Horizons 2030

Equality at the Centre of Sustainable Development

Thirty-sixth session of ECLAC

Mexico City,
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Alicia Bárcena
Executive Secretary

Antonio Prado
Deputy Executive Secretary

This document was coordinated by Alicia Bárcena, Executive Secretary of the Economic Commission for Latin America and the Caribbean (ECLAC), with the collaboration of Antonio Prado, Deputy Executive Secretary of ECLAC.

The drafting committee also comprised Martín Abeles, Verónica Amarante, Wilson Peres, Esteban Pérez, Gabriel Porcile and Pablo Yanes, who were assisted by Vianka Aliaga, Dillon Alleyne, Guido Camu, María Ortiz and Romain Zivy, all staff members of ECLAC.

The following chiefs of substantive divisions, subregional headquarters and country offices of ECLAC were also involved in the preparation of this document: Laís Abramo, Chief of the Social Development Division; Hugo Beteta, Chief of the ECLAC subregional headquarters in Mexico; Inés Bustillo, Chief of the ECLAC office in Washington, D.C.; Mario Cimoli, Chief of the Division of Production, Productivity and Management and Officer in Charge of the Division of International Trade and Integration; Pascual Gerstenfeld, Chief of the Statistics Division; Jorge Máttar, Chief of the Latin American and Caribbean Institute for Economic and Social Planning (ILPES); Carlos Mussi, Chief of the ECLAC office in Brasilia; Diane Quarless, Chief of the ECLAC subregional headquarters for the Caribbean; Juan Carlos Ramírez, Chief of the ECLAC office in Bogota; Nieves Rico, Chief of the Division for Gender Affairs; Paulo Saad, Officer in Charge of the Latin American and Caribbean Demographic Centre (CELADE)-Population Division of ECLAC; Joseluis Samaniego, Chief of the Sustainable Development and Human Settlements Division; Ricardo Sánchez, Officer in Charge of the Natural Resources and Infrastructure Division; and Daniel Titelman, Chief of the Economic Development Division. Osvaldo Sunkel, Chair of the Editorial Board of the CEPAL Review, also participated in the work.

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Explanatory notes

- Three dots (…) indicate that data are not available or are not separately reported.
- A minus sign (-) indicates a deficit or decrease, unless otherwise indicated.
- A full stop (.) is used to indicate decimals.
- The term "dollars" refers to United States dollars, unless otherwise specified.
- A slash (/) between years (e.g. 2013/2014) indicates a 12-month period falling between the two years.
- Figures and percentages in tables may not necessarily add up to the corresponding totals due to rounding.

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Foreword

Today we face a dizzying process of change —a change of era, in fact. The prevailing global economic and social trends are deepening the contradictions of a development pattern that has become unsustainable. These contradictions are undeniable, as evidenced by the unprecedented increase in global inequality in recent decades; the worsening environmental crisis, especially climate change; and the ambivalent role of the technological revolution that, while offering opportunities for sustainability, creates tensions in labour markets that are heightened as new technology becomes more widely used.

The deep economic, social and environmental imbalances have prompted the international community to seek answers; efforts on this front have been drawing to maturity for more than two decades. The most comprehensive and ambitious response is the 2030 Agenda for Sustainable Development and the 17 Sustainable Development Goals, which the 193 countries represented at the United Nations General Assembly adopted in September 2015. These commitments recognize equality and sustainability as the shared and universal guiding principles on which a new set of global, regional and national strategies and policies should be based. The participation of virtually the entire international community in formulating and adopting the Agenda gives it unprecedented legitimacy and strengthens countries' political commitment to implement it effectively and efficiently, adapting it in response to the major shifts under way.

We see many points of connection between the 2030 Agenda and the proposals that the Economic Commission for Latin America and the Caribbean (ECLAC) has made over the years, particularly the recommendations for combating inequality that are at the heart of the strategy set forth in *Time for Equality: Closing Gaps, Opening Trails* in 2010. That document points to the negative impact of inequality on growth and on political and social stability in Latin American and Caribbean countries; furthermore, it posits that inequality is not only ethically unacceptable, but also represents a formidable barrier to development.

Two years later, the document *Structural Change for Equality: An Integrated Approach to Development* extended these lines of argument further and stressed that, unless the production structure and specialization patterns incorporated more technology and shifted towards activities with higher levels of productivity, it would be impossible to create quality jobs to replace the very low productivity employment that fuels inequality in the region's countries and holds back their development.

More recently, in 2014, ECLAC argued in *Compacts for Equality: Towards a Sustainable Future* that the most effective way to pursue the new development pattern based on the theses of the aforementioned books, was to build the broad alliances and social compacts needed to make sustainable development policies viable and turn them from government policies into State policies, in the framework of a new equation between the State, the market and society. The three publications share visions, diagnoses and strategies, forming a trilogy that has systematically put the quest for equality at the core of ECLAC contributions to thinking on the economic and social development of Latin America and the Caribbean.

While the 2030 Agenda for Sustainable Development and its Goals have great potential as a development tool within international relations and clearly reflect the breadth and urgency of global challenges, an analytical framework is still needed to link them together and give them coherence. The Goals cannot be effectively tackled without establishing and consolidating specific implementation tools, something that remains a pending task. Without these

tools, there is a risk that the Agenda will remain wishful thinking, at best implemented in an ad hoc and piecemeal fashion, contradicting the stated intention that it should be a universal, comprehensive and indivisible agenda.

This document, which ECLAC is presenting to its member countries at the thirty-sixth session of the Commission, aims to provide an analytical complement to the 2030 Agenda and the Sustainable Development Goals from a structuralist perspective and from the point of view of the Latin American and Caribbean countries. In this endeavour, the structuralist tradition is expanded to afford more emphasis to the environmental and global dimensions of economic development.

The leitmotiv is progressive structural change, defined as a shift towards production activities and processes that have three characteristics: they are learning- and innovation-intensive (Schumpeterian efficiency); they are linked to rapidly expanding markets, allowing production and employment growth rates to rise (Keynesian efficiency); and they promote environmental protection and decouple economic growth from carbon emissions (environmental efficiency). In order to build production structures that have all three types of efficiency and can make equality compatible with environmental protection, a new set of institutions and political coalitions are needed to support them at the global, regional, national and local levels.

Global public goods are essential for achieving these objectives. This is particularly evident with regard to environmental issues, on which collective action and multistakeholder coordination are essential for reducing emissions. Not for nothing has the destruction of the environment amid deregulation been described as "a result of the greatest market failure the world has seen". In the face of this challenge, the Paris Agreement, adopted in December 2015, is, despite its shortcomings, a step in the right direction in terms of defining common targets for reducing greenhouse gas emissions and decarbonizing economies, while respecting the principle of common but differentiated responsibilities.

There are two other areas in which it has become clear that global, concerted and collective action is urgently needed: the recovery of global growth and environmental stewardship.

On the one hand, the recovery of the world economy after the 2008 financial crisis has been slower and more uncertain than expected, and there is a risk that a new crisis could strike in the next few years. Growing inequality, external adjustment pressures on the weakest economies, falling investment and the multiplication of financial assets paint a picture of uncertainty and weak aggregate demand that has stamped a recessionary bias on the world economy. To win free from this scenario, public goods must be created to promote stability and full employment around the world: coordinated expansionary fiscal policies and a new financial architecture that will reduce the uncertainty and volatility generated by excessive leverage and speculative capital movements.

Even the richest countries, which are now under strain from migratory flows, can no longer ignore the major development issues, including many countries' permanent technological lag, the persistence of poverty and evidence that large swathes of the world's population have yet to see any benefit from the prosperity generated by technical progress and economic growth. Narrowing the technology and income gaps and disseminating knowledge and output around the world are inseparable from the goal of building a stable global system committed to full employment, in which labour is understood not only as a means of production but as an end in itself.

On the other hand, promoting growth and employment without exacerbating serious environmental problems requires a global environmental Keynesianism, based on expansionary fiscal policies, with investments focused on technologies, goods and services linked to low-carbon production and consumption paths. A fourth industrial revolution is under way and the accelerating technological progress should be tapped to advance environmental stewardship. Using technology to protect the environment presents opportunities for investment, innovation and creating quality jobs that can sustain a new phase of global growth. However, in order to channel investments in the desired direction and to make them viable, the right incentives must be created by redefining institutional and global and regional governance frameworks and national policies to change relative prices, regulations and standards, as well as the level and allocation of public investment.

Global environmental Keynesianism should be coordinated with sustainable development strategies at the national level. Unless developing countries build endogenous capacities, they will not be able to change their production structures or protect the environment. National policies need to be backed up by an environmental big push to transform production structures, shifting them towards more technology-intensive activities and sectors and

increasing the human and institutional capital in all countries. The environmental big push will be highly intensive in investment and technology, which could jeopardize employment. For that reason, and to alleviate pressure on the current account, it is crucial to internalize some of the production processes and the requisite skills and capacities and expand markets for the region's exports. Sound management of the real exchange rate would go some way towards achieving this balance, but is no substitute for industrial policy. External vulnerabilities could also be reduced if countries adopted a more proactive attitude to regional agreements on trade and payments.

In order to take this route, the Latin American and Caribbean economies need to be mature enough to engage in strong regional coordination and cooperation. This is the step the region must take in order to embark upon necessary joint measures on macroeconomic stability, fiscal policies, foreign trade, foreign direct investment and international production chains. Meaningful progress in these areas would help to reach economies of scale, develop synergies in technological projects across countries, and create more regional value in environmental goods and services. In this respect, much potential would be unlocked by the development of a single digital market in the region.

Combining policies aimed at changing production patterns with environmental conservation and the creation of high-productivity jobs represents an enormous challenge; the transition will not be an easy one, especially amid the lacklustre growth the region is currently experiencing. Universal social protection policies must therefore be strengthened as a matter of urgency, to create the safety net needed in a world where the nature of employment and the labour market are being constantly redefined by new technologies and international competition. Universal inclusion policies in health and education are needed to complement any effort to accomplish progressive structural change, since these services are crucial for building human capacities and for developing the training and skills needed for the fourth industrial revolution.

These are the issues discussed in the six chapters of this document, which starts with an overview of the prevailing development pattern's unsustainability and the need to move rapidly towards a new one, in line with the 2030 Agenda for Sustainable Development and its 17 Goals. Chapter II analyses the major changes under way in the global context, in particular the emergence of China as an economic and geopolitical power; transregional mega trade agreements; demographic trends and their implications in terms of an ageing population and migratory pressures; the most salient features of the environmental crisis; and aspects of the new technological revolution including convergence and current trends in bio-, nano- and digital technologies.

Chapters III and IV examine, from a macroeconomic perspective, economic growth, investment and international trade and the explosive expansion of the financial system in the world economy and its effects on Latin American and Caribbean countries. The evidence presented here shows that the recessionary bias of the world economy imposes inauspicious conditions on the region in the short term, and perhaps in the medium term too, which will hamper efforts to close major structural gaps in the developing world in productivity, equity, gender, access to basic services and environmental damage, issues that are discussed in chapter V. That chapter focuses in particular on the urgent need to resolve the external debt problem of the Caribbean countries. ECLAC has developed a bold debt reduction proposal for those countries that ties in constructively with efforts to move forward on climate change adaptation —another area in which action cannot be delayed.

Chapter VI discusses strategy and public policy proposals, based on the preceding analysis. They cover three areas: creating global public goods; consolidating regional action and cooperation; and designing national policies, particularly macroeconomic, industrial, social and environmental policies. Implementing these proposals will pave the way for progressive structural change, centred on the environmental big push. This will form the basis, in turn, for instilling a new pattern of sustainable development with equality.

Lastly, the main obstacles that the prevailing political economy poses to change are examined in the epilogue, as is the necessity and viability of forging new partnerships to overcome them, based on social coalitions and compacts for global, regional and national governance. This transformation requires a long-term vision and a rebalancing of social and political forces to allow the following four basic governance mechanisms to operate and to form the underpinning political coalitions:

(i) International economic coordination to promote a steady increase in investment, based on fiscal policies that prioritize low-carbon and energy efficiency projects (global environmental Keynesianism).

(ii) A new international financial architecture that reduces volatility in prices and in the real economy, and would allow progress in the reform of the international monetary system.
(iii) Multilateral governance of trade and technology to facilitate and expand access to technology and financing in order to decouple growth from environmental impact, helping to eliminate asymmetries among countries and regions.
(iv) Shared governance of essential components of the digital economy at the global and regional levels.

These tasks require, in parallel, national commitments to universalizing social protection and education and health services in order to produce proactive responses to the uncertainty inherent to globalization and the technological revolution.

A key condition of the path proposed is the joint participation of public and private stakeholders to encourage collective action to achieve a new development pattern, with steady gains in productivity and competitiveness. It is also essential to create more room for manoeuvre to allow States to build a long-term policy platform that is resilient to short-term government changes.

Our region is not starting from scratch. This is clear from the efforts to strengthen planning, implement universalist social policies, meet demands for government honesty and transparency, and promote regional integration initiatives, which all form part of the reaction to the prevailing pattern and the quest for alternatives. Latin American and Caribbean societies are no longer willing to tolerate inequality as the natural order of things.

The region must embark on this production shift amid adverse conditions on the international, regional and national fronts. Slower global growth and the threat of a new international financial crisis may hit the region hard at a time when regional integration is weak, the fiscal space to respond through countercyclical policies has narrowed or is non-existent, and —with some exceptions— political and governmental institutions have lost prestige.

Progressive structural change will depend on each society's choice between two paths: either a return to the old, unsustainable path, associated with an increasingly fierce conflict over distribution and social, institutional and political fragmentation; or a transition to a new development pattern, in which collective action and long-term compacts in democratic societies promote equality, transparency and participation, with a focus on productivity, good-quality employment and environmental stewardship based on the dissemination of new technologies and an environmental big push.

Despite the economic headwinds the region will encounter and the political tensions attendant upon slow growth, it is clear that promising new avenues are being opened by greater global awareness of the crisis in the prevailing development pattern, the decisions taken on environmental issues in the recently adopted Paris Agreement, and new technological paths that will make it more viable to decouple growth from carbon emissions.

It is time to identify the right policies and instruments and put them in place. For this, institutions and collective effort will be crucial. In this sense, the sustainable development of Latin America and the Caribbean is essentially a political issue. An ambitious and pressing agenda has emerged that has growth, sustainability and equality at its heart. It is based on an understanding of development that underpins its sustainability and supports its projection into the future, and on a macroeconomic approach slanted towards development. It is about moving from a culture of privilege to a culture of equality. Exploring these trails, laying their foundations —this is the purpose of the discussion set forth here and of the Commission's ongoing work to help build a fair, decent and egalitarian future for the peoples of our region.

Alicia Bárcena
Executive Secretary
Economic Commission for
Latin America and the Caribbean (ECLAC)

Chapter I

A new development pattern: the 2030 Agenda for Sustainable Development

Chapter I

A new development pattern: the 2030 Agenda for Sustainable Development

A. A new era

The world faces the challenge of having to change its pattern of development, which is no longer sustainable. Factors such as economic slowdown and instability, the inequalities and tensions arising from the concentration of wealth and income among and within countries, and the risk of an environmental crisis of immense proportions are increasingly at the forefront of public debate. The search for a new development pattern and a new policy agenda is under way, and the relevance and urgency of this task has been confirmed by the recent evolution of the world economy and of the region in particular.

The current development pattern is referred to herein as the "prevailing pattern" (and as "business as usual" in the literature). Although the term "business as usual" was coined to analyse the impact of growth on the environment, it has taken on a broader meaning. The concept of a prevailing pattern transcends the environmental domain to encompass key economic and social variables in a context in which policy focus and direction have changed little, and no global public goods are available to coordinate action in the economic and environmental spheres.[1] There are considerable differences between countries and some have adopted policies that represent a step in the right direction; nevertheless, there are signs that the prevailing development pattern has run its course and poses a threat to future generations. This chapter discusses these limits and what will be needed to overcome them.

Meanwhile, a new consensus is emerging in the international system that development should afford more emphasis to combating inequality and environmental destruction. The 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs), adopted in September 2015 by the United Nations, reflect this consensus, and constitute a political and conceptual advance with regard to the agenda previously set in the Millennium Development Goals (MDGs). They represent progress politically, because they are the outcome of a broad-ranging debate conducted in a context of democratic multilateralism actively involving governments and social stakeholders, and they vindicate the principle of common but differentiated responsibilities between countries, in environmental as well as social and economic matters. Conceptually, the progress lies in the wider range of themes covered in the new Agenda compared to the MDGs, whose scope was more limited. While equality and environmental stewardship are the main pillars of the SDGs, they also embrace other themes, such as the right to productive employment, transparency, and a new equation between the State, the market and society, none of which featured in the MDGs.

Although the new era has resulted in deeper imbalances, it has also brought new advances that could help to mitigate them. The rapid emergence and consolidation of new technological paradigms have provided humanity with

[1] According to a document prepared for the High-level Panel of Eminent Persons on the Post-2015 Development Agenda, "under a business-as-usual scenario, many countries will benefit from new opportunities, but others will not. The world will experience divergence, endemic fragile regions, rapid global environmental change, rising income inequalities and youth unemployment, the risk of a race to the bottom on regulatory and tax standards, and poorly managed migration." (SDSN, 2013).

a powerful, unparalleled tool to tackle its problems. Nevertheless, the transformative potential of the technological revolution must be aligned with the 2030 Agenda for Sustainable Development (United Nations, 2015c) by means of policies that create incentives to revitalize investment and channel it into full employment and sustainability. The current economic situation is favourable to such policies. The world economy's slow recovery has prompted increased calls for a new investment cycle and more egalitarian patterns of income distribution, with a view to reinvigorating effective demand and leading the economy back to a path of growth and full employment. The savings glut and secular stagnation in growth and investment could be redressed by an investment cycle that supports a transition from the prevailing development model to cleaner and more inclusive production and consumption patterns.

The time is ripe for a new investment cycle that will lead to progressive structural change —for a new wave of creative destruction, to use Schumpeter's expression. This refers to destruction of old technological, production, consumption and income distribution patterns that are no longer sustainable, or that conflict with the policy framework proposed by the international community in the 2030 Agenda. Sweeping changes must be made to institutions and the political economy in order to open the way for a new expansionary cycle. Any new Schumpeterian wave of creative destruction will necessarily redistribute wealth, income and political power, requiring and fostering a new coalition of social and political forces. There is tension between the different agendas; incentives and interests rooted in the current development pattern are pitted against the desirable patterns of change, and are delaying or preventing them from taking shape. Such was the fate of the United Nations normative agenda of the 1990s. The formulation of the MDGs bears the mark of the tension between the dominant economic interests and the normative agenda. As a result, they ultimately became a prescriptive agenda for the developing countries, whereby the rich nations were to support poor ones in overcoming extreme poverty and meeting basic needs.

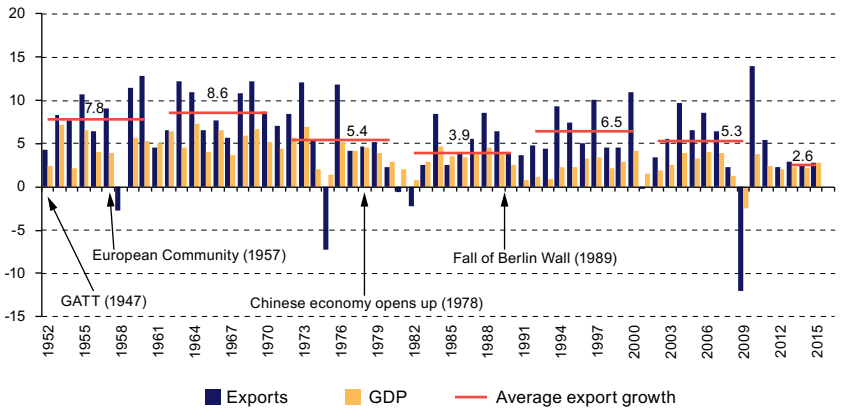
To implement the 2030 Agenda, new partnerships based on solidarity and equity must be forged at the international level and within each country. Such is the interdependence of the new goals and the universality and indivisibility of the new agenda that this will be a more complex and challenging process in terms of institution-building and policymaking than was the case for the MDGs.

B. The recessionary bias in the international economy: lack of demand and excess liquidity

Growth rates for the international economy and trade have trended downwards since the mid-1970s, following the end of the Bretton Woods system (1971) and the 1973 oil price shock (see figure I.1). This reflects the weakness of global aggregate demand in an international economic system that has no mechanisms to enable economies to expand in a coordinated manner or to correct competitive asymmetries between countries. Another factor contributing to this weakness is the fall in trade elasticity to output growth, which is explained by the slackening of two forces that drove trade growth above the rates of global output growth: trade liberalization and economic integration. These two forces brought more and more countries into global trade flows and fuelled the formation of global value chains headed by large transnational companies, which translated into rising intra-firm trade and greater vertical division of labour.

The world economy's fragile recovery following the international financial crisis of 2008 and 2009 is the result of these problems. Owing to a build-up of trade imbalances in the first half-decade of the 2000s and high external debt in some cases, several economies have sought to improve their current accounts and to weather the crisis by boosting their exports. Since it is impossible for every country to improve its current account at the same time, this has led to a negative sum game. In the absence of coordination, deficit countries allow their economies to slow or contract (to reduce the deficit), while surplus countries do nothing to boost growth or wages (thereby keeping their imports level). In conjunction with greater financialization and uncertainty, this has brought about a global slowdown in aggregate demand, leading to a lower rate of economic growth.

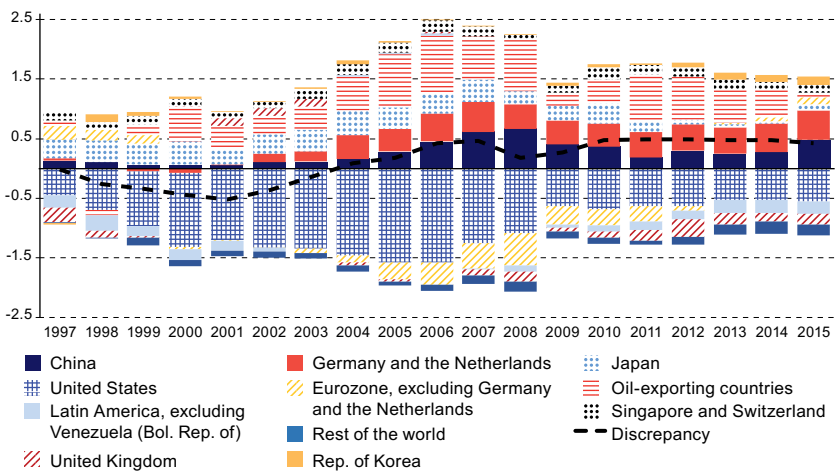
Figure I.1
World economic slowdown, measured by the annual variation in the volume of goods exports and in GDP, 1952-2015
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of figures provided by the World Trade Organization (WTO) and the International Monetary Fund (IMF).

In this game, the countries that come under the greatest pressure are the less developed countries running a deficit, which have fewer financial resources and fewer technological capacities to mitigate the impact of the adjustment or to reduce imports or increase exports. Surplus countries have no incentive to change their policies, while deficit countries are forced to do so, owing to rising debt levels and the speculative pressures being exerted on their currencies. Figure I.2 shows how China, Germany and the oil-exporting countries have systematically run balance-of-payments current account surpluses, while the Latin American and Caribbean countries did so only for a very brief period during the commodities boom. The United States is a special case since, as the issuer of the international reserve currency providing liquidity to the rest of the world, it experiences less pressure to make adjustments, in spite of its large deficit.

Figure I.2
Non-reciprocity in international trade: deficits and surpluses in the balance-of-payments current account for selected countries and groupings, 1997-2015
(Percentages of world GDP)

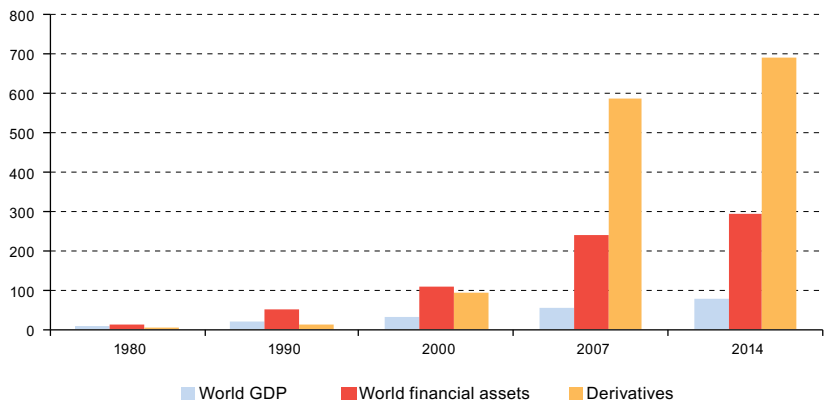


Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of figures provided by the World Bank and the International Monetary Fund (IMF).

The lack of global coordination has inflicted a recessionary bias on the whole system; in order to break through this impasse and promote growth, a global Keynesian policy will be needed,[2] whereby surplus countries use their demand to help restore global balances. This calls in turn for an institutional framework geared towards full employment and growth, as proposed in the 2030 Agenda for Sustainable Development and in the SDGs. There is currently no such framework in the international system.

Paradoxically, weak aggregate demand coexists with an excess of liquidity. The financial system is on a self-sustaining path of asset multiplication, to which current account imbalances and the resulting issuances of debt securities have contributed. Figure I.3 illustrates the jump in global finance compared with world production: financial assets, in particular derivatives, are growing exponentially relative to world GDP. Rapidly expanding financial wealth that far exceeds production and trade volumes has tremendous disruptive potential. The successive financial and exchange-rate crises that have beset the world economy, and the developing economies in particular, have often been associated with bubbles, speculation on energy or raw material prices, or exchange-rate appreciation fuelled by capital inflows and international liquidity cycles (Ocampo, Rada and Taylor, 2009).

Figure I.3
The dissonance between international finance and the real economy: world nominal GDP, financial assets and financial derivatives, 1980-2014
(Trillions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of figures provided by the Bank for International Settlements (BIS) and World Bank, World Development Indicators, 2015.

At the country level, weak macroprudential policies and wide open capital accounts have made it much more difficult to align macroprices with development objectives. The absence of a global-level Keynesian approach and the dearth of national policies to reduce the disruptive effects of the liquidity generated by a bloated financial system are two of the challenges that must be addressed in the transition to a new pattern of development.

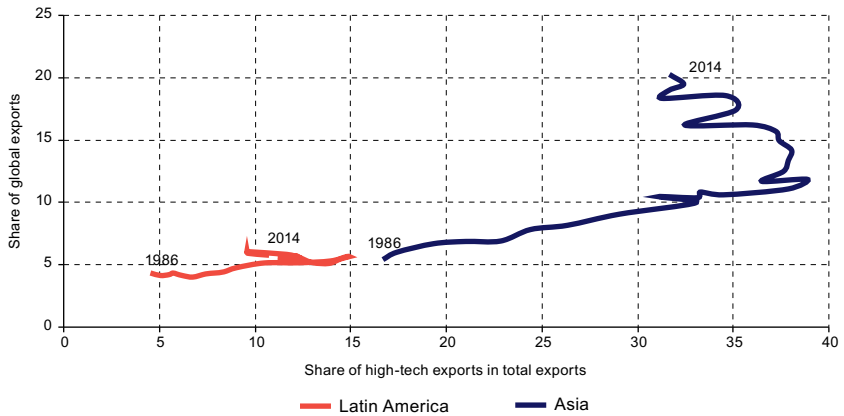
These imbalances are not simply due to trade and financial factors; the existing technology and production asymmetries between countries are at the root of the disparities in competitiveness and the trade imbalances. The Latin American and Caribbean countries are particularly affected by international growth and liquidity cycles, given their specialization in a small number of low-tech goods and their limited capacity to diversify their exports and enter new markets.

Figure I.4 shows, for Latin America and a group of Asian economies, the association that exists between the technology intensity of exports (measured by the share of high-tech exports in total exports, along the horizontal axis) and the dynamism of demand for exports (measured by the share of exports by these country groupings in world exports, along the vertical axis). By transforming its pattern of specialization, Asia gained a foothold in the most

[2] The asymmetry of the adjustment and its recessionary bias were an early preoccupation for Keynes, who maintained that "...the contribution in terms of the resulting social strains which the debtor country has to make to the restoration of equilibrium by changing its prices and wages is altogether out of proportion to the contribution asked of its creditors. […] the social strain of an adjustment downwards is much greater than that of an adjustment upwards. And besides this, the process of adjustment is compulsory for the debtor and voluntary for the creditor." He also mentioned a further consequence: "…most of the means of adjustment open to the debtor country are liable to have an adverse effect on its terms of trade." (Keynes, 1941, pp. 27-29).

dynamic trade flows, thereby loosening the external constraint on growth and employment. This did not occur in Latin America, whose rate of externally balanced growth was therefore lower, as illustrated by its numerous exchange-rate and external debt crises, which pulled the growth rate downwards.

Figure I.4
Latin America and Asia:[a] ratio of specialization in high-tech exports to global market share, 1986-2014
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of figures provided by the World Trade Organization (WTO) and United Nations Commodity Trade Statistics Database (COMTRADE).
[a] China, Malaysia, Philippines, Republic of Korea, Singapore and Thailand.

C. A more integrated but more unequal world

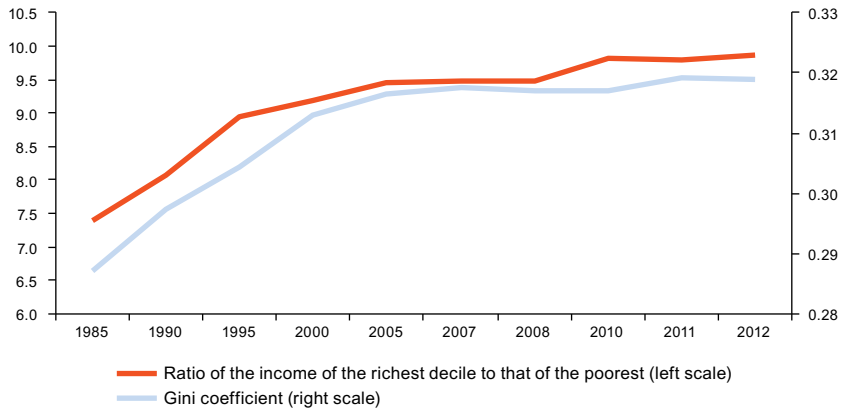
Income distribution, for many years considered to be an uncomfortable and even inappropriate topic by some economists,[3] is now at the forefront of international debate. Piketty's book (2013) was important in drawing the public's attention to this subject, and its great impact reflected concerns from across society regarding the marked concentration of income and wealth.

Income distribution inequality rose sharply between the early 1980s and the year 2000, and still slightly more thereafter. In the developed world and in several developing regions, inequality is at its highest level in more than three decades (see figure I.5). The Gini coefficient of the member countries of the Organization for Economic Cooperation and Development (OECD) increased from 0.29 in the 1980s to 0.32 in 2013, and this trend is found both in developed countries that have traditionally recorded higher levels of inequality (such as the United States, whose coefficient rose from 0.34 in 1985 to 0.39 in 2013), and in countries with a strong egalitarian tradition, such as the Scandinavian countries (OECD, 2015).[4]

Figure I.6 shows the evolution of inequality, measured by the Gini coefficient, in a sample of countries between the early 2000s (horizontal axis) and the early 2010s (vertical axis). The blue dots (below the 45-degree line) represent countries where equality increased (the Gini coefficient fell) while the red dots (above the line) correspond to cases in which the Gini coefficient rose. In most countries, inequality rose. Almost all the countries in which inequality fell are in Latin America, where inequality levels were initially —and still are— some of the highest in the world.

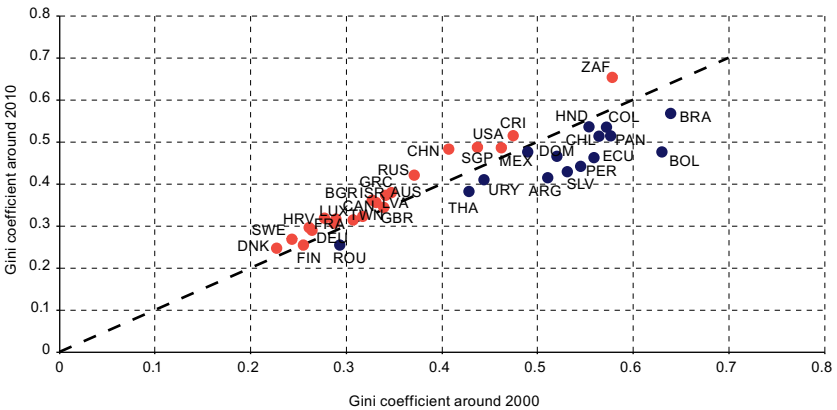
[3] In the 2003 report of the Federal Reserve Bank of Minneapolis, Robert Lucas asserts: "Of the tendencies that are harmful to sound economics, the most seductive, and in my opinion the most poisonous, is to focus on questions of distribution" (mentioned in Milanovic, 2007). See also Stiglitz (2012).
[4] The Gini coefficient increased from 0.21 to 0.26 in Finland; from 0.22 to 0.25 in Norway; and from 0.20 to 0.27 in Sweden.

Figure I.5
OECD member countries: Gini coefficient and ratio of average incomes of the richest and poorest deciles, 1985-2012



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Organization for Economic Cooperation and Development (OECD), *In It Together: Why Less Inequality Benefits All*, Paris, 2015.

Figure I.6
Latin America (14 countries) and other selected countries: Gini coefficient, around 2000 and 2010



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Bank, World Development Indicators, 2015 and All the Ginis Dataset, Organization for Economic Cooperation and Development (OECD) and Luxembourg Income Study Database (LIS).

Several problems are associated with high inequality: the most unequal countries tend to experience a worse economic performance, greater political instability and more restrictions on the exercise of citizenship. Greater inequality makes it more difficult to reduce poverty, with the result that efforts in this regard are even more dependent on economic growth. Rising inequality contributed to the global financial crisis of 2008 and 2009, initially in the United States and later worldwide.[5] As the wage share of income fell, families resorted to borrowing, mostly to purchase homes. Meanwhile, sectors that had benefited from the concentration of wealth used their income to invest in financial assets rather than in consumption or production investment. Rising household indebtedness, together with increased leverage,[6] the multiplication of financial assets and an irrational exuberance, led to the collapse of vast numbers of securities built on very fragile grounds.

5 See, for example, Setterfield (2013) and Wisman (2013).
6 Leverage is defined as the ratio between debt and equity in financial operations.

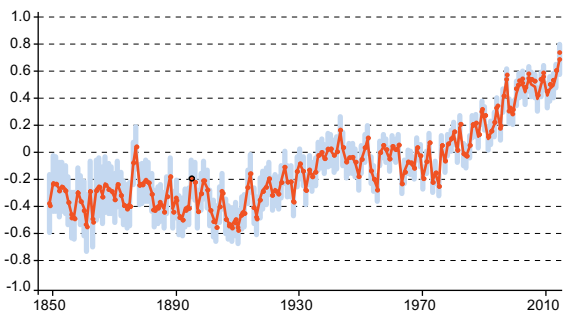
D. "The greatest market failure the world has ever seen"

The imperative to care for the environment, another key dimension of the 2030 Agenda for Sustainable Development, places economic growth in an entirely different light, and its negative externalities can no longer be ignored. Any efforts to recover global growth and to reduce income disparities between developed and developing countries must be measured and accompanied by an even greater effort to decouple growth from environmental impact.

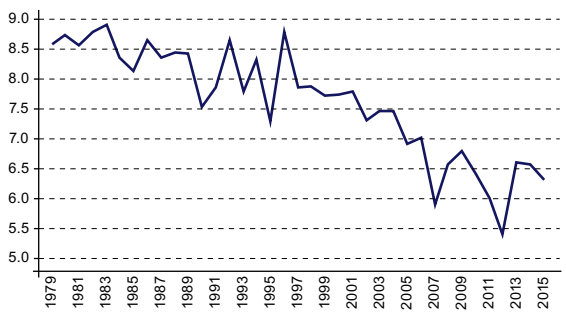
Figure I.7 shows various indicators that confirm that the impacts of climate change are considerable, may be irreversible and call for an urgent collective response. These effects have translated into persistent rises in the earth's surface temperature and changes in ocean dynamics, including a marked loss of the ice cap (see figures I.7A and I.7B). There is also evidence of a sharp increase in the percentage of species at risk of extinction between 1990 and 2015 (see figure I.7C). The Red List of Threatened Species of the International Union for Conservation of Nature and Natural Resources (IUCN) shows that 322 vertebrate species have become extinct since 1500 and that between 16% and 33% of the remaining vertebrate species are under threat. Of these, 13% of the bird species, 41% of the amphibian species and 26% of the mammal species are at risk of extinction (CDB, 2010; United Nations, 2015a). Humans are the only species whose population will continue to grow.

Figure I.7
Environmental impact of the prevailing growth pattern

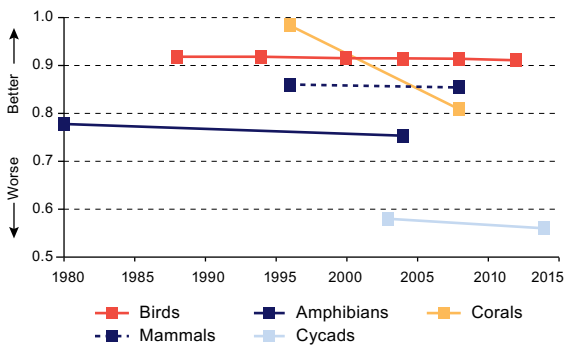
A. Anomalies in the combined land and ocean surface temperatures, 1850-2015 [a]
(degrees Celsius, temperature difference every year with respect to the average for 1961-1990)



B. Summer Arctic sea ice extent, 1978-2015 [b]
(millions of square kilometres)



C. Index of the Red List of Threatened Species of mammals, birds, amphibians, corals and cycads of the International Union for Conservation of Nature and Natural Resources (IUCN), 1980-2014 [c]



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Bank, World Development Indicators and International Union for Conservation of Nature (IUCN).

[a] Data on temperature correspond to the difference between the world average of the combined land and ocean surface temperature, expressed in annual averages from 1850 to 2015, and the average for the period 1961-1990. Data are from the HadCRUT4 database of the Met Office Hadley Centre in the United Kingdom.

[b] Data on Arctic sea ice refer to the average for July, August and September and come from the National Snow and Ice Data Center (NSIDC).

[c] The number of threatened species corresponds to the number of species placed in the following International Union for Conservation of Nature (IUCN) categories: critically endangered, endangered, vulnerable, near threatened, least concern and data deficient. A value of 1.0 indicates they are classified as being of least concern; a value of 0 means they are extinct.

The impact of climate change opens new spaces for public policy. The most recent crisis triggered a strong demand for expansionary fiscal policies, aimed at consolidating the economic recovery, as opposed to beggar-thy-neighbour policies. The emerging consensus that there is a need to invest heavily in a new energy matrix and production pattern may support the expansion of fiscal spending. In other words, global Keynesianism to sustain effective demand could take environmental Keynesianism as its basis (as the literature suggests),[7] according to which the objectives of full employment and environmental stewardship are harmonized in a block of investment in a low-carbon growth path.

The coordination problems associated with such a policy are more complex than they appear in classic Keynesianism, in which a coordinated expansion of economies produces immediate benefits for all. When it comes to environmental pollution, the country that pollutes the most may be generating more production and employment in its own economy, but the negative effects are felt everywhere. The benefit of greater production accrues directly to the producer, whereas its negative externalities are diffuse and are sometimes felt more intensely in regions far from the source of pollution (for example, climate change can wipe small islands off the map that had nothing to do with global pollution). The incentives can be such that to pollute becomes the prevailing strategy. For this reason, Nicholas Stern (2006) has referred to pollution and climate change as "the greatest market failure the world has ever seen".[8] For the same reason, the need for a response from the international community and national policy in respect of a new development pattern is a matter of unprecedented urgency and legitimacy.

E. A new international consensus

Awareness of the environmental, economic and social limits of the prevailing development pattern has grown considerably in recent years, in response to the current imbalances. The 2030 Agenda for Sustainable Development and the Sustainable Development Goals represent an emerging consensus in the search for a new development paradigm. The SDGs consist of 17 goals, which are accompanied by 169 targets (see box I.1).

Box I.1
The 17 Sustainable Development Goals (SDGs)

1. End poverty in all its forms everywhere.
2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
3. Ensure healthy lives and promote well-being for all at all ages.
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
5. Achieve gender equality and empower all women and girls.
6. Ensure availability and sustainable management of water and sanitation for all.
7. Ensure access to affordable, reliable, sustainable and modern energy for all.
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
10. Reduce inequality within and among countries.
11. Make cities and human settlements inclusive, safe, resilient and sustainable.
12. Ensure sustainable consumption and production patterns.
13. Take urgent action to combat climate change and its impacts*.
14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.
17. Strengthen the means of implementation and revitalize the global partnership for sustainable development.

* Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.

Source: United Nations, General Assembly resolution 70/1, New York, 2015.

[7] See, among others, Harris (2013), Jacobs (2013) and Antal (2014, pp. 276-286).
[8] The specific type of institutional framework required to tackle this market failure will be difficult to construct, as illustrated by the scandal of September 2015 surrounding the measurement of emissions from Volkswagen vehicles.

From a long-term perspective, the 2030 Agenda and the SDGs are based on the following core concepts:

- A rights-based approach. This means fulfilment of the commitments made by States in their domestic legislation and in international agreements. Society must be a bearer of rights, meaning that governments are bound by rules of conduct and outcomes.
- Substantive equality and the closing of gaps. Progress must be made towards more egalitarian, cohesive and solidarity-based societies. The closing of gaps must guide public action in the direction of substantive equality; this does not simply mean equality of opportunities but rather includes equality of rights, means, capacities and outcomes.
- Promotion of full and productive employment of good quality. Full employment is essential for achieving equality and for sustaining it over the long term; productivity gains and employment quality are inseparable from the universalization of rights in a welfare State.
- Gender perspective. The eradication of inequality between women and men is a cross-cutting concept that calls for eliminating traditional roles based on the sexual division of labour, abolishing the hierarchies and privileges that perpetuate the subordination of women, and closing all equality gaps.
- Common but differentiated responsibilities. Countries' obligations in environmental, economic and social matters must be proportional to their level of development and the extent to which they have been responsible for the problems to be addressed.
- Progressiveness and non-regression. Clear criteria must be established for progressive[9] fulfilment of the goals, as opposed to aspiring to simple or marginal incremental changes, and backslides with respect to existing achievements must be prevented.
- Indivisibility and interdependence. The 2030 Agenda must be an integrated whole and not a sum of isolated goals and targets. The goals and targets must be interlinked and, in many cases, processes for their joint execution will be needed; for this reason, whatever is done (or stops being done) in any area will have consequences for what can be achieved (or not) in other areas. This is a key criterion of policy design and public action, and governments must build comprehensive institutional structures to redress the fragmentation of public action.
- Citizen participation. The 2030 Agenda and the SDGs are not simply a government programme, but must be espoused by society if they are to become national goals shared by all. They can underpin the construction —as proposed by ECLAC (2010)— of a new State-market-society equation, supported by social dialogue and citizen participation. This cannot be achieved, however, without fostering participation in the formulation, implementation, monitoring and evaluation of public policy.
- Transparency and accountability. Access to relevant, adequate and timely information is essential for policy formulation and for follow-up and review, as well for strong participation. It is essential to consolidate and intensify open-government strategies.

The 2030 Agenda is broadly in line with the efforts of the Economic Commission for Latin America and the Caribbean (ECLAC) to support the analysis and design of policies promoting equality and structural change. Nevertheless, certain themes that are important in the region have not been given sufficient consideration. First, there is no reference to indigenous peoples or Afro-descendent groups, which represent a high proportion of the Latin American and Caribbean population and whose specific rights and problems have not been taken into account.

Second, some of the Goals are inconsistent with their respective targets. For example, Sustainable Development Goal 1, "End poverty in all its forms everywhere", is extremely ambitious, while its first two targets (1.1 and 1.2) propose to eradicate extreme poverty (recalling that the threshold was US$ 1.25 dollars a day at the time the 2030 Agenda was formulated) and reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions. There is clearly a gulf between the ambition of the goal and the limited scope of the targets.

Lastly, although in general the SDGs represent a significant advance in relation to the MDGs, they lag behind them on some points. One example is the targets on maternal and infant mortality, which many countries failed to achieve. The targets set for the SDGs are less ambitious, which will make it easier to attain them, thereby creating a false impression of success. One of the immediate challenges for implementation, monitoring and evaluation of the 2030 Agenda is therefore to align the Goals, the targets and the indicators and improve the consistency between them. Far-reaching goals require ambitious targets and robust and representative indicators. The SDGs have afforded

[9] The degree of progressiveness refers to the extent to which and speed with which each indicator is approaching the ultimate target sought.

national governments considerable freedom to decide on the targets and the scope of their commitments, which must reflect the transformative purpose to which the 2030 Agenda aspires.

In spite of the progress they represent, the 2030 Agenda for Sustainable Development and the SDGs may be challenged in three areas.

The first concerns the means of implementation. The 2030 Agenda is not supported by an institutional framework or effective global governance, as demonstrated by recent international decisions on financing for development.

The second relates to the internal consistency of the 2030 Agenda and the SDGs. Although they are presented as an integral and indivisible whole, their interconnections have not been analysed, nor has their relationship with the economic variables that will determine whether or not they can be achieved. The starting point must be an analytical framework and an assessment connecting and explaining those variables and how they evolve; here, it would be useful to return to the ECLAC tradition in development theory, and particularly to its most recent contributions (ECLAC, 2010, 2012 and 2014).

The third, and most important unresolved issue concerns political economy. There is a very high risk that, as happened to a great extent with the MDGs, the 2030 Agenda and the SDGs turn into declarations of intent which are then systemically overridden by market forces and realpolitik. Mainstream political economy tends to reproduce the prevailing pattern and block efforts to implement a new agenda, which will therefore require a new political economy and new international and national coalitions to sustain it.

F. Well designed, poorly implemented

The most complex aspect of the 2030 Agenda for Sustainable Development is its means of implementation. Although Goal 17 emphasizes the need to strengthen these mechanisms, profound changes in world economic governance will be needed to put it into practice. As the international experience shows, the effectiveness of public policies hinges much more on the quality of policy implementation than its design, which can often be replicated in other countries. Clear criteria and effective implementation mechanisms are contingent on the development and maintenance of robust institutions that respond to State objectives rather than the targets set by the government in office. Given the speed of changes in the global context and country realities, monitoring and evaluation tools must also be developed to assess the impact of policies, which may then be further strengthened or abandoned, depending on their outcomes.

Like all strategies, the 2030 Agenda and the Sustainable Development Goals require means and tools of implementation that are equal to the task at hand. It is explicitly recognized that each country has primary responsibility for its own economic and social development, and that national policies and development strategies are of the utmost importance. Nevertheless, national efforts must be supported by an international context that renders them possible.

The 2030 Agenda is complemented by the Sendai Framework for Disaster Risk Reduction 2015-2030, adopted at the Third United Nations World Conference on Disaster Risk Reduction, which was held in Sendai, Japan, in March 2015. The aim of the framework is to prevent new disasters and mitigate the effects of those that have already occurred through the comprehensive implementation of cultural, economic, environmental, educational, social, technological and institutional measures.

The 2030 Agenda stresses that efforts to strengthen implementation mechanisms must involve action on financing, technology, international trade, technological capacity-building and systemic matters related to the provision of global public goods. In all cases, the methodology focuses on linking domestic resource mobilization with creating or strengthening international governance mechanisms, especially in the areas of financing, trade, technology and the environment. The institutions to be developed must be founded on partnerships with the multiple stakeholders in the public and private sectors and in civil society.

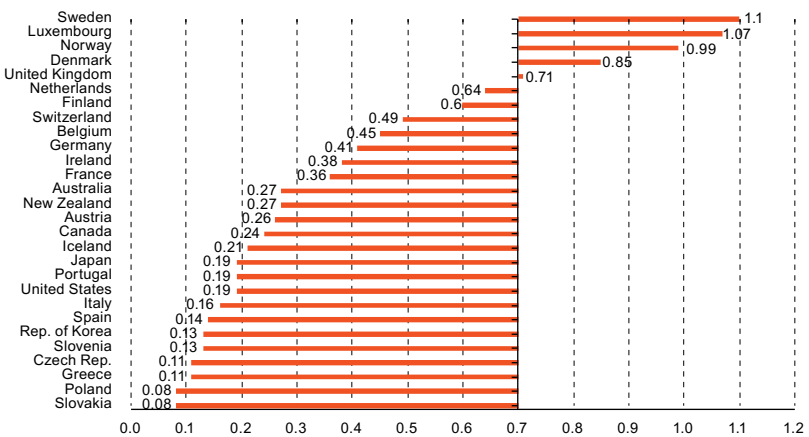
Although these principles are sound, little progress has been made on their implementation, particularly regarding the crucial matter of financing for development; indeed, the most recent decisions have gone in the opposite direction to that proposed by the 2030 Agenda. Once again, a chasm is opening up between declarations and actual economic

dynamics. One example is the Addis Ababa Action Agenda of the Third International Conference on Financing for Development, of July 2015, which follows up on the principles of the 2002 Monterrey Consensus.[10]

The Addis Ababa Action Agenda emphasizes the need for effective domestic resource mobilization, including an increase in revenues through more efficient and fairer tax systems, and the need to reduce illicit financial flows. In the area of international cooperation, the primary need is for donor countries to meet their commitment to devote 0.7% of their GDP to official development assistance. The Addis Ababa Action Agenda seeks to promote the expansion of trade in developing countries, by making special and differentiated treatment more effective and operational, and by harnessing aid for trade and investment. It also reiterates the proposals of the Monterrey Consensus with respect to improving global economic governance, which involve boosting international cooperation to promote stability and the participation and representation of developing countries in the institutions responsible for formulating, establishing and implementing global norms.

There is a significant gap between the declarations made and the instruments proposed for implementation of the Addis Ababa Action Agenda, which lack mechanisms to combat and reduce the asymmetries that developing countries face vis-à-vis the developed economies, and may even heighten them in some cases. With the exception of donor countries' commitment to channel 0.7% of their GDP into official development assistance, which only 5 of the 28 donor countries are currently meeting (see figure I.8), the remaining initiatives do not involve any specific commitments from the developed countries to make progress towards improving the financial architecture for development or reducing the asymmetries in the international financial system and international trade (United Nations, 2015b).

Figure I.8
Net official development assistance as a percentage of GDP, member countries of the Development Assistance Committee of OECD, 2014
(Percentages)



Source: United Nations, Millennium Development Goals indicators [online database] http://mdgs.un.org/unsd/mdg/Default.aspx.

In some ways, the Addis Ababa Action Agenda has made multilateral institutions weaker. This is evident in the agreement on global tax cooperation which does not establish an intergovernmental tax agency within the United Nations to replace the Committee of Experts on International Cooperation in Tax Matters. Worse still, it proposes that the Committee should continue to operate under its 2004 mandate —in other words, financed by voluntary contributions— meaning that the developed countries oversee its functioning. Multilateral institutions have also been weakened by the modification of the provision on the shared responsibility of debtors and creditors established by the Monterrey Consensus in 2002. To the criterion that "debtors and creditors must share the responsibility for preventing and resolving unsustainable debt situations" (United Nations, 2002, para. 47), the Addis Ababa Action Agenda added that "maintaining sustainable debt levels is the responsibility of the borrowing countries; however

[10] The themes included are domestic public resources; domestic and international private business and finance; international development cooperation; international trade as an engine for development; debt and debt sustainability; systemic issues; science, technology, innovation and capacity-building; and data, monitoring and follow-up.

we acknowledge that lenders also have a responsibility to lend in a way that does not undermine a country's debt sustainability" (United Nations, 2015d, para. 97). This represents a shift from a responsibility shared between creditors and debtors to one in which the latter shoulder the primary responsibility. The burden of the adjustment falls on the weakest —a problem which is a particularly serious for the small island developing States of the Caribbean, where urgent action is needed to address debt levels.

The bulk of the analysis and policy recommendations found in the Addis Ababa Action Agenda is focused on the least developed countries, while the needs of middle-income countries are only partially addressed. The document contains only seven explicit references to these countries, whereas the least developed countries are explicitly mentioned 62 times.

To address the main weaknesses of the international system in the area of development, collective efforts will be needed to fill the institutional vacuum concerning the coordination and governance of globalization. In that regard, the Addis Ababa Action Agenda represents a lost opportunity. Although the document contains general principles that acknowledge the asymmetries and specific needs of developing economies versus developed countries, it suggests no mechanisms for tackling and reducing them in the financial, trade and technological domains.

