue reserve currencies – especially the United States, and to a more limited degree other developed economies which issue major currencies (like Japan and the United Kingdom) – may combine increases of tax rates with some variety of “functional finance” as a means to fund a government spending expansion.

3. A greener horizon

A global push towards the Sustainable Development Goals is made particularly challenging by environmental targets. The development agenda drawn in this chapter requires sustained growth of output and demand in both developed and developing regions, implying massive increases in the demand for energy and primary commodities. In this context, achieving environmental targets requires efforts at three levels:

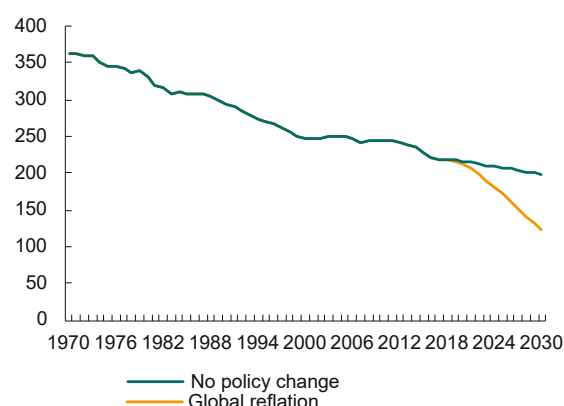
(a) drastic improvements in energy efficiency that can effectively reduce the sensitivity of energy demand to economic growth; (b) cuts to the production of carbon energy, to be partly compensated by higher production of non-carbon energy; (c) technological and financial transfers that support the energy transition. This last is especially important for developing countries, which are currently projected to grow faster than developed countries in the coming decades but generally lag behind in the adoption of green technologies and often depend on exports of carbon energy to obtain foreign exchange. International coordination can be decisive in breaking this dependence.

(a) Energy demand

As a share of global GDP, global energy demand has been falling at an average rate of 1 per cent a year since 1970 (in real terms) but it has increased in level. If this trend continues, and global growth continues as discussed above, by 2030 global energy demand will be nearly 60 per cent higher than in 2010. This will mean overshooting environmental targets. Indeed, the worst scenario considered by the IPCC assumes an increase in global demand of only 44 per cent (IPCC, 2018: 14).¹⁷ Furthermore, all scenarios deemed acceptable by the IPCC assume moderate growth of global GDP (close to the baseline discussed above, approximately 3.5 percent per year), rather than fast growth.

Empirical evidence suggests that the sustainable growth strategy proposed in this chapter is compatible with an increase of global energy demand by 2030 of approximately 14 per cent with respect to 2010. As the strategy generates faster GDP growth (of approximately 4.7 per cent per year), energy demand per unit of output will have to fall by approximately 4.5 per cent per year on average. Compared to the current trend of 1 per cent, this is clearly ambitious (see figure 3.11). But international evidence suggests that it is feasible. For example, pressed by the second international oil shock, France, Japan, the United States and West Germany improved energy efficiency by 4 per cent a year or more for five years or longer. Some developing countries, starting from lower levels of efficiency, have also managed sustained improvements. Throughout the 1980s and 1990s, China improved efficiency at an average rate of nearly 6 per cent per year, and at the rate of nearly 7 per cent per year after 2012. Meanwhile, average yearly improvements in India in the 2000s, while the oil-price boom lasted, were of nearly 3 per cent.

FIGURE 3.11 Energy intensity of global output (volume), 1970–2030 (Grams of oil-equivalent)