G. The new development pattern will require global public goods and national policies

Given the complexity of implementing policies and aligning or reforming institutions for the 2030 Agenda for Sustainable Development, an analytical framework will be needed to link them with each other and with the relevant economic variables. The 2030 Agenda explicitly states the direction of the changes sought, but not how they could be achieved, that is, the global governance requirements, the strategies and the policies. The emphasis on the integrity and the indivisibility of the SDGs makes it all the more necessary to identify the variables that influence attainment of these objectives as well as the global public goods and national policies that will be required.

The redefinition of the development pattern pivots on the construction of global public goods[11] and the corresponding governance systems, and national policymaking. The 2030 Agenda calls for progress in building the traditional global public goods, such as peace and security, and it expresses concern regarding others that are key to their implementation and which must be more fully incorporated into global governance. First, the international system must stabilize growth and employment. Second, growth must preserve the environment and the ecological integrity of common resources, which means that it must follow a low-carbon path and eschew the predatory use of natural resources.

To produce these two global public goods, governance mechanisms will be needed in four spheres: international coordination, to sustain aggregate demand; a new financial architecture, to reduce uncertainty and curb the fluctuations generated by international capital movements; mechanisms and rules that reward efforts to decouple production from emissions and restrict the predatory use of the planet's resources; and governance, to reduce inequality between countries by narrowing gaps in capacities and income that hinder cooperation and compromise the ability to contribute effectively to the production of global public goods. The principle of common but differentiated responsibilities must be universalized, recognizing that the international economy is highly heterogenous, that it has stark technological and income inequalities, and that it is highly concentrated in the hands of a small number of actors, large transnational corporations and complex financial firms. Taking these asymmetries into account and establishing rules to correct them

[11] A public good is a good whose consumption is non-rivalrous (that is, its use by an agent does not diminish the possibility of use by another agent) and non-excludable (once the good is produced, it is impossible to prevent any individuals from consuming it). For this reason, some agents seek to benefit from these goods without helping to pay for them or produce them (known as the freerider problem). For the same reason, they tend to be produced in suboptimal quantities, unless there is a mechanism of cooperation or command in place that compels everyone to contribute to their production. International governance systems therefore seek to create and maintain rules and institutions that generate these goods in the desired quantities. Public goods are global when their benefits are universal, that is, they benefit all actors in the international system —including future generations— and not only the inhabitants of a particular country or region (Kaul, Grunberg and Stern, 1999).

and to control the imbalances they generate will make the whole system more stable and ease the tension in various areas of international relations, from migratory flows to disputes over trade or labour and environmental standards.

Global public goods both enable and require national policies aimed at maintaining economic growth and equality with environmental sustainability. The policies proposed by ECLAC are based on an analytical framework that emphasizes multidimensional equality as the purpose of the development model; progressive structural change as the means of sustaining growth while fostering equality; the interdependence between economic phases and structure —between the economic cycle and the long-term growth trend— as central to macroeconomic policy for development; and a renewed discussion of the role of the State and its relationship with the market and society.

The first key component of the framework, inequality, has assumed a pivotal role in the global debate, as reflected in the 2030 Agenda. In *Time for Equality* (ECLAC, 2010), ECLAC began a reflection on the subject, introducing new analytical dimensions yet maintaining the roots of structuralist thinking, including a renewed agenda based on entitlement to rights as a condition of citizenship (Bárcena and Prado, 2016). Since inequality is evident not only in an inequitable distribution of income, but also in other areas of social and economic life, the goal of multidimensional equality is vitally important.

Concerns regarding inequality are at the heart of the historical-structural approach,[12] which sees it as the result of the production structure typical of the peripheral countries, i.e. a structure characterized by poor absorption of technology (found in only a few sectors) and a workforce engaged mostly in low-productivity activities —a hallmark of structural heterogeneity. In this situation, social and political power structures become established that reproduce privilege, hinder diversification and prevent or limit redistributive policies based on social spending and progressive tax systems. This is why the dynamics of production and productivity must be changed, and policy measures must be taken to promote redistribution, in order to correct the sources of inequality over the long term.

Progressive structural change is the second component. Its intellectual sources consist of a combination of Latin American structuralism, the Schumpeterian evolutionary approach (which analyses the factors behind capacity-building, learning and technical progress) and environmental economics (which studies the impact of growth on emissions and the destruction of natural resources) (Cimoli and Porcile, 2014). Progressive structural change centres growth on qualitative changes in the production structure, which are captured in three concepts. The first is Keynesian (growth) efficiency, which occurs when exports are based on goods and services for which demand is rising in the domestic and international economy, which makes growth compatible with current account equilibrium, defined by a stable external debt-to-GDP ratio. The second is Schumpeterian efficiency, which identifies the potential of different types of production specialization to spread technological change and innovation to the whole production system. The third is environmental efficiency, which takes into account the impact of growth on emissions and the depletion of natural resources. Transformation of the production structure in line with these three dimensions of efficiency gives rise to progressive structural change and paves the way for sustainable growth with greater distributive equity, insofar as technical advances spread to new sectors and high-quality jobs are created that absorb informality and lessen the environmental impact.[13]

Minimal diversification and barriers to technology dissemination[14] prevent productivity gains from spreading to the entire production system, meaning that they remain concentrated in a few layers or segments, creating polarized structures. Structural heterogeneity refers precisely to this polarization: wide disparities in labour productivity between and within sectors, owing to the fact that technology spreads slowly. The concentration of most employment in low-productivity activities where wages are also very low (informal or subsistence activities) is therefore a source of persistent inequality. The original concept of structural heterogeneity later incorporated new dimensions —such as gender inequalities, territorial disparities and the environment— in addition to technological and productivity divergence.

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12 This approach gave rise at ECLAC to intellectual output based on the thinking of Aníbal Pinto (1970 and 1976), Raul Prebisch (1949 and 1981), Jose Medina Echavarría (1959 and 1962), Celso Furtado (1961, 1971 and 1983), Osvaldo Sunkel (1980) and Fernando Fajnzylber (1983 and 1990), all of whom studied the persistence of inequality and structural heterogeneity during different stages of the region's economic development.

13 In ECLAC (2012), virtuous structural change is defined as change in which Keynesian and Schumpeterian efficiencies are combined. This is expanded into the concept of progressive structural change, which also considers environmental efficiency.

14 The factors that limit technological dissemination in the peripheral economies (educational level and inequality, absence of leading technological sectors, weak industrial and technological policy) have received significant attention in the economic literature (ECLAC, 2012).

With regard to the environmental dimension of progressive structural change, the production structure must target innovative sectors and clean technologies while also reducing fossil fuel consumption. The prevailing development pattern in the region is based on a production structure whose competitiveness depends on the abundance and exploitation of natural resources, which skews investment, innovation and technological development, and encourages intensive use of energy and predatory use of these resources. The main vector of structural change must be capacity-building beyond static comparative advantages, as well as innovation to decouple production, emissions and resource use. These capacities must be spread through the entire production system in order to create high-quality and inclusive employment.[15]

Structural change does not end with learning in companies and sectors. It has a macroeconomic perspective that encompasses the relationship between the economic climate and the structure. This relationship is the third key component of the ECLAC analytical framework. Investment, productivity gains and the transformation of production and technological capacities strengthen or weaken each other. In this view of the dynamics of investment in a given economic climate and the long-term effects of stabilization policies, policies for managing aggregate demand play an important part in determining output beyond the short term. Periods of falling aggregate demand and fiscal adjustment triggered by balance-of-payments disequilibria can deflate investment, with negative consequences for long-term productivity and growth. Investment, productivity and technical progress are very closely bound together: when one is weak, growth is compromised.

The role of the State and its institutions, and its relationship with the market and society must be debated afresh if progress is to be made towards structural change and equality. This brings us to the fourth component of the analytical framework. Greater agreement exists in the region today regarding the role of institutions and the importance of public policies in guaranteeing the supply of public goods, in reviving growth, in fostering the development of technological capacities, in fostering territorial development and in promoting egalitarian policies to materialize universal rights. It is increasingly recognized that such policies play an important role in redirecting growth towards a low-carbon, less-natural-resource-dependent path. Institutions involved with innovation and industrial and technological policy must offer incentives for technological change to prefer environmentally efficient routes. The intersection between new technologies, equality and the environment must be the prime locus of innovation.

The perception that ad hoc measures are not enough to change production patterns adds to the importance of industrial and technological policies. Technical progress and capacity-building must close the gaps with respect to the technological frontier in order to boost competitiveness, and must decouple production from emissions and promote social inclusion. None of these tasks will be performed spontaneously by the market.

H. Mainstream political economy: two opposing worlds

The prevailing development pattern has produced enormous imbalances, and transforming it will be a complex task. The difficulty lies in the political economy and the predominant interests and alliances that define the rules of the game, both internationally and domestically. There is a clear conflict. Numerous actors, public and private alike, have an interest in protecting their investments and the current distribution of profits; others, however, would have much to gain from a transition towards a pattern of growth that is more inclusive and environmentally sustainable. The problem is that the costs associated with conversion to a new development model are immediate and concentrated, whereas the benefits will be obtained in the future and are diffuse. In particular, the distribution of costs and benefits is inversely correlated to the distribution of power under the prevailing pattern, making it hard to forge partnerships to move forward.

What is worse, the lock-in and path dependency effects associated with the existing investments and with the price structure make it more difficult to abandon the prevailing pattern. Companies and governments that, within the framework of the existing incentives, invest in the exploration of new fossil fuel fields, in new ways to exploit them and in the necessary infrastructure, reproduce and expand the incentives to continue in the manner prevailing. These interests carry even greater weight since the main beneficiaries of change, the future generations, by definition have no voice and are not directly represented in policy formulation. All this enables the forces that support the status quo to prevail.

[15] Pollin (2012) presents evidence of the link between the creation of high-quality employment and environmental efficiency in production.

Sustainable development is a global objective which requires global public goods. Yet global governance has gone in the opposite direction to that needed. Producing global public goods demands rules and agreements that govern the markets, but the international system has instead minimized such rules in accordance with the preferences of the most powerful agents. Large economies and trading blocs, as well as firms with a greater capacity to move their resources across borders rapidly (large transnational companies in the productive, trade and, above all, financial spheres), favour a system with fewer rules and restrictions that gives them more freedom to exercise their bargaining power than a multilateral system would. The result is elite multilateralism, in which the economic and political power of the main players is mutually reinforced.

This is reflected in the contradiction between the declarations made by international institutions and the rules governing economic growth. In the 1990s, the international community under the auspices of the United Nations attempted to advance towards a new paradigm of development that would encompass the economic, social and environmental spheres. World summits were held every two years, and the period became known as "the policy-setting decade of development" (see table I.1). During this time, representatives of the international community debated the musts in relation to sustainability, childhood, women, population, social development, education and financing for development. The most visible outcomes of that process were the agreements of the United Nations Conference on Environment and Development (Earth Summit), held in 1992, Agenda 21 and the Rio Declaration on Environment and Development, along with the United Nations Framework Convention on Climate Change, the Convention on Biological Diversity and the United Nations Convention to Combat Desertification.

Table I.1
The United Nations policy-setting decade, 1990-2000

Year	Conference	Declarations, conventions and other instruments
1990	World Conference on Education for All	World Declaration on Education for All, which aimed to provide universal education and massively reduce illiteracy by the end of the decade.
1992	International Conference on Nutrition	World Declaration on Nutrition, whose objective was to eradicate hunger.
1992	United Nations Conference on Environment and Development (Earth Summit)	Agenda 21, on the link between development and the environment. Other outcomes of the Conference were the Rio Declaration on Environment and Development, the United Nations Framework Convention on Climate Change, the Convention on Biological Diversity and the United Nations Convention to Combat Desertification (1994).
1993	World Conference on Human Rights	Vienna Declaration and Programme of Action. Political, economic, social and cultural rights were deemed to be indivisible.
1994	International Conference on Population and Development	Cairo Programme of Action, which focused on poverty, demography and equality and the empowerment of women.
1995	World Summit for Social Development	Copenhagen Declaration on Social Development and Programme of Action of the World Summit for Social Development.
1995	Fourth World Conference on Women	Beijing Declaration and Platform for Action. This represented progress towards the objectives of equality, development and peace for all women.
1996	United Nations Conference on Human Settlements (Habitat II)	Declaration on Cities and Other Human Settlements in the New Millennium.
1997	Third session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP3)	Kyoto Protocol to the United Nations Framework Convention on Climate Change. Binding emission reduction targets were set for 37 industrialized countries and the European Community.
2000	Millennium Summit	Millennium Declaration and adoption of the Millennium Development Goals (MDGs).
2002	International Conference on Financing for Development	Monterrey Consensus. Financing for development based on common but differentiated responsibilities for debtors and creditors.

Source: Economic Commission for Latin America and the Caribbean (ECLAC).

The broad-ranging agenda formulated as a result of these forums was replaced by the Millennium Declaration; then, in order to make the Declaration more operative and to build a bridge between the policy-setting world and the global economy, in September 2000 the United Nations secretariat launched the Millennium Development Goals, which set targets for several indicators but did not take an integrated approach to development.

The Millennium Summit in 2000 was only the beginning. The World Summit on Sustainable Development and the Johannesburg Declaration on Sustainable Development of 2002 (which focused on social development and

environmental protection), as well as the United Nations Conference on Sustainable Development (Rio+20), in 2012, and the seventieth session of the General Assembly of the United Nations, during which the 2030 Agenda for Sustainable Development was adopted, are all examples of the continuity of that policy-setting effort and of the international debate on the course of sustainable development.

At the same time, however, the changes in the economy and society that threatened these regulatory advances gathered pace. The outcome was the progressive liberalization of trade, the globalization of markets, financial and labour deregulation, and the predominance of transnational companies as key agents of power and the restructuring of production (Cordera, 2014; Stiglitz, 2002).

In the 1990s, therefore, humanity was divided into two worlds whose agendas were at odds or openly in conflict. On one side was the United Nations policy-setting agenda. On the other side stood a deregulated economic system, especially the world of finance, whose assets were multiplying rapidly while their underpinnings in the real economy were diminishing (Gonzaga Belluzo, 2013 and 2015). This system prioritized trade liberalization and disregarded the specific problems affecting developing economies, such as competitiveness, external balances and environmental deterioration. During this decade, the Washington Consensus was also extended to the peripheral countries, which weakened the State's capacity to act and considerably reduced public policy space in the social and production arenas.

These were two worlds at odds: a world built upon the United Nations policy-setting agenda and a world under pressure to continue pursuing an unsustainable development pattern. Over two decades of declarations from the international community, unsupported by the means of implementation agreed upon at the Earth Summit in Rio de Janeiro in 1992 (financing for development, trade stimulus, closing of the technology gap), failed to eradicate poverty and inequality or to halt environmental deterioration. From a policy perspective, Principle 7 of the Rio Declaration on Environment and Development, which deals with common but differentiated responsibilities, was not developed further in the trade negotiations and remained limited to non-binding environmental agreements. The recognition of explicit asymmetries in the implementation of the agenda, which allowed for differentiated and more favourable treatment depending on the level of development, was lost, and it was replaced by the principle —used in the trade negotiations— of ensuring a level playing field for all.

There is now greater awareness, urgency and concern, because time has run out and societies are faced with the challenge of recovering an action agenda on global issues. The interplay of forces is still firmly in favour of the prevailing development pattern and a lengthy, complex process of negotiations and persuasion will be needed to tip the balance towards sustainable development.

I. Towards a new political economy

Since the classic work of Kindleberger (1986) on international public goods, weak international economic rules have been attributed to the absence or decline of a hegemonic power. Other authors have asserted, however, that cooperation on common interests can be achieved, even in the absence of a dominant power, when the negative signs in the international economy are strong enough to provoke a reaction from the most important players.[16] These signs are present today in the form of increasing imbalances. There is a shared perception that the planet is under threat and that the consequences could be catastrophic, and this opens up a larger space for international cooperation and for new forms of governance in the context of the 2030 Agenda and the Sustainable Development Goals.

Similarly, the technology revolution could be placed at the service of the new development pattern by means of policies that reinvigorate investment and channel it towards sustainability and equality. The technology revolution opens up new frontiers for economic expansion into areas related to the environment (renewable energy, bioeconomics, emissions reduction, and efficient use of natural resources) and social inclusion (health and education, transport and integrated urban spaces). The current economic climate is propitious for attempting new

[16] On the stabilizing role of the great powers, see Kindleberger (1986). The possibility of cooperation without hegemony was explored by Keohane (1989). See Meardon (2014, pp. 351-374) for a discussion of the origins and development of this idea.

fronts: given the fragile recovery, it is more important than ever to improve distribution and boost investment. The savings surfeit and persistent stagnation could be remedied through investment in the transition from the prevailing development pattern to cleaner, more inclusive production and consumption patterns.

Technologies and public policies could create the conditions necessary to break the connection between growth, employment and emissions. A coordinated economic expansion, focused on investment and based on low-carbon paths, would constitute a form of global environmental Keynesianism; its logical counterpart, at the national level, would be an environmental big push,[17] which would stimulate innovation and structural change likely to break that connection.[18] The concept of an environmental big push refers to three characteristics of investment for development: complementarity between different types of investment, including in education and technological capacities; expansion of markets towards goods less intensive in carbon and natural resources; and public investment over a prolonged period, until such a time as private investment is able to sustain the expansion.

Environmental stewardship must be considered in context and as inseparable from structural change and development.[19] For today's rich economies, growth has had a huge environmental impact; many of them are the main polluters. For this reason, it is problematic from a political perspective to ask poor countries to abandon their aspirations of growth and well-being in order to cut emissions. Narrowing the technology gaps between the developed and the developing worlds is key to creating the two global public goods mentioned earlier: stability for growth and environmental protection. The concentration of income, technology and capacities in the developed countries encourages migration and fuels tension and conflict in various parts of the world, which has resulted in a resurgence of xenophobic attitudes and ultranationalist groups in several countries. In an interview about the refugee and migrant crisis in Europe, the 2015 Nobel prize winner in economics, Angus Deaton, said that it was the result of centuries of unequal growth: "What we are seeing now is the result of hundreds of years of unequal development in the rich world, which has left a lot of the world behind" (*Washington Post*, 2015).[20]

It will be impossible to narrow these gaps without new forms of global governance to help spread the technological capacities required to produce a diversified and sustainable supply in the developing economies. Without this, stricter labour and environmental standards could act as protectionist barriers, making the reduction of global inequalities impossible. For a long time it was believed that environmental stewardship was a luxury of the rich countries ("the richer, the greener"), yet if environmental stewardship is linked to development, the inverse causality is also valid ("the greener, the richer") (Galindo, 2010).

The ability of governments' technical and political cadres to promote greater international cooperation will also depend on the strength and commitment demonstrated by domestic stakeholders in support of a new development pattern. Two factors will encourage the development of national partnerships in relation to the 2030 Agenda and the Sustainable Development Goals and play a central role in what Evans (2008) refers to as the new twenty-first century developmental State. First, the provision of services such as health and education is increasingly a prerequisite for capacity-building. Although access to services has always been positive for productivity, the complementarity between a State that provides those goods to the whole of society and the

[17] This expression is a reference to the development model and expression proposed by Rosenstein-Rodan (1943). See also Bayramoglu and Jackes (2009), Torras (2009) and De Oliveira and Lima (2015).

[18] Some countries, in particular Germany, have recently moved in this direction, but so have peripheral economies such as Portugal (see Harris, 2013, p. 10), where the Keynesian stimulus package generated external relief, traditionally an important point for developing economies in general and for the Latin American and Caribbean countries in particular. But examples can also be found in the region. Nicaragua now generates more than a fifth of its electricity (21%) from wind power, placing it among the world leaders in the use of this resource. Almost 100% of Costa Rica's electricity came from renewable sources in 2015, and it was the first country to propose a carbon neutral initiative, which will help to stem the rise in greenhouse gas emissions and climate change. This commitment was announced in 2007 and the targets were reframed in late 2014. Its fulfilment will require profound changes in energy production and consumption; some of the most far-reaching changes will be required in the area of transport.

[19] Already in 1973, Furtado argued that it would be impossible for all countries to replicate the consumption patterns of the developed world.

[20] *The New York Times* (2015) reports that 60 million people, half of whom are children, have been displaced by persecution and war.

emergence of new innovative sectors is stronger than in the past.[21] Second, the impact of new technologies on employment and the labour market generates high levels of instability and uncertainty: no job seems to be spared from technical progress and the perpetual elimination of tasks and posts. A further tool to prevent workers from opposing technical progress and to ensure that they participate in capacity-building would be to strengthen universal minimum wage systems, unemployment insurance, and protection and re-employment mechanisms, in addition to discussing the possibility of reducing the working day. This has been the success story of the small open European economies, where openness to world trade coexists with a strong State presence in the areas of social protection and national innovation systems.

The universal availability of goods and services in education and health, together with universal protection mechanisms, would provide the new developmental State with strong partnerships. In this kind of State, inclusion and equality would be much more closely linked to the expansion of capacities and competitiveness. The combination of new technologies and innovation aimed at inclusion and environmental protection would expand the scope for social compacts and redefine their modalities.

A low-carbon growth path can have a lock-in effect of its own on policies and the political economy. As the innovations that make it possible to break the connection or mitigate the effects of pollution (green technologies in general) gain in importance and competitiveness in the production and trade structure, a sufficiently large and powerful group of companies will be formed to compete for political influence with interests bound up in the prevailing development pattern. This process carries risks; it is likely that the firms and countries that led the way will oppose the dissemination of capacities and will wish to preserve their monopolistic positions derived from property rights and more restrictive patents. Their private interests in maximizing competitive assets may coincide with the trade interests of their governments. For this reason, development and the reduction of international gaps must not be separated from the green and innovative component of the new development pattern. Otherwise, there will always be incentives for countries to revert to the old, more polluting model, which is where the comparative advantages of the developing economies lie.

Table I.2 compares the structural trends and policies that sustain the current development pattern (on the basis of its impacts in the region) with those that could contribute to a sustainable development pattern, emphasizing the role of global public goods and the domestic policies that are behind each pattern. It focuses on the problems and negative externalities of the current development pattern and the direction policies must take in order to correct them. The principles of integrity and interdependence of the advances on different fronts stand out, and a broad set of positive interactions are presented that could generate a lock-in effect for policies that would benefit the Sustainable Development Goals.

Any shift towards an inclusive and sustainable development pattern will need to be sustained by political partnerships and coalitions. Although some progress has been made on emission-reduction agreements, very little has been achieved regarding a new financial architecture or the coordination of expansionary fiscal policies in the large economies, and almost nothing with respect to narrowing the gaps between the developed and developing worlds. By bringing together environmental dimensions, economic and social development, and the reduction of gaps in capacities, new kinds of domestic and external partnerships could be forged to support the new development pattern.

[21] In the words of Evans (2008): "Only aggressive and efficient entrepreneurial engagement by public institutions can deliver what is needed. At the same time, states must find ways to resist the traditional logic of political economy which pushes them to overprotect monopolies control of the existing stock of ideas, restricting access and utilization and thereby reducing both growth and well-being. The most obvious starting point for more aggressive state action is ramping up the effective delivery of capability-expanding services. Since all modern states play a central role in the provision of health and education, this is a task which public institutions cannot escape in any case."

Table I.2
Development patterns: structural trends, policies and institutional mechanisms

Development patterns	Current development pattern	Sustainable development pattern
Technology and production gaps	Negative impacts on Latin America and the Caribbean • Technological, productivity and income disparities relative to the advanced economies. • Limited technological dissemination between and within countries. • Low diversification and persistent specialization in low-tech sectors or activities.	Positive impacts on Latin America and the Caribbean • Closing of internal and external technology gaps. • Production diversification and capacity-building. • Upgrading towards higher-tech goods.
Global public goods: stable growth and environmental stewardship	Governance unable to provide global public goods • No regulation of speculative capital movements and liquidity cycles. • Weak multilateral trade system: rules agreed during bilateral negotiations between a minority of major players (elite multilateralism). • Limited rules on foreign direct investment in developing countries.	Governance aimed at the provision of global public goods • New international financial architecture. • Macroeconomic coordination. • Multilateralism and trade rules with provisions on the environment, inclusion and development based on universalizing the principle of common but differentiated responsibilities. • Intellectual property rules that favour technology transfers to developing countries. • Support of progressive structural change in developing economies (environmental big push). • Financial assistance for development. • Production integration among developing economies.
Externalities	Negative externalities • Climate change, pollution and destruction of common goods. • Recessionary bias in the international economy (lack of aggregate demand). • Predominance of finance over production and employment. • Volatile commodity, energy and currency prices. • Restrictions on access to technology and markets for developing economies. • Competition between developing countries for foreign direct investment ("race to the bottom").	Positive externalities • Coordinated expansion and global environmental Keynesianism. • Adjustment shared by surplus and deficit countries (biased towards growth and employment instead of the recessionary bias). • Stable exchange rates and commodity and energy prices. • Less economic instability and fewer risks of systemic crisis. • Separation of growth from emissions. • Sustainable consumption patterns.
Domestic development policies	Weakening of domestic development policies • Weak or no industrial or technology policy. • Macroeconomics dominated by the balance of payments. • No control of international capital flows. • Weak distributive policies or difficulty sustaining them. • Non-progressive tax system that encourages high energy consumption.	Strengthening of domestic development policies • Strong national innovation system and industrial policy. • Capacity-building. • Macroeconomics for development: the short term does not prevail over the long term; macroprudential policies; countercyclical policies; focus on the level and composition of investment. • Social and environmental policies.
Performance	Negative impacts • Trade imbalances and external restriction ("stop and go"). • Exchange-rate and financial crises. • Persistent inequality. • More conflictive and intense migratory flows. • Poor public services. • Multidimensional inequality. • Unsafe, segregated and polluted megacities.	Positive impacts • External balance and exchange-rate stability. • Progressive structural change and redefinition of insertion in value chains. • Environmental big push and decoupling of production from emissions. • Good-quality employment. • Universalism and multidimensional equality. • Cleaner and more inclusive urban patterns. • Modern production and environmental stewardship, in line with modern consumption patterns.

Source: Economic Commission for Latin America and the Caribbean (ECLAC).

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Chapter II

Global tectonic shifts are intensifying

Chapter II

Global tectonic shifts are intensifying

The rise of China, megaregional trade agreements, demographic change, environmental crisis and technological revolution are driving a global transformation of economies and societies, repositioning countries and shifting the balance of power between economic blocs and between developed economies and the emerging world. The dynamics and outcomes of these processes have fuelled growing demand for the global public goods needed to achieve the Sustainable Development Goals (SDGs) by 2030.

A. China is redefining spaces and strategies in the international economy

1. The return of the Asian giant

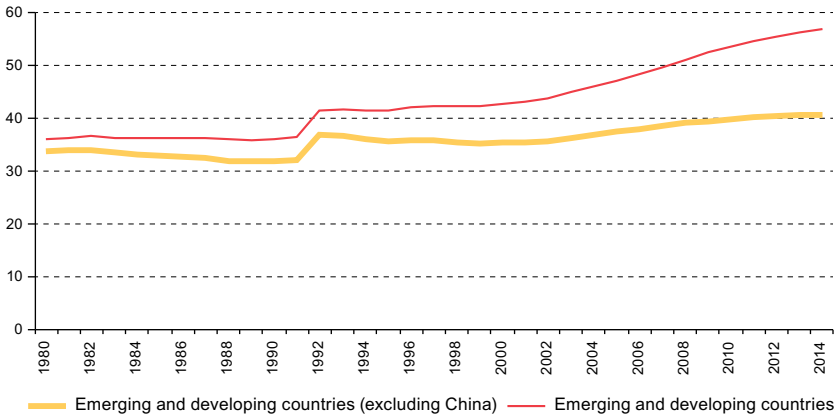
One of the greatest changes of recent decades has been China's consolidation as a foremost economic and geopolitical power, thus recovering the status it held until the end of the eighteenth century (Toynbee, 1961). Its capacity to absorb technical progress and to change its production structure has allowed China to narrow its per capita GDP gap with respect to the most advanced economies. In 2014, the Chinese and United States economies each accounted for 16.6% of global GDP, with China responsible for the bulk of emerging and developing economies' increased contribution to global output (see figure II.1). Between 1993 and 2014, this contribution rose from 42% to 57%; without China, the increase would have been just four percentage points (from 37% to 41%).

China's new role in the world economy is a consequence of its exceptional growth. For almost three decades, since the economic reforms of 1979, it maintained a real growth rate of about 10% per year on average; something no other country has achieved in economic history (Liu, 2015). The contribution of the Chinese economy to global growth surged from 5% in the 1980s to 25% in the period between 2000 and 2014, when it surpassed the United States (21.2%) as a contributor to growth.

Economic growth in China benefited greatly from multinational corporations' strategy of offshoring production and jobs to regions offering lower production costs, across a broad spectrum of industries and services.[1] This process, which also benefited countries such as India, Mexico and other Asian, Central American, Caribbean and Eastern European countries, expanded international markets and made worldwide production and distribution chains much more important.

[1] Most offshoring of production to China originated in developed countries (United States, 38%; United Kingdom, 15%; continental Europe, 21%; Australia, Canada and New Zealand, 4%; and Japan, 15%). See USA-China Economic and Security Review Commission (2004).

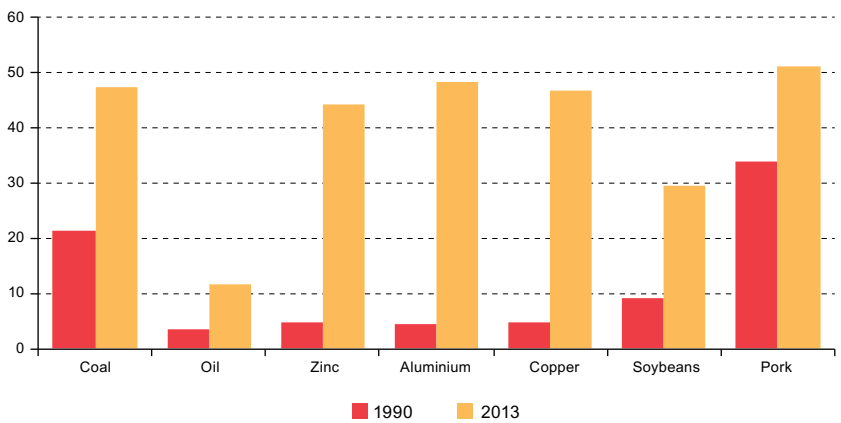
Figure II.1
Emerging and developing countries: contribution to global GDP
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of International Monetary Fund (IMF), World Economic Outlook (WEO) Database, April 2015.

From these foundations, China began to play a major role in international trade and transformed itself into one of the main trading partners for developed and some developing countries, particularly those of Latin America and the Caribbean. It is the second largest trading partner and the third largest export market of both the European Union and the United States (European Commission, 2015). As the world's leading exporter and its second largest importer of goods and services, China has also become a significant consumer and importer of raw materials, causing intense speculation and record high prices between 2000 and 2013.[2]

Figure II.2
China: share of global consumption of selected products, 1990 and 2013
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of data from the Food and Agriculture Organization of the United Nations (FAO), FAO Statistical Database (FAOSTAT), World Bureau of Metal Statistics, United States Energy Information Administration and World Steel Association.

China's trade strategy was complemented by its performance as a production and distribution centre for transnational firms,[3] especially those from Asia and the United States, while it also boosted the growth of commodity-producing countries through foreign investments that exceeded 50% of the total in Afghanistan, Ecuador, Guinea, Niger, Sierra Leone and Zimbabwe. China's share of investment in countries with large natural-resource

[2] In 2014, China was the world's leading exporter and the second leading importer of merchandise, as well as the fifth largest exporter and second largest importer of commercial services (WTO, 2015, tables I.7 and I.9).

[3] According to the European Union, half of Chinese exports originate in transnational firms operating in processing zones there (European Commission, 2015).

endowments increases the likelihood that these countries may become strong competitors for Latin America and the Caribbean in major agricultural and mineral markets.

The Chinese economy has slowed as it transitions from an investment- and export-driven model to one more weighted towards consumption and services. The growth rate, which averaged about 10% between 1980 and 2014, is expected to drop below 7% in the next five years —or even lower, according to some analysts. The most important implication of this new normal[4] is that it will diminish China's contributions to global growth, trade and demand for commodities, adding further uncertainty to the world economy. Besides the challenge of rebalancing its growth pattern, China must also address internal fragilities such as mounting debt, economic concentration in poorly regulated sectors and municipalities, and the growth of the shadow banking system, whose assets amount to almost 51% of GDP.

2. A new world order is taking shape around China

China's progress is affecting the international political economy in areas with major ramifications for Latin America and the Caribbean, such as international relations, United States-China relations, and the regional integration process.

At the global level, China's renewed geopolitical standing could be conducive to pushing developing countries' demands higher on the international agenda, for example in forums such as the Group of 20 (G20). China sees itself as an intermediary between developed and developing countries, and has sought to forge links with the latter, especially the other BRICS economies (Brazil, Russian Federation, India, China and South Africa). The New Development Bank created in 2015 (formerly referred to as the BRICS Development Bank) is one example of this approach; however, efforts in this area have generally made slow progress with little institutional development.

China aims to increase its presence in the international financial system, and for that it needs its currency, the renminbi, to be considered a reserve currency.[5] This in turn requires that China adapt to a more liberalized capital account. Capital controls have insulated China from global financial instability, and it is concerned about having to lift these restrictions in an international system with considerable potential for bubbles and volatility —especially given the apparent weaknesses of its domestic financial system (the magnitude of the shadow banking sector and the mortgage lending market). China's position may therefore converge with that of Latin America in advocating global public goods weighted towards international financing for development, stronger macroprudential policies and the regulation of short-term capital movements.

China's more proactive approach to international relations has triggered a response by the United States in an effort to prevent the erosion of its global influence. One recent example is the Trans-Pacific Partnership, concluded in October 2015, which includes the United States and another 11 Pacific Rim economies, including three from Latin America (Chile, Mexico and Peru). If the Partnership is adopted by parliaments, it will set new rules for trade and investment that will govern economies responsible for 36% of global GDP and one quarter of world trade. The Trans-Pacific Partnership represents a response by the United States to China's growing influence in Asia, as reflected by its leadership of the Asian Infrastructure Investment Bank (whose members include traditional United States allies in the Pacific region, plus one country from Latin America and the Caribbean, Brazil) and the New Silk Road initiative. The latter is both a terrestrial and a maritime initiative, aimed at strengthening overland communications between China, Central Asia and the European Union (with the emphasis on railway-building), and consolidating sea trade in the Indian Ocean and the Western Pacific, forging closer links with South-East Asia and Mediterranean and Persian Gulf countries.

China is also making its presence felt in Latin America. While the country does not want to be seen as a threat to the United States' standing in the region, the surge in Chinese trade, investment and lending has created a new configuration of influence and power. This is not only because China has financed numerous projects and has become an alternative source of funding and technology for several countries with current account difficulties, but also because

[4] The term "new normal", adopted at the China Development Forum in March 2015, refers to structural change with four facets: services, innovation, the reduction of inequality (especially urban-rural inequality) and environmental sustainability. The concept was developed on the basis of statements by President Xi Jinping to the effect that China's economic growth model was "unbalanced and uncoordinated" (third Plenary Session of the Central Committee of the Communist Party of China, November 2013).

[5] The International Monetary Fund (IMF) added the renminbi to its basket of reserve currencies on 1 December 2015. See [online] http://impresa.elmercurio.com/Pages/NewsDetail.aspx?dt=2015-12-02&dtB=02-12-2015%200:00:00&PaginaId=8&bodyid=2.

the commodities boom gave the South American economies extra scope for autonomous decision-making. Different trade strategies have arisen from this increased leeway: while Mexico, Central America and the Pacific Rim countries have drawn closer to the United States and have signed free trade agreements with that country, the countries of the Atlantic seaboard have been more reluctant to tighten links with the United States, leading to a degree of fragmentation in hemispheric and regional relations.

Despite their shared interests and potential for cooperation, the prevailing relationship between China and Latin America and the Caribbean has been of a North-South nature. China has expanded its presence in the region through projects in infrastructure and natural-resource exploitation. While China sees itself as a developing economy and demands to be treated as such in international forums —allowing it to apply successful policies of structural change— in its relations with other developing economies it adopts a centre-periphery approach. The terms of this relationship must therefore be redefined to promote a new development pattern based on the 2030 Agenda for Sustainable Development.

The motivations behind Chinese policy vary in the different subregions of Latin America and the Caribbean. While in South America it is interested in accessing natural resources, this is not the chief motivation for its presence in the Caribbean and Central America. In Jamaica and Nicaragua, for example, China is investing in transport infrastructure to be used as an offshore platform for its trade. In other Caribbean and Central American economies, Chinese firms have identified investment opportunities that were not taken up by domestic or third-country investors. Lastly, its status as a global power means that China is interested in boosting its diplomatic presence in these subregions, where several countries maintain diplomatic relations with the Government of Taiwan Province of China.

The region should create the conditions to negotiate from a more advantageous position seizing the opportunities that arise in its relations with China or from the greater autonomy generated by new markets and sources of financing. While the world is moving towards megaregional trade agreements and is structured around a few major actors (China, the European Union and the United States), which are integrated into the different regions and have considerable bargaining power, Latin America remains fragmented and lacking in a common strategy. The optimism generated by the years of prosperity may have weakened some countries' interest in integration. However, now that the boom is over and external conditions are more difficult, efforts are needed to support the convergence and strengthening of regional integration mechanisms.

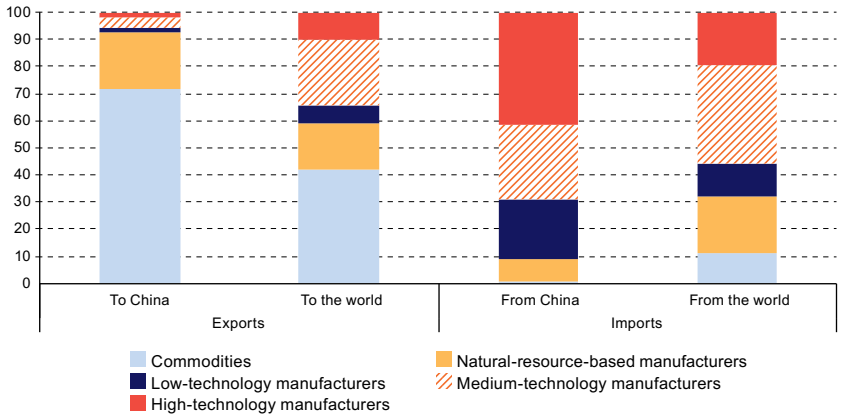
3. Contradictory effects of the relationship with China

China's success in reducing income and capacity gaps with respect to advanced economies provides some important lessons for Latin America and the Caribbean. The first of these is that the diversification of the production structure towards more knowledge-intensive sectors is a core vector of development. China diversified by building up increasingly advanced manufacturing sectors that transformed its pattern of international specialization. While China's structural change gave it a new position in the world, for much of Latin America and the Caribbean it served to reinforce the specialization in commodities. Figure II.3 shows that the region exports a smaller proportion of medium- and high-technology manufactures to China than it does to the other regions of the world. Latin American manufactures are exported chiefly to the United States and to other countries within the region, while its trade relations with China and Europe reproduce the North-South trade pattern. Conversely, the region imports a higher proportion of medium- and high-tech goods from China than it does from other parts of the world. China's transformation thus lends even greater urgency to the advancement of structural change.

The second lesson is that active industrial and technology policies are required for capacity-building and structural change. Countries need new skills and knowledge —the only enduring basis for competitiveness— to diversify their supply in order to maintain their status as important actors in dynamic markets. The Chinese experience demonstrated that policies challenging static comparative advantages were required to build capacities (Chang, 2002).[6] Such policies serve an even more critical purpose at the present time, when the direction of technical progress (i.e. which objectives should be prioritized in innovation) is just as important as its speed. The consensus is now that innovation should aim to decouple economic growth from environmental pollution and to prevent the widening of inequality so that growth will be compatible with the 2030 Agenda for Sustainable Development and the SDGs.

[6] Industrial and technology policies have been crucial in advanced and developing economies alike. For example, Mazzuccato (2011) states that many of the technologies embedded in the products of corporations such as Apple were created in United States government programmes in the areas of defence or health-care research. See also Stiglitz (2014).

Figure II.3
Latin America and the Caribbean: structure of trade with the world and China by technology intensity, 2013
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).

Structural change has not taken this direction in China, where two deeply negative side effects have emerged: the impact on global pollution levels and a sharp increase in inequality. China has become the world's largest emitter of greenhouse gases because its rapid economic growth has been fuelled by an energy mix that is heavily dependent on coal. At the same time, structural change has generated significant territorial imbalances and a highly uneven income distribution. Territorially, economic growth is concentrated in the Special Economic Zones (SEZs), so that wages in urban coastal areas are much higher than in the rural interior (Tao Yang and Zhou, 1999; Sicular and others, 2007). These territorial inequalities have coincided with sharp increases in education premiums that have generated huge disparities in urban wages. Income inequality has soared since the economic reforms: by 2012 the Gini coefficient stood at almost 0.55, higher than in any country of the Organization for Economic Cooperation and Development (OECD, 2015), and even some Latin American countries (Xie and Zhou, 2014; Hauser and Xie, 2005; Jansen and Wu, 2012).

China's high and persistent trade surpluses have been a source of volatility and uncertainty for the world economy, leading to currency wars and an excessive build-up of financial assets. While the international financial crisis corrected many of these imbalances —and is a factor driving China's transition— these assets have recently begun to accumulate again, sending a warning signal to the world economy (IMF, 2015).

There is also considerable tension between China's shift towards a market economy and its continued regulation of activity in accordance with the precepts of a centrally planned economy. These weaknesses weigh on performance and have repercussions for the global economy, as became apparent after the stock market boom between June 2014 and June 2015, whose sudden collapse caused a widespread spike in volatility.

B. Megaregional agreements are creating megaregional markets

Much of the world's trade and production now takes place within regional or global value chains, with about 80% of worldwide goods and services exports (measured in gross terms) consisting of trade within value chains involving multinational enterprises (UNCTAD, 2013). This situation reflects the far-reaching geographical fragmentation of production, a process that commenced in the mid-1980s, driven by a combination of lower barriers to trade and foreign direct investment, lower transport costs and improvements in information and communications technologies (ICTs). The countries participating in these chains specialize not so much in the complete production of final goods or services as in particular tasks or segments of the production process. Consequently, trade in intermediate goods accounted for 43% of total trade (excluding oil exports) between 2000 and 2014.

Trade within value chains, where a product may cross borders several times at different stages of production, is particularly sensitive to distance-related costs. This is why the main value chains show high levels of intraregional trade (see table II.1; WTO, 2011; Lim and Kimura, 2010), as may be observed in the world's three major production networks, or "factories": Europe (centred on Germany), North America (centred on the United States) and Asia (originally centred on Japan and more recently on China) (Baldwin, 2012).[7]

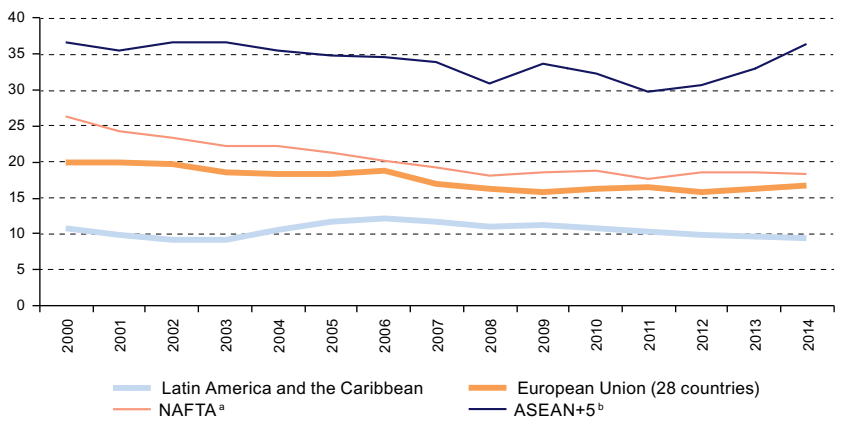
Table II.1
Selected groupings: intra-group exports as a share of total exports, 2008-2014
(Percentages)

Grouping	2008	2009	2010	2011	2012	2013	2014
European Union (28 countries)	67.7	66.9	65.4	64.5	62.8	62.1	63.2
NAFTA [a]	49.3	47.6	48.3	48.0	48.4	49.2	50.2
ASEAN+5 [b]	47.0	48.4	49.4	49.7	50.4	49.8	51.4

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).
[a] North American Free Trade Agreement.
[b] Includes the 10 member countries of the Association of Southeast Asian Nations (ASEAN) plus China, Hong Kong Special Administrative Region of China, Japan, the Republic of Korea and Taiwan Province of China.

Intermediate goods (parts and components) are an important component of this trade, particularly in East Asia, which reflects the vertical trade patterns typical of international production networks (see figure II.4). The chains' structure may change according to the capacities and policies of each country; hence China has reduced the import content of its exports since the international financial crisis, especially in the most technology-intensive sectors (see figure II.5).

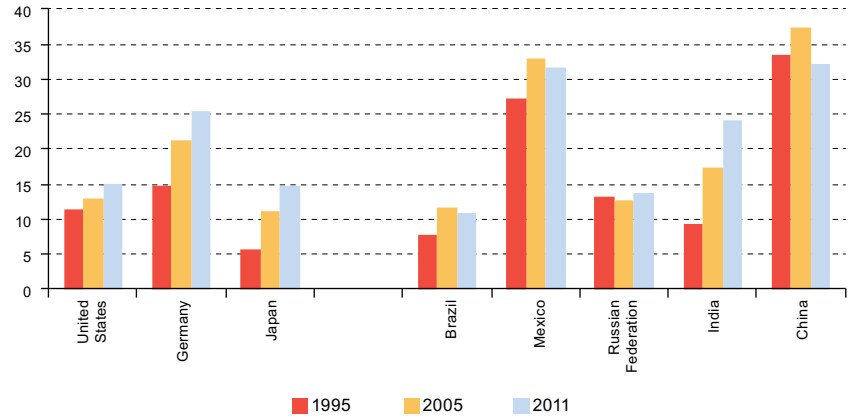
Figure II.4
Share of intermediate goods in intra-group exports, 2000-2014
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).
[a] North American Free Trade Agreement.
[b] Includes the 10 member countries of the Association of Southeast Asian Nations (ASEAN) plus China, Hong Kong Special Administrative Region of China, Japan, the Republic of Korea and Taiwan Province of China.

[7] Production networks tend to be regional, while supply networks are usually global in scope. Countries such as Brazil, Chile and Peru, for example, are major suppliers of the iron and copper used in different Asian industrial chains, but have little involvement in the process of transforming these minerals into manufactured goods.

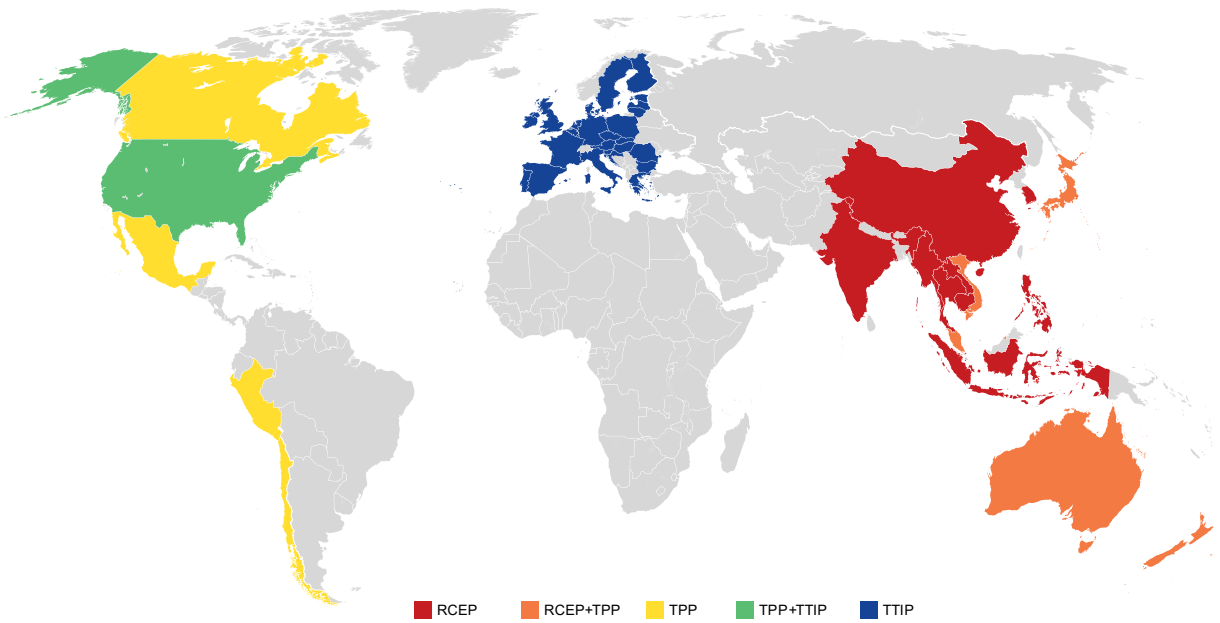
Figure II.5
Selected countries: import content of goods and services exports, 1995, 2005 and 2011
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Organization for Economic Cooperation and Development (OECD)/ World Trade Organization (WTO), Trade in Value-Added Database (TiVA).

Regional integration processes centred on major markets have been an important factor in the formation of the world's "factories". One example is "factory Asia", comprising China, Hong Kong Special Administrative Region of China, Japan, the Republic of Korea, Taiwan Province of China and the 10 economies of the Association of Southeast Asian Nations (ASEAN). All these economies in practice form an integrated region by virtue of its flows of trade and foreign direct investment, especially in the manufacturing sector. This de facto integration has been strengthened in recent years by a process of formal (de jure) integration via a network of trade agreements established around ASEAN. The next stage in the process is expected to be the creation of a vast free trade area also taking in Australia, India and New Zealand via the project known as the Regional Comprehensive Economic Partnership (RCEP), on which negotiations began in May 2013 (see map II.1).

Map II.1
International trade mega-agreements



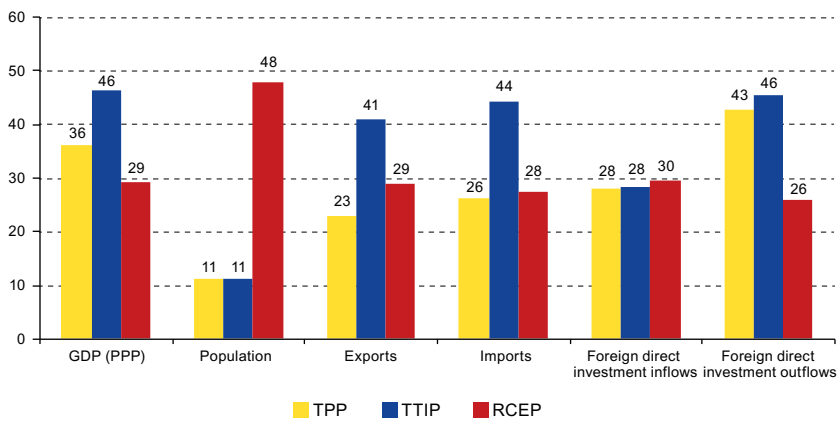
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official information.
Note: Transatlantic Trade and Investment Partnership (TTIP), Trans-Pacific Partnership (TPP) and Regional Comprehensive Economic Partnership (RCEP).

In Europe, the development of value chains was facilitated by the entry of a number of Central and Eastern European countries to the European Union (and its single market) from 2004 onwards. This economic area is completed by a number of economies in North Africa, the Middle East and the former Soviet Union with which the European Union has signed deep trade and investment agreements.[8] For its part, "factory North America" has been operating since the 1960s between the United States and Canada, particularly through binational production networks in the automotive sector. However, its scope was substantially increased with the 1994 implementation of the North American Free Trade Agreement (NAFTA), between these two economies and Mexico. This spurred the development of production linkages between Mexico and the United States, chiefly in the form of plants for the assembly of imported components in sectors such as automobiles, clothing and electronics. This economic space also encompasses the countries of Central America, which are linked to Mexico and the United States by separate free trade agreements (with the United States-Central America agreement also including the Dominican Republic).

Integration initiatives in Asia, Europe and North America have been supplemented more recently by megaregional initiatives such as the Trans-Pacific Partnership (TPP) and other agreements that are still at the negotiating stage, such as the Transatlantic Trade and Investment Partnership (TTIP) between the United States and the European Union, and the free trade agreement between the European Union and Japan. Also in this category is the Regional Comprehensive Economic Partnership, which is expected to compete with TPP as a model to set the ground rules in Asia for the coming years.

The current megaregional negotiations have features that set them apart from most existing accords. First, they differ in scale: in each instance the number and size of the economies concerned account for a significant share of world population, output, trade and foreign direct investment (see figure II.6). It is the sheer scale of these megaregional agreements that may bring about significant changes in the ground rules of world trade. Second, they all extend beyond the bilateral approach of most existing regional free trade agreements by aiming to create vast integrated economic spaces, whether Asian, trans-Pacific or transatlantic. Third, their thematic agenda is far more extensive and complex than has traditionally been the case, and it includes a number of areas not covered by agreements concluded in the framework of the World Trade Organization (WTO). In short, the megaregional agreements seek to harmonize the rules under which the global factories operate, or at least render them compatible (ECLAC, 2013a; Rosales and Herreros, 2014).