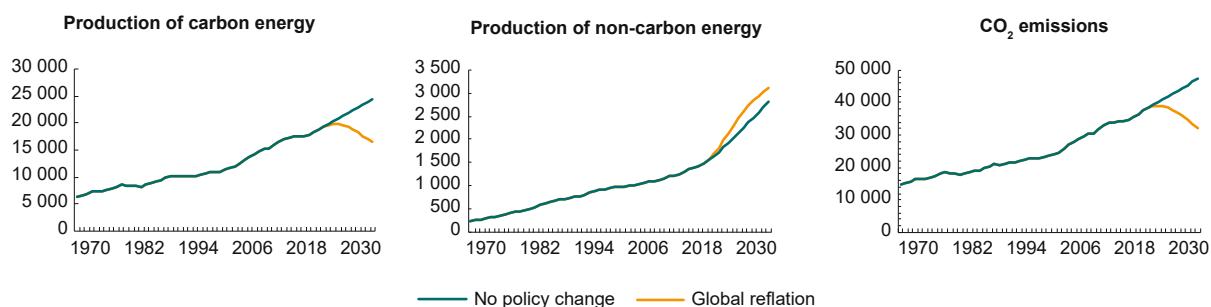


Source: UNCTAD secretariat calculations and the United Nations Global Policy Model (GPM).

(b) Energy production and carbon dioxide emissions

Improving overall energy efficiency is only one dimension of the challenge. Another is to shift from carbon to non-carbon energy sources. Total energy production is at present about 20 billion tons of oil-equivalent, about 8 per cent of which is generated from renewable sources. This combination causes gross CO₂ emissions to the degree of 36 billion tons. If current production patterns are projected into the future, even after taking into account a moderate acceleration in the production of non-carbon energy, by 2030 CO₂ gross emissions will reach 47.5 billion tons, reflecting global totals of 24 billion and 3 billion tons of oil-equivalent in carbon and non-carbon sources, respectively. Alternatively, to reach a minimally acceptable environmental target by 2030, the IPCC proposes in one of its moderate scenarios a reduction of gross CO₂ emissions of 41 per cent in 2030 relative to 2010, in conjunction with a postulated increase of 21 per cent of total energy production. That would require an excessively challenging shift towards non-carbon energy. Experimenting with a variety of scenarios, it appears that only a more modest improvement could be consistent with extrapolations to a global scale of relatively successful country-level episodes of combined falls in fossil-fuel production and meaningful increases of non-carbon production. More concretely, it is possible to postulate a fast deceleration and successive decreases of carbon energy production, falling from above 18 billion tons at present towards 15 billion tons of oil-equivalent by 2030, and a significant acceleration in renewable sources of energy, from 1.5 billion to about 3.5 billion

FIGURE 3.12 Energy production and emissions, 1970–2030



Source: UNCTAD secretariat calculations and the United Nations Global Policy Model (GPM).
Note: MTOE = million tons of oil-equivalent.

tons. Such a combination will result in a fall to about 30–32 billion tons of gross CO₂ emissions by 2030 (see figure 3.12). This may correspond to a scenario somewhere between those named by the IPCC as “no or limited overshoot” and “higher overshoot”. And yet, the extent of policy change required to make that happen is not in the least trivial.

(c) Further requirements: Coping with terms-of-trade shocks, investment and finance

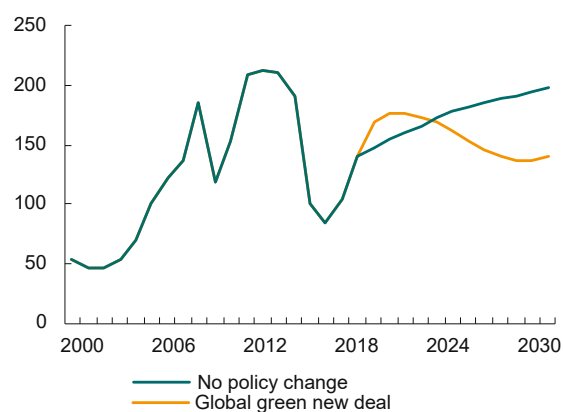
The challenge of such a transformative agenda on a global scale, even if moderate in its results, cannot be overstated. The improvements in energy efficiency and shifts towards non-carbon energy require technology sharing and financial support, both of which will need to underpin the necessary investment push, including public investment in physical and social infrastructure as discussed above. Technology sharing is essential because only a few economies have advanced sufficiently in the production of new forms of energy to the scale required to be cost-effective. For many other economies, the threshold is too high, and their best course of action may be not to join a “greener” agenda as they lack the proper technology and the financial resources to pay for it. What is more, a global shift away from fossil-fuel energy, together with the postulated fall in global energy demand relative to output, will imply consistent downward pressure on the global price of fossil-fuel products, even if initially a global fiscal reflation and investment push will cause some degree of oil-price inflation.

Under these conditions, the oil price – compared with a projection derived from current trends – may evolve as shown in figure 3.13. Depending on the

degree to which the environmental agenda going forward incorporates improvements in the production and reusability of other primary commodities, as well as technologies that improve energy efficiency, it is likely that such an agenda involves serious term-of-trade losses for most developing economies whose foreign earnings continue to depend heavily on primary commodities. Indeed, research indicates that meeting emissions targets requires the reduction of dependence not only on oil but also on primary commodities (Izurieta and Singh, 2010).

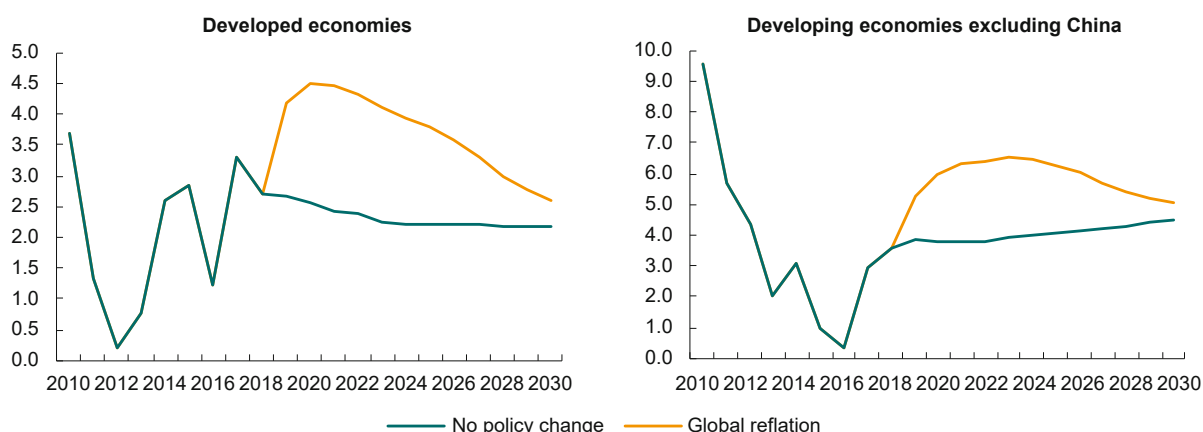
That is, on the one hand the postulated strategy of fast growth and sustainable development requires a momentous, even if feasible, impulse of public and private investment by both developed and developing economies (see figure 3.14). This means that in both groups of countries, domestic demands for finance to enable the long-term investment push will be considerable.

FIGURE 3.13 Oil price in alternative scenarios
 (Index number, 2005 = 100)



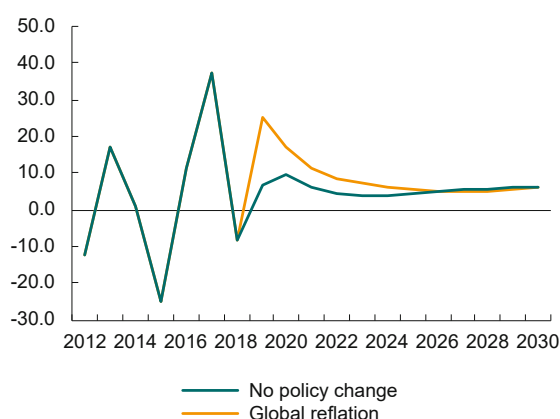
Source: UNCTAD secretariat calculations and the United Nations Global Policy Model (GPM).

FIGURE 3.14 Private investment growth, 2010-2030
(Constant 2005 US dollars, ppp year-on-year percentage)



Source: UNCTAD secretariat calculations and the United Nations Global Policy Model (GPM).