Figure II.6
Selected groupings: share of world GDP, population, trade and foreign direct investment flows, 2013
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of International Monetary Fund (IMF), World Economic Outlook (WEO) Database, April 2015 [online] https://www.imf.org/external/pubs/ft/weo/2015/01/weodata/index.aspx, GDP and population; United Nations Commodity Trade Statistics Database (COMTRADE) and World Trade Organization (WTO), exports and imports and United Nations Conference on Trade and Development (UNCTAD), foreign direct investment.
Note: Transatlantic Trade and Investment Partnership (TTIP), Trans-Pacific Partnership (TPP) and Regional Comprehensive Economic Partnership (RCEP).

[8] "Deep" agreements are those whose scope extends beyond the elimination of tariffs and other border obstacles to goods trade, taking in a range of domestic (behind the border) regulatory aspects that may present barriers to the workings of value chains. Among them are the treatment of foreign investment, trade in services, intellectual property rights and technical norms and standards.

The prolonged impasse in the WTO Doha Round negotiations is one of the factors accounting for the raft of megaregional negotiations which, if successful, will have a strong impact on the geographical distribution and governance of world trade and investment flows. Unlike the last large negotiation of this type (the Uruguay Round of the General Agreement on Tariffs and Trade (GATT)), this time the rules would be defined outside WTO by a limited number of countries, basically those with the largest share of trade in value chains. This should give cause for concern for Latin American and Caribbean countries, which —with a few exceptions— have little involvement in international production networks. Given that megaregional negotiations tend to have a strong regulatory emphasis, any results they achieve would have a larger impact on the region's trade than any tariff measures agreed. In particular, the Transatlantic Trade and Investment Partnership between the United States and the European Union may set new rules for emerging international trade issues, given the parties' economic weight and regulatory influence. In that context, there is a risk that TTIP will negotiate environmental, quality or traceability rules or requirements that are hard for the region's exporters to comply with. For example, the outcome of discussions between the European Union and the United States on matters such as the commercialization of genetically modified crops, the use of hormones in stockbreeding or the regulation of biofuels will have major consequences for the countries in the region that export these goods.

Besides their impact on trade and investment flows, megaregional negotiations will affect the scope that the countries of Latin America and the Caribbean now have to implement public policies in a variety of areas. The new rules that have been agreed or are currently being negotiated in the Trans-Pacific Partnership and the Transatlantic Trade and Investment Partnership on intellectual property, capital flows, the handling of personal information on the Internet, State-owned enterprises and labour and environmental issues are just some examples. Thus, among other things, the region's governments could have less leeway to apply capital controls for prudential purposes, independently define their levels of labour or environmental protection, or ensure access to the Internet for educational purposes and to stimulate innovation. Latin American countries participating in megaregional negotiations will directly experience the impact of these new rules, while those which are not participants will probably be exposed to them indirectly, since the results of these negotiations may ultimately provide the basis for future multilateral agreements at WTO.[9]

Megaregional agreements strongly impact on Latin American and Caribbean countries' strategies for international market integration. Of the countries of the region, only Chile, Mexico and Peru are currently participating in TPP. However, considering that the largest partner, the United States, also has free trade agreements with Colombia, Central America and the Dominican Republic, and Panama, the possibility arises that some of these countries might seek to involve themselves in TPP to prevent their agreements with the United States from becoming a dead letter. In fact, Colombia, Costa Rica and Honduras have all expressed, on a number of occasions and to varying degrees of formality, an interest in joining TPP.

Moreover, the prospect of a wide-ranging trade agreement between the United States and the European Union via TTIP led Mexico to state its interest in participating in these negotiations. Canada recently concluded an extensive trade agreement with the European Union, while in May 2015 the European Union and Mexico agreed to upgrade the agreement that had been in place since 2000. Consequently, the completion of a new-generation agreement between the European Union and the members of NAFTA is a medium-term scenario that cannot be ruled out. In such an eventuality, it is also reasonable to assume that other countries in the region that have free trade agreements with the European Union or the United States will seek mechanisms to prevent trade and investment diversion that would reduce the usefulness of their own agreements.

Like the emergence of China, megaregional agreements have positive and negative aspects when viewed from the perspective of global public goods and the 2030 Agenda for Sustainable Development. On the plus side, the negotiations may help define environmental and social standards that converge with the SDGs. Yet the weakening of multilateralism and the conclusion of megaregional agreements between powerful actors that already have a high level of de facto integration may reduce the bargaining power of developing countries. Megaregional agreements do not consider the specific problems of developing economies in terms of accessing technology, narrowing gaps and establishing an international market presence; they therefore tend to diminish the policy space available for the region.

[9] Chile, Mexico and Peru are already bound by several of the commitments established in the Trans-Pacific Partnership, through their existing free trade agreements with the United States. In principle, therefore, the legislative and policy changes that they are required to make are less extensive than those facing Asian countries such as Malaysia and Viet Nam, which have no prior agreement with the United States.

It is possible that three levels of international trade governance will develop in future: (i) WTO, regulating traditional subjects; (ii) megaregional agreements dealing with new issues associated with value chains, services, standards and intellectual property, and (iii) regional integration initiatives in Asia, Africa and Latin America, led by the BRICS countries in their respective areas of influence (Baldwin, 2012). In this context, defensive responses could well develop along the lines of regional trade blocs, hastening the economic fragmentation between the areas or countries that participate in these mega-agreements and those that do not. This would be bad news for the construction of a multilateral trade system that takes the interests of developing economies into account. The megaregional phenomenon challenges Latin America and the Caribbean to deepen its integration process as a tool for improving its linkages with the global economy and compels it to play a much more proactive role in global discussions. This problem is even more complex for the Caribbean, in that most of the subregion's countries are lacking in diversified exports, the capacities required for integration in value chains, and economies of scale.

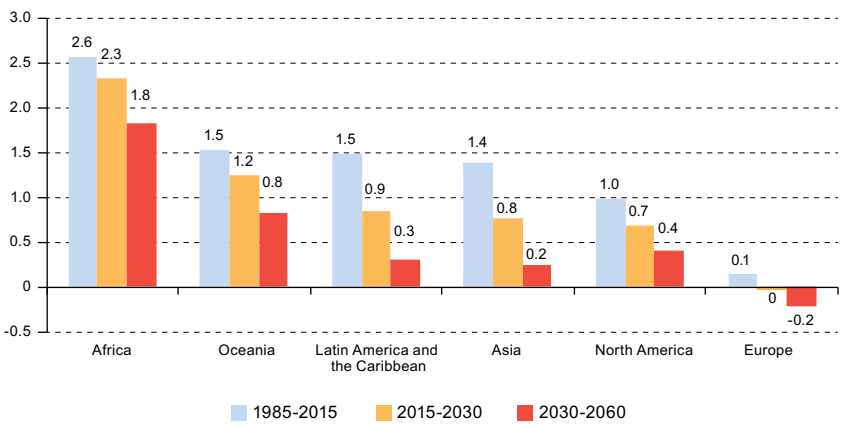
C. Slower population growth and demographic ageing

Demographic changes have profound impacts on economies and societies.[10] Sometimes, they are highly visible and occur over short periods of time. For example, the wave of refugees from the Middle East seeking asylum elsewhere within that region or in Europe, migrations from Eastern European countries to the north of the continent, flows of Latin American workers to Europe and particularly the United States, and migrations within Latin America and the Caribbean, have all intensified since the start of the twenty-first century. Other demographic transformations are slower and more cumulative, such as changes in population age structures and growth rates.

1. Migratory implications of faster population growth in poor countries

Population growth has slowed in all regions. Annual growth rates of below 1% are expected in most regions during the period of the SDGs (2015-2030), whereas they exceeded 1.5% in the past two decades (see figure II.7). Between 2030 and 2060, population growth will slow even further, to below 0.5% per year in most regions. This trend shift is the outcome of a steep fall in the fertility rate.[11]

Figure II.7
Population growth rates by region, 1985-2015, 2015-2030 and 2030-2060
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations, "World Population Prospects: The 2015 Revision, Key Findings and Advance Tables", *Working Paper*, No. ESA/P/WP.241, Population Division, 2015 [online] http://esa.un.org/unpd/wpp/.

10 European migration and the slave trade from Africa were pivotal in the economic history of Latin America.

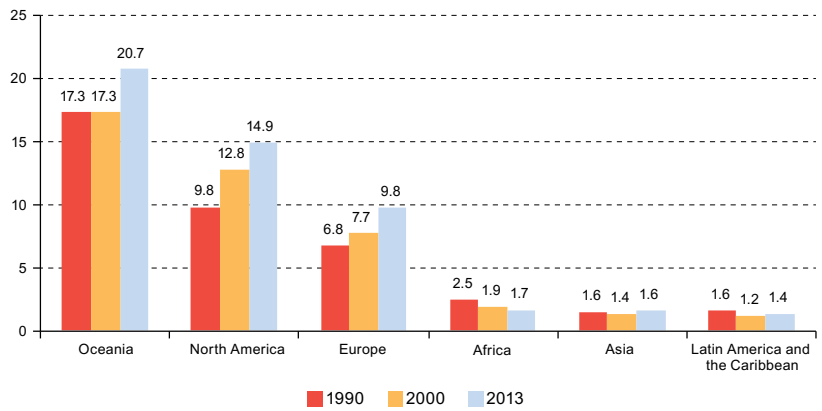
11 In the past 30 years, the number of children per woman has dropped from 6.5 to 4.7 in Africa, from 3.7 to 2.2 in Asia, from 4.0 to 2.2 in Latin America and the Caribbean and from 1.9 to 1.6 in Europe. In North America the rate edged up from 1.8 to 1.9. The recent change in China's birth-rate policy may alter the pattern.

One important consequence of this change is heightened political concern over fertility rates that are too low, immigration rates that are too high, and population ageing (Lee and Mason, 2014). Growing political angst over fertility and migration is especially worrying because it may fuel xenophobia; amid low fertility rates, nationalist groups have associated national identity with the native-born population and regard immigrants as a threat. There has thus been an upsurge in xenophobic political parties and groups with platforms that are hostile and discriminatory to immigrants, refugees and religious and ethnic minorities.

A second trend relates to the redistribution of the world population. In 1985, about 60% of the world population lived in Asia, but by the end of the period of the SDGs this proportion will have dipped to 58% and will shrink further to 52% in 2060. By contrast, Africa's high fertility means that it will account for an ever greater share of the world population. In 1985, 11% of the people on the planet lived in Africa, a figure that has since risen to 16% and will reach 20% by 2030. In 1985, 15% of the world population lived in Europe, but this figure has fallen to 10%, and will drop to 9%. Latin America and the Caribbean, North America and Oceania will maintain their current shares of 9%, 5% and 1%, respectively. In 2030, Latin America's population will almost equal Europe's.

A third characteristic is the growing scale of international migration. In the three regions that receive the most immigration (Europe, North America and Oceania), the percentage of the foreign-born population continues to increase (see figure II.8), while this percentage has either fallen or remained stable in Latin America and the Caribbean, Asia and Africa.

Figure II.8
Foreign-born population, by region, 1990, 2000 and 2013
(Percentages of the total population)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations, *Trends in International Migration Stock: The 2013 Revision - Migrants by Age and Sex* (POP/DB/MIG/Stock/Rev.2013/Age), New York, Population Division, 2013.

Immigration makes up for the declining fertility rate in the three regions that receive most immigrants, although the same movement has the opposite effect in Latin America and the Caribbean.[12] The phenomenon will attract significant interest during the SDG period because recipient countries will continue to post low fertility rates and because immigrants already account for a significant proportion of their population. As a region, Latin America and the Caribbean has been characterized by emigration, with sizeable population outflows.

In 2010, about 30 million Latin American and Caribbean citizens resided outside the country of their birth (up from 26 million a decade earlier). This figure is equivalent to about 5% of the region's total population (see table II.2).

Meanwhile, there were 7.6 million non-nationals living in the countries of Latin America and the Caribbean around 2010, equivalent to a quarter of the number of emigrants and 1.3% of the region's population. Immigrants come from both outside the region (37.2% of the immigrant population —a proportion that continues to fall in relative terms) and within the region, (62.8% —a figure that is growing in respect of previous decades). The ratio of the immigrant population to the native population remains fairly constant across the different subregions of Latin America and the Caribbean, ranging between 0.9% and 2.8%.

[12] During the period 2005-2010, for every 100 births, 10 emigrants left the region. This average figure conceals the magnitude of emigration in several countries. For example, El Salvador reported 46 emigrants per 100 births, while Jamaica had 39, Cuba 32, Nicaragua 29 and Peru 24.

Table II.2

Latin America and the Caribbean: immigrants and emigrants as a percentage of the total population, by country of residence and birth, around 2010 [a]

(Minimum estimates in thousands of persons and percentages)

Country	Total population	Immigrants		Emigrants	
		Number	Percentage of country's population	Number	Percentage of country's population
Latin America and the Caribbean	**599 057**	**7 564**	**1.3**	**28 467**	**4.8**
South America	**397 082**	**4 756**	**1.2**	**8 398**	**2.1**
Argentina	41 223	1 806	4.4	710	1.7
Bolivia (Plurinational State of)	9 918	128	1.3	686	6.9
Brazil	198 614	592	0.3	874	0.4
Chile	17 015	320	1.9	429	2.5
Colombia	45 918	110	0.2	1 976	4.3
Ecuador	14 935	182	1.2	995	6.7
Guyana	753	12	1.6	374	49.7
French Guiana	234	108	46.2	1	0.4
Paraguay	6 210	161	2.6	688	11.1
Peru	29 734	64	0.2	981	3.3
Suriname	518	39	7.5	4	0.8
Uruguay	3 374	77	2.3	242	7.2
Venezuela (Bolivarian Republic of)	28 996	1 157	4.0	439	1.5
Central America	**161 118**	**1 672**	**1.0**	**15 550**	**9.7**
Belize	322	47	14.6	6	1.9
Costa Rica	4 545	386	8.5	111	2.4
El Salvador	6 038	37	0.6	1 316	21.8
Guatemala	14 732	59	0.4	919	6.2
Honduras	7 504	24	0.3	611	8.1
Mexico	118 618	968	0.8	11 863	10.0
Nicaragua	5 738	33	0.6	597	10.4
Panama	3 621	117	3.2	126	3.5
The Caribbean [b]	**40 857**	**1 135**	**2.8**	**4 519**	**11.1**
Bahamas	361	33	9.1	1	0.3
Barbados	280	28	10.0	18	6.4
Cuba	11 308	15	0.1	1 297	11.5
Dominican Republic	9 898	396	4.0	1 070	10.8
Guadeloupe	457	105	23.0	0	0.0
Haiti	10 000	35	0.4	994	9.9
Jamaica	2 741	30	1.1	803	29.3
Martinique	395	71	18.0	1	0.3
Netherlands Antilles	202	53	26.2	2	1.0
Puerto Rico	3 710	324	8.7	10	0.3
Saint Lucia	177	10	5.6	22	12.4
Trinidad and Tobago	1 328	34	2.6	301	22.7

Source: Latin American and Caribbean Demographic Centre (CELADE)-Population Division of ECLAC, Investigation of International Migration in Latin America (IMILA) Project, on the basis of J. Martínez, M.V. Cano and M. Soffia, "Tendencias y patrones de la migración latinoamericana y caribeña hacia 2010 y desafíos para una agenda regional", *Población y Desarrollo series*, No. 109 (LC/L.3914), Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), 2014.

[a] Data for Argentina, Bolivarian Republic of Venezuela, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Mexico, Nicaragua, Panama, Peru, Plurinational State of Bolivia and Uruguay and correspond to the 2010 census round and were obtained from the IMILA database. For other countries, the figures are from the United Nations Population Division. Estimates of emigrants are a minimum, since they cover a limited number of countries in Europe and Oceania.

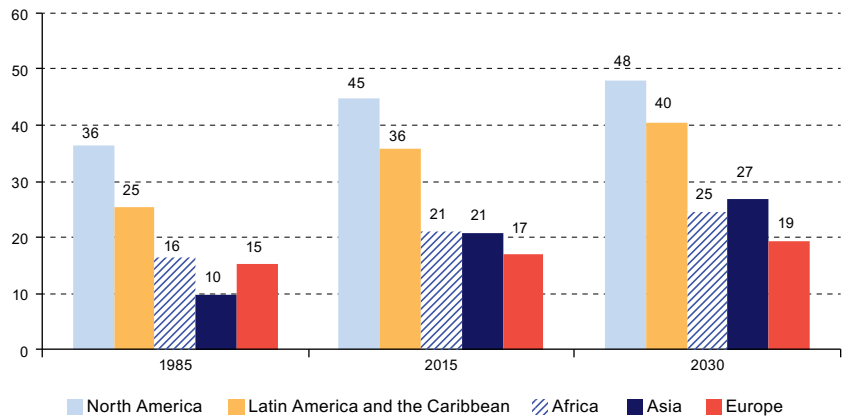
[b] Excludes Anguilla, Antigua and Barbuda, Aruba, Bermuda, British Virgin Islands, Cayman Islands, Dominica, Grenada, Montserrat, Saint Kitts and Nevis, Saint Vincent and Grenadines, Turks and Caicos Islands and United States Virgin Islands.

2. Ageing and urbanization are changing consumption and production patterns

In 2008, urban-dwellers became the majority of the world population for the first time. Increasing urbanization has been accompanied by the growth of megacities of more than 10 million inhabitants, and large cities of over a million inhabitants (known as millionaire cities). In 1950, there were just 2 megacities, New York and Tokyo, and 77 millionaire cities. Today, there are 29 megacities and 501 millionaire cities, with a further 12 megacities and 160 millionaire cities projected to be added during the SDG period.

An ever greater percentage of the world population lives in large metropolises (see figure II.9). In 1950, only 7% of people lived in large cities, but by 2030 the figure will have risen to 27%. This trend is clearest in the Latin American and Caribbean region: in 1985 a quarter of the population lived in cities of over a million inhabitants; the figure now stands at 36% and will rise to 40% by the end of the SDG period. Only North America will have a higher level of urbanization (45%). Asia and Africa have also posted solid population growth in cities of over a million people: 21% of the population of Asia lives in a large metropolis (up from 10% in 1985), while the figure in Africa has risen from 16% to 21% during the same period.

Figure II.9
Population residing in large cities (over 1 million inhabitants), 1985, 2015 and 2030
(Percentages of the total population)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations, *World Urbanization Prospects: The 2014 Revision, Highlights* (ST/ESA/SER.A/352), New York, Population Division, 2014.

One final feature of the global demographic situation is the change in the age distribution of national populations, with falling fertility rates and greater longevity leading to the gradual ageing of the world population. For most of history, societies were young, with those aged under 20 making up the largest demographic group. As the population grew older, young adult societies emerged in which 20- to 39-year-olds became the largest age group. Continued population ageing then gives rise to adult societies, in which the population aged 40 to 59 is the largest group. Finally, populations become aged societies, in which those aged 60 or older are the predominant group.

Thirty years ago, the world was clearly divided into young societies in the southern hemisphere, and young adult societies in the northern hemisphere. Today the situation is more heterogeneous, owing to the appearance of the first aged societies in Japan and Sweden, adult societies in Europe, Canada and the Republic of Korea, and the spread of young adult societies in Asia and Latin America. This heterogeneity will be a feature of the SDG period. By 2030, aged societies will have spread widely in Europe and North America, and by 2060 most countries will have aged societies.

The transformation of the age structure has profound consequences for economic growth, consumption patterns and the sustainability of transfer systems. The growth of the working-age population (aged between 20 and 64) tends to invigorate economies insofar as the labour force is mostly drawn from this group —the demographic dividend— and provided that the factors ensuring a good supply of workers are in place. The transition from predominantly young societies to predominantly old ones also affects consumption, since older persons use medical services more intensively than the general population. Population ageing thus implies that health care will require greater financing and that spending in this area will increase as a proportion of GDP during the period covered by the SDGs.

Changes in population age distribution have important consequences for the funding of transfers. Consumption among the child population is financed from transfers that come chiefly from the working-age population, either directly within the family, or indirectly through taxation or government transfer programmes. While older persons partially fund their own retirement from work or savings, consumption among this population group is also heavily funded from transfers, generally from the working-age population. Demographic ageing is exerting ever greater pressure on these systems.

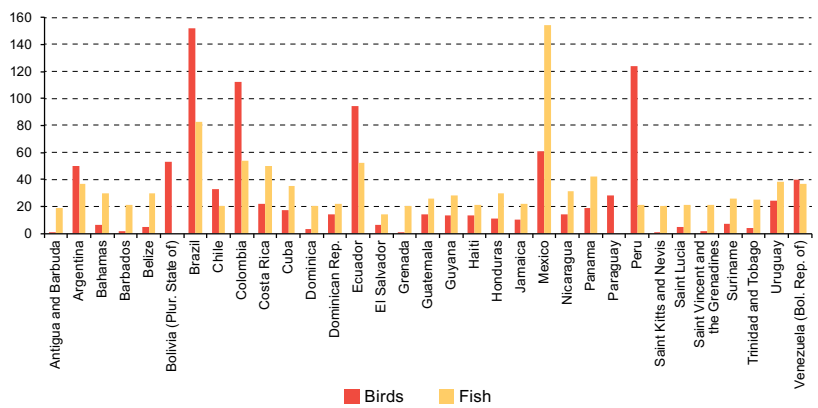
In conclusion, the demographic trends of recent decades have led to growing concern worldwide over the need to reduce asymmetries in development and income. The inverse relationship between population growth and per capita income encourages migration flows to rich countries. While migration may be beneficial to the recipient country, especially if it has low fertility rates and an older population, it also generates political, social and economic tensions, especially where large migratory flows occur in a context of slow global growth. The way to ensure that the migratory impact is well absorbed is to balance the acceptance of immigrants with job creation in the less advanced economies. Migration flows will slow if the world economy spreads the benefits of production, technical progress and employment more evenly, instead of concentrating them. This is a core aspect of the SDGs and the 2030 Agenda for Sustainable Development. New technologies are crucial for responding to the challenges of an older, more urbanized population. In particular, the use of new technologies to provide health services and to build environmentally sustainable, smart and integrated cities represents a new Schumpeterian frontier for innovation and structural change.

D. A world in environmental crisis

1. At the crossroads: climate change

Humanity has reached a point of no return: the environmental impact of the prevailing development pattern is endangering both its own survival and that of other species. The environmental destruction associated with economic growth has been a constant throughout history, but today it bears two unique hallmarks. The first is that its impact is not just local, but affects common resources: the world's atmosphere, oceans, polar ice caps and biodiversity. The second is that, for the first time, there is a generation that is aware and informed by scientific evidence of this impact and of the danger that human activities pose to the environment. The balance of ecosystems is unique and may be irreversibly damaged by anthropogenic causes. And while the number of human beings will continue to grow for at least several decades, most species, especially mammals, are declining in number or at risk of extinction. Figure II.10 depicts the number of endangered bird and fish species in Latin American and Caribbean countries.

Figure II.10
Latin America and the Caribbean: threatened species, by taxonomic group, 2013 [a]
(Number of species)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Bank, World Development Indicators and International Union for Conservation of Nature (IUCN).

[a] The threatened species shown here refer to the number of species classified on the basis of the International Union for Conservation of Nature categories: critically endangered, endangered and vulnerable.

This is a familiar concern. As early as 1972, at the United Nations Conference on the Human Environment held in Stockholm, it was recognized that human activity could cause irreparable damage to the environment that sustained life on the planet, and a warning was issued over the potential irreversibility of such damage. The United Nations thus accepted the mission of averting a large-scale environmental crisis; a challenge whose urgency and gravity was confirmed in studies of both the physical science and the estimated economic costs of environmental degradation (Stern, 2006).

The most recent report of the Intergovernmental Panel on Climate Change (IPCC) reiterates the unequivocal warming of the climate system. The evidence points to an increase in greenhouse gas concentrations since the beginning of the industrial era as a result of human activity, and links this increase to unprecedented changes in climate variables during the last 100 years. The trends identified in greenhouse gas emissions scenarios will cause major shifts in the global climate system that will tend to intensify. In Latin America and the Caribbean, temperatures will gradually rise (by between 1.6 °C and 4 °C in Central America and between 1.7 °C and 6.7 °C in South America), with more volatile precipitation patterns and a trend towards lower precipitation, particularly in Mexico and Central America. Moreover, extreme weather events are expected to occur with greater frequency and intensity (Magrin and others, 2014).

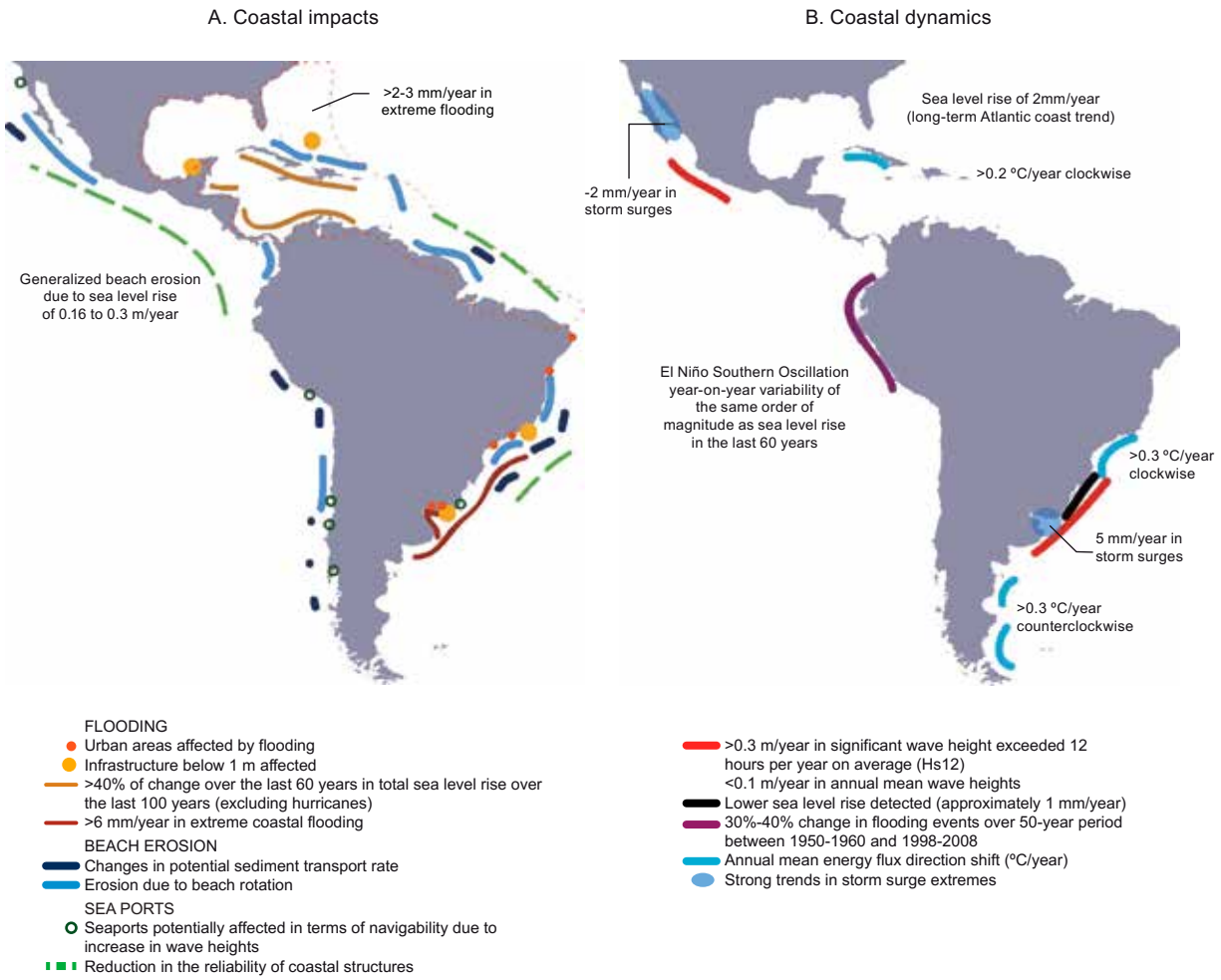
Shifts in climate variables such as temperature and precipitation bring about changes that are slow to occur but have significant effects: smaller yields from subsistence crops such as potatoes and maize in Central America and the Andean countries; reduced availability of grazing land that impairs the productivity of stockbreeding activities in Argentina and Paraguay; higher rates of dengue fever and malaria in almost all countries, including at altitudes that were historically unaffected; changes in plant and animal diversity, with an increase in desertification and deforestation; impacts on the hydroelectric sector in most Andean countries (Argentina, Chile, Peru and Plurinational State of Bolivia) owing to weaker flows and greater sedimentation, and impacts on sectors such as tourism and infrastructure due to extreme events (hurricanes and the El Niño Southern Oscillation) which heighten the vulnerability of socioeconomic and ecological systems (ECLAC, 2015a, 2014b, 2014c; IDB/ECLAC, 2014a and 2014b; DNP/ECLAC/IDB, 2014).

Central America and the small island States of the Caribbean are especially vulnerable. Between 1930 and 2008, Central America suffered 248 extreme events, over 85% of which consisted of floods, storms and landslides with severe consequences for the economies and societies of the subregion. In the past four decades, 11 extreme hydrometeorological events in Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua caused economic losses amounting to US$ 13.642 billion at 2008 prices (ECLAC, 2010a). Extreme events of this kind have been exacerbated by global warming.

The sea level rose by 3.3 millimetres per year during the twentieth century, a trend that is set to increase in the present century. In a hypothetical exercise, Winkelmann and others (2015) showed that if all proven reserves of fossil fuels were burned, the Antarctic ice sheet would melt entirely, raising sea levels by more than 50 metres and swamping coastal cities. Recently the Governor of the Bank of England alerted investors to the risks of investment in oil, since a large proportion of fossil reserves would have to remain untapped owing to the adverse impacts that their exploitation would have on climate change (*The Telegraph*, 2015).

The coasts of Latin America and the Caribbean have already suffered the consequences of climate change (Magrin and others, 2014; IPCC, 2013; ECLAC, 2011 and 2012b). Changes in meteorological tides as a result of storms, for example in the River Plate area, have caused serious floods, while variations in swell have been observed on Mexico's Pacific coast and in Argentina and Uruguay. Extreme flooding events are expected to become more frequent, affecting urban areas on the east coasts of Caribbean and South American countries, especially in Brazil (ECLAC, 2012b). Lastly, there will be an increase in coastal erosion and changes in wave and tide dynamics. All of the above will lead to adverse impacts on tourism, infrastructure and marine biodiversity, coral bleaching, reduced port infrastructure operability, less effective coastal maritime defences, and the flooding of ecosystems and aquifers (see map II.2).

Map II.2
Latin America and the Caribbean: climate-change impacts on coastal areas and coastal dynamics

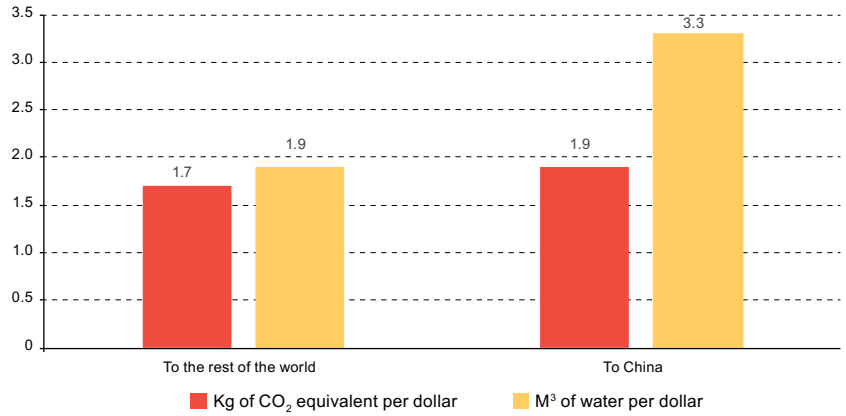


Source: G. Magrin and others, "Chapter 27. Central and South America", Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, V. R. Barros and others (eds.), Cambridge, Cambridge University Press, 2014.

If current trends are maintained, the economic losses incurred as a result of climate change (excluding the impact of coastal dynamics), could amount to upwards of 1% of GDP per year by 2100. The costs would be highest in Andean, Central American and Caribbean countries, and are in addition to those caused by extreme hydrometeorological phenomena and rising sea levels. Moreover, cases involving the loss of biodiversity or human life have irreversible consequences that cannot be quantified in economic terms. In the absence of global measures to stop climate change, the countries of the region must meet the growing costs of adaptation and mitigation. Consideration of these trends should be central to the design of policies to reduce vulnerability and, especially, to adapt to this new structural situation (ECLAC, 2010c).

In this context, China's activities have had direct consequences for the global environment (as a result of its growth) and for the countries of the Latin America and the Caribbean. By reinforcing the region's specialization in primary goods, exports to China have caused a relative increase in the dirtiest production processes. Per dollar exported, exports to China produce carbon emissions and water consumption levels that are higher than those of exports to the rest of the world (see figure II.11).

Figure II.11
Latin America and the Caribbean: environmental impact of exports to China and to the rest of the world
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official information.

2. An environmental big push is needed

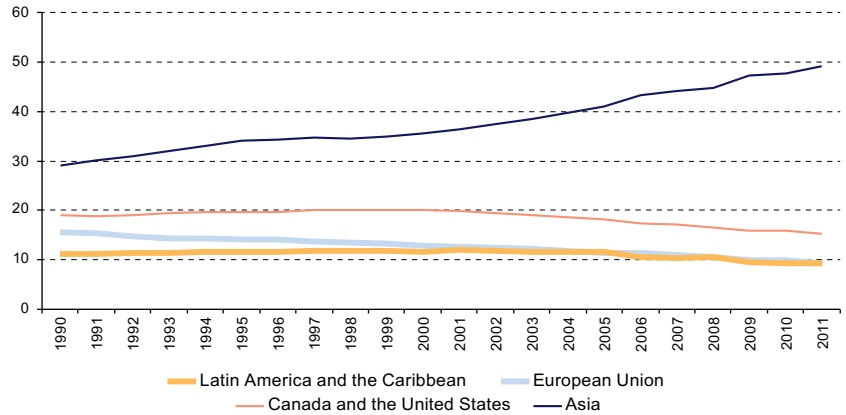
We are on the verge of a new era in environmental matters, with the emergence of a fresh consensus centred on the quality of economic growth, as reflected in the SDGs. Intertemporal exchanges are less acceptable as a response to growth and pollution patterns; more importance is afforded to the pursuit of complementarities between growth, equality and energy efficiency, with an emphasis on green growth and on mitigating environmental damage in the present rather than leaving it to a hypothetical future (in which greater wealth and more efficient technology would be available). Studies by Pindyck (2013 and 2015) and Stern (2013) confirm that the most commonly used models greatly underestimate the negative effects of pollution, that the use of these models has created a mistaken impression of the risks, and that urgent action is needed to reduce greenhouse gas emissions and the likelihood of catastrophic events associated with climate change.

The scientific consensus suggests that the world needs to move from its current emissions level of about 40 gigatons of greenhouse gases per year, equivalent to an average of 7 tons per capita, to average global emissions of 2 tons per capita by 2050. It is also estimated that total accumulated CO_2 emissions amount to 2,000 gigatons, leaving a budget of approximately 1,000 additional gigatons of greenhouse gas emissions which must not be used up if the planet is to remain below the 2 °C global warming threshold.[13] With almost 40 gigatons released into the atmosphere each year, this upper limit will have been crossed in 26 years, drastically reducing the room for adapting economies before endogenous feedback mechanisms make it more difficult to halt or reverse the process. This means cutting emissions to a maximum of 20 gigatons per year in total, and keeping concentrations of greenhouse gases in the atmosphere to below 500 parts per million (in the pre-industrial era it was 280 parts per million).

Latin America and the Caribbean is moving in the opposite direction, since its emissions have risen by 0.6% per year. Energy consumption in the region produces 4.6 tons of emissions per capita, almost equal to the figure for the European Union, with the difference that Europe is decoupling emissions from growth at an annual rate of -0.9% (see figure II.12). Achieving the level of 2 tons per capita in the Latin American and Caribbean region —considering its unequal income distribution and the fact that its highest income sectors make a disproportionate contribution to emissions— will require considerable improvement in the coverage and quality of urban public services such as mass transit, waste management and street lighting infrastructure, greater penetration and diversification of renewable energies (currently averaging 24% of the energy mix) and preservation measures in agriculture and forest cover, besides meeting the additional costs of adapting to rising sea levels, water stress and changes in agriculture, among others.

[13] Carbon budgets of 900, 1,010 and 1,300 gigatons give a 33%, 50% and 66% likelihood, respectively, of exceeding the 2 °C threshold. On current trend, these budgets will be exhausted in 23, 26 and 33 years. For more information on the carbon budget, see IPCC (2013) and Le Quéré and others (2014).

Figure II.12
Greenhouse gas emissions, by region, 1990-2011
(Percentages of world total)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Resources Institute (WRI), Climate Analysis Indicators Tool (CAIT) 2.0. ©2014. Washington, D.C. [online] http://cait2.wri.org.

The technology gap and the weakness of the region's production capacities have contributed to the negative emissions trend. Shifting to a growth pattern that combines technical progress, equality and environmental sustainability requires capacity-building to generate the innovations needed to decouple growth from emissions. Economies with scant technological capacity and human capital will not be capable of protecting the environment, but will always be inclined to sustain growth through intensive natural-resource use and cheap labour, which are the source of their international competitiveness. The simplest response to unemployment, fiscal deficits and external imbalances is to rely on static comparative advantages. An alternative is the course taken by the United States economy, for example, where environmental regulations have generated increased demand for skilled labour and green skills (Vona and others, 2015).

The international community has raised its ambitions for the achievement of climate goals. As of January 2016, 187 countries had submitted their intended nationally determined contributions (INDCs), in which they set out their national mitigation and adaptation commitments for 2030.[14] For example, the European Union undertook to reduce its emissions by at least 40% compared with 1990 levels, the United States committed to a reduction of between 26% and 28% by 2025 compared with its 2005 emissions, and China pledged to reduce its carbon intensity by between 60% and 65% by 2030 compared with the 2005 level. The United Nations Framework Convention on Climate Change (UNFCCC) estimates that on aggregate, these contributions would reduce per capita global emissions by 8% by 2025 and by 9% by 2030, compared with 1990 per capita emissions (UNFCCC, 2015). Yet, although these commitments would significantly slow the rise in emissions, they are not enough to prevent the global temperature from climbing more than 2 °C higher than the average temperature before the Industrial Revolution.

The emerging consensus on the urgency of decoupling growth from emissions is enormously significant and substantial progress and negotiations have taken place in this regard. Stronger international cooperation on goals relating to environmental protection and the decarbonization of consumption and production is a good sign. Yet the countries' achievements and commitments are not enough to reduce the probability of an environmental catastrophe to a reasonable level. Another challenge is the full inclusion of economic development as a dimension of the discussion on climate change. Developing economies must boost growth to reduce the income gap with respect to developed economies, but this can only be achieved through a transformation of the development pattern that entails a simultaneous process of building new capacities and narrowing the technology gap. There is no other way to reconcile job creation, growth and environmental protection. These new capacities will not arise spontaneously; they must be generated by policy-driven distortions —both positive (incentives) and negative (disincentives)— to the profitability structure underpinning the prevailing development pattern (see box II.1). Such efforts should focus on the technology revolution, as discussed in section II.E.

[14] To date, the United Nations Framework Convention on Climate Change has been ratified by 196 parties. Information on national commitments may be found at [online] http://cait.wri.org/indc/.

Box II.1
An environmental big push

The major issues of development theory are a forceful presence in environmental approaches. Coordination problems in this regard are further complicated by the fact that moves towards sustainability cannot occur without a package of complementary investments. Rosenstein-Rodan, a pioneer in development theory, termed these processes a "big push", in which parallel investments should be coordinated in different sectors so that all are viable and profitable. Efforts to move to a low-carbon growth path also encounter a coordination problem, since investments will not be made in new energy sources unless they are accompanied by investments in industry and consumption that will enable these new sources to operate efficiently. Neither can new transport systems be created without a simultaneous expansion of road infrastructure, support services, smart networks and cities, physical and virtual interconnections, and the capacity to operate, maintain, repair and, in some cases, produce the necessary equipment and vehicles. Consumption and production patterns will not change unless the cost and price structure (including subsidies and eco-taxes) penalizes polluting processes and goods. An investment package centred on a new sustainable development pattern may be part of the solution to the global economy's problems of weak aggregate demand. An environmental big push would be a natural counterpart of global environmental Keynesianism.

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of P. Rosenstein-Rodan, "Problems of Industrialization of Eastern and South-Eastern Europe", *The Economic Journal*, vol. 53, June-September 1943.

E. The new technology revolution

1. Technology convergence

Technological convergence is not a new phenomenon: many twentieth-century advances were driven by the accumulation of knowledge and technologies developed since the nineteenth century. The current process of convergence is much deeper, however, and has been driven by four main factors (Roco and Bainbridge, 2003). First, the principle of material unity at the nanometric scale, i.e. the ability to control aggregation from the nanoscale (atoms) to complex organic and inorganic structures and materials, and from genes and the DNA double helix structure to biological systems. This principle also applies to the fields of information, communication and knowledge, in which bits-bytes and neurons-synapses are the elemental features integrated into the construction of complex systems (artificial and human intelligence). These features are the building blocks of the scientific-technological platforms that make up the NBIC (nano-bio-info-cogno) convergence paradigm: nanoscience and nanotechnology, biotechnology and life sciences, information and communications technologies and sciences, and cognitive science and related technologies (Roco and Bainbridge, 2003).

The second element is progress in the development of transforming tools —scientific instruments, analytical methodologies and new materials— that can achieve interfaces between previously separate fields of science and technology. A third factor refers to developments in system approaches, mathematics and computational methods based on complex algorithms which, together with NBIC tools, enable a better understanding of complex systems, the processing and analysis of large quantities of data (for example, on genomes and transcriptomes, ecosystems, neuronal processes and other complex systems), including data interactions and networks, the interpretation of satellite and aerial images, and the monitoring of crops and climate change indicators. A fourth variable is the possibility of developments in human physical and intellectual capabilities.

NBIC convergence could have great potential for the development of new materials, devices and systems; nanoscale biosystems at the intersection of nanotechnology, biotechnology, and computer sciences; advanced sensory, computational and communications systems, especially the integration of components into a ubiquitous and global network; and the production of smart systems. In agriculture and the food industry, it could help to increase crop yields and reduce wastage by means of intelligent sensor networks that constantly monitor the conditions and needs of plants, animals and agricultural products.

The concept of NBIC convergence has now been extended to the convergence of knowledge, technology and society (CKTS), defined as "the escalating and transformative interaction among seemingly distinct scientific disciplines, technologies, communities and domains of human activity to achieve mutual compatibility, synergism, and integration, and through this process to create added value and branch out into emerging areas to meet shared goals". This convergence is facilitated by four interdependent platforms for convergence (Roco and others, 2014):

(i) The foundational tools provided by NBIC convergence;
(ii) The human-scale platform, characterized by the interactions between individuals (social networks), between humans and machines (facilitating agents), and between humans and the environment (for example, consumption patterns);
(iii) The Earth-scale platform, as the environment for human activities, including global natural systems (water and nitrogen cycles, atmosphere, oceans and climate), communication systems and the global economy; and
(iv) The societal-scale platform, characterized by activities and systems that link individuals and groups (collective activities, organizations and procedures).

CKTS is important for the 2030 Agenda for Sustainable Development and the SDGs. For example, the interactions between the human-scale platform (local food systems), the Earth-scale platform (water and nitrogen cycles, climate) and the NBIC scale (genetic enhancement, for example) will have significant implications for the goals relating to hunger eradication and sustainable food production (Goal 2), climate action (Goal 13) and the protection of life on land (Goal 15).

2. Bio- and nanotechnologies for sustainability

Since its beginnings in the mid-twentieth century, the biotechnology revolution has made a giant contribution to improved living standards, especially thanks to its agricultural and medicinal uses.[15] Today, its applications are more extensive and diverse: in agriculture and related spheres; in aquaculture and coastal and marine areas; in health, medicine and diagnostics; in food and nutrition; in industrial applications; in combating bioterrorism, biowarfare and biocrimes; and in addressing pollution problems.

In agriculture, biotechnological applications are commonly grouped into three categories, depending on the process applied: plant tissue culture, molecular marker-assisted selection, and genetic engineering. Plant tissue culture allows the cultivation of entire plants from a single cell or a group of cells in an artificial medium, and is useful for the mass propagation of enhanced varieties. Molecular marker-assisted selection is based on the ability to detect the presence of particular DNA sequences in specific chromosome locations, and to link these sequences to the presence of genes with desirable traits (for example, drought tolerance, disease or pathogen resistance, or a higher content of certain micronutrients). Genetic engineering is the application of techniques to control and transfer genes from one organism to another, including crosses that do not occur in nature, in order to develop new varieties of plants, animals, bacteria or other organisms.

Agricultural biotechnology aims to enhance traits such as productivity, environmental performance and nutritional values. Its first applications were in support of initiatives launched in the 1940s to increase cereal productivity. Increased maize and wheat yields prevented the famines that were predicted for developing countries in the late 1960s and early 1970s as a result of rapid population growth. More recent applications are geared towards improving productivity and developing varieties with desirable characteristics such as resistance to water and heat stress and to certain pests and diseases (better adaptation to climate change) as well as improved micronutrient contents and functional components (food and nutritional security). Initiatives in the region that have achieved progress in this area include those of the National Institute for Agricultural Technology (INTA) of Argentina (increased productivity), the Brazilian Agricultural Research Enterprise (EMBRAPA) (resistance to drought, pests and diseases), the Centre for Genetic Engineering and Biotechnology (CIGB) of Cuba (pest control in livestock), the International Centre for Tropical Agriculture (CIAT) of Colombia (improved nutritional content) and the international research centres for crop improvement of the Consultative Group on International Agricultural Research (CGIAR) (maize, wheat, rice and potatoes, for example).[16]

Biotechnological applications for addressing environmental problems include improving soil quality through nutrient recycling and sustainable biomass production, imitating nature to obtain bioactive components and enzymes from plants and microorganisms, and the substitution of petrochemical products with biochemical alternatives.

[15] The Convention on Biological Diversity defines biotechnology as "any technological application that uses biological systems, living organisms or derivatives thereof, to make or modify products or processes for specific use".
[16] Biotechnology applications are also on the rise in the development of bio-inputs for agriculture (such as biofertilizers, bio soil conditioners and bioinoculants), especially by SMEs, in countries such as Chile, Colombia, Costa Rica and Mexico.

Industrial applications are also on the increase, driven by advances in synthetic biology, which enables the selective alteration of organisms' genes so that they can perform functions that they would not be able to perform in their original or natural state (Church and Regis, 2012). For industry, this includes applications for the development of new materials and the productive use of waste, for example, the artificial design and engineering of biological systems and living organisms (microbes, bacteria, enzymes and other microorganisms) that can be used in industrial processes for the pretreatment and breakdown of materials, the development of production chain segments in the chemical industry, integration with catalytic and thermodynamic processes for biomass conversion in biorefineries and the production of bioenergy, and in wastewater treatment and the recycling and reuse of waste biomass (Church and Regis, 2012).

Nanotechnology has grown exponentially in many areas. Between 2000 and 2010, the penetration of nanotechnology in the semiconductor industry rose from zero to 60%, while it established a penetration of about 15% in the pharmaceuticals market. By 2020, nanotechnology will be present in 100% of the semiconductor industry, roughly 50% of the pharmaceutical industry and about 20% of the wood industry, from zero presence in 2010 (Roco, 2015).

Some applications in agriculture are: the use of nanosensors to detect diseases in plants, to control soil conditions, to monitor harvest growth and to detect nitrogen, agrochemicals and other pollutants; the use of nanochips to identify animals, of nanoparticles to administer vaccinations and drugs, and of bio-nanosensors to detect microorganisms, diseases and toxic substances in animals; and the development of nanoparticle coatings for pesticides and fertilizers to better control the release of compounds, reducing pollution problems.

In the food industry, uses include the development of nanosensors and nanochips to ensure the quality and safety of foods by monitoring their freshness and shelf life as well as the presence of pathogenic microorganisms, additives, drugs, heavy metals, toxins and other contaminants; the creation of smart packaging to prolong the food's shelf life and protect it from microorganisms; the creation of nanofoods with improved nutritional or organoleptic properties, and the development of nanoparticles for water purification.

As a very recent development, nanotechnology is little regulated. It is known that nanotechnologies and nanomaterials may may expose humans and the environment to new risks, involving different mechanisms of interference with the physiology of human and environmental species. This poses a regulatory challenge in such areas as the manufacture of new products and the protection of workers and the environment. The regulatory challenge is therefore to ensure that society can benefit from novel applications of nanotechnology, while maintaining a high level of protection for health, safety at work and the environment (Commission of the European Communities, 2008).

3. Universalization of the digital economy

Latin America and the Caribbean has experienced an unprecedented expansion in digital technologies, with 51% of the region's inhabitants classed as Internet users in 2014. Extra capacity for capturing, processing and transmitting data in an environment of mobility and ubiquity, together with the continued expansion of access to networks and devices, has enabled the development of a wide range of electronic applications covering all economic sectors. The cost-performance ratio of processing power, storage and broadband capacity has fallen rapidly, driving down prices and contributing to the spread of these technologies. Convergence between Internet-based devices, applications, networks and platforms has become a key factor in economic growth and competitiveness, to the point that the world economy is now a digital economy.

The main effect of digitalization is its capacity to transform all economic flows by reducing transaction costs and marginal production and distribution costs. The impact occurs through three mechanisms: the creation of digital goods and services, the addition of value by incorporating digital features into goods and services that in principle are not digital; and the development of production, exchange and consumption platforms.

The greatest change in the economy is seen in business models based on the connectivity of objects, or the Internet of Things (IoT). The application of digital technologies will exert much greater influence over the economy and society during the Sustainable Development Goal cycle, with the greatest advances envisaged in health (applications for monitoring, medication dispensers and tele-medicine) and manufacturing (robotization, advanced manufacturing and the development of next-generation machine-to-machine (M2M) services), as well as in areas such as energy, transport, natural resources and smart grids, all of which are clearly linked to the SDGs (ECLAC, 2015b).

The fact that the most significant changes are occurring in areas at the intersection of technological trajectories means that impending radical changes cannot be anticipated simply by extrapolating from the dominant trends in each trajectory. This introduces a greater degree of uncertainty into economic decision-making, which can only be reduced by pooling knowledge and analysing big data, gathered from the digital footprints that individuals and companies leave as they use networks. Beyond the discussion as to whether current technological advances will have effects akin to those of previous major technological revolutions (such as those that accompanied the development of the steam engine, the railroad, electricity and the internal combustion engine), the reality is that consumption and production patterns are changing at an unprecedented rate, which is cause for concern for a region like Latin America, for which the production of new technologies is largely exogenous.

Of particular relevance is the trajectory based on ultra-fast networks with ubiquitous and mobile connections, cloud computing, the Internet of Things and big data analytics. The Internet of Things means the capacity for objects, machines and persons to interact remotely over the Internet in any place and at any time, thanks to the convergence of digital technologies. Its implementation will involve a third stage of network development, with major changes in its scope and content. In the first stage, in the 1990s, fixed Internet connected 1 billion people through personal computers (PCs). In the second stage, in the 2000s, mobile Internet connected over 2 billion users through smartphones, with numbers set to increase significantly in the next five years. In the third stage, the Internet of Things is expected to connect 28 billion objects to the Internet by 2020, ranging from wearables, such as smart watches, to automobiles, household appliances and industrial machinery (ECLAC, 2015b).

The Internet of Things is having disruptive effects in all sectors, and is generating profound changes in economic and social processes, particularly in job creation. The boundaries between industries and markets are rapidly changing, generally as a result of intensive technological convergence. The greatest disruption is its impact on the physical world, which gives rise to smart, connected products with embedded digital content (Porter and Heppelmann, 2014). Products are increasingly comprised of three layers: physical hardware, embedded software, and cloud connectivity. The most modern production and consumption structures will comprise products with embedded intelligence (software) and cloud connectivity, such as smartphones and smart consoles, robots, 3D printers (additive manufacturing) and transport equipment such as drones and connected cars, as a step towards driverless vehicles.