FIGURE 3.15 Total financing requirements (domestic and external) as a share of GDP, excluding China, 2012–2030
(Constant 2005 US dollars, ppp percentage)



Source: UNCTAD secretariat calculations and the United Nations Global Policy Model (GPM).

On the other hand, the financial constraints for most developing countries may turn out to be very tight. A globally coordinated agenda that favours the technological transfers necessary for climate change mitigation will partially ease them. It can also be considered that, judging from the expected patterns in the price of oil presented above (which may also be exhibited by some of the primary commodities that feed into infrastructure and fixed capital production), at least initially there will be additional sources of

foreign exchange for exporting countries. But eventually this strategy will require considerable increases in demand for resources in developing countries, in terms of both domestic and foreign financing, roughly at rates above 10 per cent per annum for the first four to five years, slowing down towards 4–5 per cent per annum afterwards (see figure 3.15). Admittedly, the demand for finance also grew considerably in 2016–2017, but this was mostly due to recovery from its fall that followed the “taper tantrum” of 2013. Besides, while in the years from 2012 to 2018 the main driver of demand for finance was the speculation induced by quantitative easing. By contrast, the increase generated by a globally coordinated strategy after 2019 would mainly be motivated by the financing of productive investment and infrastructure.

Though what is presented above is empirical estimates of projections that are conditional on the set of policy assumptions to shape a genuine sustainable development agenda, it should be clear that adding environmental targets to what is already a challenging strategy of growth and development requires very significant efforts at both the national and international levels. The question is whether the postulated changes required to deliver even modestly on climate change mitigation can also deliver on growth and employment.

E. Conclusion: Coordination is the key to growth, jobs and climate stability

Strategies towards sustainable development and economic growth can take a variety of paths, depending on the structural conditions and constraints of

each country. Yet, the main factors to consider can be derived from the multiplier analyses presented above (tables 3.1 and 3.2). If policymakers succeed

in raising the shares of labour income towards the levels of a not-so-distant past, growth will increase between 0.25 and 0.75 per cent per year depending on the country. If all or most countries act in the same direction, feedback effects will lead to faster and more sustained growth. International coordination is key to ensure buy-in by all countries as well to facilitate transmission of demand and productivity effects by enhancing trade and financial networks.

A similar observation can be made about assessing the impact of a combined fiscal reflation financed by progressive tax increases and credit creation. Government spending multipliers for individual countries range from 1.3 to 1.8. In a globally or regionally coordinated agenda, these effects are amplified. Of particular importance is the extent to which private investment is stimulated by the initial fiscal impulse (the crowding-in effect). Considering that many economies currently experience weak or insufficient demand, it is expected that the fiscal stimulus will result in sizeable increases of private investment and consequently faster productivity growth than if current policy stances continue.

Significant public investment in clean transport and energy systems is imperative to establish low-carbon growth paths and to transform food production for the growing global population, as well as to address problems of pollution and environmental degradation more generally. This will need to be supported by effective industrial policies, using a mix of general and targeted subsidies, tax incentives, loans and guarantees, as well as accelerated investments in research, development and technology adaptation, and a new generation of intellectual property and licensing laws. Specific measures and support will be required in developing countries to help them leapfrog the old and dirty development path followed by today's advanced economies.

Coordination is key in this instance for two other reasons. First, for many countries, particularly in the developing world, constraints to growth may not emerge from demand but from supply bottlenecks in particular sectors or from the lack of foreign finance. A coordinated strategy is needed to ensure that any such shocks do not trigger capital

flights and that trade can compensate for domestic supply deficiencies. Second, a critical limit to the growth of productivity in many developing countries arises from technology, know-how and sophisticated capital equipment. In many instances, such countries will not be able to succeed in reaching the initial conditions to take off and realize the scale economies needed to be cost-effective. Coordination to support technology transfers and access to markets is critical.