Manufacturing will have a newly valuable role to play in this technology revolution, albeit not in the traditional sense; rather, its value will stem from the interaction and combination with digital services. For a long time, manufacturing was seen as an engine for development, but its importance began to be called into question by the increased prevalence of services in jobs and value added and, more recently, by the natural-resource boom in many of the region's countries. However, in recent years policymakers have been concerned with preventing or slowing the decline of manufacturing as a proportion of GDP. There are several reasons for this: 70% of research and development initiatives are undertaken by manufacturing firms, and the fastest growing services and the main technological externalities are strongly associated with manufacturing, making it difficult to be at the vanguard of advanced services without strong manufacturing activity.[17] Another factor contributing to renewed interest in the sector is the growing importance of advanced manufacturing, which is revolutionizing the manufacturing industry and enhancing its knowledge content, flexibility and competitive potential.[18] Some developed countries have actively promoted advanced manufacturing and have bolstered their industrial and technology polices through initiatives such as Industrie 4.0 (in Germany), Advanced Manufacturing (in the United States), and Made in China 2025. As policies of this type are implemented and become widespread, the shift from an Internet of consumption to an industrial Internet will gather momentum.

Equally important, albeit with less well-defined outcomes, is the reshaping of the market structure and of the production agents operating in them. On the one hand, digital technologies, owing to their capacity to externalize production processes and to transform manufacturing into externally provided services, create opportunities for smaller firms by making economies of scale less important. Broader access to cloud computing services also helps small

[17] "We have the wrong picture if we think on the one hand there's manufacturing and on the other there's services. Almost all valuable things are some bundle of manufactured goods plus services attached." (Interview with Suzanne Berger, *Washington Post*, 2013).

[18] Advanced manufacturing arises from the intensive application of knowledge to production activity, and tends to be fully merged with services, as noted by Berger in footnote 17. The growth of advanced manufacturing may shorten value chains, something that the region's diversification strategies should take into account. The greater use of knowledge makes the separation of design and manufacture inefficient and in some cases unviable. Together with rising labour costs in China, this could encourage the return of some industries to central countries.

firms to lower the capital costs of new operations, which should lead to larger numbers of firms in the marketplace, with positive impacts on job creation and competitiveness.

At the same time, network economies and economies in the management and maintenance of big data centres strengthen trends in the opposite direction by concentrating key services with one or a few global producers. The trend towards concentrated oligopoly or monopoly is evident in, for example, search engine services (Google), the production of advanced hardware and software (Apple), social networks (Facebook) and cloud computing services (Amazon, Microsoft). Although it is not clear which of these forces will prevail, history shows that in the long run, competition prevents the establishment and maintenance of oligopolies concentrated among the same operators, while scale, scope and network economies prevent the establishment of totally fragmented markets in perfect competition. The dichotomy between small and medium-sized enterprises (SMEs) and large corporations, with its corresponding effects on job creation, will continue, but its modalities will change in directions that the region's countries would do well to monitor.

Lastly, new technologies are also redefining the competitive advantages of countries and territories. Advances in robotics herald significant reductions in production costs and will place additional pressures on labour markets. Recent experiences with friendly robots, which can interact and work with humans, suggest that devices may be developed that are capable of learning medium-complexity tasks at operating costs of less than US$ 1.50 per hour. Even if these expectations are slow to materialize, the pressure on the labour supply will be significant and will shift the balance between capital and labour in favour of the former. The geographical location of production will also be affected. In that sense, the evolution and expected outcomes of advanced manufacturing should be closely watched in view of the possibility that manufacturing activities will be relocated to their former production centres, especially in the United States and Western Europe. This could have a severe impact on jobs, with redistributive implications that could undermine some of the SDGs (particularly Goal 8 referring to full and productive employment).

Countries' competitiveness and growth will depend largely on their integration into global digital infrastructure. This transition makes it necessary to develop and improve the infrastructure of the digital ecosystem, build up human capital and enhance the business environment. Consideration must also be given to the definition of global standards, the regulation of data flows, intellectual property rights and security and privacy, all aspects that are being discussed intensively in the advanced countries and form part of the megaregional negotiations described above. These issues should be addressed from a regional perspective. As discussed in chapter VI, a common digital bloc or market could significantly support regional efforts to expand the digital economy (ECLAC, 2015b).

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Chapter III

The international economic environment has been deteriorating

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The international economic environment has been deteriorating

The world economic situation will be less favourable over the coming years, with global GDP growth rates below the averages for previous decades. This is due to the weakening of the engines of growth (investment, productivity and, more recently, trade), mainly in the developed countries. Although emerging economies, particularly China, have managed to sustain high growth rates, they have not been able to pick up the baton to become the leaders of global growth.

In this context, a number of factors have been depressing aggregate demand. The first is the rise in inequality, now at its highest in over three decades in some regions, especially in the developed world. Inequality increased most in the period of stability known as the "great moderation", which lasted from the 1980s until 2007, before the global financial crisis broke out. Second, countries have pre-emptively adopted adjustment policies, partly in response to their current account imbalances and, in some cases, to high levels of external debt, and these have been depressing demand and international trade. Furthermore, the elasticity of trade relative to global GDP growth has declined. Lastly, the financial sector and global liquidity have grown explosively since the 1990s, far outstripping the rise in real activity. Global liquidity is heavily concentrated in large and complex financial institutions (LCFIs), which have extended their reach to markets traditionally associated with real activity in the economy.[1] As a result, uncertainty in financial, currency and commodity markets has become more severe, with negative spillover effects on investment.

The trend towards greater inequality is associated with the operating logic of the international monetary system, which tends to place most of the burden of international settlement adjustments on indebted deficit countries, typically on the periphery. These adjustments are usually achieved through public spending restraint (with social spending often bearing the brunt) and wage moderation or outright contraction.

A. The global economy has weakened

Global economic growth has been tending to slow for over two decades now, with the real trend GDP growth rate[2] dropping from 5.4% in 1961-1969 to 3.8% in 1971-1979 and 2.9% in 1990-1999, which was also roughly the rate from 2000 to 2014 (see figure III.1). This tendency reflects secular decline in the most developed economies, whose growth rates dropped between 1961-1969 and 2000-2014.[3] Conversely, developing regions have grown

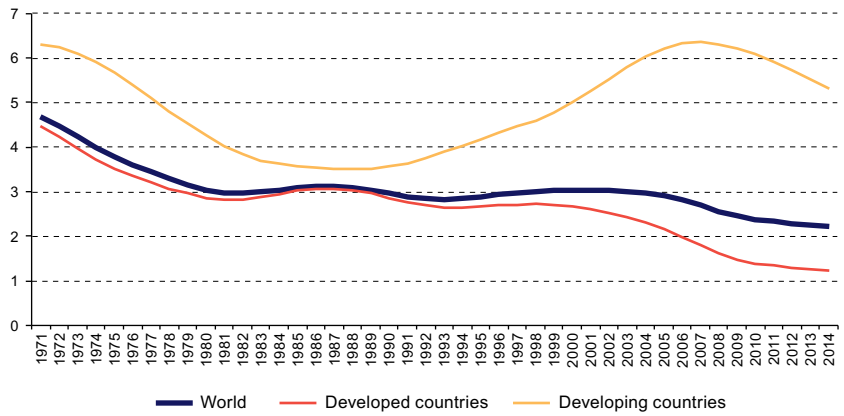
1 In its report on Wall Street bank involvement with physical commodities, the Permanent Subcommittee on Investigations (PSI) of the United States Senate has stated that until recently Morgan Stanley had over 55 million barrels of oil storage capacity, 100 tankers and 6,000 miles of pipeline (PSI, 2014). JP Morgan held copper stocks worth US$ 2.7 billion at one point (213,000 metric tons, or almost 60% of the physical copper available at the London Metal Exchange). In 2012, Goldman owned 1.5 million metric tons of aluminium valued at US$ 3 billion (25% of the annual consumption of the United States).

2 Trends in global growth rates for GDP and gross fixed capital formation were obtained using the Hodrick-Prescott filter.

3 This finding is not significantly affected if the period taken does not include the 2008-2009 financial crisis or the 2009-2013 eurozone crisis.

by more than the average and more than the developed countries. Growth quickened between 1961-1969 and 2000-2014 in all developing regions except the Middle East and North Africa and Latin America and the Caribbean. The most substantial improvements were in East Asia and the Pacific and in South Asia, with growth rising between 1961-1999 and 2000-2014 from 3.8% to 8.6% in the former and from 4.1% to 6.6% in the latter. In the Middle East and North Africa, and in Latin America and the Caribbean, rates dropped from 7.9% to 3.5% and from 6.1% to 3.2%, respectively.

Figure III.1
Trend gross domestic product growth rates, 1971-2014
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Bank, World Development Indicators, 2015.

B. Low investment: slow productivity growth

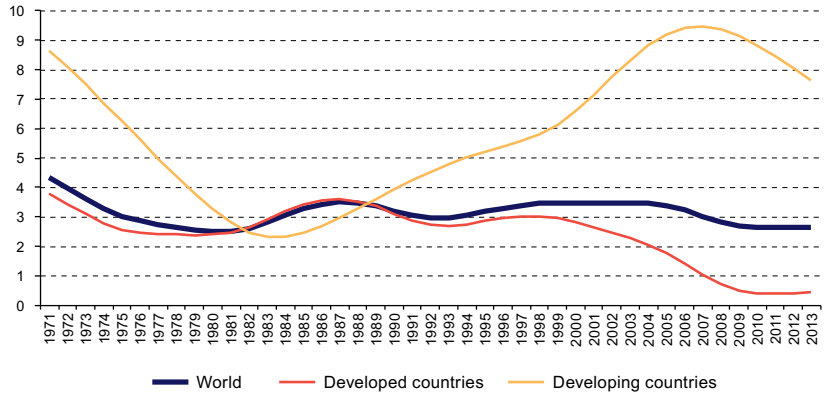
The trend towards slowdown in the world economy has been associated, first, with a decline in the rate of gross fixed capital formation (GFCF) growth.[4] The global investment growth rate dropped from 4.0% in the early 1970s to 3.2% in the 1980s and 1990s. It picked up only temporarily in the early 2000s and has been below 3% since the global financial crisis (see figure III.2). This dynamic has been driven by the trend in the more developed countries, since the rate has been rising in developing economies. Investment fluctuations closely track those of GDP, with a correlation coefficient between the rates of change in the two series of over 0.80 in 1971-2014. Furthermore, the concordance between investment and GDP over the cycle is high, as they tend to be in the same phase for over 75% of the time.

These shifts in the investment dynamic have been due to several factors. First, the geographical distribution of investment has been changing: GFCF has been more dynamic in developing than developed economies, particularly those of East Asia and the Pacific, led by China. Between 1971-1979 and 2000-2014, the developed economies' investment share dropped from 86% to 47%. Conversely, China's share more than quadrupled from 6% in 1980-1989 to 27% in 2000-2014.[5] This has been driven partly by the investment-focused economic policies of some emerging economies and the shift in international specialization, which in turn reflects the offshoring of production from developed to developing economies.

[4] Net fixed capital formation shows a similar trend. See, for example, Buiter and others (2014). The decline in the growth rate is attributed to the behaviour of the private sector. The evidence available since the 1990s is that public investment, as well as representing a small share of total investment, held fairly steady in most of the developed countries at least up until the global financial crisis or the eurozone crisis (2009-2013).

[5] China adopted an investment-led growth policy in 2008 as a countercyclical measure to counteract the impact of the global financial crisis, which may go some way towards explaining its rising share of the global total.

Figure III.2
Trend gross fixed capital formation growth rates, 1971-2013
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Bank, World Development Indicators, 2015.

Another factor has been a shift in the sectoral composition of production in the most advanced countries. The most investment-intensive sectors, such as manufacturing and mining, have lost share to the services sector, which is more labour-intensive. Services growth is strongly linked to the expansion of the financial sector (responsible for more than a quarter of this growth), which does not promote investment. Although the expansion of finance has been pronounced essential to capital formation (Levine, 2005), its growth has actually been due to the expansion of the securities market (stock market capitalization and securitization) and lending to households. Greenwood and Scharfstein (2013) argue that the substantial growth of financial assets in the past three decades (their share of United States GDP rose from 4.9% in 1980 to 8.3% in 2006) was not reflected in higher investment.

Financial sector growth has become a source of instability with medium- and long-run consequences for investment, as shown by the growing number of financial crises in the developed would since the 1970s and their negative impact on the path of GFCF.[6] According to McKinsey (2012), between 1973 and 2005 there were 41 crisis episodes in which GDP and investment shrank by over 10%. A detailed analysis by country shows that there were 10, 12 and 13 crisis episodes, respectively, in the 1970s, 1980s and 1990s.[7] To these must be added the global financial crisis (2008-2009) and the euro crisis (2009-2013), in which the worst-affected GDP component was investment (ECLAC, 2015). These factors have exacerbated uncertainty and compromised investment.

A breakdown of the GDP of developed countries or country groupings shows investment to have been the component hardest hit by the latest crisis. In the European Union, the GDP growth rate between 2007 and 2011 was negative at 0.6%, while private and public investment contracted by 14.5% and 4.2%, respectively. Meanwhile, the other components of aggregate demand, private and public consumption, had growth rates of 0.2% and 5.0%, respectively. In the United States and Japan, investment and GDP contracted by 3.4% and 3.8%, respectively,[8] while GDP expanded a mere 1% in the United States and contracted by 2.6% in Japan.

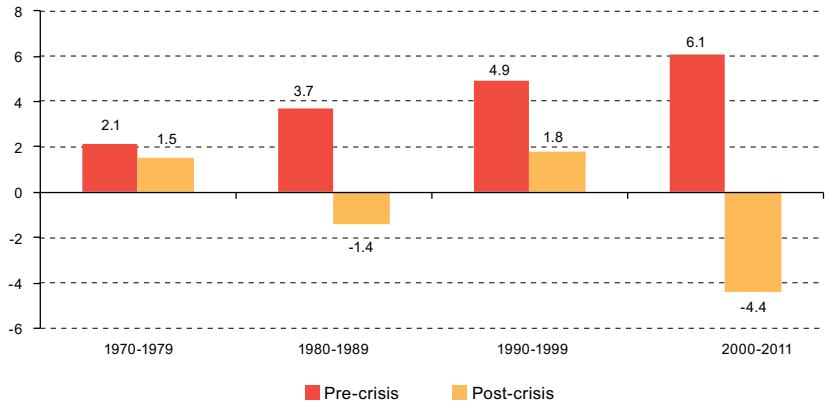
6 Increasing financial openness and financial deregulation have played a fundamental role. The Bretton Woods period, which coincided with the so-called "golden age of capitalism", was a time when capital mobility as measured by the Obstfeld-Taylor index was low (Obstfeld and Taylor, 2004) and financial and banking crises were absent (Reinhart and Rogoff, 2009).

7 The episodes include Australia (1982-1983 and 1990-1991), Austria (1974-1975), Belgium (1980-1981), Canada (1981-1982 and 1990- 991), the Czech Republic (1996-1998), Denmark (1973-1975, 1979-1981 and 1992-1993), Finland (1989-1993 and 1992-1993), France (1992-1993), Greece (1973-1974, 1980-1983 and 1986-1987), Iceland (1982-1983 and 1990-1992), Ireland (1982-1983), Italy (1992-1993), Japan (1997-1999), Luxembourg (1980-1981), Mexico (1994-1995), the Netherlands (1974-1975 and 1980-1982), New Zealand (1973-1978 and 1990-1991), Norway (1987-1988), Portugal (1974-1975, 1982-1984 and 1992-1993), the Republic of Korea (1997-1998), Spain (1992-1993), Sweden (1980-1981 and 1990-1993), Switzerland (1990-1993), Turkey (1998-2001), the United Kingdom (1973-1975, 1979-1981 and 1990-1991) and the United States (1973-1975).

8 Estimates for the costs of crises in terms of lost output are based on solid assumptions. In the case of the United States, the official estimate by the Federal Reserve puts this at between US$ 6 billion and US$ 14 billion. These calculations depend on estimates of potential GDP and its evolution. In this case, the period from 2008 to 2023 is taken, the latter being the year GDP returns to trend after the global financial crisis (Luttrell and others, 2013).

Figure III.3 shows the average rate of investment growth in the five years prior and subsequent to four financial crises. In all cases, the GFCF growth rate was lower after the crisis,[9] which is consistent with the fact that investment cycles in the great majority of regions have been shorter (i.e. more volatile) than GDP cycles. Financial crises and investment volatility increase the perception of uncertainty (Baker, Bloom and Davis, 2015), which complicates investment decision-making.

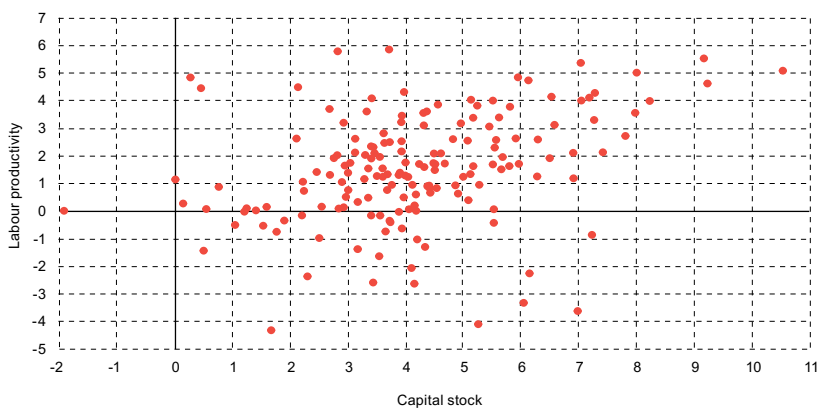
Figure III.3
Developed countries: gross fixed capital formation growth rates in the five years before and after financial crises
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of McKinsey, *Investing in Growth: Europe's next challenge*, McKinsey Global Institute (MGI), 2012, and World Bank, World Development Indicators, 2015.

The downward trend in investment and capital formation has affected the rate of productivity growth, since the most modern technological innovations are embedded in the most recent capital stock.[10] Figure III.4 shows a positive and statistically significant correlation (the correlation coefficient is 0.34) between the two variables for 90 countries in 1960-2011.[11]

Figure III.4
World (90 countries): average annual rates of change in labour productivity and capital stock, 1960-2011
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of R.C. Feenstra, R. Inklaar and M.P. Timmer, "The Next Generation of the Penn World Table", 2013 [online] www.ggdc.net/pwt.

9 The decline in these economies' long-run trend growth does not date from the global financial crisis (2007-2009) or from the euro crisis (2009-2013). This contradicts a report by the International Monetary Fund (IMF, 2015a) arguing that the global financial crisis brought about a structural shift in the long-run growth trend of the most developed economies.

10 See Kaldor (1957), Furtado (1971), Nurske (1953) and Bresser-Pereira, Oreiro and Marconi (2014).

11 The evidence is that the rate of growth in capital stock fell between 1996-2007 and 2008-2014 in the countries of the Organization for Economic Cooperation and Development (OECD), the United States, Japan and the eurozone.

Matching the declining trend of economic growth and investment, the productivity growth rate has also tended to fall or stagnate, especially in the developed world. In the United States, it increased in the 1990s (from 1.4% to 2.6% on average between 1990-1995 and 1996-2000), only to drop below 1% in the first half of the 2000s and then hover at around 1% between 2010 and 2015. The eurozone and the other industrialized economies experienced a clear decline in productivity growth in the 1990s (see table III.1). Manufacturing sector productivity growth has also dropped in the most developed economies, with the annual rate of increase in output per worker falling from 4.2% to 3.7% between 2001-2006 and 2010-2015 across a set of developed economies (WEF, 2014).

Table III.1
Average annual labour productivity growth, 1990-2015
(Percentages)

	1990-1995	1996-2000	2001-2006	2007-2009	2010-2015
			Developed economies		
United States	1.4	2.6	1.7	0.6	1.2
Eurozone	2.0	1.2	0.9	-0.7	0.8
Other industrialized economies	3.0	2.8	1.9	0.6	1.7
			Developing economies		
Developing economies	0.6	1.6	4.2	4.4	3.7
China	7.8	3.5	11.0	10.3	7.9
India	2.3	3.6	3.2	9.3	4.6
Developing Asia (excluding China and India)	4.7	0.3	3.1	1.6	3.5
Latin America	0.8	0.9	0.5	1.1	0.7
Middle East and North Africa	-0.9	1.0	1.3	0.8	0.3
Sub-Saharan Africa	-1.7	0.8	3.7	3.2	2.4
Russian Federation, Central Asia and South-East Europe	-5.6	1.7	5.6	1.4	1.7

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of The Conference Board, "Productivity Brief 2015. Global productivity growth stuck in the slow lane with no signs of recovery in sight", 2015, and "The Conference Board Total Economy Database. Summary Tables", 2015.

Productivity rose in the developing economies between the 1990s and the 2000s, largely because of the performance of China and India, where it more than doubled between the second half of the 1990s and the 2000s. However, productivity stagnated in the developing countries of Asia (excluding China and India), the Middle East and North Africa, and Latin America.

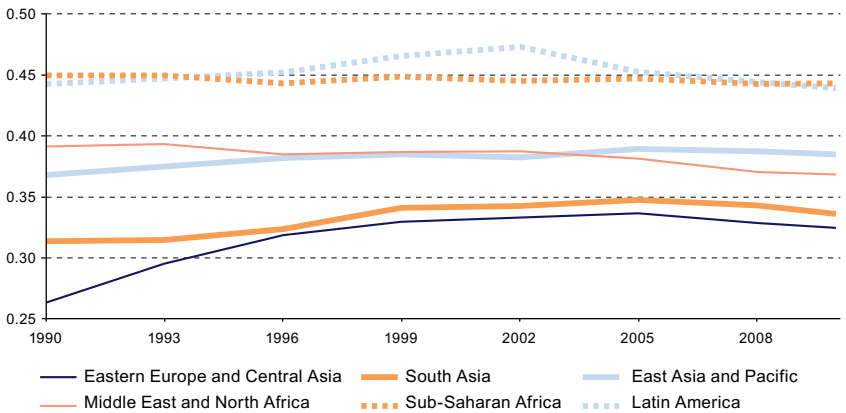
C. Demand will not grow unless inequality is reduced

The behaviour of aggregate demand is crucial to investment decisions because of its impact on expected returns. Among the factors doing most to weaken demand have been the rise in inequality and the growing weight of the financial sector. In the developed economies and some developing ones, inequality is at its highest in three decades (OECD, 2011 and 2015a), as indicated by the rise in the Gini coefficient and the ratio between average incomes in the richest and poorest deciles. In the countries of the Organization for Economic Cooperation and Development (OECD), the average income was seven times as great in the richest decile as in the poorest in 1985, but 10 times as great in 2013. A third indicator of the rise in inequality is the wage share of GDP, which dropped from 63% in 1960-1980 to 56% in 2012 in the most advanced economies. The rise in inequality has been even starker in wealth terms. According to Credit Suisse (2015), the richest 1% of the population of Western Europe owns 31% of all wealth, while the poorest 40% owns just 1%.

The greatest increase in inequality occurred in the 1980s and 1990s, a period characterized in the developed world by a simultaneous decline in the volatility of inflation and of GDP growth. The great moderation ended when Lehman Brothers collapsed in September 2008, marking the start of the global financial crisis. A similar trend can be seen in developing countries, where inequality levels are much higher than in developed ones, with the average Gini coefficient rising from 0.38 to 0.40 in developing regions between 1990 and the late 2000s. Figure III.5 shows the change in the average index value by region between 1990 and 2010. Inequality increased

in Eastern Europe and Central Asia, South Asia, and East Asia and the Pacific, and rose by 24% in China and 16% in India. Conversely, inequality declined in Sub-Saharan Africa and in the Middle East and North Africa, while in Latin America and the Caribbean it rose in the 1990s and fell markedly in the 2000s. Nonetheless, Latin America and the Caribbean and Sub-Saharan Africa remain the world's most unequal regions, with Gini coefficients of about 0.44 for per capita consumption distribution. All other regions have a coefficient of less than 0.40 (East Asia and the Pacific, 0.38; Eastern Europe and Central Asia, 0.34; the Middle East and North Africa, 0.36; South Asia, 0.35) (Amarante, 2015; Alvaredo and Gasparini, 2015).

Figure III.5
Gini coefficient by region, simple averages, 1990-2010



Source: F. Alvaredo and L. Gasparini, "Recent trends in inequality and poverty in developing countries", *Handbook of Income Distribution*, A.B. Atkinson and F. Bourguignon (eds.), London, Elsevier, 2015, vol. 2.

The global rise in income inequality has been associated with trade and financial liberalization, skill-biased technological change and the increasing share of the financial sector in the economy. The globalization of international trade via the reallocation of production chain components and competition from low-cost producers has opened up investment and employment options by reducing dependence on local investment and employment. This has weakened wage bargaining power and the scope of labour negotiations and collective agreements. The increase in privatizations and the eroded public sector role in sectors such as energy, transport and communications have also contributed. According to OECD (2012), globalization was responsible for 10% of the decline in the wage share between 1990 and 2007, and privatization for about 33% of the drop in the labour share in these sectors.

In parallel with this, the productivity gains associated with technical progress were largely confined to the highly skilled and educated strata, which raised the skills premium and widened inequality between workers. The inequality resulting from the rise in returns on capital relative to wages has also been a factor in higher global inequality (Vieira, 2012), as has the unequal distribution of credit and wealth at the household level (Denk and Cournède, 2015; Denk and Casenave-Lacroutz, 2015; OECD, 2015a). Lastly, the increased weight of the financial sector has impacted inequality, as its employees are concentrated towards the top of the pay pyramid and their average income is much higher than that of employees in other sectors with similar gender, age and educational characteristics.[12]

Tax and social protection systems have not corrected these trends (Vieira, 2012), particularly in Latin America and the Caribbean. While the OECD countries reduce the Gini coefficient for household income by an average of 35% through taxes and transfers, the reduction in Latin America is just 6% (Amarante, 2015).

Inequality results in a lower consumption capacity that acts as a drag on aggregate demand unless offset by higher investment. Analysing the impact of functional income distribution on demand, Stockhammer and Onaran (2013) show that a uniform global reduction of 1 percentage point in the wage share translates into a decline of 0.36 percentage points in global GDP. The wage share of GDP has diminished over the past three decades in most

[12] According to the International Labour Organization (ILO, 2015, p. 94), the median pay of a FTSE-100 chief executive was 11 and 116 times that of a median worker in the United Kingdom in 1980 and 2008, respectively. In the United States, the median pay of an S&P500 chief executive was 26 and 240 times that of a median worker in the country in 1970 and 2008, respectively.

developed countries (see table III.2). The wage share of GDP in the developed countries of Europe, North America and Asia was about 61% in 1980-1985 but just 55% in 2010-2015. Data for developing countries show a similar trend.[13]

In Latin America and the Caribbean, just a third of the profits share of GDP translates into investment, by contrast with a two thirds share in Asia. Latin America and the Caribbean is not only the most unequal region on the planet (leaving aside Sub-Saharan Africa), but the one whose elite is most reluctant to translate its position of privilege into the investment of profits (Palma, 2014).

Table III.2
Total wages, 1980-2015[a]
(Percentages of GDP)

		Average 1980-1989	Average 1990-1999	Average 2000-2007	Average 2008-2009	Average 2010-2015
European Union (15 countries)	Austria	61.2	58.8	54.5	54.6	55.4
	Belgium	63.0	61.5	59.7	60.5	60.5
	Denmark	58.9	56.1	54.9	58.0	56.7
	Finland	62.5	58.2	52.9	55.3	56.5
	France	62.5	57.0	55.8	56.5	57.5
	Germany	...	59.1	56.8	55.7	56.4
	Greece	55.3	49.8	51.1	52.6	51.0
	Ireland	62.7	55.3	46.7	54.0	49.7
	Italy	61.1	55.3	51.7	53.5	53.5
	Luxembourg	54.3	50.6	51.8	54.1	53.1
	Netherlands	65.7	62.3	58.5	58.5	59.7
	Portugal	60.8	59.2	58.9	57.1	54.2
	Spain	62.3	60.5	56.8	58.3	55.6
	Sweden	51.6	49.1	48.1	49.2	49.8
	United Kingdom	60.3	58.3	59.5	60.3	59.2
Other European countries	Iceland	...	...	64.1	57.8	58.6
	Norway	53.9	51.4	46.1	46.9	47.8
	Switzerland	...	66.1	65.2	64.2	65.5
North America	Canada	58.4	58.3	55.3	56.0	55.8
	United States	61.0	60.4	59.8	58.5	56.8
Asia and Oceania	Australia	61.0	58.3	55.5	53.5	53.3
	Japan	70.1	65.8	61.3	59.8	59.4
	New Zealand	...	46.6	45.5	49.0	46.1
	Republic of Korea[b]	...	69.7	65.1	62.9	59.9
Developing countries	China[c]	...	52.7	51.3	48.5	47.3
	Mexico	...	40.7	41.0	39.1	36.9

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of European Commission, The Annual Macroeconomic Database (AMECO), 2015 [online] http://ec.europa.eu/economy_finance/db_indicators/ameco/index_en.htm.
[a] Average for each period.
[b] Latest year available: 2012.
[c] Latest year available: 2011.

D. International trade has been slowing

By contrast with the downward trend in output and investment growth since the 1970s, trade was highly dynamic until the start of the global financial crisis.[14] Since then, it has also shown signs of slowing, with the average rate of global trade growth dropping from 7.6% in 1992-1995 to 4.8% in 2001-2015. The trade slowdown has affected the advanced economies in particular, and the developing world to a lesser degree. Growth in exports from the

[13] Real compensation is used as a proxy for the real wage in all the analyses. The econometric estimates were carried out using Scilab 5.4.1 and Grocer. See Dubois and Michaux (2011).
[14] On the basis of data from 1950 to 2012, Ocampo (2015) divides the evolution of trade into four phases: 1950-1974, 1974-1986, 1986-2007 and 2007-2012. Trade grew most strongly in the second and third phases (7.0%) and most weakly in the fourth (2.6%).

industrialized economies has dropped on average from between 6% and 7% in the 1990s to about 2% in the 2000s. Most of the advanced economies have been affected to a similar extent by the trade slowdown. Conversely, the extent of the slowdown has been heterogeneous across the developing economies, with Latin America and the Caribbean and Africa and the Middle East being worse affected than Asia and Eastern Europe and Central Europe (see table III.3).

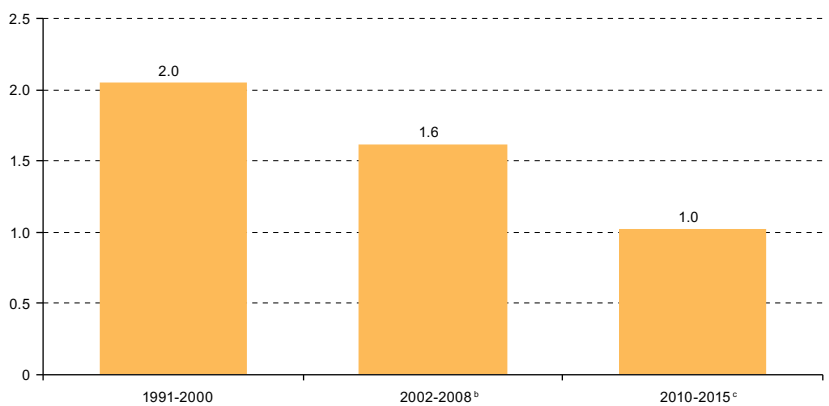
Table III.3
Export volume growth, worldwide and by region, 1990-2015 [a]
(Annual percentages)

	1992-1995	1996-2000	2001-2007	2008-2011	1992-2000	2001-2015
World trade	**7.4**	**8.1**	**5.7**	**2.8**	**7.8**	**4.1**
World exports	**7.3**	**8.1**	**5.6**	**3.1**	**7.8**	**4.1**
Industrialized economies	**6.2**	**7.6**	**3.6**	**0.8**	**7.0**	**2.3**
United States	8.6	8.2	3.7	3.8	8.3	3.4
Japan	2.7	5.5	6.5	1.3	4.2	3.6
Eurozone	6.0	8.3	4.4	0.3	7.3	2.5
Other industrialized economies	-	-	0.7	0.0	-	0.9
Emerging economies	**9.7**	**9.2**	**9.0**	**6.0**	**9.4**	**6.8**
Asia	12.4	10.5	12.1	8.1	11.4	8.9
Eastern and Central Europe	11.3	10.1	11.7	4.4	10.6	7.9
Latin America	11.0	10.2	4.7	2.4	10.5	4.2
Africa and the Middle East	3.5	4.7	2.0	2.0	4.2	1.8

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Netherlands Bureau of Economic Policy Analysis (CPB), *World Trade Monitor*, 2015.
[a] The 2015 data are to September.

The trade slowdown has been due to both cyclical factors and structural causes, as indicated by the decline in the long-run elasticity of global exports to global output. The long-run elasticity of the index of export volumes relative to industrial production dropped from 2.0 in 1991-2000 to 1.6 in 2002-2008 and 1.0 in 2010-2015 (see figure III.6). The same thing happened at the regional level: the elasticity of Latin American exports relative to income in the advanced economies and the emerging economies of Asia also dropped between 1991 and 2015. When elasticity is broken down by product group, the decline is found to reflect the situation of manufactures, whose elasticity declined from 2.6 to 0.8 between 1986-2000 and 2001-2013.

Figure III.6
Long-run elasticity of the export volume index relative to global industrial production, [a] **1991-2015**



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Netherlands Bureau of Economic Policy Analysis (CPB), *World Trade Monitor*, 2015; C. Constantinescu, A. Matto and M. Ruta, "The global trade slowdown: Cyclical or structural?", *IMF Working Paper*, No. WP/15/6, Washington, D.C., International Monetary Fund (IMF), 2015; Centre for Economic Policy Research (CEPR), *The Global Trade Slowdown: A New Normal?*, London, CEPR Press, 2015; and World Bank, World Development Indicators, 2015.
[a] The elasticities of export volumes relative to the industrial production index weighted by production were obtained using the Johansen cointegration method, these being integrated series of the same order. The data source was the quarterly series of Netherlands Bureau of Economic Policy Analysis (CPB), *World Trade Monitor* (including the September 2015 figure). The optimal numbers of lags in the models were chosen using the Akaike and Schwarz information criteria.
[b] Data to the first quarter.
[c] Data to the third quarter.

The lower income elasticity of trade reflects three factors. The first is the shift in the composition of aggregate demand and the drivers of global growth. Because the decline in the global growth rate has been due to the components of aggregate demand with a larger trade content, such as investment, the drop in the growth rate has had a proportionally greater negative effect on trade (CEPR, 2015; Bussiere and others, 2013; Anderton and Tewolde, 2011).

Secondly, the worldwide growth of value chains has lost momentum. The ratio between the external value added and domestic value added of global exports rose by 8.4 percentage points between 1995 and 2005 and just 2.5 percentage points between 2005 and 2012 (Constantinescu, Matto and Ruta, 2015). An alternative measure, the growth of intermediate goods trade, has also stagnated. This partly reflects the fact that the fragmentation of the production between countries has been encountering limits, something also confirmed in the debate about the importance of reshoring.

Lastly, the international system embodies a recessionary tendency, especially in the eurozone, because of the predominant adjustment mechanism used when balance-of-payments disequilibria arise. The surplus countries of the eurozone have been reluctant to adopt expansionary fiscal policies that could boost their imports and improve wages for fear of inflation, labour market overheating, rising public debt or a weakening of their position in external markets. This rationale imprints a recessionary bias on the dynamic of the international economy, since the entire weight of adjustment falls on the deficit countries, which thus tend to experience slower growth or contractions.

E. A financial sector that is decoupled from the real economy

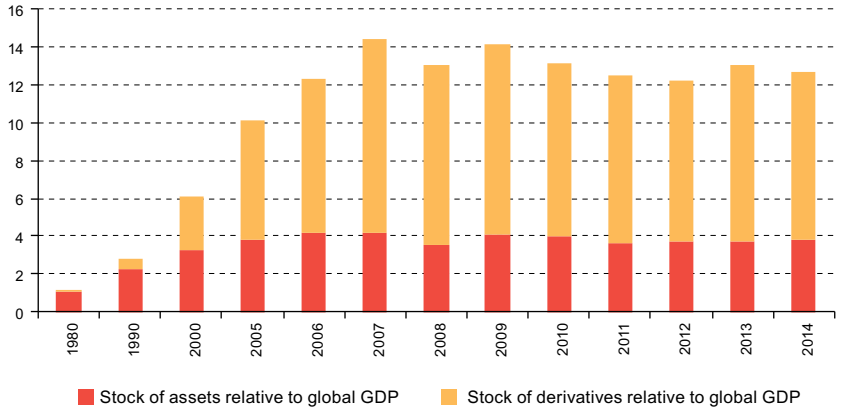
Besides transformations in the real sector, the international context is characterized by a financial sector whose transaction volumes are far larger than those of the real economy, led by large and complex financial institutions (LCFIs) that tend to be highly interconnected and concentrated and have a liability structure skewed towards procyclical leverage. In addition, this sector has a large segment that is little regulated, the shadow banking system, which increases uncertainty. The growing presence and involvement of the financial sector in different spheres of economic activity has complicated the relationship between real and financial activity. Part of the behaviour of activities and variables that used to be thought of as determined by real factors is also now due to financial factors, and in some circumstances the financial sphere tends to predominate over the real sphere. This is part of a process of financialization, defined as a situation where financial markets, financial institutions and financial elites are increasingly important in the workings of economies and their institutions of governance, both nationally and internationally (Epstein, 2006).

The financial sector has expanded in an unprecedented manner in the past three decades. Between 1980 and 2014, worldwide assets (not including derivatives) expanded from US$ 12 trillion to US$ 294 trillion (1.1 and 3.7 times global GDP, respectively). In the same period, the value of derivatives contracts rose from US$ 1 trillion to US$692 trillion, thus coming to represent about 70% of the global stock of financial assets. This has been reflected in increased financial deepening. Meanwhile, the value of derivatives, having been roughly equal to global GDP in 1980, came to represent more than 10 times this by the second half of the 2000s (see figure III.7).[15]

Governments responded to the 2008 and 2009 crisis with expansionary fiscal and monetary policies that prevented the crisis from worsening or being yet further prolonged. As fiscal space diminished (because public debt was increasing as a share of GDP or, in the United States, because of the political problems that increased spending generated), the predominant course of action was an expansionary monetary policy in the form of quantitative easing (QE), adopted first by the United States and Japan and latterly by the European Union. Monetary expansion has helped keep long-term interest rates very low. Despite this strong monetary growth, however, aggregate demand has not picked up significantly, confirming the pattern of plentiful liquidity and low effective demand.

[15] In the United States, the share of total national lending accounted for by financial institutions linked to the capital market rose from 4% in 1975 to 41% in 2008, while the total credit share of commercial banks fell from 56% to 19%. The share of total financial system assets accounted for by capital market financial institutions dropped substantially after the global financial crisis (2008-2009). There has been a recovery in the role of capital market institutions as providers of credit since the last quarter of 2012, however.

Figure III.7
Global financial deepening, 1980-2014



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of McKinsey, *Investing in Growth: Europe's next challenge*, McKinsey Global Institute (MGI), 2012; McKinsey, *Mapping Global Capital Markets*, McKinsey Global Institute (MGI), 2011; Deutsche Bank, *The Random Walk. Mapping the World's Financial Markets 2014*, 2015; Bank for International Settlements (BIS), "Statistical Release. OTC derivatives", 2015; and World Bank, World Development Indicators, 2015.

Financial sector growth has been led by large groups, particularly LCFIs, which operate in different countries and dominate the global financial system.[16] They have grown substantially in the last decade, account for the bulk of financial intermediation between countries and bring together services and institutions such as banking, insurance, securities and asset management. The world's 100 largest financial institutions have a portfolio of US$ 87 trillion in assets and are headquartered in 22 countries. Over half these institutions, which own almost 80% of total assets, are in the following eight countries, listed in order of the number of institutions and volume of assets: China, the United States, Japan, France, the United Kingdom, Germany, Spain and Canada (see annex III.A1).[17] Derivatives are essentially concentrated in United States financial institutions.

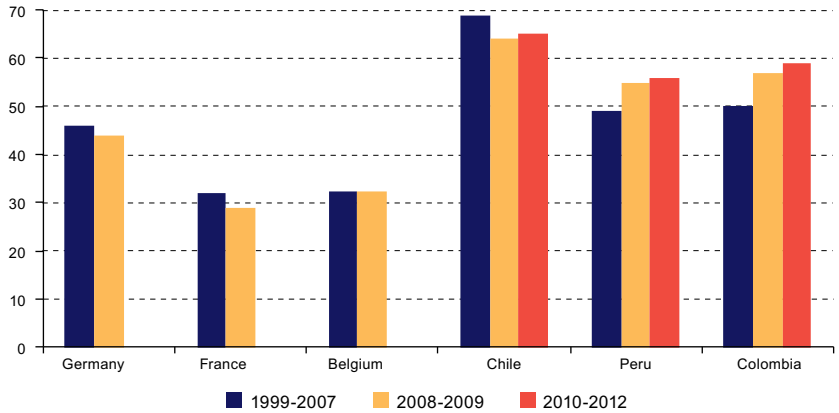
Institutions of this type are highly interconnected, with the result that the financial system has been becoming less dependent on deposits but more dependent on lending between the institutions themselves. One of the most important reflections of this is the increasingly close relationship between the banking system and the capital market. Market-based financial institutions have been playing more of a leading role by comparison with banking entities. Greater interconnectivity means that an institution's financial stability comes to depend on the stability of other institutions. This being so, the handling of risk as seen from the perspective of an individual financial institution has system-wide consequences, thus representing a risk for the financial system as a whole. In the developed countries, financing from the rest of the financial system represents 60% of the total; in France and Belgium, it represents about 70%. The interconnectedness of the Latin American financial system is much lower by comparison (see figure III.8).

This shift in the financial system has been reinforced by deregulation, which has driven growth in the shadow financial sector at the national and global levels. This includes financial intermediaries operating outside the formal system and conducting credit intermediation operations, such as leveraging and maturity transformation. The volume of operations in the global shadow financial sector has grown since the crisis, rising from between US$ 60 trillion and US$ 67 trillion or so in 2007 to US$ 71 trillion in 2012 (see table III.4) so that, according to the Financial Stability Board (FSB, 2014a), it now accounts for 24.0% and 46.7% of total assets and banking system assets worldwide, respectively.

16 According to the International Monetary Fund (IMF, 2010), these institutions operate with a worldwide network of offices and subsidiaries, with centralized financing that is distributed within the financial group as part of a global strategic plan.

17 In 2012, institutions considered too big to fail by the United States Federal Reserve included Bank of America, Bank of China, Bank of New York Mellon, Barclays, BBVA, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, Groupe Banque Populaire, CdE, Groupe Crédit Agricole, HSBC, ING Bank, JPMorgan Chase, Mitsubishi UFJ FG, Mizuho FG, Morgan Stanley, Nordea, Royal Bank of Scotland, Santander, Société Générale, Standard Chartered, State Street, Sumitomo Mitsui FG, UBS, Unicredit Group and Wells Fargo. The classification methodology is specified in Basel Committee on Banking Supervision (2011).

Figure III.8
Non-interbank financing in the banking sector, 1999-2012
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official figures.

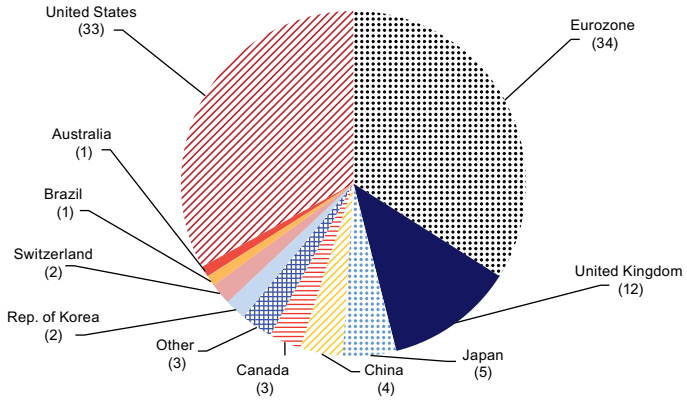
Table III.4
Estimates of shadow banking system volumes, 2007-2015
(Trillions of dollars)

Source	Country or region	Amount
Pozsar and others (2010)	United States (March 2008) United States (2010)	20 16
Pozsar and Singh (2011)	United States (late 2007) United States (late 2010)	25 18
Financial Stability Board (2010)	United States (2010)	24
Deloitte (2012)	United States (2010)	10
Bouveret (2011)	Europe (March 2008) Europe (late 2010)	13 13
Financial Stability Board (2011)	World (2002) World (2007) World (2010)	27 60 60 (24 and 22 in the United States and Europe, respectively)
Bakk-Simon and others (2012)	Europe (second half of 2011)	14
Financial Stability Board (2012)	World (2011) World (2012)	67 74
Tyson and Shabani (2013)	United Kingdom (2013)	1,4
Fung Global Institute (2015)	World (2007)	62
Fung Global Institute (2015)	World (2102)	71
Fung Global Institute (2015)	China (2013)	51% of GDP

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of the sources cited.

Although the bulk of the shadow financial sector operates in developed countries (the United States and Europe accounted for 67% of its assets in 2012), it is also visible in Brazil, China and India. In relative terms, Brazil and China accounted for 5% of total shadow banking system assets in 2011 (see figure III.9).

Figure III.9
Distribution of shadow banking system assets, 2012
(Percentages)



Source: Fung Global Institute, *Bringing Shadow Banking into the Light: Opportunity for Financial Reform in China*, A. Sheng and N. Chow Soon (eds.), 2015.

As well as being highly interconnected, the liabilities of LCFIs are structured through leverage. First, the ratio of debt to capital (leverage) at these institutions is usually around 20 or more, which means that they finance over 95% of their asset purchases by issuing debt. Second, leverage tends to behave procyclically. The ratio between the rate of asset growth and the rate at which leverage increases is positive and statistically significant. The correlation coefficient between the two variables for a sample of major banks in the United States is 0.89.[18] High levels of leverage create considerable opportunities for profit, since the more leverage there is, the greater the returns on capital. The expectation of increased returns provides an incentive for over-leveraging.[19]

At the same time, greater dependence on credit financing generates increased fragility, as greater risks come with greater exposure and vulnerability to illiquidity and, even more importantly, insolvency. The global crisis laid bare the risk represented by high leveraging. Furthermore, monetary growth and the disorderly reproduction of financial assets have been giving rise to a new build-up of debt in the global economy that could have highly negative consequences for its stability. In its latest report, the International Monetary Fund (IMF, 2015b) warned of the risk that the global system may be hatching a speculative framework similar to the one that led to the last major crisis.[20]

Financial sector transformations have significant implications for the dynamic of the real economy, as seen in the 2000s, when the behaviour of the commodity market had a significant impact on Latin America's economic performance. Besides being an important component in the exports and fiscal revenues of the region's largest economies, raw materials can also be regarded as a financial asset, insofar as their prices respond more to changes in expectations of future conditions than to the current state of market supply and demand (i.e. the fundamentals). Some large financial institutions, such as Goldman Sachs, JP Morgan and Morgan Stanley, have been playing an increasing role in these markets (PSI, 2014).[21]

18 Authors' estimates based on Bloomberg.

19 This can be demonstrated by calculating banking returns. Return on equity (ROE), defined by the ratio between net income and assets, equals the product of the ratio between net income and assets and the ratio between assets and equity. Formally,

$$(1)\ \ ROE = \frac{\text{Net income}}{\text{Equity}} \equiv \left(\frac{\text{Net income}}{\text{Assets}}\right) * \left(\frac{\text{Assets}}{\text{Equity}}\right)$$

In turn, the ratio between net income and assets is simply the return on assets (ROA), and the ratio between assets and equity is known as leverage. Thus, the return on equity (ROE) can be expressed as the product of the return on assets (ROA) and leverage, so that the greater the leverage, the greater the returns will be. Formally,

$$(2)\ \ ROE = ROA * Leverage = ROA * L.$$

20 The signs of financial fragility coming out of China and emerging economies are particularly strong. As noted by IMF (2015b), authorities in emerging markets should regularly monitor firms' foreign-currency exposures, including derivatives positions, and use micro- and macroprudential tools to discourage the build-up of excessive leverage and debts with foreign lenders.

21 The large banks involved in commodity markets are also the ones that have been heavily affected by the global financial crisis. Their leverage has dropped (from 33 to 12 between 2007-2008 and 2012, taking the average for the old investment banks), and they have consequently had to opt for other strategies, such as investment in commodities, to maintain profits. The recent falls in the prices of these have led the institutions concerned to alter their investment portfolios, giving less weight to raw materials.

The most significant manifestations of the growing role of commodities as financial assets have been their growing presence in futures markets (including their derivatives), greater synchronicity in price movements between them and between their prices and securities markets, and their recent use as collateral for loans and credit. Between 1998 and 2012, the number of contracts outstanding on commodity exchanges rose from 27 million to 161 million in the case of futures and from 14 million to 108 million in the case of options. Similarly, between 1998 and 2014 the notional value[22] of derivatives contracts on commodities expanded from US$ 443 billion to US$ 2.2 trillion (BIS, 2015c).

The growing role of commodities as financial assets can also be seen in the fact that they have been becoming increasingly associated (correlated) with traditional financial assets such as shares in terms of returns and, above all, volatility. This implies that the behaviour of commodities is becoming increasingly dependent on the factors explaining the behaviour and fluctuations of stock markets. Figure III.10 shows the correlation coefficients between the rates of return and volatilities of different commodity indices (for agriculture, energy, industry, metals, livestock, precious metals and non-energy commodities) and share indices, including the Dow Jones Industrial Average (DJIA) and the Standard & Poor's 500 (S&P500).

Figure III.10
Statistically significant correlations between returns and volatilities in commodity price indices and stock markets,[a] 1990-2000, 2001-2007 and 2010-2015
(Percentages)

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of figures from Bloomberg.
[a] Statistical significance was calculated at confidence intervals of 95% and 99%.
[b] Data to November 2015.

The correlations were computed for 1991-2000, 2001-2007 and 2010-2015 on a monthly basis. For both returns and volatilities, the results show the share of correlations that are statistically significant at 5% as increasing with the passage of time. Between 1990 and 2000, the total share of statistically significant correlations of returns and volatilities was 16.7% overall. In 2010-2015, the correlations were greater, at 66.7% and 41.7% of the total, respectively. The close connection between financial and commodity markets (and fossil energy prices) has been fuelling uncertainty in developing countries and is a barrier to higher investment there.

[22] The notional value is the total value of a leveraged position's assets. This term is commonly used in the options, futures and currency markets because a very small amount of invested money can control a large position —and have major consequences for the trader. See [online] http://www.investopedia.com/terms/n/notionalvalue.asp.

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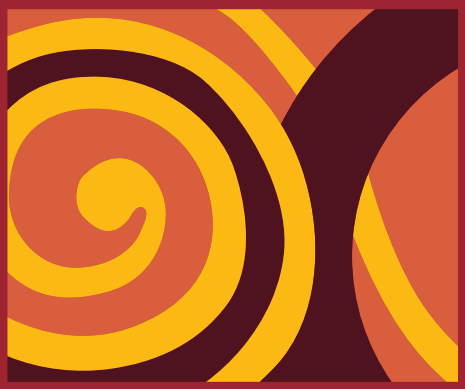
Annex III.A1

Table III.A1.1
World's leading financial institutions by country of domicile, 2014

Country	Number of banks	Large and complex financial institutions	Total assets *(billions of dollars)*	Capitalization *(billions of dollars)*	Share of total assets *(percentages)*	Share of total capitalization *(percentages)*
China	14	3	15 727	1 189	18.0	26.9
United States	10	7	11 064	1 227	12.7	27.8
Japan	9	3	10 366	194	11.9	4.4
France	6	4	9 494	141	10.9	3.2
United Kingdom	6	4	9 199	403	10.6	9.1
Germany	8	1	5 237	45	6.0	1.0
Spain	5	2	3 511	96	4.0	2.2
Canada	5		3 262	292	3.7	6.6
Italy	4	1	2 784	90	3.2	2.0
Australia	4		2 754	352	3.2	8.0
Netherlands	3	1	2 545	....	2.9	....
Switzerland	2	2	2 150	107	2.5	2.4
Sweden	4	1	1 924	83	2.2	1.9
Brazil	4		1 776	101	2.0	2.3
Republic of Korea	4		1 156	....	1.3	....
Belgium	3		941	....	1.1	....
Denmark	2		847	....	1.0	....
Russian Federation	2		777	....	0.9	....
Singapore	2		576	65	0.7	1.5
Norway	1		405	....	0.5	....
India	1		361	34	0.4	0.8
Austria	1		281	....	0.3	....
Total	**100**	**29**	**87 138**	**4 419**	**100**	**100**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Financial Stability Board (FSB), "2014 update of list of global systemically important banks (G-SIBs)", 2014 [online] http://www.fsb.org/wp-content/uploads/r_141106b.pdf, and information from the websites of financial institutions.