Considering the estimates reviewed, and assuming an effective degree of international policy coordination (including South–South cooperation), it seems realistic to envisage that a policy package consisting of redistribution, fiscal expansion and state-led investment push will yield sustained growth rates of GDP in developed economies at 1–1.5 per cent above of what can be experienced under current patterns. For developing economies, excluding China, the growth rate increases above the projection of current patterns may be between 1.5 and 2 per cent per annum. Growth above the baseline in China may be more moderate, close to an increase of about 1 per cent per annum.

Based on current trends in employment creation, a successful global growth strategy of this kind will increase employment by approximately 26 million jobs in developed countries and 146 million jobs in developing countries (40 million of which would be in China) by 2030. These are relatively small numbers compared to a global labour force projected to reach 4.1 billion, especially as in the past economic growth used to have stronger impact on employment. But it is plausible that a globally coordinated strategy centred on state-led investment and social spending would have a substantially larger impact than projected here, thanks to the expansion of service employment. Clearly, therefore, the projected estimates for growth and employment as well as for environmental outcomes, suggest that even more decisive efforts than those explored here are necessary to achieve global growth and development that are sustainable economically, socially and environmentally. Nevertheless, the policies discussed in this section would effectively push the global economy in the right direction. ■

Notes

- 1 The cost-cutting agenda has been promoted as a one-size-fits-all remedy to jump-start economic growth, based on studies suggesting that labour-market regulation undermines economic growth while cutting labour costs boost private investment (Besley and Burgess, 2004; Bernal-Verdugo et al., 2012; IMF, 2013a, 2013b; World Bank, 2008, 2019). It has informed policy advice (IMF, 2013a, 2017), financial aid conditionality (European Commission, 2010, 2012, 2015) and country rankings (World Bank, 2018; World Economic Forum, 2017). The rationale of flexibilization has been shown to be biased and flawed by unrealistic assumptions, most recently in the context of the slow recovery from the Great Recession (see section B).
- 2 In development policy the idea gained traction in the 1950s informing early IMF conditionality (Polak, 1957) and was mainstreamed in the 1980s and 1990s in the Washington Consensus, the “Shock Therapy” programmes for transition economies (Lipton et al., 1990; *Financial Times*, 1992) and in responses to emerging market financial crises (IMF, 1998; World Bank, 1999).
- 3 In the policy debate there is often another connotation to “fiscal space”, referring to the fear of policymakers of being penalized by domestic and international investors who tend to dismiss all forms of public sector action as “irresponsible” or “profligate”. But that cannot be a guide to fiscal policy action of sovereign states.
- 4 An adjustment process known as “forced saving”. Attempts at expanding demand in the presence of tight constraints (such as bottlenecks to investment or the economy’s reaching its full capacity) may lead to price increases that reduce real wages and increase real profits, effectively transferring income from workers to profit earners. To the extent that the latter save a larger share of their income than workers, the transfer causes a net reduction of consumption “forcing” higher savings out of national income.
- 5 Provided that wage-earnings are indexed, a moderate degree of inflation reduces the real value of debts, thus redistributing wealth from creditors to debtors. This can be especially conducive to promoting activity by small and medium entrepreneurs, who tend to be credit-constrained. The policy concern in these instances is whether the initial expansionary push is met with sufficiently fast and reliable increases of productive capacity that lift the constraints. Under such circumstances, inflation rates in the range of 10–20 per cent per year can be beneficial to sustained growth and development (UN DESA, 2008: chap. 1). But if capacity is not increased, or inflation runs too fast, the result is a vicious circle in which wages and prices chase each other, causing instability and economic shocks.
- 6 The view that lower interest rates always promote productive investment was shown to be wrong already during the Great Depression (Keynes, 1936) but resurfaced in the academic literature of the past few decades and linked to the idea of a “great moderation” (Bernanke, 2004). Though this was disproved several times before and after the Great Recession (Godley and Lavoie, 2007; Storm, 2017a; Taylor, 2017), it still prevails.
- 7 There is an ongoing discussion of sectoral dynamism (*TDR 2016*). The latest “manufacturing renaissance” in development analyses places a renewed emphasis on the benefits of local concentration of industrial firms. Alfred Marshall’s analysis of industrial districts (Marshall, 1920: 222) has reappeared, modernized and extended, in the notion of “industrial commons” (Andreoni and Gregory, 2013; Best, 1999).
- 8 Keynes famously pointed this out, among others (Keynes, 1936: 84): in the aggregate increasing saving leads to lower demand and income. The only way to increase aggregate investment is to reduce aggregate saving, which requires borrowing. For an analysis of these relationships in the context of today’s financial system, see Wray, 2012.
- 9 The literature on crowding-in has been extensively reviewed (Erenburg, 1993), including with reference to developing countries (Taylor, 1994) where insufficient private investment is analysed in connection low government investment (a fiscal gap between government saving and investment).
- 10 With geographically fragmented manufacturing, data on emissions can give the false impression that some developed economies have reduced emissions when, in fact, they have mostly outsourced carbon-intensive tasks (Peters et al., 2017; Semieniuk, 2018; Schröder and Storm, 2018).
- 11 Frequently discussed examples include energy efficiency measures (Panwar et al., 2011), wind power (Guezuraga et al., 2012; Lazard, 2018), solar power (IRENA, 2018a; Bloomberg New Energy Finance, 2018), new batteries (*Greentech Media*, 2019), electric vehicles (Hao et al., 2017) and heat pumps.
- 12 These include renewable liquid or gas fuels, new formulas for cement manufacturing and other industry-specific technologies to reduce process carbon emissions, climate-smart agriculture (de Oliveira Silva et al., 2016) and new patterns of high-density, transit-centred urbanism.
- 13 Short-term credit continues to be needed to finance businesses’ payroll and circulating capital (Godley and Lavoie, 2007: 49–51).