Chapter IV



The region's position in the world economy has been weakening

Chapter IV

The region's position in the world economy has been weakening

The Latin American and Caribbean region is confronting the challenges of the 2030 Agenda for Sustainable Development with a lower long-run growth rate than other regions in the developing world and with persistent external vulnerability. The region's growth dynamic was hit by the economic shocks caused by the 1980s external debt crisis, the Mexican and Asian, Russian and Brazilian crises of the 1990s, and then the Argentine crisis, followed by the global financial crisis, in the 2000s. Worse still, it has not performed particularly well by international standards even in upturns: its growth rate in 2003-2007, its best in three decades, was lower than that of other regions in the developing world. Furthermore, its real and financial external vulnerability remains; its countries' predominant specialization patterns mean that they are still sensitive to terms-of-trade and external demand shocks, and some have increased their gross external liabilities and become more dependent on international capital inflows.

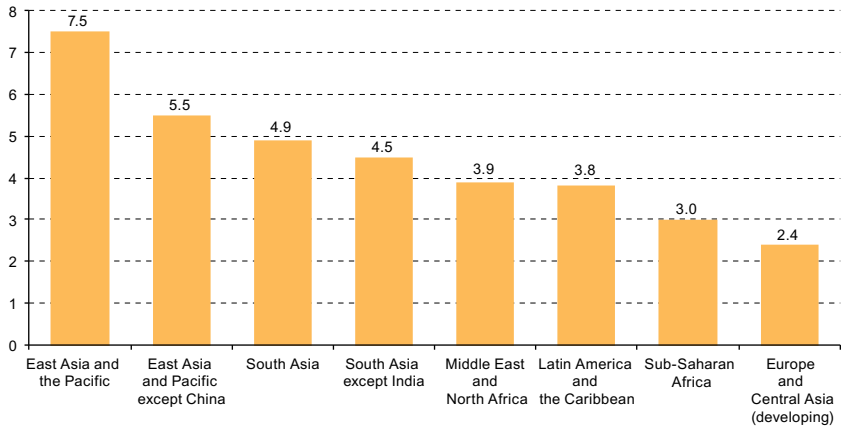
These characteristics have influenced the way recent developments (the near-stagnation of the global economy, increased financial volatility, the flight to quality, lower growth in China and sharp falls in commodity prices) have affected the region as a whole and its subregions. Economic growth has slowed in most of the countries since 2010-2011, with some even experiencing contractions. The aggregate demand component most affected by the slowdown has been investment, which has negative implications for productivity and competitiveness. At the same time, fiscal space has tightened in almost all the countries. The combination of these factors indicates that the region will have to change its development style under less favourable conditions than in the previous decade, with less room for manoeuvre and a relative loss of technological capabilities.

A. The region has fallen behind

The long-run GDP growth rate of Latin America and the Caribbean over the 1960-2014 period is estimated to have been 3.8%, below that of all other developing regions except Sub-Saharan Africa (3.0%) and developing parts of Europe and Central Asia (2.4%) (see figure IV.1).

The relatively slow growth of Latin America and the Caribbean is accounted for by the long-run effects of successive crises, particularly the external debt crisis of the 1980s. In addition, the region has not capitalized on phases of expansion in the global economy as intensively as other developing regions (ECLAC, 2012). In the most recent boom period (2003-2007), the regional growth rate remained well below that of East Asia and the Pacific (9.2%), developing parts of Europe and Central Asia (7.0%) and South Asia (6.5%). Similarly, the period of recovery that followed the crisis was weaker in the region, as table IV.1 shows.

Figure IV.1
Long-run real GDP growth rates,[a] 1960-2014
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Bank, World Development Indicators, 2015.
[a] Each region's trend growth rate was obtained from a linear approximation of the logarithm of real GDP (base year 2005).

Table IV.1
Average per capita GDP growth by region or income grouping, 1961-2014
(Percentages)

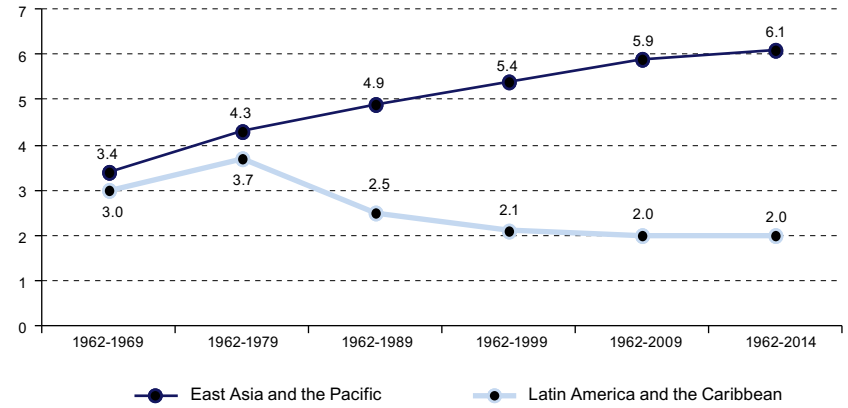
	1961-1970	1971-1980	1981-1989	1990-2000	2003-2007	2010-2013	2001-2014
Latin America and the Caribbean	3.3	4.4	-0.3	1.3	2.7	2.9	1.8
Brazil	3.3	5.9	-0.3	1.0	2.7	3.0	2.1
Mexico	3.6	3.7	-0.3	1.8	2.0	2.2	0.7
East Asia and the Pacific [a]	2.4	4.6	5.8	7.0	9.2	7.5	7.8
South Asia	2.0	0.7	3.1	3.2	6.5	5.3	5.2
Europe and Central Asia (developing only)	...	...	2.3	-0.5	7.0	4.0	3.9
Organization for Economic Cooperation and Development (OECD) (high-income countries)	4.2	2.6	2.6	2.0	2.0	1.2	1.0
Middle East and North Africa	5.0 [a]	3.0	0.1	1.5	3.5	0.2	1.7
Sub-Saharan Africa	2.4	0.9	-1.3	-0.7	3.7	1.7	2.1

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Bank, World Development Indicators, 2015.
[a] Data from 1966 onward.

In 2003-2007, the gap between the growth rates of Latin America and the Caribbean and most other developing regions widened. The percentage point growth differential with East Asia and the Pacific, Europe and Central Asia, the Middle East and North Africa, South Asia and Sub-Saharan Africa was greater than in the previous three decades. Figure IV.2 shows that the annual per capita GDP growth rate in the region since the 1980s has been just 2%, which means that its path has diverged from that of the more dynamic developing economies of East Asia and the Pacific. No differences between the averages are observed in periods of slow growth or in the 1962-2009 period, which includes the 2003-2007 boom.

The slowdown that began in the region in 2010-2011 is fundamentally affecting its largest economies and seems to be extending beyond the short run, having been protracted over between five and six years in most of the region's countries.

Figure IV.2
Latin America and the Caribbean and East Asia and the Pacific: real per capita GDP growth, 1962-2014
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Bank, World Development Indicators, 2015.

The slowdown is partly due to the greater synchronization between the region's business cycle and the world cycle now than in the past. Figure IV.3 shows the evolution of the index of concordance of the GDP cycle (which measures the percentage of time for which two economies are in the same phase of the cycle, whether expanding or contracting) between Latin America and the Caribbean and the emerging economies, the world overall and the advanced economies. When Latin America and the Caribbean is compared with the world, the results show that 105 pairs of countries had a degree of concordance of between 90% and 100% in 1990-1999, whereas 334 pairs of countries had that level of concordance between 2000 and 2006 and 149 between 2007 and 2009. The number of countries in concordance increased once again in the most recent period (2010-2014). The tendency observed between Latin America and the Caribbean and the world is also seen when the comparison is made with the different regions, with concordance increasing between 2000 and 2006 and declining during the crisis (2008-2009) before rising again between 2010 and 2014.

Figure IV.3
Latin America and the Caribbean: quarterly indices of concordance[a] with emerging economies, the world and advanced economies, 1990-2014[b]

A. Pairs of countries in Latin America and the Caribbean and emerging economies

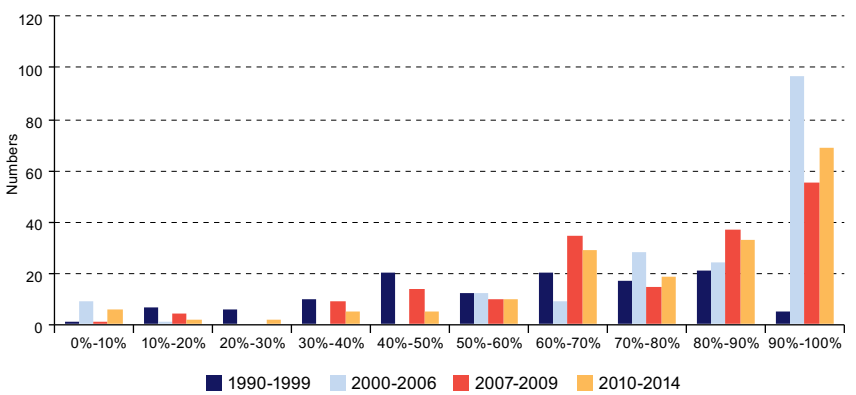
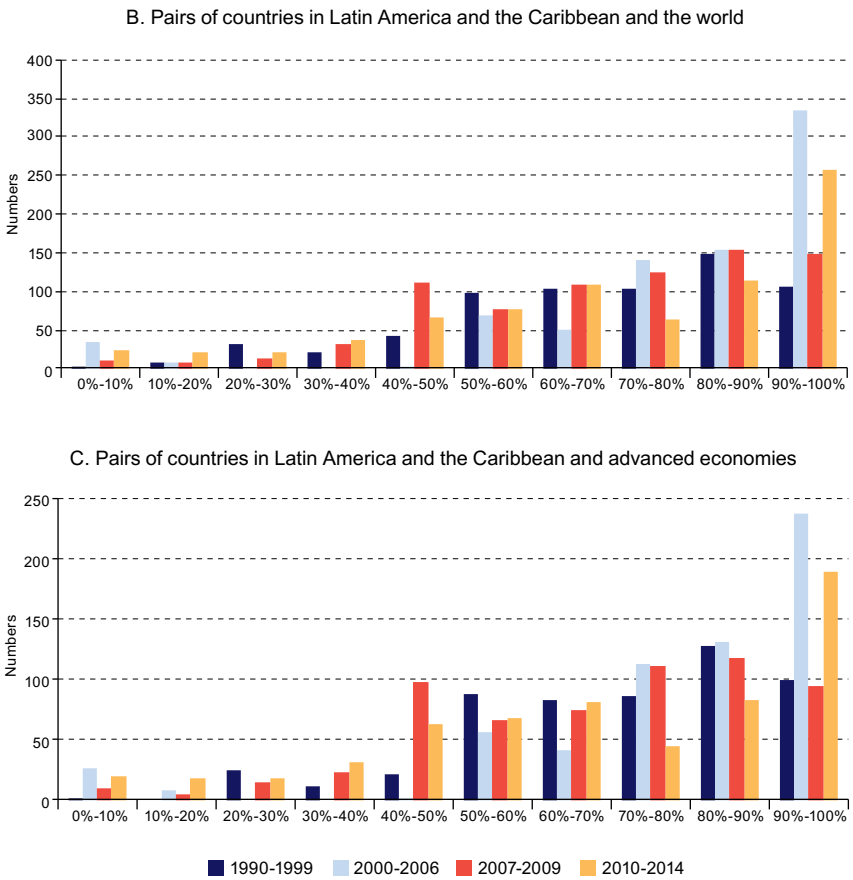


Figure IV.3 (concluded)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official figures.

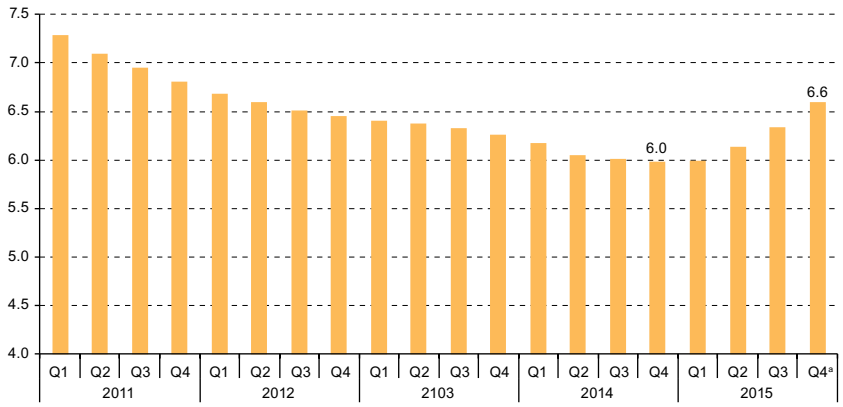
[a] The concordance index measures the percentage of time for which two economies are in the same phase of the cycle, expansionary or contractionary.
[b] For the cyclical concordance analysis, use was made of quarterly GDP data from 1990 to 2014 covering 62 countries, which were divided into four groups: Latin America and the Caribbean (Argentina, Brazil, Belize, the Bolivarian Republic of Venezuela, Chile, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Guatemala, Jamaica, Mexico, Nicaragua, Paraguay, Peru, the Plurinational State of Bolivia, Trinidad and Tobago, and Uruguay), emerging Asian countries (Malaysia, the Philippines and Thailand), eastern Europe (Bulgaria, Georgia, Kazakhstan, Latvia, Lithuania, Romania, the Russian Federation, Turkey and Ukraine) and developed countries (Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, the Republic of Korea, Singapore, Slovakia, Slovenia, Spain, Sweden, Switzerland, the United Kingdom and the United States). There are no data on Estonia, Georgia, Kazakhstan, Luxembourg, Trinidad and Tobago, or Ukraine for 1990-1999.

In terms of intensity, the slowdown has been concentrated by subregion, particularly affecting the economies of South America and, to a lesser extent, Central America. Between the second quarter of 2010 and the last quarter of 2014, year-on-year growth in the South American economies fell from 7.0% to 0.5%. In the same period, Central American growth fell from 7.0% to 5.6%. At the country level, it was the region's large economies that experienced the sharpest slowdowns.

The growth slowdown hurt job creation and employment quality. Figure IV.4 shows that the urban unemployment rate in the region has been rising steadily, from 6.0% in the fourth quarter of 2014 to 6.6% a year later.

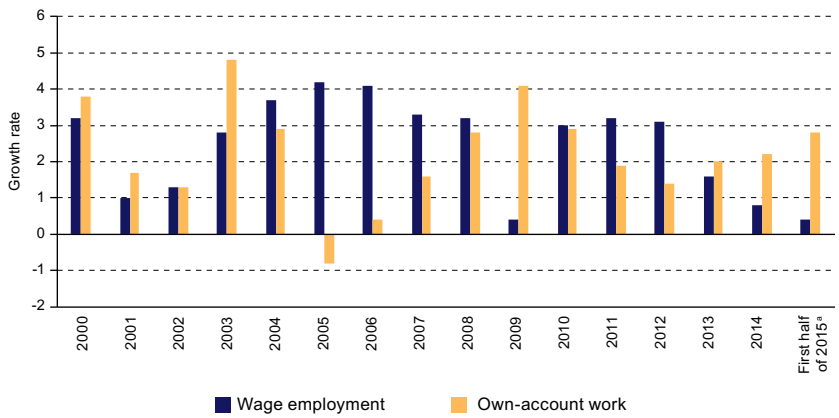
Again, not only are too few jobs being created to absorb the expansion of the labour supply, but their quality has deteriorated, something that is reflected in the stronger growth of own-account work than of wage employment since 2012 (see figure IV.5). Considering that own-account work is largely an indicator of a lack of opportunities in the labour market (a refuge from open unemployment), its higher growth rate can be taken as a consequence of slackness in that market, and it translates into lower incomes and poorer social protection for workers. These two factors help explain why the downtrend in inequality has petered out and some social indicators in the region have worsened since 2012.

Figure IV.4
Latin America and the Caribbean: urban unemployment rate, rolling years, first quarter of 2011 to fourth quarter of 2015[a]
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official figures.
[a] Preliminary figures.

Figure IV.5
Latin America and the Caribbean: year-on-year rate of job creation by employment category, 2000 to first half of 2015
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official figures.
[a] Preliminary figures. Mexico is not included.

The slowdown originated in two types of factors: those affecting the whole region alike and those affecting each country specifically. The former include lower external demand, smaller financial inflows, particularly of foreign direct investment (FDI), and an increased perception of investment risk. Foremost among the latter are declining terms of trade.

B. The determinants of the slowdown

The slackening of external demand has been reflected in a lower rate of export volume growth both regionally and subregionally. In Latin America, the export volume growth rate dropped from 2.3% to 0.3% between 2013 and 2014 (see table IV.2). South America achieved growth of 2.1% in this rate in 2013, but this turned into a contraction of 3.0% in 2014. Growth dropped by less in Central America than in the region as a whole (1.3% and 1.0% in 2013 and 2014, respectively). The sharpest decline of 2014 occurred in the Caribbean (-12.1%).

Table IV.2
Latin America and the Caribbean: growth in export volumes and the terms of trade, 2006-2014
(Percentages)

	2006	2007	2008	2009	2010	2011	2012	2013	2014
					Export growth				
Latin America	5.4	3.4	0.0	-6.3	8.6	4.3	3.8	2.3	0.3
South America	2.5	3.9	-0.5	-5.6	4.8	5.2	0.9	2.1	-3.0
Hydrocarbon exporters (Bolivarian Republic of Venezuela, Colombia, Ecuador and Plurinational State of Bolivia)	-0.7	-1.9	2.6	-3.8	-4.4	10.0	5.4	-0.9	-5.0
Central America, Dominican Republic and Haiti	7.1	8.1	3.6	-4.7	9.6	9.0	8.4	1.3	1.0
Agricultural commodity exporters (Argentina, Paraguay and Uruguay)	7.8	8.3	1.6	-3.8	17.1	4.5	-5.6	5.8	-7.9
The Caribbean	10.3	-5.4	2.6	-26.4	6.3	-0.3	-7.1	-3.1	-12.1
The Caribbean (except Trinidad and Tobago)	5.3	6.2	2.5	-18.9	0.1	4.2	10.7	-7.3	-24.4
Service exporters (the Caribbean except Guyana, Suriname and Trinidad and Tobago)	6.5	3.1	1.9	-24.2	-8.7	7.4	7.8	-16.0	-7.4
Metal exporters (Chile and Peru)	1.8	5.7	-2.0	0.7	-0.2	4.7	2.4	0.8	0.9
Brazil	3.5	5.5	-2.5	-10.7	9.5	3.1	-0.3	3.4	-2.0
Mexico	11.1	1.7	0.4	-7.8	15.8	1.8	8.3	2.8	9.4
					Terms of trade growth				
Latin America	7.2	3.0	3.3	-7.0	10.7	7.7	-2.4	-2.2	-3.7
South America	5.7	3.2	1.9	-11.2	5.0	5.8	2.4	-2.5	-3.1
Hydrocarbon exporters (Bolivarian Republic of Venezuela, Colombia, Ecuador and Plurinational State of Bolivia)	14.2	4.7	10.1	-11.9	14.5	14.0	0.1	-2.3	-4.3
Central America, Dominican Republic and Haiti	-2.2	-0.7	-6.2	7.0	-0.6	-1.5	-2.3	-2.8	1.5
Agricultural commodity exporters (Argentina, Paraguay and Uruguay)	4.5	5.5	11.0	1.4	1.9	9.2	3.4	-5.7	-1.2
The Caribbean	13.0	-4.1	8.9	-13.3	0.9	8.6	2.1	-2.3	-0.1
The Caribbean (except Trinidad and Tobago)	11.4	-4.2	-3.8	-0.2	5.4	-0.5	-1.4	-6.8	-0.1
Service exporters (the Caribbean except Guyana, Suriname and Trinidad and Tobago)	0.8	3.7	9.1	1.8	0.6	5.5	2.9	-3.7	0.7
Metal exporters (Chile and Peru)	30.6	3.9	-12.0	0.0	21.8	3.0	-4.3	-4.2	-2.9
Brazil	6.4	3.5	5.3	-2.7	15.3	8.7	-5.1	-2.3	-3.3
Mexico	0.6	1.0	0.7	-10.7	7.3	7.0	-2.0	-0.2	-4.9

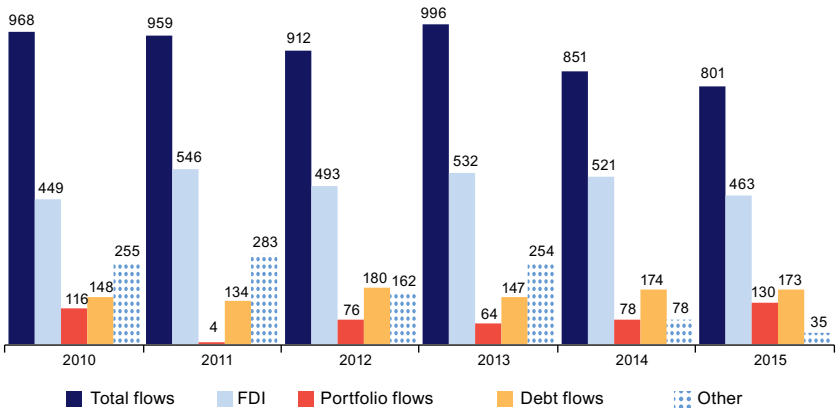
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official figures.

If the value of goods exports from the region to the world is confirmed to have decreased by 14% in 2015, this will make three consecutive years of ever-greater declines in the value exported, turning 2013-2015 into the worst three-year period for the region's exports since 1931-1933, in the midst of the Great Depression. The 2015 contraction may be attributed to a sharp drop in prices (-15%) not offset by a higher volume of exports (1%) (ECLAC, 2015, p. 42).

The impact of the drop in aggregate demand was greater for countries exporting agroindustrial commodities (Argentina, Paraguay and Uruguay) than for those exporting hydrocarbons.

A second factor affecting all regions of the developing world, including Latin America and the Caribbean, has been the decline in private sector financial flows, which have been behaving procyclically. Total financial flows into 10 of the largest emerging economies, namely Brazil, the Russian Federation, India, China and South Africa (the so-called BRICS), Chile, Indonesia, Mexico, Poland and Turkey, have trended downward since mid-2012. Flows into this group of economies totalled US$ 851 billion in 2014, with a reduction of US$ 50 billion expected in 2015. The largest component of these flows, FDI, will have dropped from US$ 532 billion to US$ 463 billion between 2013 and 2015 (see figure IV.6).

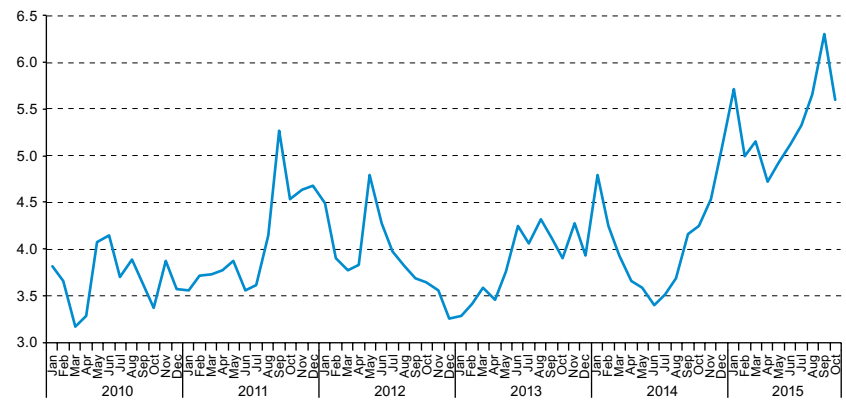
Figure IV.6
Total annual private sector financial flows into developing economies and their components, March 2010 to June 2015[a]
(Billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Institute of International Finance (IIF), *Capital Flows to Emerging Market Economies*, Washington, D.C., 2015.
[a] Including Brazil, the Russian Federation, India, China and South Africa (the so-called BRICS), Chile, Indonesia, Mexico, Poland and Turkey.

A third determinant has been an increased perception of Latin America's riskiness as an investment destination. Current account imbalances and slower growth have increased investors' uncertainty about future performance. Figure IV.7 shows that the Emerging Markets Bond Index (EMBI) spread (the difference between the interest rates on dollar-denominated bonds issued by emerging countries and United States Treasury Bonds, considered risk-free)[1] has widened since the second half of 2014.

Figure IV.7
Latin America: Emerging Markets Bond Index (EMBI Global),[a] **January 2010 to October 2015**
(Basis points)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of figures provided by JP Morgan.
[a] Monthly data.

This means that the minimum rate a financial investor would demand to invest in Latin America has increased even as the region's economies have slowed. This also holds true at the country level, especially in Argentina, the Bolivarian Republic of Venezuela, Brazil, Chile, Colombia, the Dominican Republic, Ecuador, Mexico, Panama, Peru and Uruguay.

[1] The EMBI is based on the behaviour of the external debt issued by each country. The less certain a country is to meet its obligations, the higher its EMBI will be, and vice versa. The lowest rate an investor would require to invest in a particular country would be the United States Treasury Bond rate plus the country's EMBI.

Unlike the factors that have affected the region as a whole, the consequences of the commodity price fall have differed widely from country to country. For net energy importers such as Central America, the Dominican Republic and Haiti, it has improved the terms of trade. In the case of agroindustrial commodity exporters (Argentina, Paraguay and Uruguay), lower energy prices have partly offset the drop in agricultural goods prices and helped to reduce the impact of weaker external demand on the current account. Conversely, the same development has had the opposite effect in countries that export hydrocarbons (the Bolivarian Republic of Venezuela, Colombia, Ecuador and the Plurinational State of Bolivia) and metals (Chile and Peru), as their terms of trade have deteriorated.

The drop in commodity prices has also affected the tax take in producing countries, particularly hydrocarbon and metal exporters or producers whose fiscal revenues depend heavily on these prices. The effect depends not only on the size of the commodities sector, but also on factors such as exchange-rate flexibility, the sector's ownership structure and the way natural resources are taxed (IMF, 2015). The Bolivarian Republic of Venezuela, Ecuador and Trinidad and Tobago are at one extreme, with fiscal revenues from the hydrocarbon sector representing more than 40% of the total take in 2010-2013. At the other extreme, fiscal revenues from the hydrocarbon sector represented 7.1%, 3.9% and 3.1% of total revenues in Peru, Argentina and Brazil, respectively. Of mineral-exporting countries, it is in Chile that this sector accounts for the largest share of fiscal revenues (15.3%), followed by Peru (7.4%) and the Plurinational State of Bolivia (3.2%) (see table IV.3).

Table IV.3
Latin America and the Caribbean (selected countries): indicators of fiscal revenues from hydrocarbon and mineral production, 2010-2013

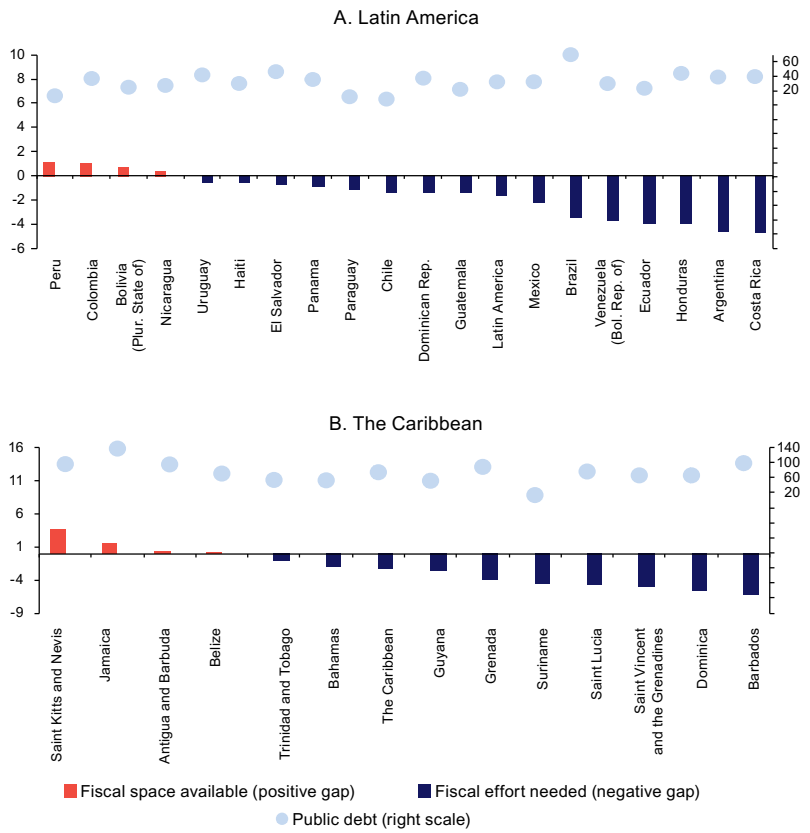
	Hydrocarbon producers [a b]	
	(percentages of GDP)	*(percentages of fiscal revenues)*
Argentina	1.0	3.9
Bolivia (Plurinational State of)	10.2	29.9
Brazil	0.9	3.1
Colombia	3.3	11.5
Ecuador	13.4	40.3
Mexico	5.5	34.4
Peru	1.4	7.1
Suriname	6.0	25.3
Trinidad and Tobago	13.4	40.8
Venezuela (Bolivarian Republic of)	10.5	44.7
	Mineral producers [b]	
	(percentages of GDP)	*(percentages of fiscal revenues)*
Argentina [c]	0.1	0.5
Bolivia (Plurinational State of)	1.1	3.2
Brazil	0.2	0.7
Chile	3.4	15.3
Colombia	0.4	1.3
Jamaica	0.1	0.4
Mexico	0.2	1.0
Peru	1.5	7.4

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official figures and figures provided by the World Bank.
[a] Fiscal revenues include tax and non-tax resources generated from hydrocarbons.
[b] In order to standardize the information from the countries, the calculations use total general government fiscal revenues excluding social security contributions. For Argentina, Colombia and Ecuador, however, non-financial public sector (NFPS) revenues are used, with net figures being taken for Argentina and Ecuador and gross figures for Colombia.
[c] The figures exclude the value of mining royalties when not disaggregated from total royalties, which come mainly from hydrocarbon exploitation.

Falling exports, smaller financial flows and, above all, declining commodity prices have reduced the region's fiscal space, measured as the gap between the actual primary balance and the primary surplus required to stabilize debt as

a proportion of GDP (ECLAC, 2014).[2] This space continued to shrink between 2014 and 2015, mainly because the economic weakness the region has experienced since 2011 has persisted and the fiscal accounts have deteriorated somewhat. This is reflected in the negative gap (an actual primary balance that is less positive than required to stabilize the debt) presented by 16 of the 19 countries in the region (see figure IV.8A). Countries requiring a major fiscal effort (over 3% of GDP) include Costa Rica, Argentina, Honduras, Ecuador, the Bolivarian Republic of Venezuela and Brazil. They are followed by Mexico, requiring an effort of over 2% of GDP, and Guatemala, Chile, Paraguay and the Dominican Republic, requiring an effort of just over 1%. Only four countries have positive differentials: Nicaragua, the Plurinational State of Bolivia, Peru and Colombia, mainly because their primary surpluses and expected growth rates have been slightly higher in 2015.

Figure IV.8
Latin America and the Caribbean: fiscal gap between the actual primary balance in 2014 and the primary balance required in 2015 to stabilize the public debt
(Percentages of GDP)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official figures.

The Caribbean has less fiscal space than the rest of the region because average debt levels there are high, at about 80% of GDP. The average fiscal effort required in 2015 to make the current level of debt sustainable is 1.3% of GDP (see figure IV.8B). Most of the countries in the subregion have a negative gap between the actual and required primary balance, with Saint Lucia, Grenada and Dominica needing to make an exceptional fiscal effort (some 6%

[2] ECLAC (2014) calculates the primary surpluses the region's countries need if they are to stabilize debt as a share of GDP, using the following equation:

$$bp^* = \left(\frac{r - g}{1 + g} \right) \cdot d_0$$

where bp^* is the primary balance required to stabilize the current level of debt as a share of GDP, r is the real interest rate, g is the rate of output growth in time period t and d_0 is the level of public debt at $t-1$.

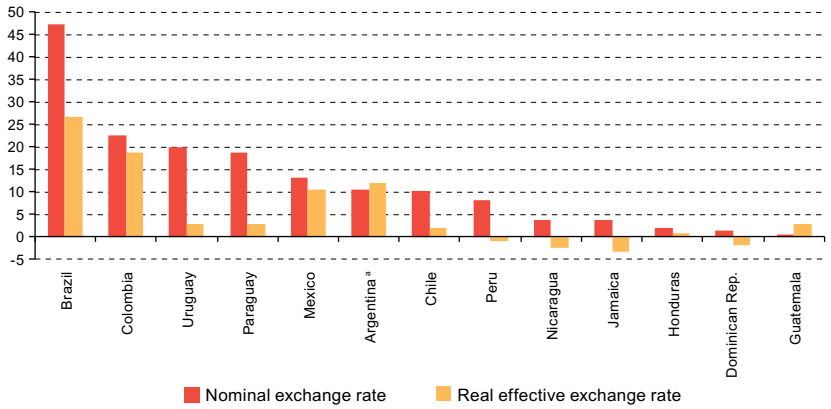
of GDP or more). At the other extreme, Antigua and Barbuda, Jamaica and Saint Kitts and Nevis have a positive gap that means they can continue along their path of fiscal consolidation.

Another factor with heterogeneous effects in the region are nominal exchange-rate movements. In the past two years, almost all the countries of Latin America and the Caribbean have experienced nominal depreciations, the largest being in Brazil, Colombia, Uruguay, Paraguay, Mexico, Argentina, Chile and Peru (see figure IV.9).

Figure IV.9

Latin America and the Caribbean (selected countries): nominal exchange-rate depreciation, January to October 2015, and real exchange-rate depreciation, January to September 2015

(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official figures.
[a] For Argentina, the multilateral real exchange rate was taken instead of the real effective exchange rate.

Nominal depreciations have partly fed through into inflationary pressures, so that real-term depreciations have not been as great as nominal ones. Although the average inflation rate in the region has remained in single digits, inflation has behaved differently between subregions and countries. The highest rates are in South America, where the average rose from 4.8% to 8.6% between 2013 and 2015. The economies with the highest rates have been Argentina, the Bolivarian Republic of Venezuela, Brazil and Uruguay (14.3%, 68.5%, 9.9% and 9.2%, respectively),[3] with the effect of exchange-rate movements on inflation also being greatest in these countries. Rates in Central America and the Caribbean have been below 3% in the past year, partly because of the positive effects of falling import prices for food and energy.

It is still too soon to know the effects on exports and growth. In a global context of low growth, a weakening exchange rate in economies with few technological capabilities is not enough by itself to increase exports and drive import substitution to the extent needed to revive aggregate demand. This demand will be negatively affected by the decline in real wages associated with currency depreciation, which reduces the purchasing power of wages and contracts the domestic market. Thus, the ultimate effect of depreciation will depend on the production structure, the importance of the domestic market and any policies adopted to boost productivity and diversify export patterns.

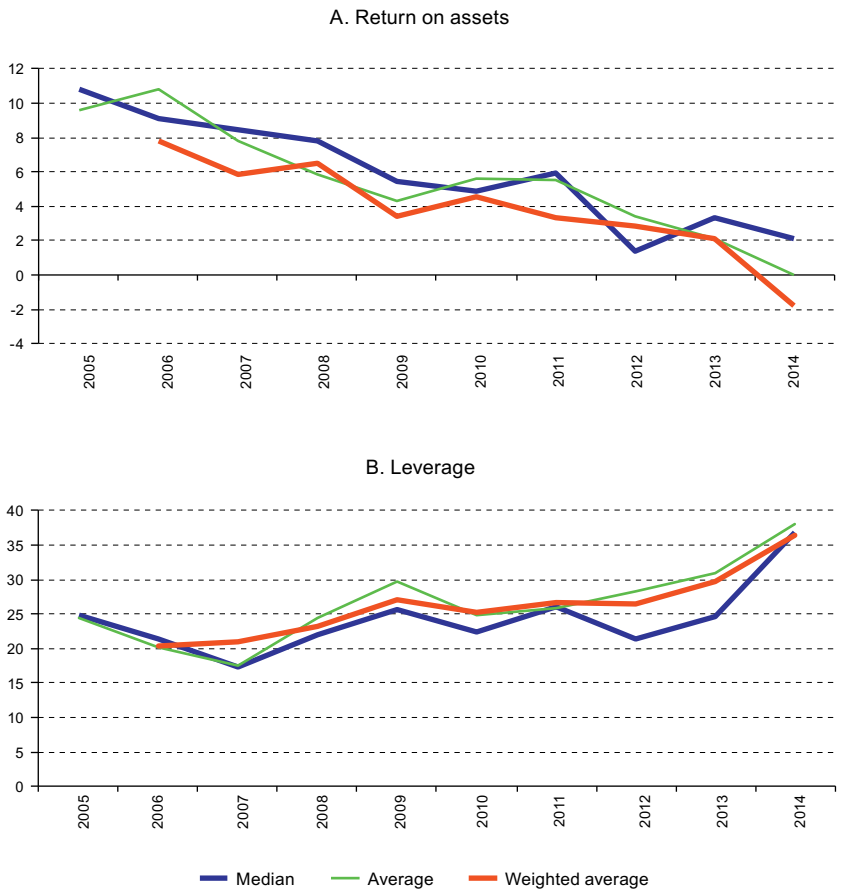
Another important effect of falling commodity prices can be seen in the financial situation of the non-financial corporate sector. In emerging economies, including Brazil, China, Mexico and the Russian Federation,[4] the data show an increase in borrowing in this corporate sector since the global financial crisis, with particularly high leverage in the energy sector. According to the Bank for International Settlements (BIS, 2015a and 2015b), the global stock of bonds in this sector rose from US$ 455 billion in 2006 to US$ 1.4 trillion in 2014.

In a context of greater indebtedness, falls in the prices of commodities affect firms specializing in these products by increasing their financing costs and reducing their ability to meet their obligations. The situation may be compounded yet further if they have contracted external debt obligations secured against the commodity

[3] Annual rates to October 2015 for Argentina, Brazil and Uruguay and to October 2014 for the Bolivarian Republic of Venezuela.
[4] The corporate debt stock in Brazil is put at about US$ 300 billion.

produced and exported. Higher costs and lower revenues reduce profitability, and when combined with a deteriorating asset situation this can increase the risk of default (see figure IV.10). If the response to this situation involves production and investment cutbacks in sectors with large ramifications across the rest of the production fabric, harmful macroeconomic consequences may ensue. The region's large hydrocarbon-producing firms, whose financial situation has deteriorated since the crisis that broke out in 2008, and particularly since 2011-2012, have seen their return on assets decline and have increased their leverage.

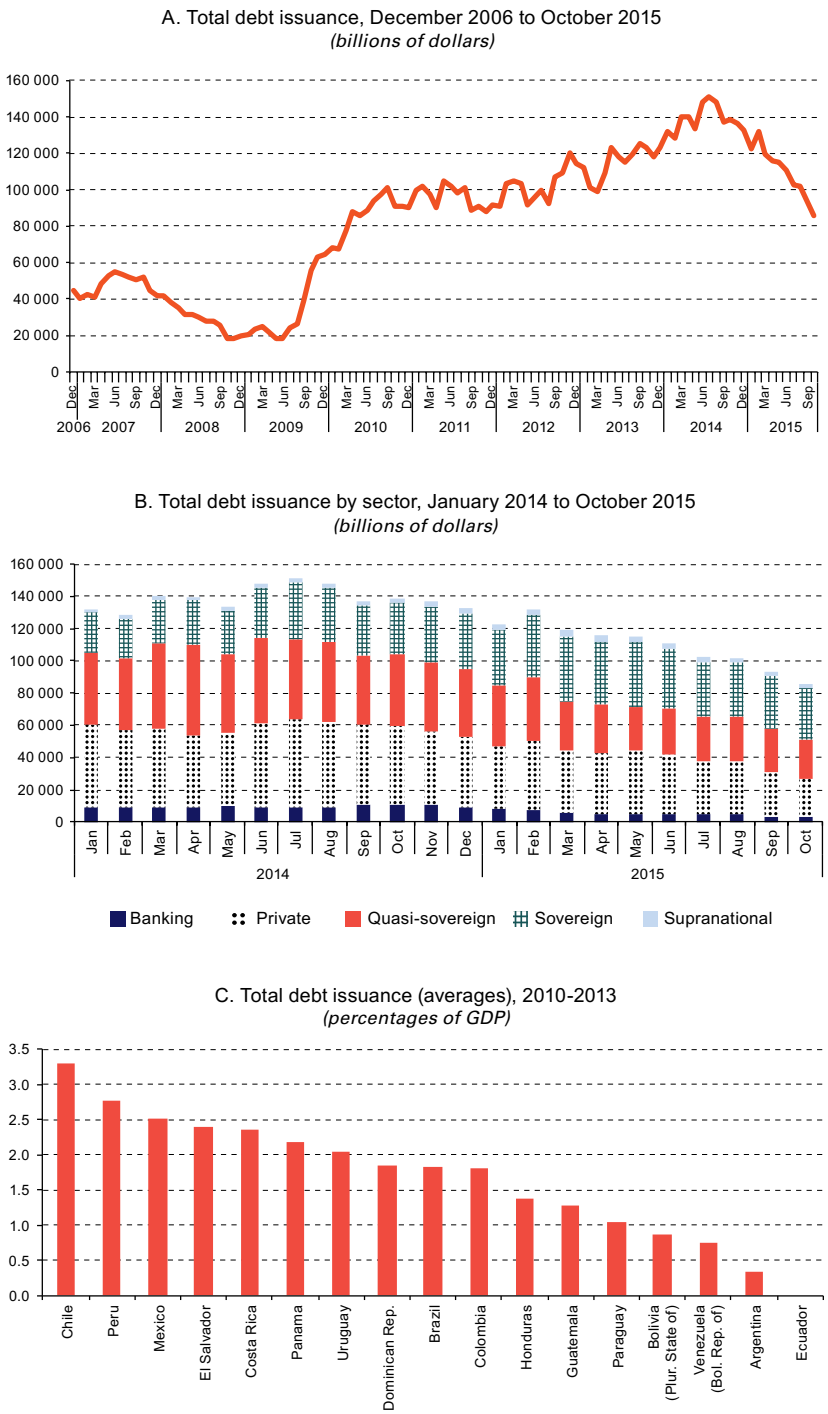
Figure IV.10
Latin America: return on assets and leverage of selected firms in the hydrocarbons sector,[a] 2005-2014



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Bloomberg, 2015.
[a] The sample includes the National Copper Corporation of Chile (CODELCO), Ecopetrol, Eletrobras, ENAP, Petrobras, Petróleos Mexicanos (PEMEX), Petróleos de Venezuela (PDVSA), Petroperú (information from 2010 onward only) and YPF.

Total external debt issuance, including corporate private sector and non-financial public sector debt, began to increase in 2009, implying that total external debt and corporate debt have grown, as in other emerging economies. Total debt issuance rose from US$ 20 billion in mid-2009 to over US$ 80 billion in October 2015, peaking at about US$ 150 billion (2.8% of regional GDP) in the third quarter of 2014. Between 2010 and 2013, Chile, Peru and Mexico showed the largest volumes of total external debt issuance relative to GDP (3.3%, 2.8% and 2.5%, respectively), while the figure was less than 1% in Argentina, the Bolivarian Republic of Venezuela and the Plurinational State of Bolivia (see figure IV.11).

Figure IV.11
Latin America and the Caribbean: cumulative 12-month debt issuance



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official figures.

At the sectoral level, the bulk of total debt issuance has been accounted for by the public and private sectors (31% and 34%, respectively, of the cumulative total between January 2014 and October 2015), while the financial sector has had only a small share (6%). Most debt has been issued by producers of natural resources, particularly in the energy sector.

Like commodity price changes, the depreciation of local currencies can affect firms' financial situation. Depreciation not only raises debt service costs, and thence outgoings, but also swells liabilities by increasing the local-currency value of outstanding debt. If the collateral for the debt is likewise denominated in local currency, depreciation will also cause this asset to lose value. This can give rise to a mismatch such that the firm has to purchase currency to balance its accounts. Depending on its size and importance in the market and the number of firms behaving in this way, currency purchases can create further pressure for devaluation of the nominal exchange rate, ultimately increasing the external debt of the firms operating in the non-tradable goods sector.

C. External vulnerability remains

The economies of Latin America and the Caribbean are essentially exposed to two kinds of external shocks: real shocks, determined by movements in the terms of trade or changes in the growth rates of a country's main trading partners, and financial shocks, associated with fluctuations in short- and long-term external investment flows.

Real external vulnerability depends on each country's trade specialization. A lesser degree of production diversification or a higher degree of export concentration among just a few trading partners leaves an economy excessively exposed. The heavy dependence of a number of Central American and Caribbean countries on remittances from abroad or inbound tourism is a vulnerability of the same type. External financial vulnerability, meanwhile, depends on each economy's degree of leverage, including the greater or lesser degree of FDI penetration, which in turn depends on the degree of financial openness and the regulatory framework for foreign capital investment. This type of vulnerability is manifested in an unfavourable asset position, with high debt ratios.[5] The greater the external leverage, the greater the exposure to sudden stops in the international financial cycle or changes in the monetary policy of the central countries.

From a long-term perspective, taking the 1980s as a starting point, external financial vulnerability has been increasing almost everywhere in the region, especially in the Caribbean, where external liabilities rose from 34% of GDP that decade to 78% in the latest period for which information is available. There have also been large increases in South America (from 25% to 33%), Brazil (from 16% to 25%) and Mexico (from 19% to 27%). In Central America, the increase has been small and external liabilities remain at an intermediate level (up from 30% to 33%).

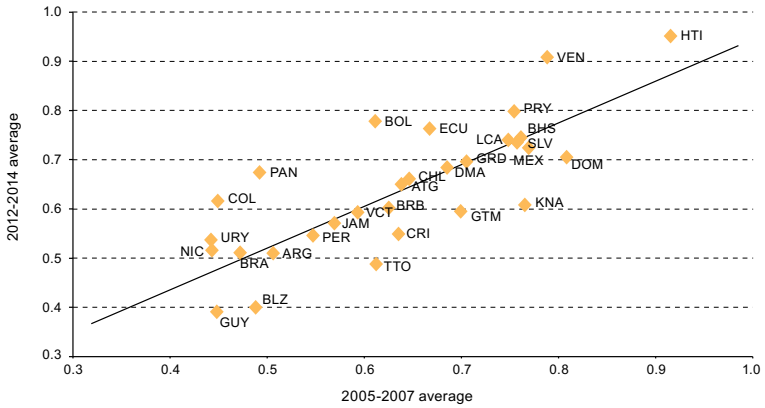
The increase in external vulnerability can also be observed over shorter periods. Figures IV.12 and IV.13 show the evolution of real and financial vulnerability indicators in 2005-2007 (when there was a cyclical upturn prior to the global financial crisis) and 2012-2014 (after the crisis): real vulnerability increased in 17 of the 32 countries, while financial vulnerability increased in 29. Countries can be grouped into three types by their real vulnerability levels:

(i) Tourism-oriented countries: these are highly exposed to growth rates in the central countries, especially the United States.
(ii) Commodity exporters: these have more diversified sources of currency as exporters of industrial products (Argentina and Brazil) or recipients of remittances (Ecuador and Paraguay).
(iii) Countries that assemble industrial goods for export and are large recipients of remittances: these depend heavily on the business cycle in the United States (El Salvador, Guatemala, Honduras and Mexico).

Most of South America is less vulnerable than the other subregions. External financial vulnerability tends to be positively associated with integration into international markets: the indicator is very low for Ecuador, Paraguay and the Plurinational State of Bolivia and much higher for Brazil, Chile, Uruguay and, to a lesser degree, Colombia. Where real vulnerability is concerned, the share of commodity exports in the total exports of Argentina, Brazil and Colombia is held down by the size of the manufacturing sectors in those countries, while the Bolivarian Republic of Venezuela, Chile, Ecuador, Paraguay, Peru and the Plurinational State of Bolivia have export baskets that are far more skewed towards natural resources, which makes them more vulnerable to fluctuations in their terms of trade.

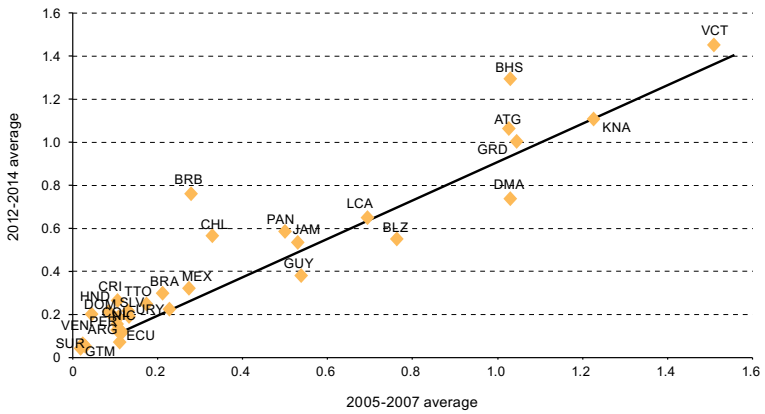
[5] This indicator is calculated using gross debt, particularly that of the private sector. Net debt is not a suitable indicator, since even if the private sector has abundant assets available abroad, as is the case in some countries of the region, these funds are not necessarily available to be set against the economy's external commitments.

Figure IV.12
Latin America and the Caribbean: real vulnerability, 2005-2007 and 2012-2014



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official figures.
Note: Real vulnerability is defined using the highest of two alternative indicators: either primary goods exports as a percentage of total foreign-exchange inflows, or the sum of remittance receipts and exports of manufactures and tourist services as a percentage of total foreign-exchange inflows.

Figure IV.13
Latin America and the Caribbean: financial vulnerability, 2005-2007 and 2012-2014



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official figures.
Note: Financial vulnerability is defined as the ratio between the sum of portfolio investment liabilities and foreign direct investment net of international reserves, and GDP measured in dollars at purchasing power parity.

The situation of the Central American economies as regards real vulnerability is also varied. One group of countries (Costa Rica, Guatemala and Nicaragua) have vulnerability levels close to those of the more diversified economies of South America, since they have some natural resources and their foreign-currency earnings are thus divided between commodities and remittances or tourism. The Dominican Republic, Honduras and Panama are far more exposed to the United States cycle (greater real vulnerability). In the financial sphere, all the countries except Panama have vulnerability levels similar to those of the financially integrated South American countries.

Mexico is an intermediate case on both counts. In terms of real vulnerability, its combination of remittances, tourism and exports of manufactures to the United States makes it particularly vulnerable to that country's economic cycle. However, the fact that some of its exports are of commodities (oil) means that its current account revenues are less heavily dependent on a single source of external demand. Financially, its situation is much like Brazil's: it is highly integrated into the international financial market and is consequently vulnerable to a reversal in international flows, especially short-term ones.

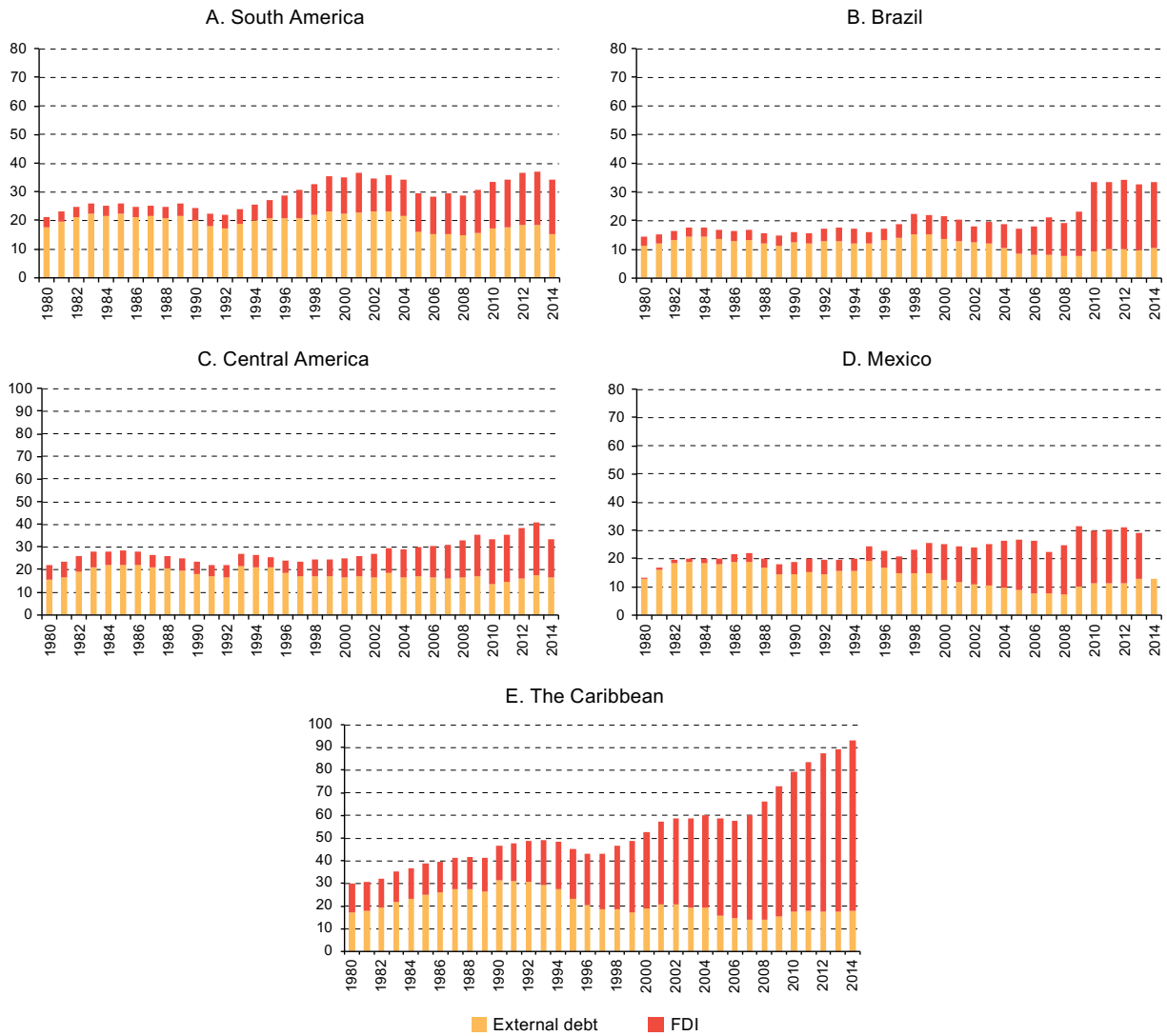
The Caribbean countries exhibit substantially higher vulnerability, both real, essentially because of their very heavy exposure to the United States business cycle (remittances and tourism), and financial, because of their high debt ratios. There are exceptions, however. Belize, Guyana, Suriname and Trinidad and Tobago are less vulnerable in the real sector because they exploit some natural resources, enabling them to diversify their export baskets into

activities less exposed to United States growth rates. Their better current account situation means they are less heavily indebted than the rest of the subregion, standing midway between the small island developing States and the South American countries.

External liabilities include not just traditional debt (a financial liability) contracted with economic agents residing abroad, but also the stock of FDI located in each country, as this generates a yield (often higher than that on strictly financial investments, for reasons of risk and liquidity) that can be remitted abroad. Consequently, its effect on the asset situation is similar to that of a traditional external debt instrument.

From a long-term perspective, taking the 1980s as the starting point, the region's traditional or financial indebtedness can be seen to have fallen, especially in the 2000s (see figure IV.14). For example, financial debt fell from 22% of GDP in the late 1980s to 18% in 2013 in South America and from 28% to 18% in Central America. It also declined in Brazil and Mexico over the same period. The improvement in the ratio in the Caribbean is only apparent because external public debt alone is recorded.

Figure IV.14
Latin America and the Caribbean: external liabilities, 1980-2013
(Percentages of GDP in purchasing power parity dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of figures from the United Nations Conference on Trade and Development (UNCTAD).

This reduction in traditional external debt, combined with an increase in the stock of international reserves, has given rise to a sensation of reduced external vulnerability. However, the total external liabilities of these economies (traditional borrowing plus the FDI stock) have moved differently. When the two figures are consolidated, external liabilities are greater now than they were in the 1980s for all cases and groupings, particularly in the Caribbean, where they have risen from 34% of GDP in the 1980s to 78% in the latest period for which information is available. There have also been large increases in South America (from 25% to 33%), Brazil (from 16% to 25%) and Mexico (from 19% to 27%), although the levels there are significantly lower. In Central America, the increase in liabilities has been small and they are still at an intermediate level (up from 30% to 33%).

From a long-term perspective, total external financing has changed little. What has changed considerably is its composition. Whereas in the 1980s the bulk of it took the form of traditional debt, this no longer constitutes so much as half of total external liabilities. In South America, Mexico and Central America, the two external financing sources are roughly matched. In Brazil and the Caribbean, the change in the composition of external liabilities has been still greater: in the former, FDI rose from 21% of these liabilities in the 1980s to 70% in 2013, while in the latter its share increased from 28% to 79%.

Figure IV.15 shows how interest payments and profit and dividend remittances abroad changed as a percentage of the exports of the three subregions and Brazil and Mexico. South America stands out, and especially Brazil, where interest costs dropped from 39% of exports in the 1980s to 8% in 2014. In the same period, profit and dividend remittances rose from 6% to 9% of exports.

Figure IV.15
Latin America and the Caribbean: foreign direct investment income and external debt interest payments, 1980-2014
(Percentages of exports)

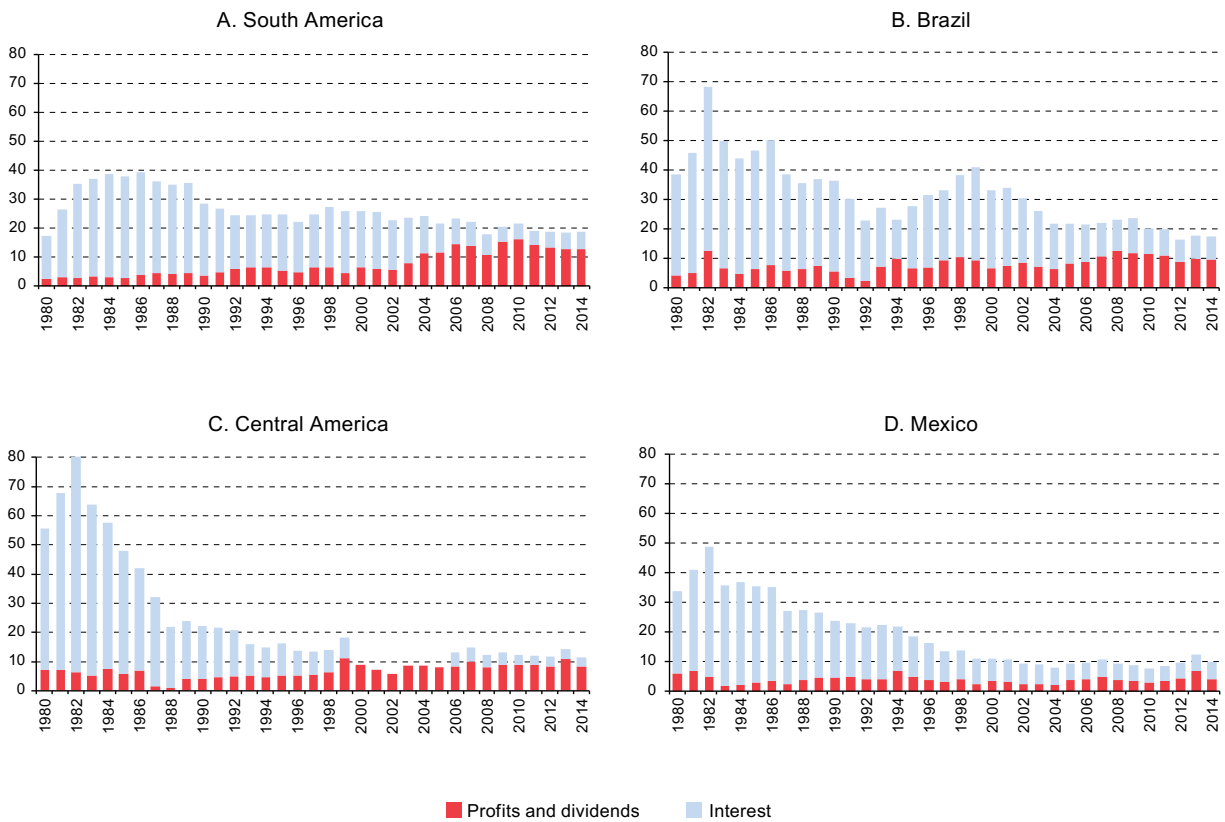
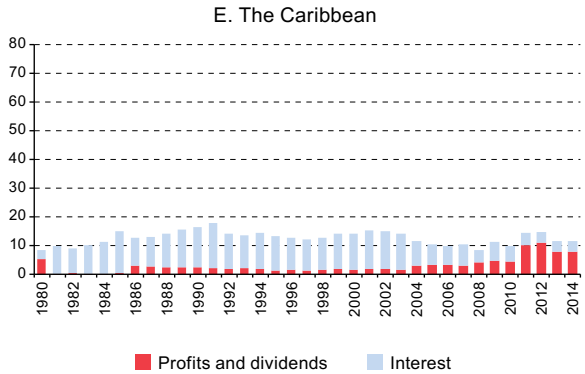


Figure IV.15 (concluded)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official figures.

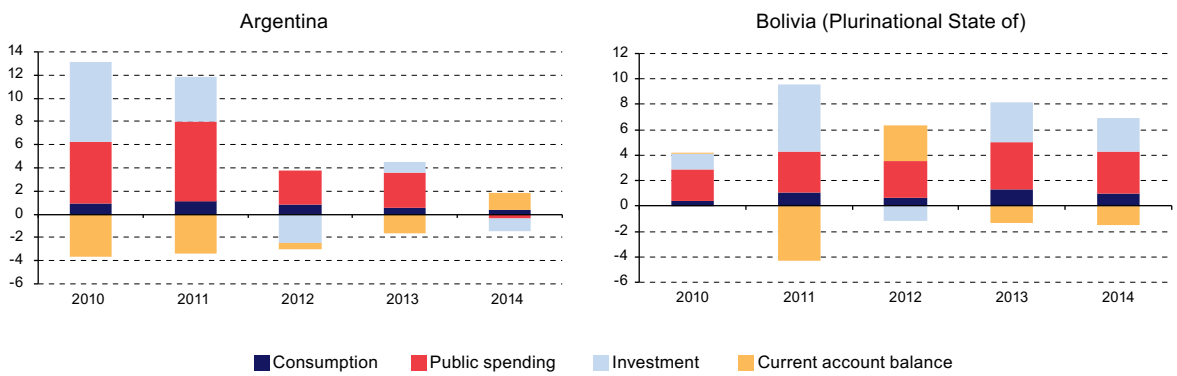
Other things being equal, a larger share for FDI in the stock of external liabilities means a lower degree of external vulnerability. This is because, notwithstanding the macroeconomic strains sometimes associated with the dynamic of profit and dividend remittances abroad, direct investment is less liquid than short-term flows and profits tend to improve over the cycle.[6]

In sum, taken as a whole, and despite the relative decline in traditional forms of debt, the burden of external liabilities as a share of exports has tended to rise because of increased foreign ownership of production assets. Although this shift has made external liabilities less risky in the short run, it is heightening the region's external vulnerability in a context of low growth in the global economy.

D. Weak investment is hindering capacity-building

Both the general and the country-specific factors have impacted on the momentum of aggregate demand and gross fixed capital formation, as can be deduced from the breakdown of the behaviour of aggregate demand in 15 of the region's economies (see figure IV.16).

Figure IV.16
Latin America (15 countries): breakdown of growth by aggregate demand components, 2010-2014[a]
(Percentages)



6 It is assumed that the profits to be distributed and perhaps remitted abroad decline in the downturns of the cycle.

Figure IV.16 (continued)

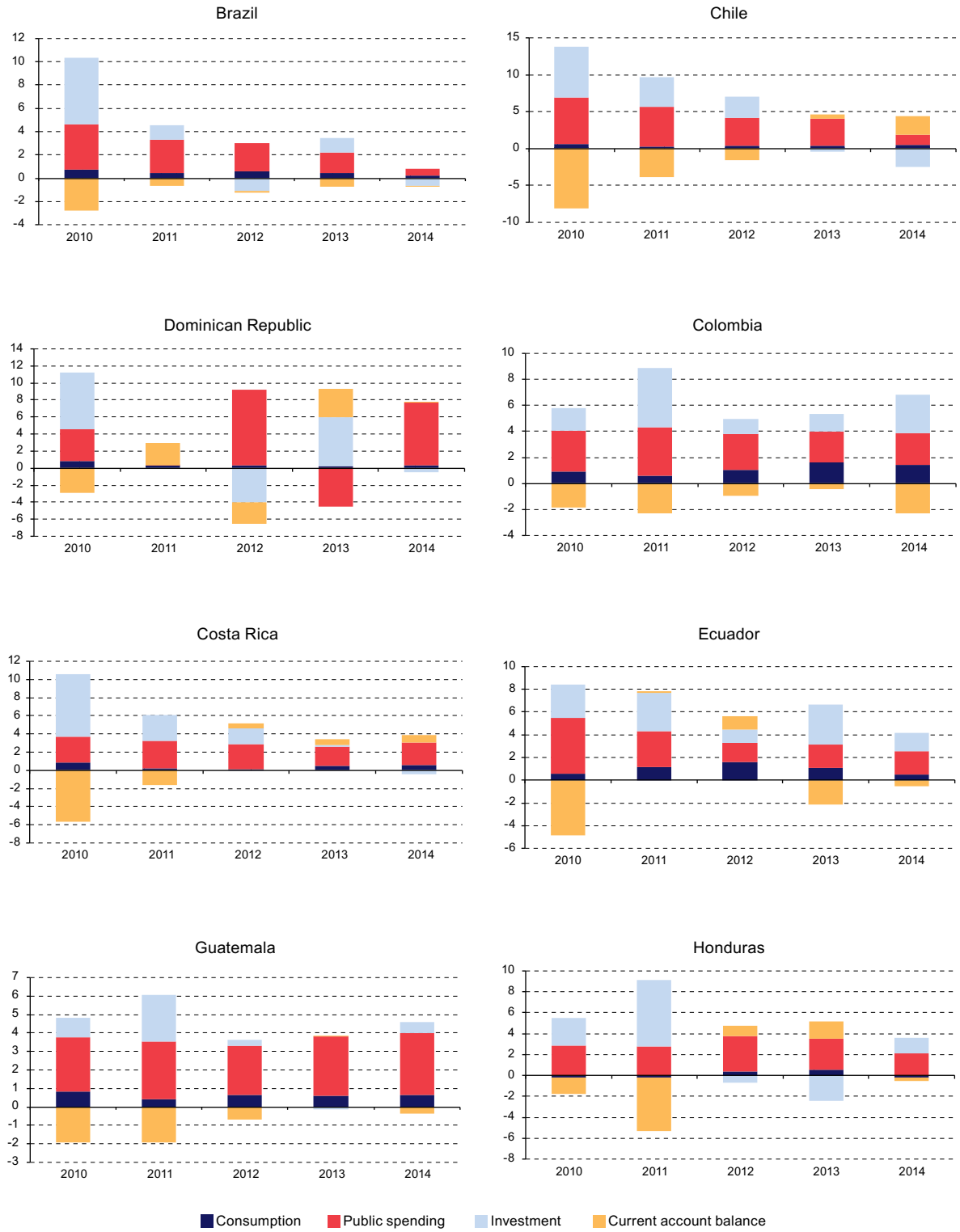
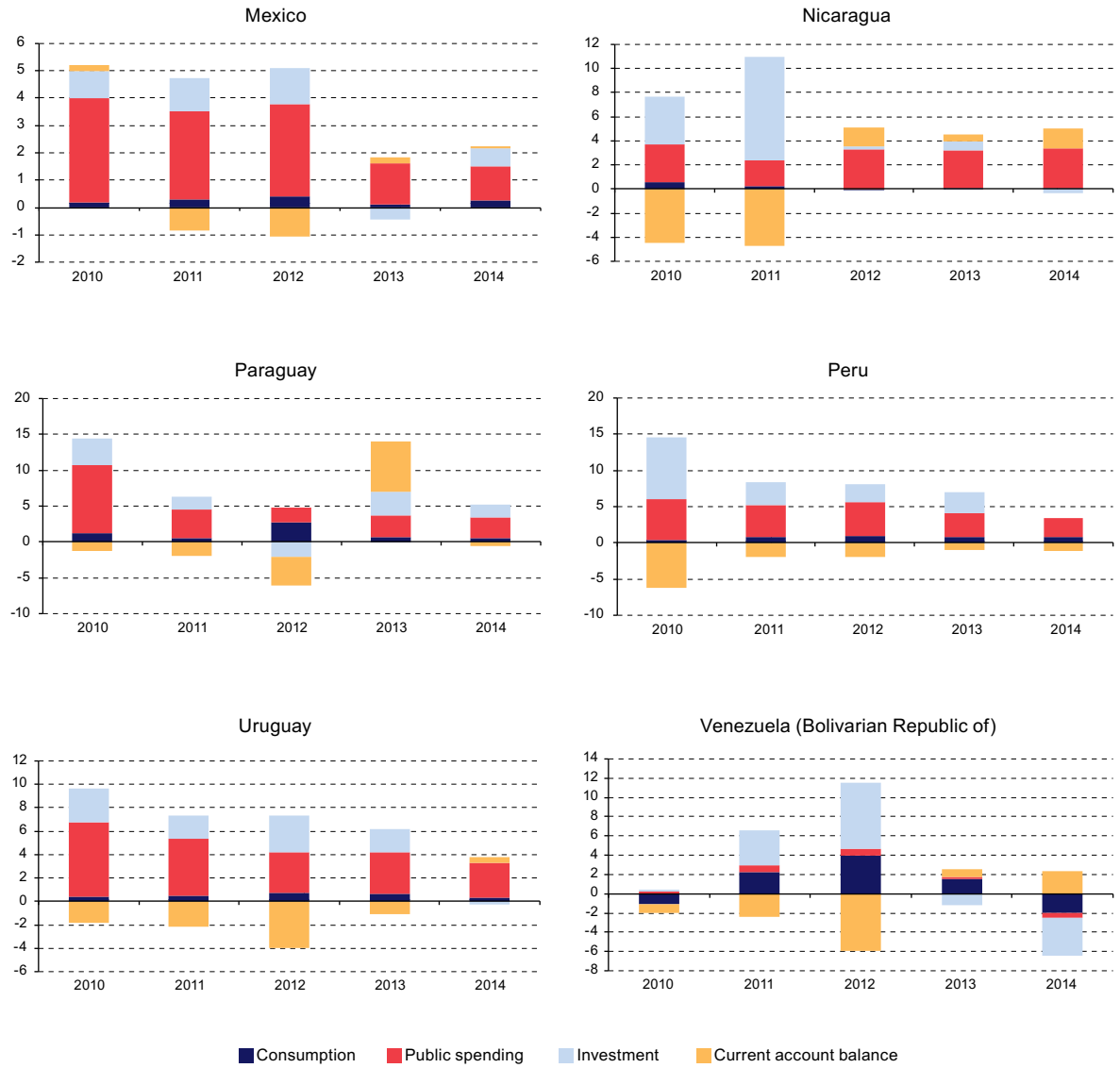


Figure IV.16 (concluded)

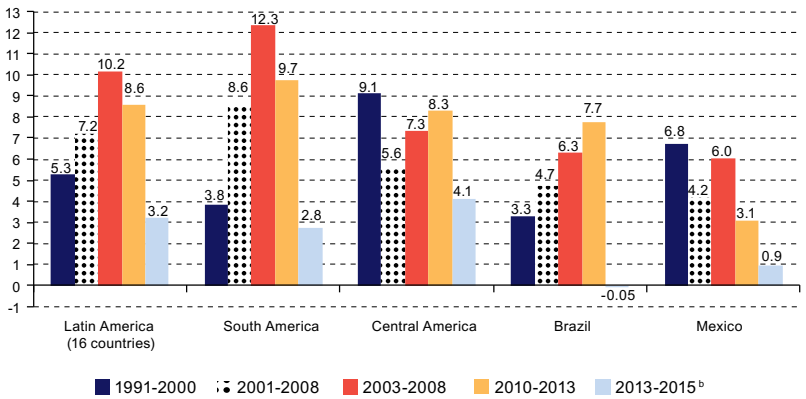


Source: Economic Commission for Latin America and the Caribbean (ECLAC), CEPALSTAT database, on the basis of official figures.
[a] Quarterly data.

There are large regional and subregional differences in investment behaviour. Figure IV.17 shows that Latin America, South America and Central America have experienced significant declines in investment growth rates since 2013. In Brazil and Mexico, the rate has been virtually nil.

This investment pattern is a cause for concern because it implies that the region is not building the capacities, infrastructure and innovation underpinnings required for a growth cycle like that proposed by ECLAC as necessary to support the effort to achieve the Sustainable Development Goals. Investment and innovation are at the core of the big environmental push that is needed.

Figure IV.17
Latin America: rates of change in real-term gross fixed capital formation, 1991-2000, 2001-2008, 2003-2008, 2010-2013 and 2013-2015[a]
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), CEPALSTAT database, on the basis of official figures.
[a] The data are the averages for each subperiod and, in the case of the subregions, the average for the countries.
[b] Data refer to the first quarter.

E. The impact of the investment cycle on the short- and long-run growth paths

The investment cycle in the region has four characteristics. First, it tends to be shorter than the GDP cycle, which increases volatility. Table IV.4 shows that investment cycles last 35% less than GDP cycles in the region, and are shortest in Central America (74% less than GDP cycles).

The second characteristic is that investment tends to contract more heavily than GDP (see table IV.5). This is seen at the subregional level in Central and South America, and also in the large economies, such as Brazil and Mexico.

Table IV.4
Latin America: selected investment cycle indicators, 1990-2014[a]
(Ratios and percentages)

	Ratio of investment growth to GDP growth	Ratio of investment contraction to GDP contraction	Percentage by which investment cycles are shorter than GDP cycles	Ratio of cumulative investment losses to cumulative gains
Latin America	1.40	4.0	35.0	2.42
South America	1.39	3.3	35.0	1.56
The Caribbean	3.51	5.9	14.0	1.15
Central America	0.59	4.9	74.0	8.27
Mexico	1.38	2.1	22.0	1.63
Brazil	1.39	4.2	35.0	2.41

Source: Economic Commission for Latin America and the Caribbean (ECLAC), CEPALSTAT database, on the basis of official figures.
[a] Quarterly data.

At the regional level, investment contracts by four times as much as GDP in downturns. At the subregional level, the ratio is three in South America, five in Central America and about six in the Caribbean.

This last characteristic is reflected in a third fact, namely that over the business cycle the cumulative loss of investment (estimated as the product of size and duration) during the downturn is greater than the gain accumulated in the upturn. For the region, the cumulative loss in downturns is more than double the cumulative gain in upturns. This pattern is also seen at the subregional level, with some variations. Central America and the Caribbean show the largest and smallest cumulative losses, respectively. In South America, meanwhile, the cumulative loss in downturns is 56% greater than the cumulative gain in upturns.

Table IV.5
Latin America: size of contractions in aggregate demand components relative to GDP contractions, 1990-2014[a]
(Ratios)

	Private consumption	Public consumption	Gross fixed capital formation	Exports
Latin America	0.6	0.6	4.0	3.3
South America	0.6	0.8	3.3	3.6
Central America	0.3	1.0	5.9	3.6
Mexico	0.8	0.1	2.1	1.1
Brazil	0.8	0.3	4.2	3.6

Source: Economic Commission for Latin America and the Caribbean (ECLAC), CEPALSTAT database, on the basis of official figures.
[a] Quarterly data. Total losses are calculated as the product of duration and size.

A fourth characteristic can be seen when the contraction in the investment-to-GDP ratio is compared with the other components of aggregate demand. At the regional and subregional levels, and in Brazil and Mexico, investment contracts by more than these other components. The difference is striking when the size of investment contractions is compared with that of contractions in public and private consumption, as this falls by less than GDP. For their part, exports usually tend to contract by well over three times as much as GDP, which implies that they are also an important factor in the evolution and behaviour of GDP over the cycle.

The asymmetry of investment behaviour in the upturns and downturns of the cycle is captured by two indicators (Sichel, 1993; Mills, 2001). The first is steepness asymmetry, which is detected when the drop in investment in the recessionary phase of the cycle is sharper than its recovery in the expansionary phase. The second indicator is the deepness of the investment decline in the recessionary phase. Deepness asymmetry occurs when the value of the decline in the downturn is larger than the value of the increase in the upturn.[7]

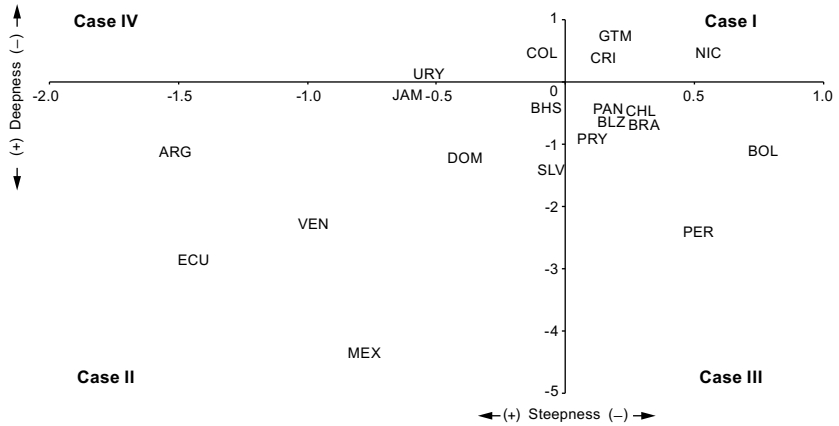
Figure IV.18 divides 19 countries of Latin America and the Caribbean into four groups by the steepness and deepness asymmetry of investment over the cycle. In case I, the countries display no asymmetry in steepness or in deepness, as both indicators are above zero. In case II, they display both steepness and deepness asymmetry, with both indicators below zero. In case III, there is asymmetry in the steepness of the investment downturn, but not in its deepness (the steepness indicator is above zero and the deepness indicator below). Lastly, case IV includes countries that display asymmetry in the deepness of investment downturns but not in their steepness (the deepness indicator is above zero while the steepness indicator is below it).

Most of the Latin American and Caribbean countries (15 of 19) display asymmetry in the steepness or deepness of their investment cycles, while a very small number display asymmetry in neither. Comparing the region with others, especially East Asia and the Pacific, shows that it has higher levels of both steepness and deepness asymmetry. This means that the downturn of the cycle is steeper and deeper than the upturn, which has major consequences for long-term investment behaviour.

This variable affects the long term via three channels. For one thing, investment is highly irreversible and connects short-term decisions with medium- and long-term outcomes. Irreversibility has two effects. First, it gives investment decisions durability over time, since firms cannot disinvest or can only do so at high cost and very gradually via depreciation of their fixed assets; investment thus becomes a sunk cost. Second, irreversibility can become a determinant in the decision not to invest in cyclical downturns because of the risks involved, such as the uncertainty of the macroeconomic environment. Thus, the downturn of the cycle can bring lower growth in the capital stock, which in turn usually reduces the economy's ability to generate and sustain employment. It can also hold down productivity by delaying the adoption of more capital- and technology-intensive production methods.

[7] Steepness asymmetry and deepness asymmetry are calculated by computing the respective statistical indicators (for steepness and deepness) and comparing them with a threshold that, for demonstration purposes, is set at zero. When the steepness indicator is below zero, investment steepness is deemed asymmetrical. Similarly, when the deepness indicator is below zero, investment deepness is deemed asymmetrical.

Figure IV.18
Latin America and the Caribbean (19 countries): steepness and deepness asymmetry in investment cycles, 1990-2014 [a]



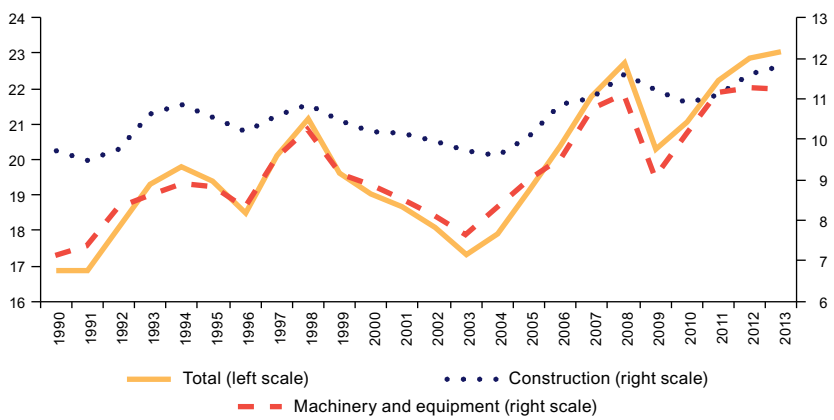
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official figures.
[a] Based on quarterly data.

A second channel is the induced effect of investment on the other components of aggregate demand. A larger investment spending multiplier generates greater demand for inputs and finished products, and this then acts as a further stimulus to investment (i.e. it acts as an accelerator).

The third channel is the impact on productivity. Traditionally, a distinction is made between higher production resulting from increased capital accumulation and that resulting from productivity gains. In practice, it is difficult to distinguish between the two, since as capital is accumulated the successive units of capital stock put to use in the production process absorb greater technological progress and innovation. Thus, capital accumulation is associated with rising productivity.

In 1990-2013, and especially between 2003 and 2008, the evolution of investment was led by its most dynamic and highest-tech component: machinery and equipment (see figure IV.19). Investment in construction (the other component of gross fixed capital formation) also increased, but much more slowly, rising from 9.6% of GDP in 1990 to 11.0% in 2010; during what was the region's strongest growth period in three decades, it did not behave in a different or particularly dynamic way relative to other periods.

Figure IV.19
Latin America and the Caribbean: total gross fixed capital formation in construction and in machinery and equipment, 1990-2013
(Percentages of GDP)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), CEPALSTAT database, 2015.

The close link between the evolution of total gross fixed capital formation and the machinery component, which embeds the latest innovations and technological advances, is a key channel through which capital accumulation affects productivity. Eroded productivity can then widen the productivity gap between Latin America and the Caribbean and other regions, which has consequences in various spheres, especially international competitiveness. A country that lags on productivity will struggle more to generate foreign exchange and to diversify, increasing its external vulnerability. In an economy with these characteristics, a low-tech structure will tend to be reproduced and prove highly persistent, making the Sustainable Development Goals yet harder to achieve.

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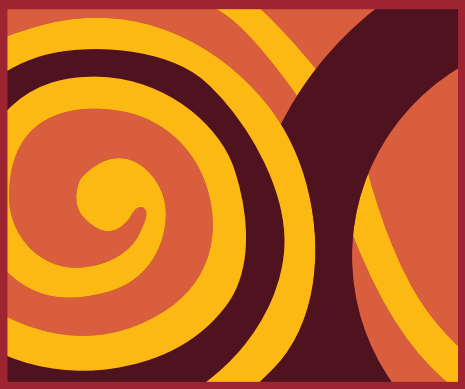
Chapter V



Structural gaps have not narrowed

Chapter V

Structural gaps have not narrowed

The external context is not the only factor shaping responses to the challenges of the 2030 Agenda for Sustainable Development. Development possibilities are also constrained by the region's internal structures, whose negative effects may even be further entrenched by the current conditions. Despite recent achievements in some areas, the structural gaps analysed by the Economic Commission for Latin America and the Caribbean (ECLAC) in the publications making up its equality trilogy (ECLAC, 2010a, 2012, 2014c) continue to obstruct progressive structural change. Economic, social, territorial and environmental gaps hinder both sustainable economic growth and efforts to move towards more inclusive economies and societies.

A. Low productivity and poor infrastructure

Insofar as it calls for full productive employment, innovation and inclusive and sustainable industrialization —thereby recognizing the importance of the production sector to development— the 2030 Agenda for Sustainable Development encompasses something not covered in the Millennium Declaration. Although this represents progress, it falls short, as it neglects the links and interdependence between various economic and social aspects.

The long-term engines of growth lie in diversifying production and increasing the weight of more technology-intensive sectors in the economy by means of an environmental big push in the form of low-carbon investments. These factors are part of progressive structural change and have been important to successful experiences of convergence elsewhere in the world.

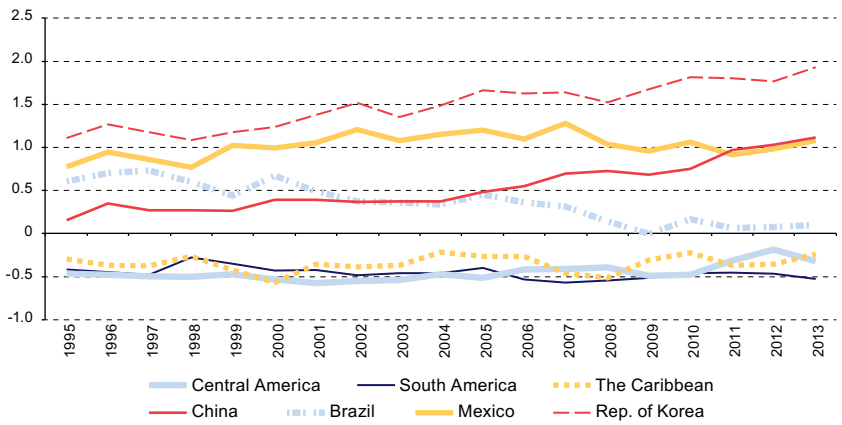
However, progressive structural change has been weak in the economies of Latin America and the Caribbean, particularly when compared with successful Asian economies. The region's productivity gap with the developed world —the external gap— has therefore not decreased significantly and, where it has, it has done so at a slower rate than in other developing economies.

The scale of the external gap is determined by the nature of the link between technological development and production transformation. In open economies, the absence of technological convergence with the international frontier is indicative of a specialization pattern in which few activities make intensive use of technology. This has two major consequences. First, in a structure biased towards activities that involve little research and development (R&D) spending, learning processes are slow and productivity gains meagre. Second, a production structure with smaller or fewer technology-intensive sectors (with less Schumpeterian efficiency) has little capacity to adapt to shifts in demand. In the most dynamic markets, competitiveness depends on technological expertise, and demand for consumer goods and investment change constantly. Technological disadvantages prevent the region from responding with the speed and determination needed to maintain its share in those markets.

One of the most commonly used indicators to measure the extent of structural change is the Hidalgo-Hausmann economic complexity index, which is based on two indicators: diversity and ubiquity (that is, a country's capacity to produce goods that very few countries produce). The two are combined to reflect the country's production capacities, capturing not only the variety of existing skills, but also their degree of sophistication.

In the success stories from Asia, the Hidalgo-Hausmann index has risen in the last two decades, but it has remained very low in South America, Central America and the Caribbean (see figure V.1). The exception in the region is Mexico, where the index has increased considerably. However, although many Mexican exports are classified as knowledge-intensive, they are in fact intensive in unskilled labour owing to the vertical fragmentation of the respective activities in global value chains. Because the index is built using a trade database[1] that does not capture this fragmentation, it overestimates the complexity of assembly-intensive economies.

Figure V.1
Selected countries and regions: economic complexity index, 1995-2013



Source: Center for International Development at Harvard University, The Atlas of Economic Complexity [online], http://www.atlas.cid.harvard.edu.
Note: South America: Argentina, Bolivarian Republic of Venezuela, Chile, Colombia, Ecuador, Paraguay, Peru, Plurinational State of Bolivia, and Uruguay. Central America: Costa Rica, Cuba, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua and Panama. The Caribbean: Jamaica and Trinidad and Tobago.

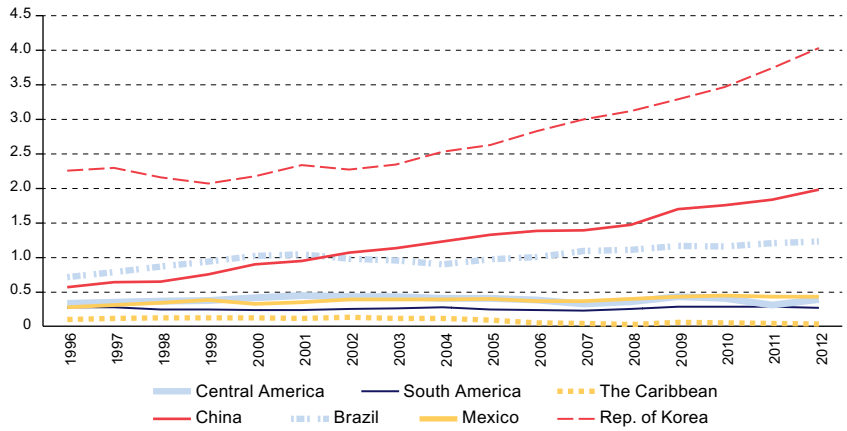
Other indicators that directly capture the scale of technological efforts —such as spending on R&D as a percentage of GDP— and their results —such as the share of total global patents— add weight to that conclusion. Spending on R&D by China and the Republic of Korea far outstrips that of South America, Central America and Mexico (see figure V.2). Brazil has a smaller gap with respect to the Asian economies than that of other countries and subregions of Latin America and the Caribbean, because it has pursued policies to foster R&D and research systems, and has a more diversified industrial base than other countries in the region. Nevertheless, the gap between Brazil and China in this area is widening visibly.

Between 2004 and 2013, the share of the different economies in total patents worldwide —a direct indicator of the results of innovation— became more concentrated. In that period, Asia's share grew considerably (from 49% to 58%) and that of Latin America slipped from 3% to 2% (see figure V.3).

As a country increases its capacities and approaches the technological frontier, its productivity gap narrows and its relative productivity increases vis-à-vis the technology and productivity leader. Figure V.4 shows the relative productivity of different countries compared to the United States, plotted against an indicator of technology intensity (CEPALITEC), which combines information on high-tech exports, patents, R&D spending and the weight of engineering in the manufacturing value added.

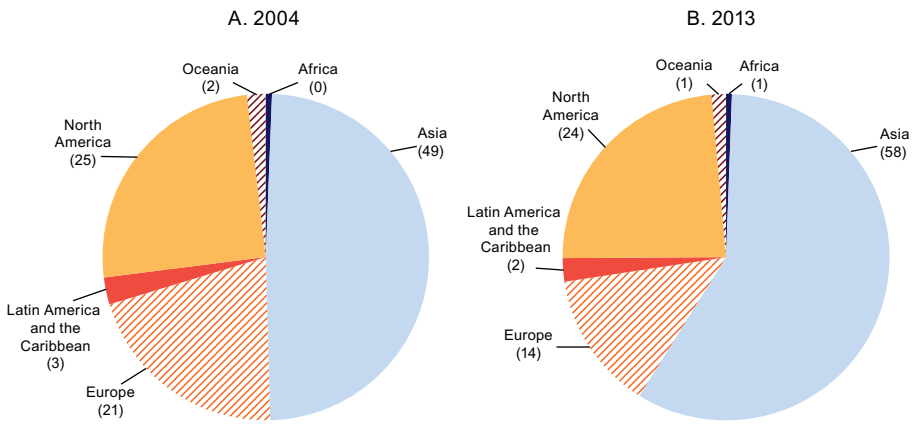
[1] The indicator is built on the basis of the United Nations Commodity Trade Statistics Database (COMTRADE).

Figure V.2
Selected countries and regions: spending on research and development, 1996-2012
(Percentages of GDP)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), CEPALSTAT database on the basis of official figures.
Note: South America: Argentina, Chile, Colombia, Ecuador, Peru, Plurinational State of Bolivia, and Uruguay. Central America: Costa Rica, Cuba and Panama. The Caribbean: Trinidad and Tobago.

Figure V.3
World regions: share of total patents worldwide, 2004 and 2013
(Percentages)



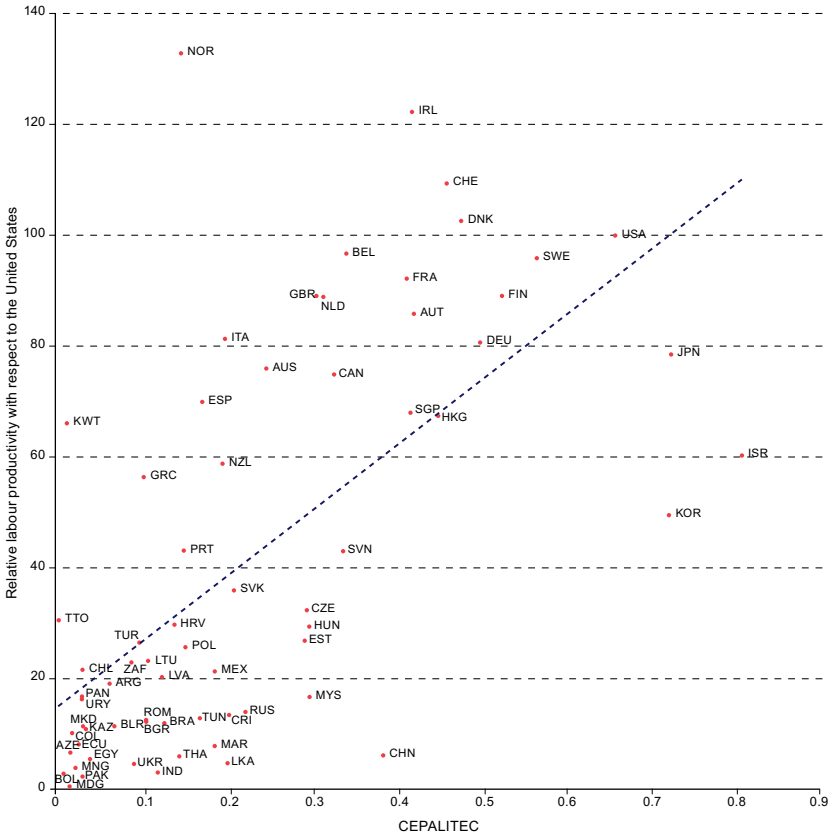
Source: World Intellectual Property Organization (WIPO), Statistics [online database] http://www.wipo.int/ipstats/en/.

Most Latin American countries are in the bottom left-hand corner of figure V.4, with low technology intensity and low relative productivity. In general, their relative productivity is higher than would be expected from their technology intensity, reflecting the greater weight of natural resources than human capital in sustaining labour productivity.

The dynamics of the production structure should be analysed in conjunction with productive capacity-building. The complexity of the production structure, measured by the share of medium- and high-tech manufacturing, is closely linked to investment in R&D (see figure V.5). The region's economies generally have a low share of medium- and high-tech manufactures, and show low demand for and use of knowledge.

Figure V.4

Selected economies: relative labour productivity compared to the United States and technology intensity index

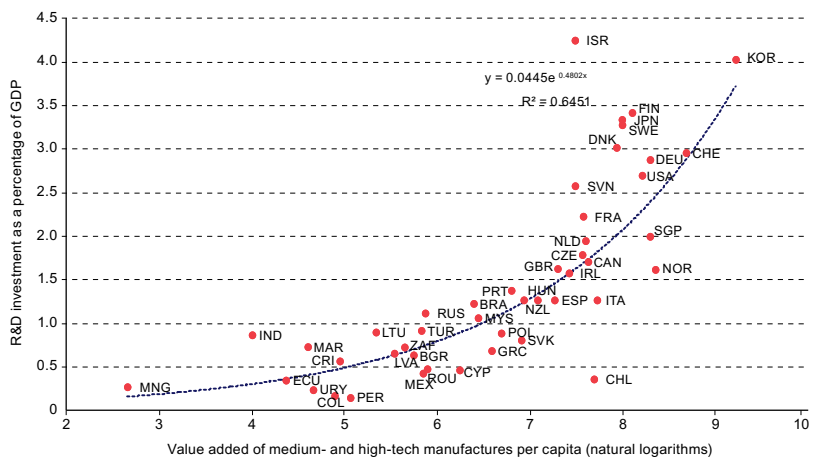


Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations Commodity Trade Statistics Database (COMTRADE), United States Patent and Trademark Office (USPTO), United Nations Educational, Scientific and Cultural Organization (UNESCO), Organization for Economic Cooperation and Development (OECD), Ibero-American Network of Science and Technology Indicators (RICYT) and ECLAC.

Note: CEPALITEC is an unweighted average of three indicators with values standardized between zero and one: medium- and high-tech exports as a percentage of total exports (high-tech exports according to the Lall classification); the number of patents per million inhabitants; and spending on R&D as a percentage of GDP.

Figure V.5

Selected economies: production structure and research and development, 2009

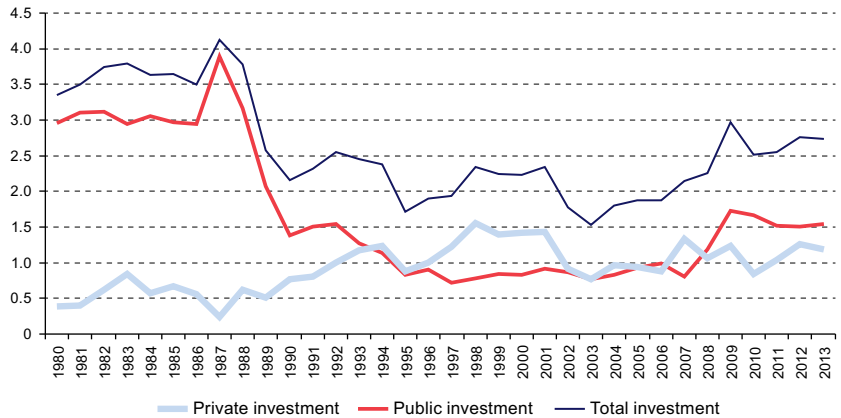


Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of information from the United Nations Educational, Scientific and Cultural Organization (UNESCO), Organization for Economic Cooperation and Development (OECD), Ibero-American Network of Science and Technology Indicators (RICYT), ECLAC, International Telecommunication Union (ITU), World Telecommunication/ICT Indicators database, 2014 and the United Nations Industrial Development Organization (UNIDO), Industrial Statistics Database INDSTAT2-2015.

Investment in infrastructure fosters progressive structural change geared towards reducing productivity differences between sectors and companies, while strengthening external linkages and allowing the country to take advantage of the opportunities offered by the global economy. Such investment has a high social return as it facilitates access to essential goods and services, such as health and education, and strengthens social networks. Sustainable Development Goal 9 of the 2030 Agenda for Sustainable Development refers to building resilient infrastructure, again recognizing the links between social progress and economic change that were not explicit in the Millennium Declaration.

The region suffers from a persistent shortfall as regards infrastructure. Investment ratios were higher in the 1980s, when they reached 3.6% of GDP, dropping to 2.2% between 1990 and 2001, before rallying slightly to 2.5% between 2002 and 2013 (see figure V.6). The highest rates achieved by Latin America and the Caribbean between 1992 and 2011 are much lower than those of economies such as China (8.5%), Japan (5%) and India (4.7%) (McKinsey, 2013).

Figure V.6
Latin America: investment in infrastructure by sector, 1980-2013
(Percentages of GDP)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of figures provided by the initiative for measuring economic infrastructure investment of the Inter-American Development Bank (IDB), Development Bank of Latin America-CAF and ECLAC; and C. Calderón and L. Servén, "Infrastructure in Latin America", World Bank Policy Research Working Paper, No. 5317, Washington, D.C., World Bank, 2010.

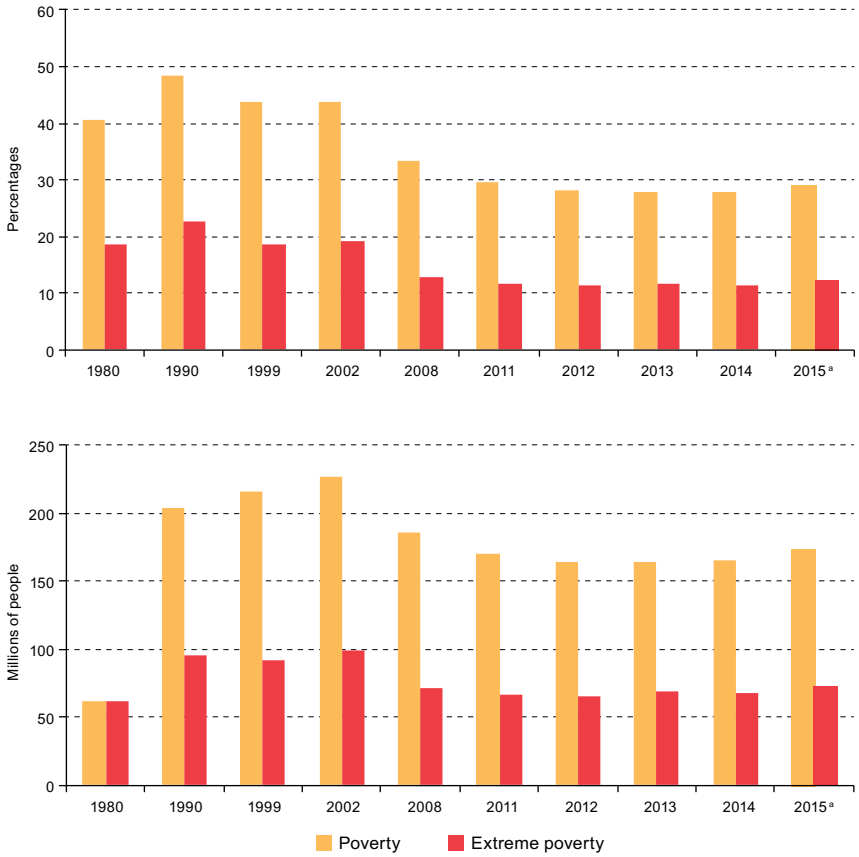
There is a significant gap between the region's investment needs and the amounts actually raised (Perrotti and Sánchez, 2011), which adds to existing historical gaps and turns infrastructure into a structural constraint on productivity.

B. Poverty and income concentration increase vulnerability

Sustainable Development Goal 1 calls for ending poverty in all its forms everywhere, and it is complemented by Goal 10, to reduce inequality within and among countries. These Goals seek equality not only of opportunities, but of outcomes too —this is crucial for the region. The social pillar of the new Agenda is much broader and more ambitious than the Millennium Development Goals.

Twenty-eight per cent of the Latin American population —168 million people— live in poverty (see figure V.7). This figure represents a significant reduction with respect to the beginning of the 1990s, when the poverty rate was 48%, and even 2002, when it was 44%. Most of the decrease in fact occurred between 2002 and 2009. In the past few years, the downward trend has slowed and estimates for 2015 indicate an increase of nearly one percentage point. The extreme poverty rate follows a similar trend: after dropping from 19.2% to 11.8% between 2002 and 2014, it is expected to rise in 2015.

Figure V.7
Latin America (19 countries): poverty and extreme poverty rates, 1980-2015[a]
(Percentages and millions of people)

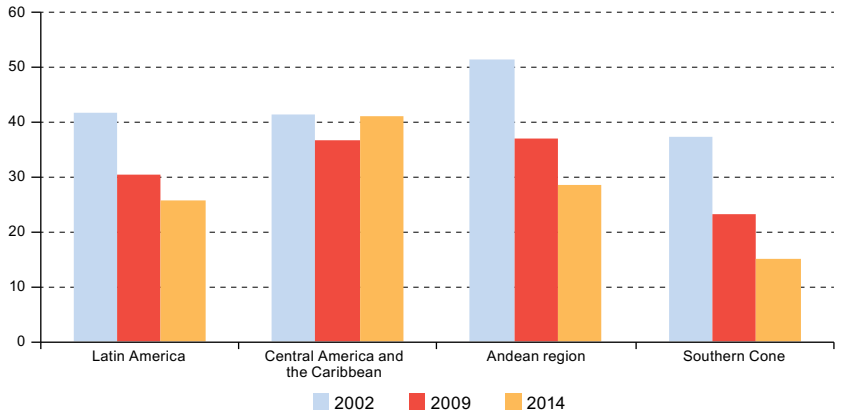


Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of special tabulations of data from household surveys.
[a] Projection.

The setback in poverty reduction has two causes: the slowdown in growth (with its impact on employment creation and decent work) and mounting inflationary pressures. Higher food prices increase poverty because they represent a hefty proportion of low-income groups' consumption baskets. Depending on the country, the poorest quintile of households spent between a third and half of their budget on buying food and non-alcoholic beverages, with the cost of a basic food basket accounting for between a third (Costa Rica for the period 2007-2010) and two thirds (Peru for the period 2010-2013) of the rise in the percentage of the population living in extreme poverty (Medina and Galván, 2014).

The decline in poverty rates was not uniform. The biggest decreases were in the Southern Cone and the Andean region (see figure V.8). In the period 2002-2014, poverty came down by almost 60% (22 percentage points) in the Southern Cone (Argentina, Brazil, Chile, Paraguay and Uruguay) to reach 15% in 2014. The rate fell significantly in absolute terms (23 percentage points) in the Andean region (Bolivarian Republic of Venezuela, Colombia, Ecuador, Peru and Plurinational State of Bolivia) as well, although it started from a much higher point there than in the rest of South America. The 45% drop in poverty in the Andean region meant that it is no longer the poorest subregion, albeit its poverty levels are still relatively high (29% in 2014). Central America and the Caribbean (Costa Rica, Dominican Republic, El Salvador, Honduras, Mexico and Panama) started the period with lower poverty levels than the Andean region (42%), but were less successful in bringing down the figure. By the end of the period, poverty was 41% in Central America and the Caribbean, the highest rate among the subregions under consideration.