- 14 The Paris Agreement, combining member countries' voluntary commitments to emission reduction, called for \$100 billion per year of contributions through to 2025, with a likely increase in contributions after that year (Meltzer, 2016). On the one hand, this is too little for climate stabilization and sustainability; trillions, not billions, of dollars per year will be needed. On the other hand, it is more than the parties to the Paris Agreement have been willing to provide, in practice. In 2014, developed-country governments could only agree to \$10.3 billion in pledges to the Green Climate Fund (Waslander and Amerasinghe, 2019). According to the World Resources Institute, five different methods of estimating likely future contributions produce figures between \$14 billion and \$66 billion per year. Controversy over contributions from developed countries reflects, in part, historical responsibility for the initial stages of climate change. Several analytical frameworks have attempted to assign responsibility for past emissions, and for the elevated levels of GHGs in the atmosphere. Such frameworks often project that Europe and North America, which enjoyed such a long head start in fossil-fuelled economic development, are responsible for much more than domestic climate damages (Baer et al., 2009).
- 15 This is known as “primary” distribution and the resulting incomes (net wages, net profits and taxes) are known as primary incomes. Transfers in money and in kind, except social transfers in kind, operate a “secondary” distribution the results of which are “disposable” incomes. The remaining transfers yield “adjusted” disposable income (United Nations, 2009).
- 16 These include the North American Free Trade Agreement (NAFTA), the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), the Transatlantic Trade and Investment Partnership (TTIP), the European Union–Canada Comprehensive Economic and Trade Agreement (CETA) and the African Continental Free Trade Area (AfCFTA).
- 17 In 1970 \$1 of global output required about 363 grams of “oil-equivalent” energy, while in 2005 it required 250 grams (expressing output in constant United States dollars of 2005). By 2018, the energy demand per constant unit of output has fallen to about 218 grams. With an average density of crude oil of 0.87 grams/litre, this means that producing an extra dollar of output is currently equivalent to burning almost one third of a litre of oil. For every \$3 (ppp) of sales, approximately one litre of oil is burned somewhere in the world. If the trend continues, by 2030 \$1 of global output (in 2005 dollars) will require approximately 195 grams of oil-equivalent or 0.22 litres.

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