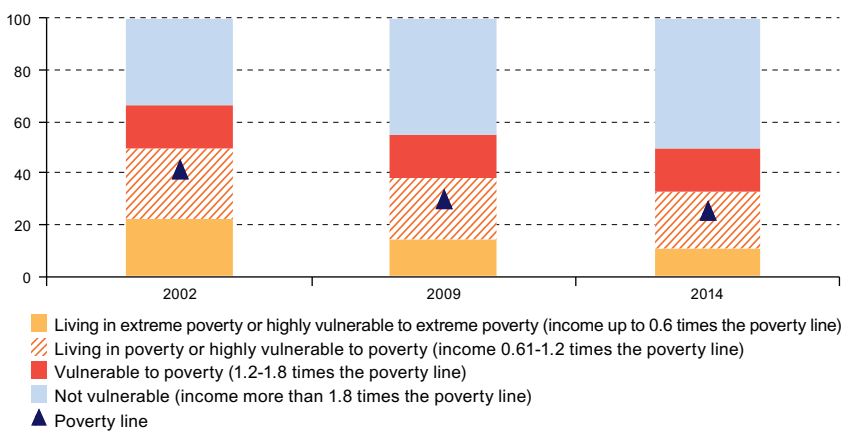
Figure V.8
Latin America and the Caribbean: poverty by subregion, 2002, 2009 and 2014
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of special tabulations of data from household surveys.

Measuring poverty by monetary methods, as with other indicators, involves a degree of arbitrariness, insofar as it defines an income threshold that separates the poor from the non-poor: a useful complement is therefore to analyse living conditions with a view to vulnerability to poverty.[2] The improvement in material living conditions in Latin America between 2002 and 2014 is clear to see in figure V.9. The percentage living in or vulnerable to extreme poverty was halved in that period. The number living in or vulnerable to poverty also decreased, albeit to a lesser extent (nearly six percentage points), and the percentage of the population not at risk increased. However, the percentage that was vulnerable to poverty (17%) remained relatively stable. The fact that a significant percentage of the population is close to the poverty line and highly vulnerable to returning to poverty in the event of a slight fall in their income should raise alarm bells at a time when economic conditions in the region are less auspicious.

Figure V.9
Latin America: vulnerability to poverty, 2002, 2009 and 2014
(Percentages)

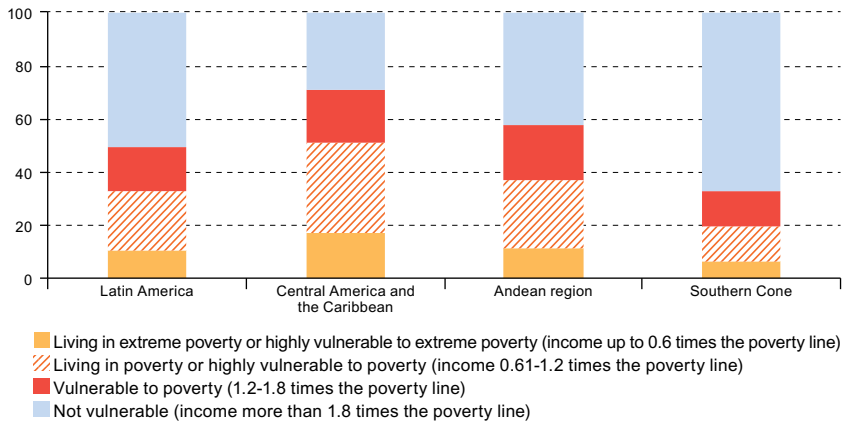


Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of special tabulations of data from household surveys.

[2] ECLAC (2010c) classifies households with income between 0.6 and 1.2 times the poverty line as poor or highly vulnerable to poverty, while it considers those that have income between 1.2 and 1.8 times the poverty line as vulnerable to poverty. Those with incomes higher than 1.8 times the poverty line are considered less vulnerable and those with income less than 0.6 times the poverty line are considered to be living in extreme poverty or highly vulnerable to extreme poverty.

The vulnerability indicator also shows marked differences by subregion (see figure V.10). More than half of the population is at least vulnerable to poverty in the Andean region (57%) and more than 70% is vulnerable in Central America and the Caribbean. On the other hand, more than 60% of the population of the Southern Cone is considered not vulnerable.

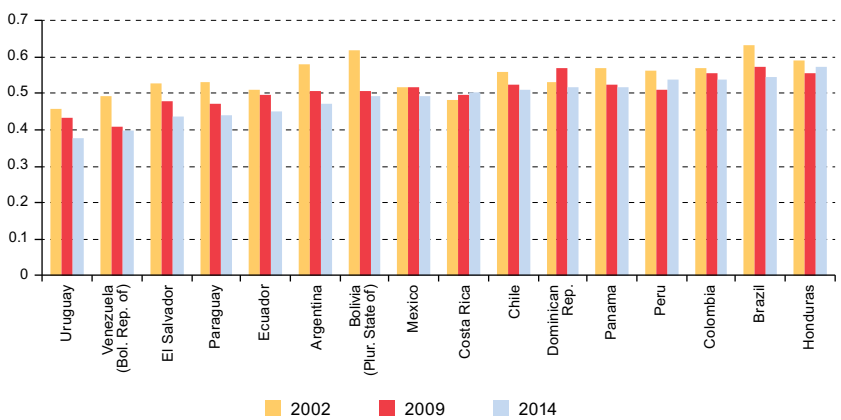
Figure V.10
Latin America and the Caribbean: vulnerability to poverty by subregion, 2014
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of special tabulations of data from household surveys.

The region has seen a reduction in income inequality, as measured by the Gini coefficient, in almost all the countries included in figure V.11. Between 2002 and 2014, the greatest poverty reduction achievements in relative terms occurred in Argentina, the Bolivarian Republic of Venezuela, El Salvador, Paraguay and the Plurinational State of Bolivia, with rates declining by more than 4% a year.

Figure V.11
Latin America (16 countries): Gini coefficient, 2002, 2009 and 2014



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of special tabulations of data from household surveys.

The figures from recent years indicate that inequality reduction has slowed. The decline in income inequality basically reflected developments in the labour market, where the dispersion of earnings narrowed considerably. The extent to which the drop in the education premium was driven by the increased supply of skilled workers, by the slowdown in relative demand for skilled labour, or by a combination of both, has been much discussed (ECLAC, 2014a). A combination

seems the most likely, insofar as the surge in commodity prices during the period appears to have strengthened natural-resource-intensive sectors, which in turn make heavy use of less-skilled labour.[3]

Beyond general patterns, national experiences are dissimilar and various factors may have contributed to the lessening of inequality. In the Southern Cone economies, for example, labour institutions have made a significant contribution through minimum wage policies and collective bargaining. In the Central American economies, sources of non-labour income, including remittances, have had a positive effect on poverty and, to a lesser extent, on inequality (see box V.1). In general, non-contributory transfers to households with children and non-contributory pensions helped to lower inequality in the last decade. Given the significant expansion that has already occurred in coverage of such welfare programmes, new equalizing forces may not be expected from this quarter, unless transfer amounts increase. The possibility of further reducing inequality, therefore, appears to hinge in the medium-term on developments in the labour market, whose outlook is less promising than a few years ago. More progressive fiscal policies would also help to reduce inequality.

Box V.1

The impact of remittances on poverty and inequality

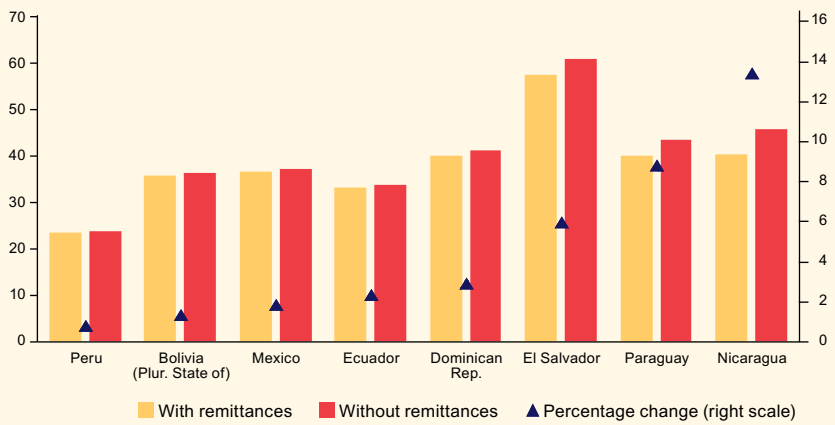
The effects of remittances on distribution and poverty depend on the type of household receiving them, as well as their significance compared to income from other sources. The potential impact of remittances has led to the inclusion of a target in the Sustainable Development Goals to reduce to less than 3% the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5% by 2030 (target 10.c).

For eight Latin American countries, removing remittances from the calculations changes overall poverty levels only slightly, but it has a greater effect in El Salvador (3.6 percentage points), Nicaragua (5.5 points) and Paraguay (3.5 points), reflecting, in the case of El Salvador and Paraguay, a pattern of migration originating in low-income households. In Peru, poverty rates change by less than 1% (0.2 percentage points) when remittances are removed.

Figure 1

Latin America (8 countries): individuals living in poverty with and without remittances and percentage change, latest available data, all households

(Percentages)



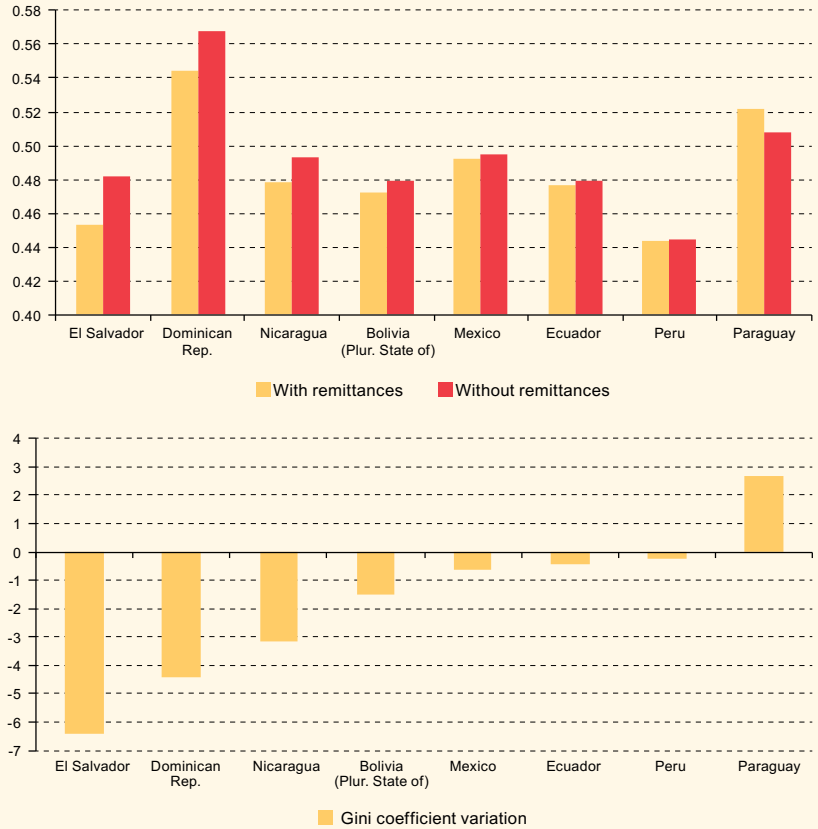
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of special tabulations of data from household surveys.
Note: The results are for 2009 for Nicaragua, 2011 for the Plurinational State of Bolivia, 2012 for Mexico, and 2013 for the Dominican Republic, Ecuador, El Salvador, Paraguay and Peru.

The impact of remittances on income inequality, measured using the Gini coefficient, shows more ambiguous results. While they produce a reduction in income inequality in the Dominican Republic, El Salvador, Nicaragua, and the Plurinational State of Bolivia, in Paraguay they increase it. In turn, the effects are very small in Ecuador, Mexico and Peru. This indicates that remittances are better distributed than other forms of income in the first countries, equally distributed in the latter and are more concentrated in Paraguay.

[3] In a recent study, Székely and Mendoza (2015) present econometric evidence that short-term fluctuations in income inequality in the region appear to be directly linked to terms of trade, which are volatile and variable owing to the effects of the international markets.

Box V.1 (concluded)

Figure 2
Latin America (8 countries): Gini coefficient with and without remittances and percentage change, latest available data



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of special tabulations of data from household surveys.
Note: The results are for 2009 for Nicaragua, 2011 for the Plurinational State of Bolivia, 2012 for Mexico, and 2013 for the Dominican Republic, Ecuador, El Salvador, Paraguay and Peru.

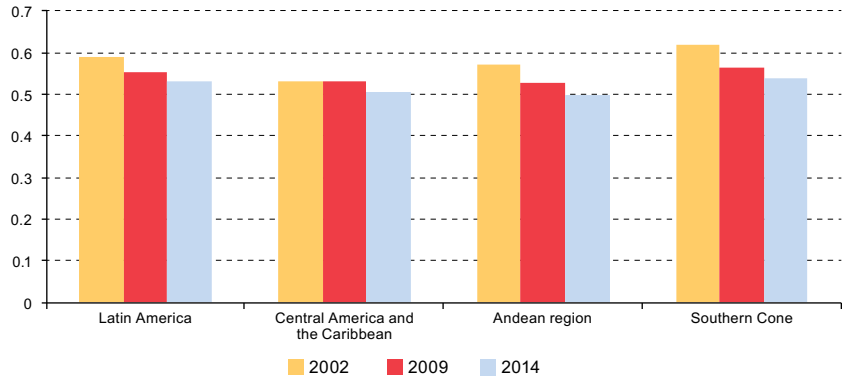
The economic effects of migration are particularly significant in the Caribbean countries. The positive effects of remittances on the economy should be compared to the cost of hiring and training people for jobs left vacant by emigrants, especially with regard to the migration of skilled education and health professionals. However, remittances may have prevented many households from falling into poverty or extreme poverty (ECLAC, 2015b).

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of P. Acosta and others "Do remittances lower poverty levels in Latin America?", Remittances and Development: Lessons from Latin America, World Bank, Washington, D.C., 2008; ECLAC, Social Panorama of Latin America, 2005, (LC/G.2288-P), Santiago, 2005; and Economic Survey of Latin America and the Caribbean, 2015 (LC/G.2645-P), Santiago, 2015.

Considering inequality in the region as a whole, beyond national cases, brings up some points of interest.[4] The Gini coefficient for the region indicates that Latin Americans' income is growing less unequal, since it went from 0.588 in 2002 to 0.553 in 2009 (see figure V.12). The rate of decline slowed in the second half of that period. Regional movements essentially reflect events in South America, given that trends are different in Central America and the Caribbean. The great weight of Brazil in terms of population (37% in 2014) and income (45%) mean that changes there have a significant effect on the regional indicator. Also as a result of Brazil's weight, the Southern Cone is the most unequal subregion.

[4] This study is based on data from household surveys from the region. It updates the results in Amarante, Galván and Mancero (2015) using similar criteria for processing data and calculating household income. The comparison between countries' per capita income is used, on the basis of purchasing power parity dollars at 2011 prices (PPP, World Bank series, World Development Indicators). The study is similar to those carried out worldwide by Lakner and Milanovic (2013), Niño-Zarazúa, Roope and Tarp (2014), and Anand and Segal (2015).

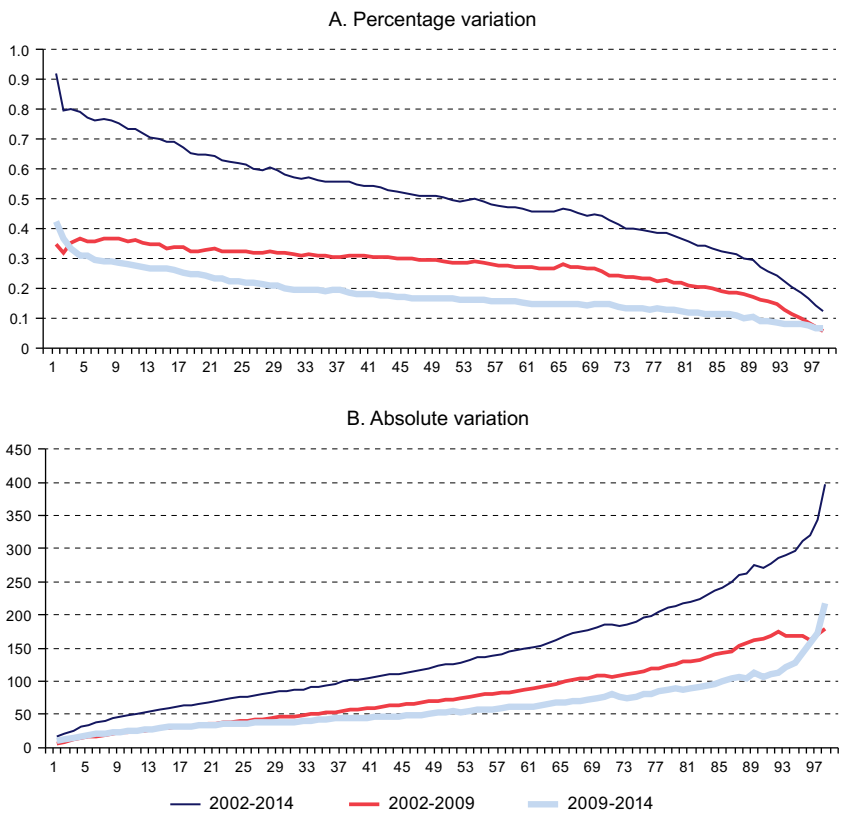
Figure V.12
Latin America and the Caribbean (16 countries): Gini coefficient of per capita income, on the basis of PPP dollars at 2011 prices, 2000, 2009 and 2014



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of special tabulations of data from household surveys.

The growth incidence curves proposed by Ravallion and Chen (2003) illustrate the changes in income across the distribution. Figure V.13A shows the traditional method of calculating the percentage change in income by percentile. Another way to look at variation income by percentile is in PPP dollars at 2011 prices, i.e. in absolute terms. Between 2002 and 2014, the traditional method shows the percentage change in income as positive in all percentiles, albeit not uniform across the distribution, because the lower percentiles showed larger rises.

Figure V.13
Latin America (16 countries): percentage and absolute variation in per capita income, on the basis of PPP dollars at 2011 prices, by percentile (growth incidence curves), 2002-2014



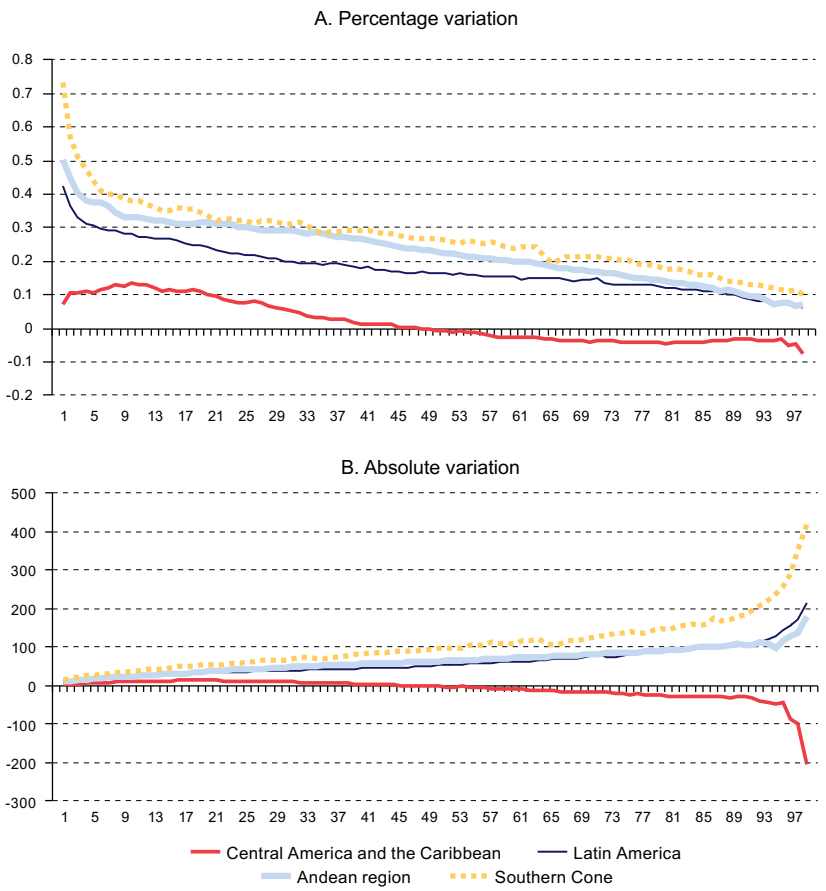
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of special tabulations of data from household surveys.

The results are less auspicious when the curves are analysed in absolute terms. The changes in income increase with income distribution; the higher percentiles saw a significantly greater increase than the lower percentiles. This indicates an increase in absolute inequality that is not seen with the Gini coefficient, which measures inequality in relative terms (ECLAC, 2014a).

As with the Gini coefficient, growth incidence curves for the subregions for the whole period reveal differences (see figure V.14). Relative income in the Andean region and the Southern Cone saw high levels of growth in all percentiles, with a negative slope. This indicates a favourable situation for the poorest in relative terms, and a resulting reduction in inequality. Levels of per capita income growth were lower in Central America and the Caribbean, but they also benefited the poor somewhat.

Figure V.14

Latin America and the Caribbean (16 countries, by subregion): percentage and absolute variation in per capita income, on the basis of PPP dollars at 2011 prices, by percentile (growth incidence curves), 2002-2014



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of special tabulations of data from household surveys.

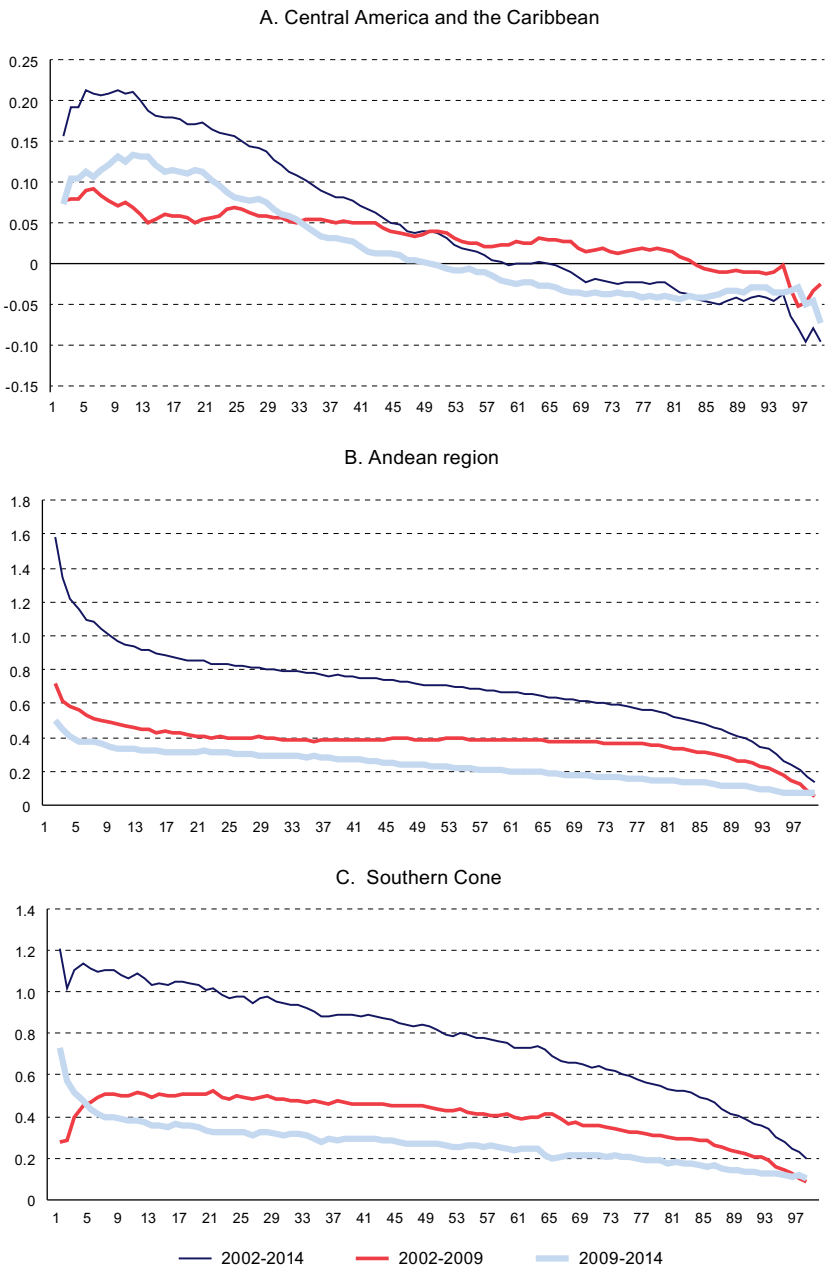
The absolute curves replicate the trends seen in the region; variations in income are rising, except in Central America and the Caribbean. This indicates that the wealthiest percentiles of all the subregions reaped larger income gains in absolute terms than the poorest percentiles, even though these variations represent a higher percentage of the poorest group's income than of the richest group's.

The curves for the Andean region are the most uniform across the subperiods, although each one starts at a higher level (see figure V.15). There was a marked increase in the average income of low-income sectors, particularly in the lowest decile. The Southern Cone also saw strong per capita income growth, the highest of the subregions in fact, and its curve shows a fairly egalitarian profile, albeit with significant growth for the percentiles in the middle of the range as well. In any case, during the first subperiod a clear pro-poor trend can be seen after the first ventile and in

the second subperiod too the effects are greater for this group. Central America and the Caribbean is the subregion with the least absolute growth in per capita income. An equalizing trend is seen in both subperiods, with an outright fall in the income of the very wealthiest percentiles in the second period.

Figure V.15

Latin America and the Caribbean (by subregion): percentage variation in per capita income, on the basis of PPP dollars at 2011 prices, by percentile and subperiod (growth incidence curves), 2002-2014, 2002-2009 and 2009-2014

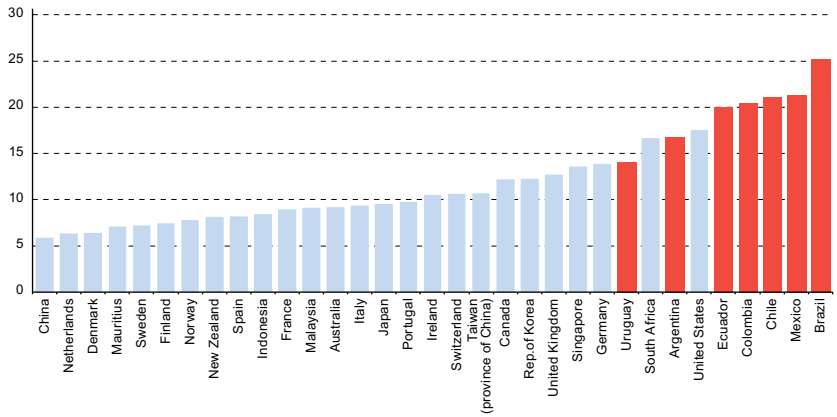


Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of special tabulations of data from household surveys.

The above analysis is based on information from household surveys. In recent years, attention has been drawn to the failure of these data sources to capture adequately the income of the upper end of the distribution, i.e. the richest groups. To overcome this limitation, an alternative that has been gaining ground in recent years, boosted by Atkinson's and Piketty's research, is to include other data sources in the analysis, particularly information on income

and wealth taken from tax records. Comparing the income capture of the richest —by combining information from various data sources— confirms the high levels of inequality prevailing in region (see figure V.16). In Brazil, Chile, Colombia, Ecuador and Mexico, more than 20% of total income went to the richest 1%, while in most developed countries (except the United States) this figure was not more than 15%.

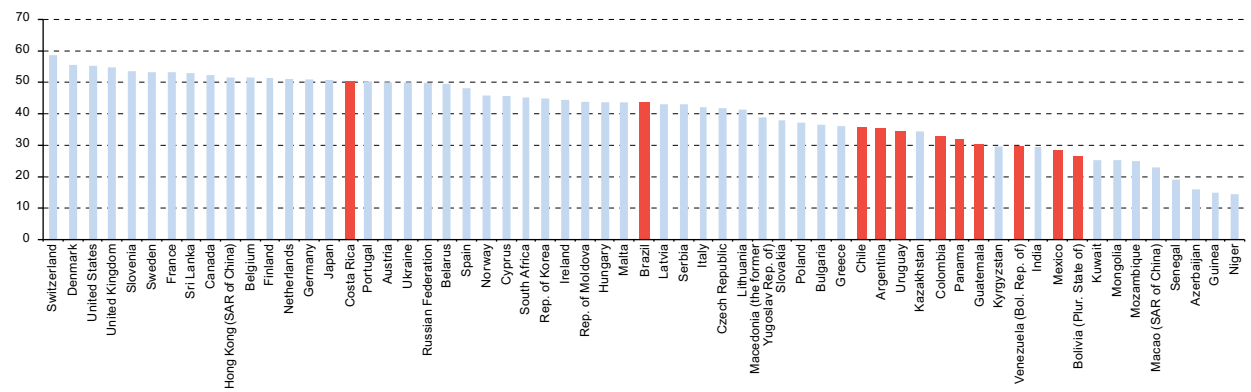
Figure V.16
Selected countries: share in total income of the richest 1%, around 2010
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Paris School of Economics, The World Top Incomes Database [online] http://www.wid.world/; for Chile: T. Fairfield and M. Jorrat De Luis, "Top income shares, business profits, and effective tax rates in contemporary Chile", ICTD Working Paper, No. 175, 2015; for Ecuador: L. Cano, "Income mobility in Ecuador: new evidence from personal income tax returns", UNU-Wider Working Paper series World Institute for Development Economics Research (WIDER), 2014; for Mexico: R. Campos, E. Chávez and G. Esquivel, "Los ingresos altos, la tributación óptima y la recaudación posible", Premio Nacional de Finanzas Públicas 2014, Mexico City, Centro de Estudios de las Finanzas Públicas, 2014; and for Brazil: P.H.G.F. Souza, M. Medeiros and F. Avila de Castro, "Top incomes in Brazil: Preliminary results", Economics Bulletin, vol. 35, No. 2, 2015.
Note: The red bars correspond to countries in Latin America.

Lastly, alternative distribution indicators, such as the wage bill as a percentage of GDP, confirm the higher levels of inequality in the region in functional terms. Labour earnings generally account for a lower percentage of GDP than they do in developed countries (see figure V.17).

Figure V.17
Selected countries: share of wages in GDP, at market prices, around 2010
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of figures provided by the United Nations Statistics Division.

The —now stalled— drop in income inequality between households in the region over the last decade was not the outcome of gains in workers' share of the fruits of growth (Abeles, Amarante and Vega, 2014). The imbalance between capital and labour, which can be seen in the functional distribution of income, reveals less favourable facets of the regional distribution situation (see box V.2).

Box V.2
The need to improve wealth distribution analysis

Distributional studies tend to focus on the distribution of income or consumption. In the region, they have traditionally analysed income, on the basis of data collected in household surveys. Since income and consumption reflect resource flows, which involve certain limitations, wealth is probably the best indicator of households' access to resources, as it covers financial and non-financial assets that can be traded on the market. It is a stock variable that generates revenue streams and is a powerful means of intergenerational transmission through inheritance. Developing countries have made efforts to quantify inequality in terms of wealth, on the basis of information from tax records or special surveys that cover ownership of assets and liabilities. Such surveys, known as family finance surveys, collect information on households' accumulated assets and debts, as well as income and expenses. Relatively long-standing examples are the Survey of Consumer Finances (SCF), carried out in the United States, and the Encuesta Financiera de las Familias (EFF) in Spain. They are usually designed in such a manner that higher-income households are overrepresented. In many countries, surveys have been carried out with the help of tax authorities that provide information on taxpayers' income, which allows a more accurate sampling frame of the households with the highest incomes to be established while respecting statistical confidentiality. Such information supports analysis of wealth distribution and concentration, beyond income or consumption inequality. In countries for which information is available, studies indicate that the distribution is considerably more unequal for wealth than for income (Davies and Shorrocks, 2000; Davies and others, 2008; IMF, 2013). In Latin America, such surveys have been carried out only in Chile, Colombia and Uruguay. Compiling information on wealth in the region should be part of the policy agenda, as it would contribute to discussions on the feasibility of more progressive tax policies and margins for implementing them, including, possibly, taxing capital, wealth and inheritance.

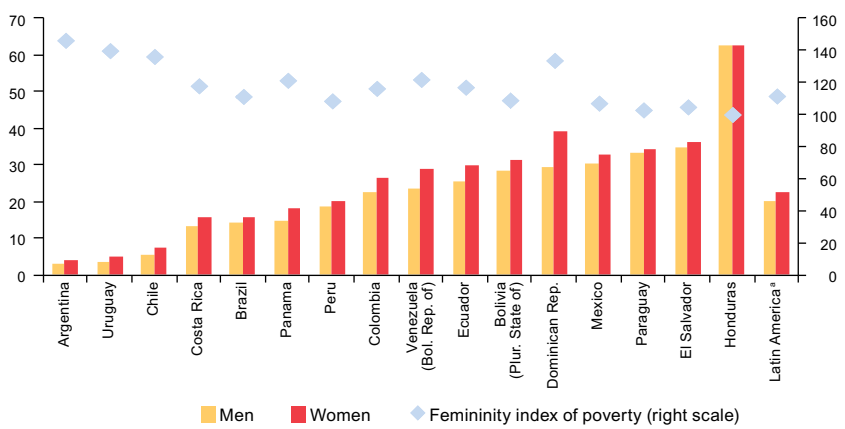
Source: V. Amarante and J.P. Jiménez, "Desigualdad, concentración y rentas altas en América Latina", Desigualdad, concentración del ingresos y tributación sobre las altas rentas en América Latina, J.P. Jiménez (ed.), Libros de la CEPAL, No. 134 (LC/G.2638-P), Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), 2015.

C. Shedding light on the gender gap

Sustainable Development Goal 5 calls for achieving gender equality and empowering all women and girls. This Goal is broader than its predecessor in the Millennium Development Goals, which focused on access to education and on reducing maternal mortality. A major step forward is the inclusion of targets to eradicate all forms of discrimination and to recognize and afford value to unpaid care work, which will help to empower women in the public and private spheres.

Access to resources and eliminating inequalities in paid and unpaid work are two fundamental variables in achieving these targets. One approach to the issue of access to resources is to examine the incidence of financial poverty among men and women, as in figure V.18 for 16 countries of the region in 2013.[5]

Figure V.18
Latin America (16 countries): persons aged between 20 and 59 living in poverty, by sex, and poverty femininity index, around 2013
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of special tabulations of data from household surveys.
[a] Weighted average.

[5] The universe considered in this section is persons aged between 20 and 59, the working and reproductive ages when gender tensions are highest. This group represents 88.5% of households in the region, from a low of 78% in Uruguay up to a maximum of 93% in Honduras.

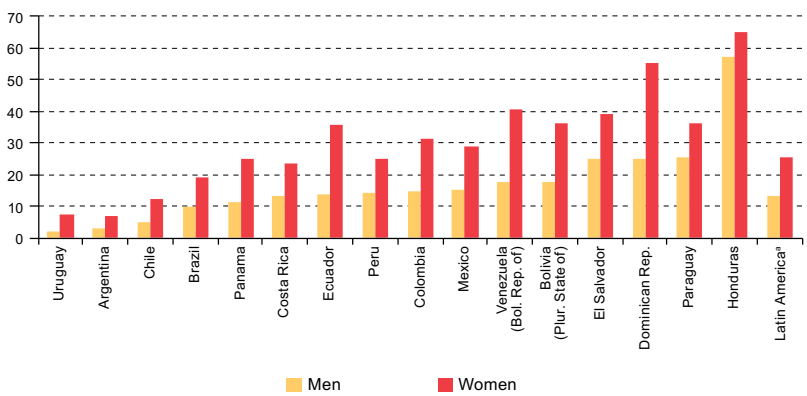
Although poverty is higher among women in all the countries, the differences are relatively small. Figure V.18 also gives the poverty femininity index calculated by ECLAC, which shows the ratio between the number of women and men living in poverty and the total female and male population. Given the differences observed between women and men in the labour market (lower participation of women in general and their overrepresentation in part-time and low-paid jobs), a higher level of female poverty would be expected, particularly considering the age group under consideration.

The main problem lies in the methodology used to measure poverty, which divides aggregate household income by the number of family members so as to compare households of different sizes. This methodology does not take into account who earns this income and assumes that it is equitably distributed among all household members, an assumption that is roundly criticized by feminist economists. The methodology assumes that there are no non-poor persons in poor households or poor persons in non-poor households.

Using individual-level poverty indicators reveals the true percentage of persons living in poor households. As households are made up of relatively equal numbers of men and women, differences in household poverty indicators by sex are very small. This can be clearly seen in the case of couples: the use of household per capita income gives an identical poverty level by sex, hiding any income differences that may exist between women and men. The crux of the problem is that traditional measurements of poverty and inequality merge individuals into their households, making individual situations practically impossible to trace (Ponthieux and Meurs, 2015).

Various mechanisms have been employed in the attempt to correct this problem. One is to analyse female-headed households compared to those headed by men. Considering households with only one adult shows up sharper gender differences (see figure V.19).[6] In all the countries, poverty is higher among women than among men for sole adults in the household. This is due to two factors: the lower income received by women and the composition of those households. Households with only one adult male are usually working-age, one-person households, while those with one working-age adult female are divided among single-parent, one-person or extended households. The average income that these types of household receive differs, and in the case of single-parent and extended households, depends on the number of people to be supported (children and older persons).

Figure V.19
Latin America (16 countries): persons aged between 20 and 59 living in poverty, by sex, in households where they are the only adult of that age, around 2013
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of special tabulations of data from household surveys.
[a] Weighted average.

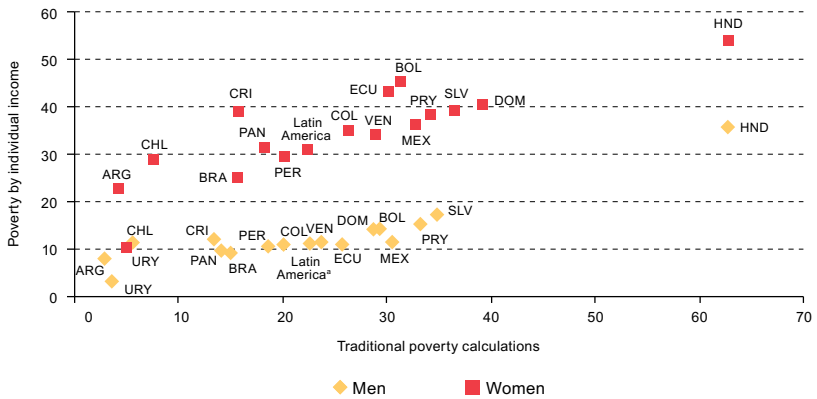
One way to explore the linkages between gender and poverty is to remove the assumption of equitable distribution of income within households (Ponthieux and Meurs, 2015). Personal income is calculated by assuming that only the household's unearned income is shared and each individual has full use of their own wages. This indicator reveals the gender gaps in access to resources, but does not reflect the true distribution within the household, given the limitation of the information. The results should therefore be analysed in terms of gender gaps, rather than the poverty levels obtained.[7]

6 This figure includes households which have only one adult between the ages of 20 and 59. This group represents 21% of households in Latin America (16 countries), ranging between 17% in Peru and 29% in the Dominican Republic. Of the adults in this situation, 57.7% are women.

7 A further limitation is that this technique does not take into account persons aged under 20 or over 59. It therefore shows most countries' overall poverty rates as significantly lower than traditional methods.

The calculations assume that personal income is a person's income from any source and that other household income is divided equally among its members (Meulders and O'Dorchai, 2010). That result is compared to each country's poverty line to obtain the poverty rate of those aged between 20 and 59. The results are given in figure V.20, where each point represents male and female poverty calculated using this method and the traditional one based on the criteria of equal distribution. The assumption regarding income distribution within the household has a greater impact on women than men: according to the population-weighted average of 16 countries, the male poverty rate under the alternative calculations would fall from 20% to 11% and the female poverty rate would rise from 22.3% to 31.1%. In all the countries, using individuals' own income for the calculations shows poverty rates as substantially higher for women and lower for men, with the exception of Argentina and Chile, where male poverty rises slightly, and Uruguay, where it remains virtually unchanged.

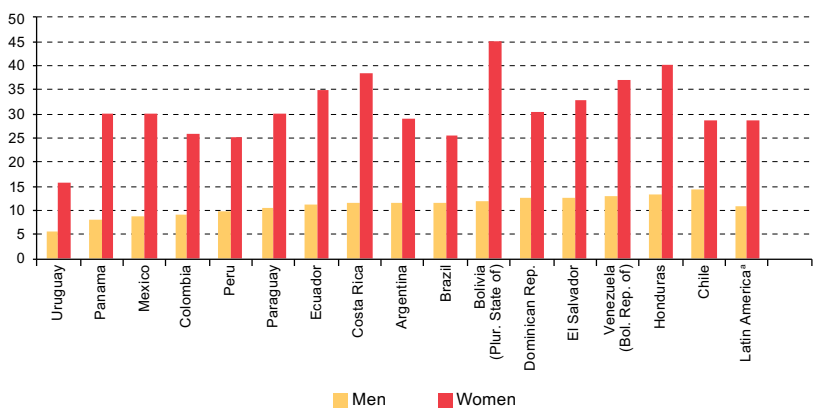
Figure V.20
Latin America (16 countries): persons aged between 20 and 59 living in poverty, by sex, by type of assumption regarding household income distribution, around 2013
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of special tabulations of data from household surveys.
[a] Weighted average.

One explanation for this difference in results between the two methods of calculation is that women are overrepresented among non-earners and are thus at significant risk of being considered poor. Figure V.21 sets out the percentage of women and men who do not receive income of their own.

Figure V.21
Latin America (16 countries): persons aged between 20 and 59 without their own income, by sex, around 2013
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of special tabulations of data from household surveys.
[a] Weighted average.

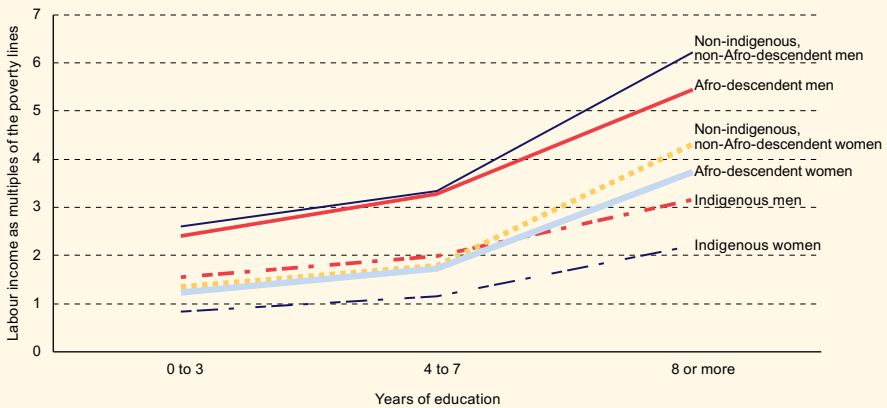
The percentage of women without their own income is triple that of men in all the countries, which is attributable to differences in labour participation. Gender gaps in earnings —which are significant in most of the countries of the region— also contribute to this large difference (ECLAC, 2014a). Moreover, these gaps intersect with and aggravate ethnic and racial inequalities (see box V.3).

Box V.3
Intersecting inequalities

Gender inequalities and ethnic and racial inequalities do not simply add to each other: rather, they multiply. As a result, Afro-descendent or indigenous women are at a particular disadvantage when compared with non-indigenous, non-Afro-descendent men.

ECLAC (2015b) examines the earnings gap by educational level for different gender and ethno-racial groups in eight Latin American countries. At the lowest educational levels, women earn less than men regardless of ethnicity. However, both women's and men's incomes are lower among indigenous peoples than among Afro-descendents, who, in turn, receive less income than the non-Afro-descendent, non-indigenous population. This pattern leaves non-indigenous, non-Afro-descendent men at one end of the income scale and indigenous women at the other. Even at the highest educational levels, the lowest wages are earned by indigenous persons and, within this group, indigenous women. Income dispersion at this educational level is substantially greater than at the other two levels examined.

Latin America (8 countries): average monthly labour income of indigenous, Afro-descendent and non-indigenous, non-Afro-descendent population, by years of education and sex, around 2011
(Multiples of the poverty line in each country)



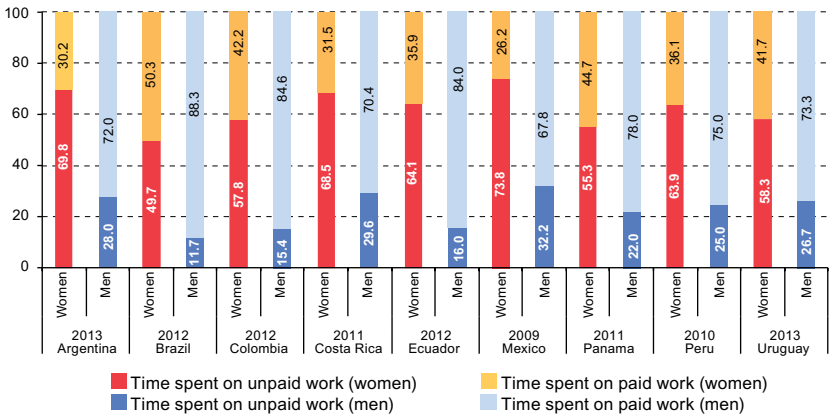
Source: Economic Commission for Latin America and the Caribbean (ECALC), *Inclusive social development: The next generation of policies for overcoming poverty and reducing inequality in Latin America and the Caribbean* (LC.L/4056(CDS.1/3)), Santiago, 2015.

Lastly, consideration of women's well-being should not be confined to matters of income. A core element of the analysis of gender gaps in well-being is time use and the distribution of unpaid work in the home. Although women participate less in the labour market, their overall workload is greater than men's. Furthermore, the balance between paid and unpaid work differs between the sexes: on average for the nine countries considered in figure V.22, around 40% of work undertaken by women is paid, compared with around 80% for men. In Mexico, 32.2% of men's working hours are unpaid, while in Brazil the figure barely exceeds 10%. Women's share of paid work is the lowest in Mexico and women in Brazil divide their time almost equally between paid and unpaid work.

Unequal division of labour within the household persists, even across different types of household and differing participation by women in paid employment. Figure V.23 shows the distribution of hours of unpaid work between couples in two-parent households, by the share of household income contributed by women. Although women's financial contribution is negatively correlated with their hours of unpaid work, they always do a larger share of the unpaid work. Regardless of the percentage of their household's income they contribute, women undertake at least 60% of the couple's total unpaid workload.[8]

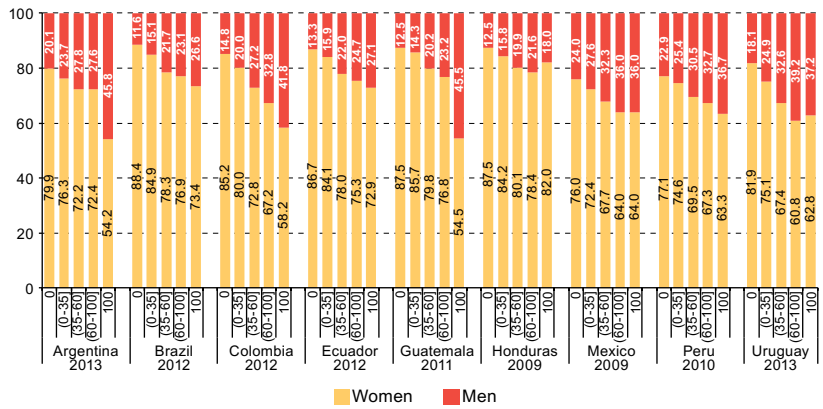
[8] In Argentina, Colombia, Ecuador and Uruguay, when the women's income contribution is 100% (or more than 60% in Uruguay), the spouse's contribution to unpaid work is higher, nearly 50%. However, the woman still has the heaviest workload in these instances.

Figure V.22
Latin America (9 countries): time spent on total work, paid and unpaid, by the economically active population aged between 20 and 59, by sex, latest year available
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of special tabulations of time-use surveys.
Note: Data refer to the national level, except for Costa Rica where they correspond to the Greater Metropolitan Area.

Figure V.23
Latin America (9 countries): unpaid work performed by each partner aged between 20 and 59 in two-parent, extended and composite households, by women's contribution to household total personal income, latest year available
(Percentages)



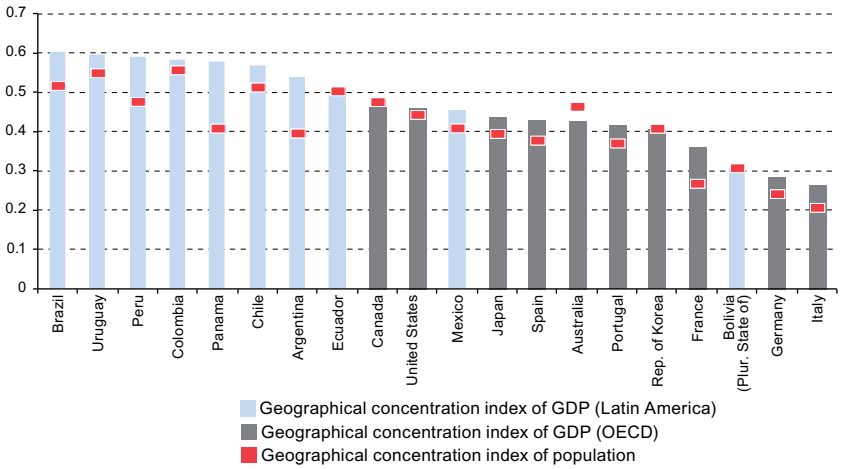
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of special tabulations of data from time-use surveys.

D. Territorial inequalities restrict personal development

Territorial inequalities come in two forms in Latin America and the Caribbean. The first is that the population and economic activity is heavily concentrated in a small number of geographical locations within each country, usually the major metropolitan areas. A comparison with a selection of countries from the Organization for Economic Cooperation and Development (OECD) shows that geographical concentration is, in general, very high (see figure V.24).[9]

[9] The geographical concentration of GDP index is the sum of the differences between the share of land area and the share of GDP of the leading subnational unit over the total for the country, in absolute values divided by two. The index is zero when the share of national GDP and the share of total land area are identical for all subnational units and moves closer to one as the differences between the GDP and land area shares of each subnational unit become larger.

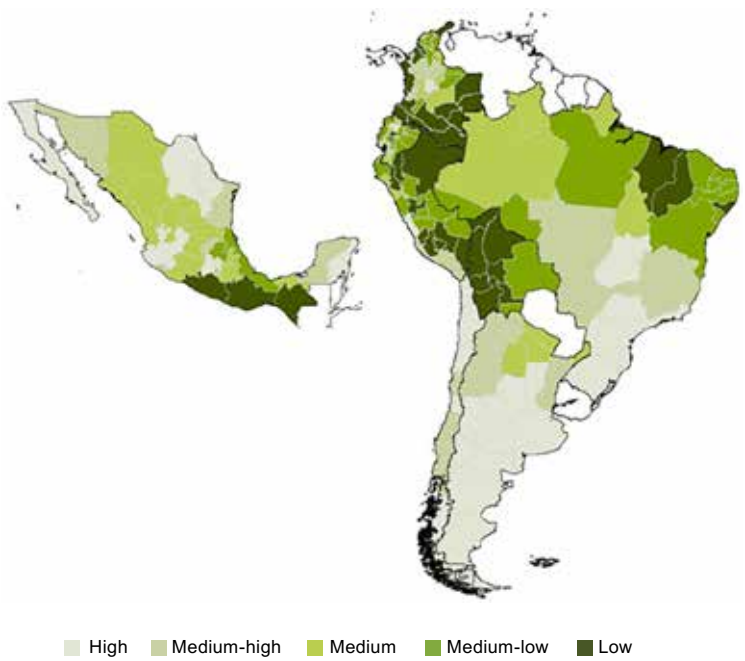
Figure V.24
Latin America and OECD (selected countries): geographical concentration index of GDP and population, 2012



Source: Economic Commission for Latin America and the Caribbean (ECLAC), *Panorama del Desarrollo Territorial en América Latina y el Caribe, 2015* (LC/W.671), Santiago, 2015.

A second form of territorial inequality in the region is the wide gaps in the general living conditions of the populations of different areas. One indicator of territorial development, calculated for 8 countries and 182 territorial entities in 2010, classified the territorial entities into five groups, or quintiles, from least to most developed (see map V.1). Some examples of disparities within countries occur in North-East Brazil, south-eastern Mexico, the Andean areas of Peru and the Plurinational State of Bolivia, Greater Northern Argentina and southern Chile.

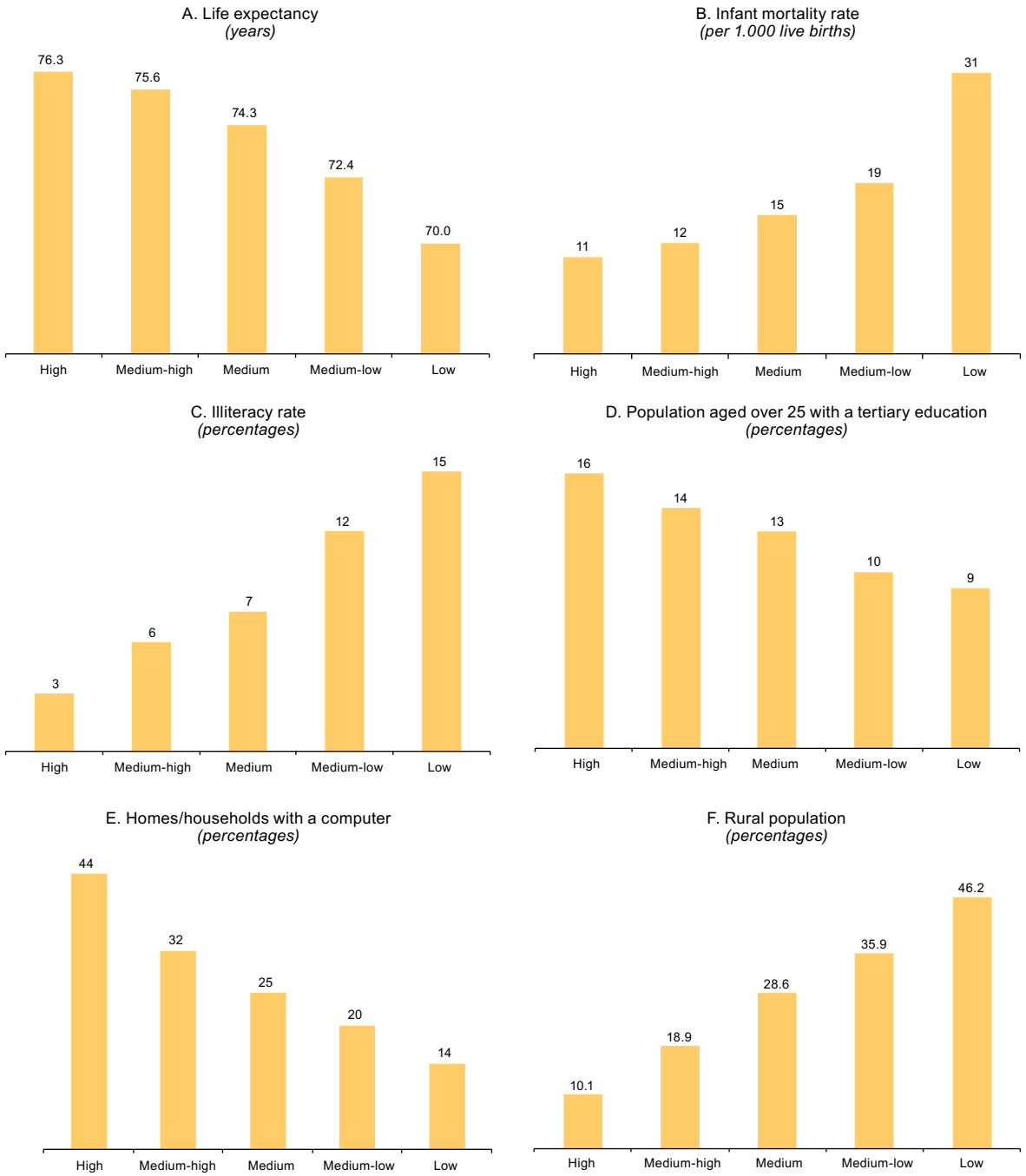
Map V.1
Latin America (8 countries and 182 territorial entities): regional development indicator, 2010



Source: Economic Commission for Latin America and the Caribbean (ECLAC), *Panorama del Desarrollo Territorial en América Latina y el Caribe, 2015* (LC/W.671), Santiago, 2015.

On average, for the least developed quintile, life expectancy is six years less, the infant mortality rate is three times higher and the illiteracy rate is five times higher than for the most developed quintile (see figure V.25). The percentage of households with access to a computer in the highest quintile is three times that of the lowest, while the rural population accounts for 10% of the highest quintile and for 45% of the lowest.

Figure V.25
Latin America (8 countries and 182 territorial entities): gaps among territorial development quintiles, 2010



Source: Economic Commission for Latin America and the Caribbean (ECLAC), *Panorama del Desarrollo Territorial en América Latina y el Caribe, 2015* (LC/W.671), Santiago, 2015.

Socio-spatial organization in Latin America and the Caribbean reveals the inequality in living conditions across the region. Given the importance place of birth has in a person's development prospects, territorial considerations should be included in national agendas and strategies in the region.

E. Environmental degradation also increases inequality

The combination of poverty and inequality makes the poor more vulnerable than the non-poor to the effects of environmental damage owing to their greater exposure to these problems, limited access to resources and lesser capacity to use political mechanisms effectively (Downey, 2005; Martuzzi, Mitis and Forastiere, 2010; Schoolman and Ma, 2012). The effects of greater exposure are exacerbated when nutrition and health conditions are suboptimal, access to health services is poor, financial capacity is lacking and people do not have access to mechanisms —such as insurance— to invest in risk mitigation, or to redress through legal proceedings (Braubach and others, 2010; WHO, 2012). The poor bear a greater burden that is evinced by illnesses, financial costs for lost workdays, loss of livelihood and even death. These effects are additional barriers to overcoming poverty and a channel of intergenerational transmission of economic and social inequalities.

Higher levels of inequality make it easier to shift the effects of pollution to the poorest, instead of investing in technology and management to resolve or mitigate environmental problems. Those who are able to avoid their exposure to environmental damage do so, for example, by relocating (Laurent, 2013; Boyce, 1994, 2007). Thus, the spatial effects of inequality mean that the poor are closest to sources of pollution. The same dynamic can be seen on a global scale with climate change, the effects of which are spread asymmetrically within and among countries (ECLAC, 2010b and 2014b).

The proximity of polluting facilities, such as industrial plants or landfill sites, lowers property prices, attracting the poorest. Companies also have an incentive to locate their polluting plants where land prices are lower. In some cases, sites previously occupied by industrial facilities have been transformed into residential areas, as a result of either town planning or irregular occupation, without environmental damage having been properly cleared up. Unawareness of environmental liabilities and their effects, combined with the lack of alternatives, means that those who have poor access to information and less purchasing power are more exposed.

Inequality also affects the balance between the consumption and supply of goods and services, such as transport, health, education, security and recreational spaces (Jáuregui, Tello Medina and Rivas García, 2012; Boyce, 2007). In very unequal societies, private companies supply services for a small high-income group, while the public sector provides or subsidizes lower-quality services for the majority of the population. This exacerbates environmental problems, such as traffic congestion and pollution. In Latin America and the Caribbean, these problems are linked to the lack of critical basic services (public transport and waste management) (ECLAC, 2014b). The chances of improving these services decrease as the groups with a larger capacity to pay and exercise political power distance themselves from the domain of public services. Lastly, commons-based solutions to environmental problems are more difficult to achieve amid inequality and greater social conflict (Baland and Platteau, 1998).

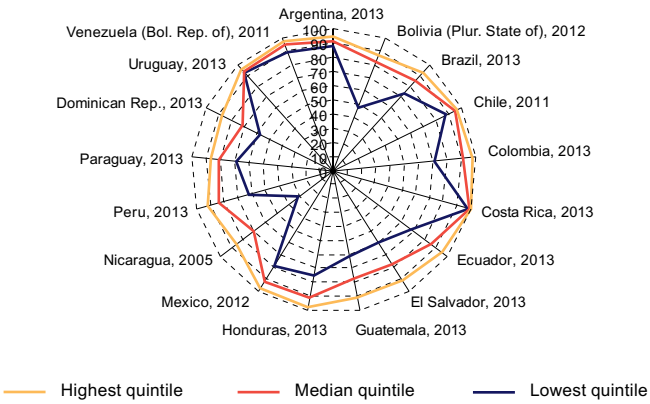
The link between inequality and environmental problems in the region owes much to long entrenched characteristics of the economic structure. Institutionally speaking, these have left the State with a limited capacity to act on environmental legislation, land use, investment in public goods and basic services, and the provision of incentives that would help to shift the economy towards more sustainable production and consumption patterns.

The provision of basic services has improved in the region over the past 25 years, but difficulties remain in extending them to the poorest groups.

Water and sanitation. Gastrointestinal infections remain a major cause of death and healthy life years lost. They affect school attendance and educational performance, and mean lost workdays. Households without drinking water face additional costs —getting water from tankers, negative health effects and opportunity costs (such as the time spent fetching water, which affects women in particular).[10] Despite the progress made, all the countries show significant differences by income quintile in access to piped water (see figure V.26) and to sanitation (see figure V.27).

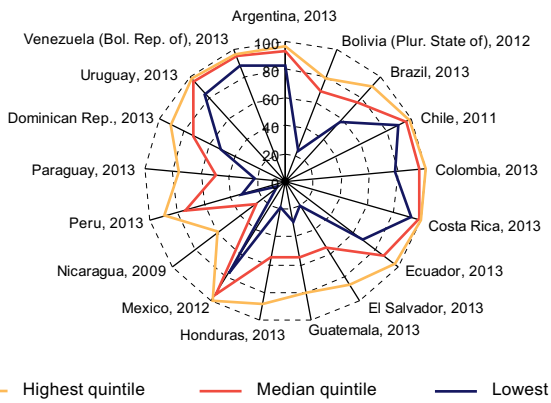
[10] For Guatemala, Lentini (2010) shows that the cost of using tankers or other alternatives to obtain water is equivalent to between 10 and 20 times the cost of piped water.

Figure V.26
Latin America: dwellings with access to piped water, by income quintile, around 2012
(Percentages)



Source: Inter-American Development Bank (IDB), Sociómetro-BID database, on the basis of household surveys conducted in the respective countries.

Figure V.27
Latin America: dwellings with access to improved sanitation facilities, by income quintile, around 2012
(Percentages)



Source: Inter-American Development Bank (IDB), Sociómetro-BID database, on the basis of household surveys conducted in the respective countries [online] http://www.iadb.org/en/research-and-data//tables,6882.html?indicator=3 [date of reference: 17 August 2015].

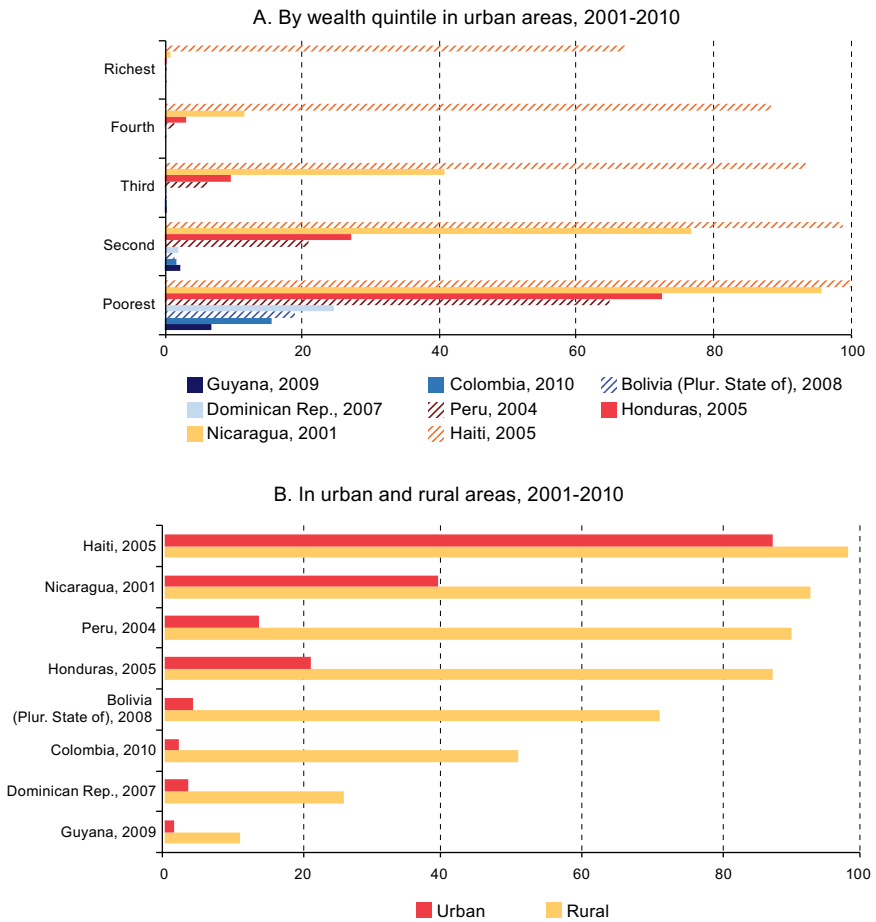
Energy. Lack of access to modern energy sources means that many households, chiefly the poorest (see figure V.28.A) and rural families (see figure V.28.B), continue to use solid fuels, which produce high levels of indoor air pollution, causing respiratory problems that can lead to illness and death. Collecting fuel, such as wood, has a high opportunity cost, particularly for women and children, and prevents or hinders them from participating in the labour market or going to school (Kozulj, 2009).

Transport. Public transport deficiencies produce inefficient urban systems where the richest groups use private vehicles (ECLAC, 2014b) and thus generate air pollution and congestion. Those who have no alternative to public transport bear the costs of congestion, in and out of vehicles, and the opportunity cost of the time involved. The limitations of public transport systems are an effective barrier to the labour market. Moreover, the concentration of private cars in the hands of the richest means that these groups benefit the most from fossil fuel subsidies and investments in infrastructure for private mobility (ECLAC, 2014b).

By sector, mining, quarrying, transporting and processing hydrocarbons, large-scale agricultural activities and mass tourism, have a significant impact on ecosystems. This particularly affects indigenous peoples and communities that rely on traditional ways of life, which are most vulnerable to water pollution caused by mining activities, the use of pesticides and other sources of contamination. These groups are also the ones most directly affected by phenomena such as deforestation and have limited access to political and institutional resources (information, participation and

access to justice) to defend their interests. Although mechanisms exist for revenue-sharing with municipalities, generally speaking these communities receive few benefits from the exploitation of resources and land; and compensation schemes are not enough to provide them with sustainable alternative livelihoods.

Figure V.28
Latin America and the Caribbean: homes without access to energy
(Percentages)



Source: World Health Organization (WHO), Global Health Observatory Data Repository [online] http://apps.who.int/gho/data/view.main.EQSOLIDFUELSRESv?lang=en [date of reference: 14 August 2015].

The conflicts that have arisen around issues such as deforestation, the pollution of waterways, barriers to resources and forced displacements highlight non-compliance with and flaws in environmental legislation, and inadequate impact evaluation (OCMAL, 2015).[11] These conflicts also reflect the region's great cultural diversity, particularly with regard to indigenous peoples' relationship with the environment. The recognition of that diversity in the outcome of the United Nations Conference on Sustainable Development (Rio+20), entitled "The future we want", contrasts with the lack of forums for dialogue to avoid such conflicts.

In terms of occupational health, two of the most dangerous sectors for workers are agriculture and mining. Agriculture employs approximately 16% of the workforce in the region and 54% of its rural workforce. Exposure to pesticides can cause acute poisoning and long-term exposure can lead to permanent damage to the peripheral nervous system. Workers in the mining industry may, among other things, contract illnesses (pneumoconiosis, silicosis

[11] Some organizations keep records of conflicts. For example, the Latin American Observatory of Environmental Conflicts [online] http://www.olca.cl; the Observatory of Mining Conflicts in Latin America (OCMAL) [online] http://basedatos.conflictosmineros.net/ocmal_db/; the "Mapa de conflitos envolvendo injustiça ambiental e Saúde no Brasil" [online] http://www.conflitoambiental.icict.fiocruz.br/, and Water Conflict [online] Worldwater.org/conflict.

and asbestosis), be poisoned by lead and arsenic, and suffer mercury bioaccumulation. These risks are greater in small-scale and illegal mining operations, two areas that lack preventative safety measures. Other industrial activities that are sources of environmental inequality are heavy industry and construction, where many small businesses cannot afford health and safety management costs. An extreme example in urban areas is that of people who make their living informally scavenging at rubbish dumps (IPEA, 2013).

The fifth assessment report of the Intergovernmental Panel on Climate Change states that, globally, the most vulnerable are those who suffer social, economic, cultural, political or institutional marginalization (IPCC, 2014). There is evidence that climate change will have a major impact on the region's populations and economies (ECLAC, 2010b; ECLAC, 2014b), owing to the increased frequency and intensity of extreme weather events, the negative effects on the farming and fishing sectors, changes in disease patterns (higher incidences of malaria, dengue fever, acute respiratory infections and diarrhoeal diseases), increased migration flows and greater fluctuations in water availability.

The effects of climate change will be felt more directly and strongly by the poorest, who lack access to basic services and health care, are more dependent on natural resources for their livelihoods, and have limited access to technology and the financial resources needed to adapt. The households most affected are also those that have the most difficulty recovering from losses, meaning that these disasters have long-term effects on health, education, nutrition and productivity, and help to engrain poverty and inequality.

F. Structural gaps in Caribbean economies

As in other countries in the region, structural gaps hamper the development of small island developing States —their production and export bases lack diversification, have weak linkages and are not particularly innovative (spending on R&D amounts to only 0.13% of GDP). These constraints are compounded by social problems, such as high maternal mortality rates, the spread of HIV (with the highest infection rate after Africa), high levels of unemployment and female unemployment rates that are double those of Latin America, as well as large pockets of poverty and vulnerability. The specificities of the Caribbean small island developing States increase the burden of financial, environmental, transport and connectivity (maritime and telecommunications) gaps, and heighten their vulnerability to natural disasters.

For more than three decades, many of the Caribbean small island developing States, particularly the members of the Organisation of Eastern Caribbean States (OECS), have had large financing requirements, owing to the hefty, chronic deficits on the current account (14% of regional GDP in 2013) and the fiscal account (3.5% over the period 2000-2015). This double imbalance is largely the result of the weak competitiveness of their economies, which cannot exploit economies of scale or scope, limiting their ability to improve product quality, to diversify and to adapt to external demand and international conditions. The increasing liberalization of international trade and finance has diluted their preferential access to developed-country markets (90% of their exports are traded under preferential agreements), increasing their vulnerability to shifts in external market conditions.

The deficits on the current and fiscal accounts also result in higher capital expenditure due, on the one hand, to government efforts to stimulate aggregate demand to compensate for private sector weakness, and, on the other, to the reconstruction and recovery costs incurred as a result of frequent natural disasters. In several Caribbean economies, persistent imbalances in the external and domestic accounts have resulted in an unsustainable build-up of external debt, producing significant borrowing needs. Despite their poor economic and social performances, and their limited access to concessional financing between 2000 and 2010, Caribbean small island developing States have begun to graduate to upper-middle or high-income status, meaning that they no longer qualify for official development assistance (see table V.1).[12]

Other financial flows, such as foreign direct investment, have been less stable and more procyclical than expected. These revenues, which peaked at US$ 6.5 billion in 2008, dropped to US$ 1.2 billion in 2012. Investments in smaller economies with heavy structural constraints are particularly risky, and this hinders such economies' access to financing on the capital markets —and makes it more expensive.

[12] In the period 1971-2013, the average growth rate of Caribbean small island developing States was below the averages for Latin America, other developing economies and least developed countries (2% compared to 3.6% in least developed countries) (ECLAC, 2015c).

As islands, small developing economies in the Caribbean pay higher transport costs per unit of traded goods than other countries, hampering their connectivity. Logistics costs (a proxy measure for connectivity costs) in the Caribbean are twice the world average (Mesquita Moreira, Volpe and Blyde, 2008), as a result of inadequate investment and maintenance, and operational inefficiencies (ECLAC, 2015c). Energy costs in some Caribbean economies are among the highest in the world for the same reasons. The lack of physical and digital connectivity hinders the development of production activities —such as agriculture and manufacturing— that depend on imported inputs, and weakens their narrow export base.

Table V.1
The Caribbean: selected indicators
(Percentages)

Country	Population living in informal settlements (2005)	Population living at an elevation of less than five metres (2012)	Population living under the national poverty line	Unemployment rate	Liner Shipping Connectivity Index [a] (2014)	GDP per capita (2013) *(current dollars)*
Antigua and Barbuda	47.9	15.5	18.3	10.2	4.1	13 342
Bahamas	...	23.55	12.5	14.0	26.7	22 312
Barbados	...	0.92	19.3	10.8	4.7	14 917
Belize	47.3	17.36	41.3	23.2	7.8	4 894
Dominica	...	3.05	28.8	14.0	1.6	7 175
Grenada	59.0	1.92	37.7	24.9	4.5	7 890
Guyana	33.7	11.81	36.1	10.7	4.1	3 739
Jamaica	60.15	3.08	17.6	13.0	24.5	5 290
Saint Kitts and Nevis	...	9.46	21.8	6.5	2.3	14 133
Saint Lucia	11.9	0.84	28.8	21.2	4.6	7 328
Saint Vincent and the Grenadines	0	0	37.5	18.8	3.9	6 486
Suriname	38.9	62.0	10.1	10.3	5.0	9 826
Trinidad and Tobago	...	...	17.0	5.9	17.3	18 373

Source: Economic Commission for Latin America and the Caribbean (ECLAC), "The Caribbean and the post-2015 sustainable development agenda", paper presented at the Symposium on sustainable development goals for the Caribbean within the post-2015 development agenda, Port of Spain, June 2015, unpublished.
[a] The Liner Shipping Connectivity Index (LSCI), computed by UNCTAD, captures how well countries are connected to global shipping networks. It is based on the number of ships, their container carrying capacity, vessel size, the number of services offered and the number of companies that deploy container ships in a country's ports. The maximum score is 100.

Lastly, the geographical situation of many of the Caribbean small island developing States makes them particularly vulnerable to the effects of climate change. This region is one of the most exposed to natural disasters: between 1990 and 2014 there were 328 disasters (13 per year). These events caused extensive damage to production sectors and set back growth, and hurt the well-being of affected populations, as the most vulnerable sectors (agriculture and tourism) account for 76% of the subregion's GDP and many of its jobs.

Natural disasters mean not only high reconstruction costs, but also prevention and mitigation costs to reduce risk and exposure to future catastrophes. The risks that the Caribbean faces as a result of climate change include the possibility of more frequent and intense hurricanes, rising sea levels, the degradation of coral reefs and marine ecosystems, and severe flooding in coastal areas. This is particularly serious as more than half of the population lives less than 1.5 kilometres from the coast and a significant proportion in informal settlements, some of which are below sea level.

In light of the foregoing, it behoves Latin America to show solidarity with the Caribbean, as discussed in detail in chapter VI.

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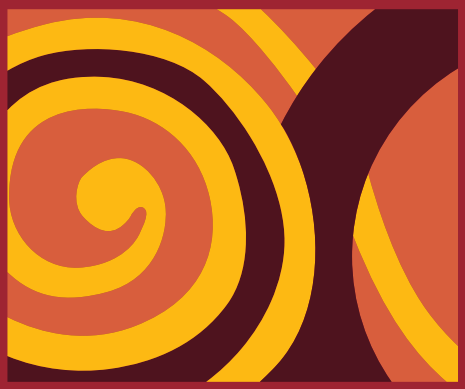
Chapter VI



An environmental big push for equality and sustainability in development

Chapter VI

An environmental big push for equality and sustainability in development

Achieving the objectives of an equality-centred agenda to the year 2030 will require a change in the style of development along with economic, industrial, social and environmental policies that are aligned with progressive structural change. In this new paradigm, public institutions and policies will focus on an environmental big push geared towards transforming the production structure and strengthening the absorption of technical progress with sustainability and equality. This is the basis for boosting high-quality employment and productivity in ways that will make it possible to craft more and better social policies, sustainably. Although, there is no single model for giving effect to this vision, as it implies transformations determined by the specific features of each country and subregion, this chapter proposes general guidelines for designing long-term strategies and policies.

Speeding up capital accumulation is key to achieving progressive structural change, as today's investment will determine the production structure of tomorrow, and it is the main instrument for transforming industry, expanding technological capabilities and redefining the style of development.

Progressive structural change is not the result of spontaneous market forces: it demands industrial policies to stimulate dynamic sectors that have Keynesian and Schumpeterian efficiencies and follow low-carbon paths with forward and backward linkages, so as to pull along the entire economy as they grow. As noted in chapter I, the environmental crisis amounts to probably the greatest market failure of all time, but it also opens opportunities for industrial and technological policies focused on sustainability. Building capacities and developing institutions and policies around an environmental big push can offer a learning horizon with great potential for economic transformation. These opportunities extend to the social sphere, as they demand the full engagement of society in capacity-building, which in turn presupposes the universal extension of rights of access to public goods and services such as education and health, and social protection in settings where technical progress is constantly redefining occupational opportunities.

The principle of universality in social policies has gained growing acceptance around the world, consistently with a rights-based approach. There is also greater awareness that industrial and technological policies need to be geared increasingly towards sustainability. More meaningful discussion is taking place on macroeconomic policies for development, including the need for effective regulation of financial markets.

All of this requires coordination among the various spheres of government action, with the involvement of all stakeholders, including businesses and civil society. At the same time, it means tackling economic policies driven by those interests that have historically impeded transformations of this kind in the region. In order to achieve the objectives of the 2030 Agenda for Sustainable Development, countries will have to grapple with a socioeconomic and political reality marked by tensions and contradictions. This poses challenges at various levels: reducing power asymmetries in global governance of the monetary, financial, trade, technological and environmental spheres; achieving institutional coordination within and among countries; developing production chains along low-carbon paths, based on subcontracting networks that will lead to true regional integration; and consolidating social coalitions that will engage the broad majority in the effort.

Putting the 2030 Agenda into effect will require action on three fronts: international governance for the production of global public goods; regional cooperation and input to the global discussions; and national policies, in particular macroeconomic, social, industrial and environmental policies. The policy proposals for each of these areas are summarized in table VI.1, and are analysed in the following sections of this chapter.

Table VI.1
Policy proposals for implementing the 2030 Agenda for Sustainable Development

Sphere	Policies
Creating global public goods	(i) Achieve greater correlation between the weight of developing countries in the world economy and their representation and decision-making power in international financial institutions. (ii) Coordinate fiscal policies focused on environmental investments to give an expansionist thrust to the global economy and sustain employment. (iii) Coordinate foreign-exchange and financial policies to reduce trade imbalances and volatility through redesign of the financial architecture. (iv) Strengthen international coordination to reduce tax evasion and avoidance. (v) Create funds to finance the adaptation and transfer of environmental technologies. (vi) Disseminate environmental standards and eco-labelling to promote trade in goods of lower carbon intensity. (vii) Adjust global trade and investment rules to make them more compatible with the Sustainable Development Goals. (viii) Participate proactively in the discussion on Internet and information governance.
Strengthening the regional contribution	(i) Create or expand financial safety nets (Latin American Reserve Fund (FLAR), regional development banking, payments clearing system). (ii) Apply common fiscal, social and environmental standards to avoid predatory competition in international trade and foreign investment. (iii) Create a digital common market. (iv) Develop regional value chains in environmental goods and services. (v) Establish a regional fund for the purchase and licensing of patents. (vi) Create a debt relief and resilience fund for countries in the Caribbean.
National strategies and policies	(i) Fiscal space and multi-year planning to protect and promote public investment. (ii) Afford equal priority to nominal and financial stability in monetary policy. (iii) Implement suitable macroprudential policy in the external sphere, especially at times of abundant liquidity. (iv) Smart cities: expand the public transport and social integration system. (v) Increase the share of clean energies in the energy mix. (vi) Develop clean technology capacities. (vii) Create science centres to evaluate, implement and monitor intended nationally determined contributions (INDC). (viii) Gradually withdraw fossil fuel subsidies. (ix) Tax carbon-intensive sectors and activities. (x) Include environmental costs in the cost of bank loans. (xi) Achieve universal social protection. (xii) Achieve universal health and education coverage.

Source: Economic Commission for Latin America and the Caribbean (ECLAC).

A. Governance for creating global public goods

1. Changing the international financial system

Achieving the objectives of the 2030 Agenda for Sustainable Development will require wide-ranging resource mobilization and changes in the global, regional and national financial architecture in order to redirect the process of globalization, promote financial stability, improve the governance of multilateral financial institutions —now asymmetric in terms of the representation and participation of emerging economies and middle-income countries vis-à-vis developed countries— and expand the capacity of these institutions to channel resources into the financing of development and to redirect investment along low-carbon paths.

The international financial architecture has proven unable to prevent or temper the economic cycle, especially in the wake of the global financial crisis. The inescapable need to reform the governance of the Bretton Woods financial institutions —a point driven home with particular force during the global financial crisis— has translated into a

series of measures: (i) an increase in capitalization levels, and amended and more flexible conditions for granting financing on the part of the International Monetary Fund (IMF) and the World Bank; (ii) establishment of additional mechanisms to provide liquidity through increased cooperation among central banks; (iii) creation in 2009 of the Financial Stability Board, which replaced the Financial Stability Forum and has a broader mandate; and (iv) a greater priority on financial regulation and standards of national, regional or worldwide scope, which has revived the debate on the regulation of capital flows.[1]

Good intentions notwithstanding, these measures have been limited and some have become diluted over time. A prime example is the lack of leadership or effective response by the Group of 20 (G20), which was for a time the principal forum for international cooperation following the global financial crisis. However, it lost the lead in the face of the eurozone crisis, continuous expansion of the financial sector, rising volatility in financial markets and commodity prices, and asymmetry between the monetary policy stances of the United States and Europe.

The need to expedite reforms to the governance of the Bretton Woods institutions —and thereby respond to the international community's long-standing aspiration to give a stronger voice and vote to emerging economies with growing weight in the global economy— led to an agreement between the BRICS countries (Brazil, the Russian Federation, India, China and South Africa) to create two new multilateral financial institutions: the New Development Bank and the Contingency Reserve Arrangement (CRA). As part of this thrust, IMF has announced the inclusion of the yuan in the basket of currencies that make up its special drawing rights (SDRs). In addition, the Government of the United States approved the reform of the IMF quota system proposed in 2010, which raises quotas for the 188 member countries and reallocates some quotas towards emerging and developing economies. This reform gives greater decision-making power and a stronger vote to some of the largest emerging and developing economies —Brazil, China, India and the Russian Federation— which have thus entered the list of the Fund's 10 largest members.

These developments and the ongoing discussion on governance gives greater recognition to the role that developing countries and their institutions can play in reforming the international financial architecture. Nevertheless, the emerging countries still need greater representation and effective participation in this discussion and in the resulting governing bodies. The international financial architecture is governed by a small group of developed countries (G7 or G8) or by an "elite multilateralism" —countries that enjoy greater influence because of their quota shares, voting rights, and decision-making power in international organizations. Developing countries and their regional agencies play a minor role. Medium-sized and, especially, the smallest countries, vulnerable as they are to the vagaries of financial flows, have little voice or vote in those institutions. Even the quota shares and voting rights of some of the larger economies are not fully proportional to their economic and political weight. Although the weight of emerging economies and developing countries in world GDP is equal to that of developed countries, the former have only a 4.42% of IMF quotas (compared with 57.6% in the hands of the advanced economies) and 44.8% of IMF voting rights (versus 55.2% for the advanced economies). Moreover, these quotas do not reflect the implicit veto power of the United States, which wields a 16% share in a governance structure that requires 85% of votes to approve major changes. Although the recent reforms represent a step in the right direction, they need to go further.

With better governance of the system, other global institutions —such as the United Nations— that are highly representative and enjoy great legitimacy, would acquire a more prominent role. This is a valid consideration as well for regional and subregional organizations with technical expertise and broad acceptance on the part of their member countries. In this rationale, regional financial institutions must complement the global institutions in a multilevel cooperation structure that respects the principle of subsidiarity. With a stronger presence in global forums, developing countries could play a part in reducing the financial instability and the imbalances of the world economy.

Closer integration into the world financial system for Latin American and Caribbean countries is increasing their exposure to the shifts that are taking place in the forms and availability of external financing, including fluctuations in international interest rates, and goes a long way towards explaining their macroeconomic volatility. This is harmful for development, as it reduces the planning horizon for economic agents and erodes investment, particularly in high-risk activities. A significant problem facing the international financial system is the difficulty of mobilizing resources for

[1] An outstanding example of financial regulation at the world level is the Basel III Accord of September 2010, which is based on stricter rules than Basel II (2004) and is to begin operation in 2016 and come into full effect in January 2019. The Basel Accords refer to the regulatory capital rules established by the Basel Committee on Banking Supervision (BCBS), intended to foster financial stability and avoid regulatory arbitrage among countries. The Basel III Accord calls for the inclusion of additional liquidity and solvency indicators in evaluating the financial status of banking institutions.

inclusive and sustainable development, and the tendency to channel those resources into growth of the financial system itself. The exponential increase in the size of the financial sector and its instruments over the past decade has generated a complex network of macroeconomic externalities, the ultimate consequences of which are hard to foresee.

Mobilizing resources for development is also hampered by the magnitude of illicit capital outflows from developing countries and the great volumes of liquidity that are held in tax havens (OECD, 2013). During the period 2002-2013, such illicit flows rose from US$ 200 billion to more than US$ 1 trillion a year, equivalent to 1.5% of world GDP and over 4% of global savings (Global Financial Integrity, 2015). Illicit capital flows from the developing world now exceed the amounts provided by the principal sources of external financing, including inflows of foreign direct investment (FDI), private portfolio flows, remittances and official development assistance (ODA). Funds held in tax havens amount to more than US$ 7 trillion, equal to around 10% of world GDP (Zucman, 2015).

Illicit capital outflows from Latin America and the Caribbean amounted to an annual average of some US$ 150 billion between 2004 and 2013, and in the latter year they stood at more than US$ 200 billion. Combating illicit flows and regulating tax havens could open up important sources of funding for development and for achieving the Sustainable Development Goals. Efforts in this direction are being supplemented by initiatives such as the Action Plan on Base Erosion and Profit Shifting (BEPS), which is intended to regulate the tax practices of multinational enterprises and to prevent tax evasion through the manipulation of transfer prices and tax arbitrage.

2. Climate security and implementation of the Paris Agreement of 2015

Since the United Nations Conference on the Human Environment, held in Stockholm in 1972, the United Nations has come to play a central role in efforts to generate global public goods in the environmental sphere. The concept of sustainable development was consolidated and given an institutional dimension at the United Nations Conference on the Environment and Development (Rio de Janeiro, 1992), known as the "Earth Summit", [2] whose negotiations gave rise to the United Nations Framework Convention on Climate Change, which came into force in 1994 and now has 195 signatory countries. The Conference of the Parties (COP) has met every year since 1995, with a view to moving forward with implementation of the provisions in that Convention.

An important milestone was the adoption of the Kyoto Protocol at the third session of the Conference of the Parties (COP3) in 1997. That Protocol is valid until 2020, at which time the Paris Agreement will come into force, covering nearly all global emissions. At COP3 a group of industrialized countries assumed commitments to reduce emissions, and mechanisms for facilitating their fulfilment were established.[3] The Conference also recognized the need to provide financial support to developing countries in their efforts to adapt to and mitigate the effects of climate change. The Kyoto Protocol recognizes the principle of common but differentiated responsibilities, whereby today's industrialized countries (which are mainly responsible for environmental problems) must shoulder the bulk of the costs of shifting towards a less polluting pattern of development. At the fifteenth session of the Conference of Parties (COP15), held in Copenhagen in 2009, the negotiations (which ended inconclusively) were aimed at extending emissions control to developing countries. At the sixteenth session of the Conference of Parties (COP16) in 2010, the commitments of developing countries were formalized.

Despite the many forums and discussions that have taken place, the problem of carbon emissions —and environmental issues in general— have not been at the forefront of economic policy decisions at the international, regional and national levels. Multilateral environmental agreements lack enforcement mechanisms such as fines or other penalties, relying instead on mechanisms that involve the loss of potential benefits such as access to climate finance. An example is the trade in emission reductions under the Kyoto Protocol, which facilitates the achievement of developed countries' targets through investments that have a positive environmental impact in developing countries.

[2] At this conference the manner of negotiating agreements was amended in recognition of the fact that achieving sustainable development requires the active participation of all sectors of society. Thus, socioenvironmental multilateralism was expanded to include citizens and civil society, through Principle 10 of the Rio Declaration on Environment and Development.

[3] These mechanisms are international emissions trading (whereby countries that have exceeded the reduction targets may sell their emission rights to countries that have not achieved them), the clean development mechanism (investments by developed countries with positive environmental impacts in developing countries) and joint initiatives (investments with positive environmental impacts between countries).

The Paris Agreement, adopted at the twenty-first session of the Conference of the Parties (COP21) in 2015, marks a positive step in the construction of a new environmental governance. The commitments to intended nationally determined contributions (INDC) by 185 countries under the Agreement cover virtually all global emissions.[4] Recognition of the severity of the problem is reflected in the objective of limiting the global temperature rise to less than 2°C, or even to 1.5°C, over the pre-industrial level. The Agreement also establishes the aspiration of neutralizing emissions through absorption, i.e. achieving carbon neutrality, by 2050.

This universal agreement, which involves commitments by both developed and developing countries while recognizing their differing capacities, represents a move away from the markedly differentiated regime of the Kyoto Protocol (where developed countries had absolute reduction obligations), with a weak common element (developing countries were committed only to what they wished or were able to do), towards a common regime (all countries must make reductions) with less differentiation (the effort varies according to the degree of development).[5] As well, financial assistance to developing countries for mitigation and adaptation has been expanded,[6] emphasizing the need to transfer and build technological and institutional capacities on the basis of a mechanism similar to, but more flexible than, the Global Environment Facility (GEF).

Yet there are some less positive aspects to the Agreement. In the first place, while the majority of countries are committed to reducing their emissions, the intended nationally determined contributions are to be established by means of domestic legislation. Thus, although this legislation will be binding on the country adopting it, it will not be internationally binding and consequently a change of government could result in the modification of policies and even of targets (with the only cost to the country being the damage to its reputation).

A second problem is that the sum of the pledged country targets is insufficient to meet the objective of avoiding a global temperature rise of 2°C above pre-industrial levels: it is estimated that annual emissions will reach 55 gigatons in 2030, which would lead to a temperature rise of closer to 3°C. For this reason, it was agreed to conduct an initial review in 2018 to adjust the intended nationally determined contributions, and to review the targets every five years starting in 2020.

In the third place, although mention is made of the importance of adaptation and the losses and damages occasioned by global warming, no compensation mechanisms or adaptation commitments have been established. This is the greatest challenge for many of the region's countries (which are seeing their agriculture and their access to water affected, for example), particularly in the Caribbean (where natural disasters and rising sea levels are projected). Yet this issue has only a minor place on the agenda through climate financing, for example, via the Green Climate Fund and the Adaptation Fund. Although the Paris Agreement includes no adaptation goals, it would be technically possible to agree upon such targets,[7] recognizing that certain phenomena —such as rising sea levels, the retreat of glaciers, and the shrinking level and extent of the cryosphere— can be unequivocally attributed to global warming.

Lastly, climate funds are earmarked resources and are not additional to official development assistance. They do nothing to change banking practices and are inadequate to address the magnitude of climate change. They are channelled as concessional loans or guarantees through domestic and international development banks, and they

4 There are two processes under way. The first began in 2010, on the basis of decisions taken at COP16 and its successors, at which certain developing countries (Brazil, Chile, Costa Rica and Mexico within the region) assumed mitigation commitments that expire in 2020. As well, as part of the Paris Agreement, nearly all countries (except Nicaragua and Panama within the region, according to information as of January 2016) have assumed commitments that will come into effect as of 2020 and that will be reviewed periodically to make them progressively stricter. The first review of intended nationally determined contributions, prior to their entry into force, will come in 2018.

5 The Kyoto Protocol includes emission reduction pledges by developed countries of OECD, which remain valid. However, the effectiveness of the Kyoto Protocol has been compromised by the United States' refusal to ratify it, and the reluctance of other countries to apply it. As a result of the Copenhagen (2009) and Cancun (2010) agreements, other developing countries, including Brazil, Chile, Costa Rica and Mexico, have joined the emissions reduction effort.

6 At COP16 in Cancun, the Parties officially established a Green Climate Fund, which holds funds of US$ 6 billion (at December 2015). The Paris Agreement calls for boosting that fund to US$ 100 billion annually as of 2020, to be used for financing mitigation and adaptation. The size of the fund will be revised upwards prior to 2025.

7 The Environment Minister of Ecuador issued a statement to this effect at COP21, on behalf of the Community of Latin American and Caribbean States (see http://celac.cancilleria.gob.ec/ecuador-lidera-llamado-por-financiamiento-y-tecnologia-de-cara-a-un-acuerdo-sobre-el-clima-en-cop21/). Both ECLAC, in the context of the 2013 Regional Meeting of Chief Climate Change Negotiators of Latin America and the Caribbean, and the Institute for Sustainable Development and International Relations (IDDRI, 2014) have presented suggestions in this regard.

are not sufficient to offset the downtrends observed in ODA since the Third International Conference on Financing for Development in Addis Ababa.

The greatest merit of the Paris Agreement is the long-term signal it sends to the effect that economies must move toward decarbonization,[8] even though it makes no provision for reducing the supply of fossil fuels, an idea resisted by the oil industry, by countries that depend on oil exports, and by investor groups with interests in that sector. Banks, including the development banks, are among the most egregious laggards in terms of adjusting their policies: they have maintained their financing practices and their portfolio exposure to carbon-intensive sectors.

In addition to financial and technological adjustments, important steps in the area of environmental governance are still pending: these include carbon taxes that will shift relative prices in favour of more sustainable goods and processes, and the labelling of less-polluting goods as guidance to the consumer. Environmental governance has made no progress in linking up the environmental dimensions of taxation, financing, government procurement, technology and trade policies, and their implications for developing countries. Moreover, the dynamics of trade agreements in the World Trade Organization (WTO) and in bilateral trade agreements have been moving forwards in a manner parallel —and sometimes even contradictory— to environmental issues. In this regard, global and regional coordination must be geared towards preventing countries from competing on the basis of lowered (or non-existent) environmental standards. Once again, there is a disconnect between the policy-setting world and the economic sphere, which is leading to failure to address these issues in a comprehensive way.

3. Improving trade and intellectual property rules

The discussion of environmental governance needs to be cast within the broader framework of governance for development. Developing country governments will find it difficult to change production patterns if this undermines their capacities to promote growth and job creation. These economies are especially sensitive to shifts in the terms of trade and to international liquidity cycles. The key issues for development governance are trade, investment and technology, and financial governance as discussed above.

The institutions and agreements that comprise global governance of trade and foreign investment place tight bounds on the policy room available to countries, especially developing countries. The multilateral agreements of WTO, which have been in force now for 20 years, have been accompanied by some 300 bilateral or regional trade agreements[9] and perhaps 3,000 bilateral investment agreements.[10] This complicated scenario will see the addition in coming years of a new generation of megaregional trade agreements, the provisions of which will have a cross-cutting effect on a broad spectrum of public policies, well beyond tariffs and other issues traditionally associated with trade.

The WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) has obliged many developing countries to substantially increase the protection they offer for various categories of intellectual property (trademarks, patents and copyright, among others), bringing it closer to that of industrialized countries (Rosales and Sáez 2010; Roffe and Santa Cruz, 2006). This regulatory harmonization has meant a net transfer of resources from countries that import intellectual property (for the most part developing countries) to the economies where it is generated. Measures that extend the duration of patents and the exclusivity of test data for new pharmaceuticals and that delay market entry for generic versions have made medicines more expensive and limited their availability. Free trade agreements of the North-South variety, in particular those signed by the United States, include provisions that are even stricter than those of the TRIPs accord, and the gap is widening further with new technological advances (Herreros, 2013).

In a similar manner, the WTO Agreement on Trade-Related Investment Measures (TRIMs) has sharply curtailed the ability of developing countries to impose performance requirements on foreign firms, and has prohibited practices such as demanding minimum quotas of domestically produced goods in firms' procurement or exports. Industrial policy

[8] For example, on the Monday following approval of the Paris Agreement a coalition of automobile and autopart makers announced the future decarbonization of their industry (El País, 2015) and the International Union of Architects committed to achieving carbon neutrality in building designs by 2050 (Stott, 2014). There are indications that some institutional investors are gradually abandoning fossil fuel assets (the Allianz group made such an announcement prior to COP21).

[9] See World Trade Organization, Regional Trade Agreements Information System [online] http://rtais.wto.org/UI/PublicAllRTAList.aspx [date of reference: 3 December 2015].

[10] See United Nations Conference on Trade and Development (UNCTAD), Investment Policy Hub [online] http://investmentpolicyhub.unctad.org/IIA [date of reference: 2 December 2015].

instruments of this kind were widely used in the past by the countries of East Asia, and by developed countries themselves. A number of North-South free trade treaties (for example the Transpacific Partnership Agreement, TPP) contain provisions that restrict the application of performance requirements even more tightly than does the TRIMs accord.

Investment promotion and protection agreements and most North-South free trade treaties typically contain mechanisms for the settlement of disputes between foreign investors and governments: if a firm considers that its rights under the agreement in question have been infringed it may sue the host government in an international tribunal.[11] This may discourage the host country from adopting regulations that are in the public interest, owing to "regulatory chill" —the prospect of being summoned before these tribunals. Regulatory chill can lead to institutional bias, conflicts of interest, lack of transparency and excessive compensation awards in the arbitration process itself (Productivity Commission of the Australian Government, 2010).

The policymaking discretion of developing countries can also be reduced by provisions contained in certain North-South free trade treaties (in particular those signed by the United States) that limit their capacity to apply capital controls, even on a temporary basis, in order to preserve financial stability (Gallagher, 2010). This is indeed paradoxical, considering that in the wake of the global financial crisis the International Monetary Fund —a traditional apologist of financial account openness— recognized the usefulness of capital controls for coping with speculative capital flows (IMF, 2011).

The commitments assumed in trade or investment agreements can also limit developing countries' policy discretion in public procurement, the treatment of State enterprises, and procedures whereby governments prepare their health, environmental or consumer protection regulations. This situation has been accentuated by the prolonged hiatus in the WTO Doha Round, which has inspired doubts about the role of WTO as the principal forum for creating new rules for world trade. In practice, that role is gradually being taken over by megaregional negotiations, in which developing countries' ability to articulate their interests is more constrained than in the multilateral sphere.

In light of the foregoing, greater consistency is called for among the various international regimes (labour, environment, public health and trade, among others) to make them mutually supportive. A first step must be to ensure consistency between the rules governing global trade and the actions that governments may take to implement the 2030 Agenda for Sustainable Development and the Paris Agreement.

The regulatory power of governments must not be subordinated to external mechanisms for dispute settlement between foreign firms and the State. Trade and investment agreements will have to incorporate the development dimension in terms of building technological capacities and competitiveness in less carbon-intensive industries and goods. The production structure will not change if developing countries lack capacity in sustainable technologies or if they are obliged to import them in a context of external restrictions and limited production diversification.

Although the key discussion in the short run relates to financial assistance, over the long term what will be important is for countries to internalize production and technological capacities for the environmental big push and the shift in the energy mix. A global governance that is committed to sustainable development must foster local capacities, more flexible mechanisms for transferring knowledge, and the establishment of preferential pricing for clean energies, while penalizing fossil fuel subsidies.

To create capacities, new policies are needed to help local firms, particularly the smaller ones, to access technology. One such policy would be to establish a fund to purchase and release patents that are important from the sustainability viewpoint. Reducing the costs of acquiring technology by this means could have an even greater impact if it is done within an integrated regional market that enables economies of scale. This is an initiative that should be taken up by regional institutions, and operational input could be provided from the experience of public or private funds that purchase patents and license them to their members, thereby reducing transaction costs and risks of litigation. Those models are based on "club goods",[12] in contrast to the model proposed here, which is geared to the creation of public goods.

[11] The most frequently used arbitration forum is the International Center for the Settlement of Investment Disputes (ICSID), an international institution that is part of the World Bank Group and is headquartered in Washington, D.C. The United Nations Commission on International Trade Law (UNCITRAL) also plays a relevant role.

[12] Club goods are goods or services that are accessible to all members of a group, and only to them; they are non-rivalrous in terms of consumption, but non-members of the group are excluded.

4. Participation in the data revolution and in Internet governance

Citizens, businesses and governments of the region are now immersed in experimenting with and adapting to a new online ecosystem with more complete and up-to-date data that can be used to improve decisions and to make their impacts more transparent. Big data originates in the rapid expansion of the quantity, speed and diversity of digital data generated in real time as a result of the increasingly important role played by information technologies in daily activities (digital exhaust). Working with big data makes it possible to generate information and knowledge based on comprehensive information in real time, understood as a time lapse in which decisions can be changed on the basis of new information before they become irreversible. Unlike in traditional sources, in which data are collected for one or a few specific purposes, in the field of big data, the data used were generated for other purposes and are reused in ways that were not foreseen when they were generated. Consequently, the concept of reuse is fundamental (ECLAC, 2015a).

The processing and use of big data has increased the importance of correlation as a forecasting tool. The exponential growth in the amount of data easily compensates for their messiness, and opens up alternatives for improving decision-making and overcoming the constraints inherent in explaining phenomena through the design and solution of complex systems. In this sense, the biggest change stems from the shift away from using small and highly refined data samples to working with data that, although of inferior quality, covers the whole of the universe in question.

Within this framework, in November 2014 the Independent Expert Advisory Group on the Data Revolution for Sustainable Development (IEAG), appointed by the United Nations Secretary-General, published a report entitled *A World that Counts: Mobilising the data revolution for sustainable development*. The report highlights the opportunities and challenges involved in the data revolution, and puts forward recommendations and proposals for actions to be undertaken in the near future with a view to overcoming obstacles and optimizing the positive impact of the reuse of data worldwide (IEAG, 2014).

One of its fundamental points is the development of global principles and standards, for which it is necessary to bring together and aggregate data from the public, private and civil society spheres. As a way to improve monitoring and evaluation of the Sustainable Development Goals, the United Nations is working to encourage stakeholders to create a global partnership on sustainable development data. There is a valid concern to develop mechanisms to ensure that the less advanced countries have access to big data, thereby avoiding the emergence of a new digital divide. This is particularly important considering the scant weight of developing regions in the total stored data: in 2012 the United States and Western Europe accounted for 51% of all data stored, a figure that rises to 64% if China is included (ECLAC, 2015a).

Measuring and tracking indicators associated with the Sustainable Development Goals will require good-quality data and statistics and access to open public information that is impartial from different socioeconomic, geographical and demographic points of view. In this regard, the United Nations Statistical Commission adopted a framework for establishing the indicators and methodological analysis of the Sustainable Development Goals and their targets, coordinated by the Inter-Agency Expert Group on Sustainable Development Goal indicators. ECLAC provided support for this effort by coordinating the national statistical institutes and systems of Latin America and the Caribbean involved in this Group and analysing the methodological framework and priorities for the region. ECLAC will continue this work through the Statistical Conference of the Americas, which will therefore require stronger technical and financial capacities to enhance its role and autonomy.

From a strategic perspective, progress is needed towards a new information governance based on: (i) the combination of new and traditional data sources to produce good-quality, timely and relevant information for multiple purposes and users, (ii) increased data utility through greater openness and transparency, avoiding the invasion of privacy and minimizing inequality in production, access and use; and (iii) the development of new data systems at the global, regional and national levels with an empowered citizenry and better accountability mechanisms in the framework of open government.

To take full advantage of the data revolution and the possibilities opened up by the Internet of Things, as discussed in chapter II, will require effective governance of the Internet, taking into account the ways information and knowledge are created, accessed, used and shared. This governance must be not only a model of control or management, but a continuous process of seeking solutions to the problems generated by the accelerating pace of decentralized technological change of transnational scope.

Internet governance has evolved in three phases (Hofman, 2007). A first, technical stage, which ran to the mid-1990s, was geared towards defining the standards and rules of organization of the engineering community responsible for operating the Web. The Internet Engineering Task Force (IETF) was the first and, to date, the most important standard-setting organization.[13] The second stage institutionalized a self-regulating system for administering Web protocols, including domain names and IP addresses. This task fell to the Internet Corporation for Assigned Names and Numbers (ICANN), a private non-profit organization set up in Los Angeles (United States) in 1998 to oversee the administration of unique Internet identifiers and to promote competition in the market for domain names.

The third phase consisted of the establishment and consolidation of new spaces for dialogue under a multi-stakeholder approach: one of the most important forums was the World Summit on the Information Society (WSIS), which met in 2003 and 2005. In December 2015, the United Nations General Assembly held a high-level meeting on the overall review of the implementation of the outcomes of the World Summit on the Information Society (WSIS+10). On that occasion, the issue of Internet governance sparked an interesting debate, after which participants agreed to take note of paragraph 29 of the Tunis Agenda for the Information Society, recognizing that management of the Internet as a global facility must include multilateral, transparent, democratic and multi-stakeholder processes, with the full involvement of governments, the private sector, civil society, international organizations, technical and academic communities, and all other relevant stakeholders in accordance with their respective roles and responsibilities. This agreement was reached after intense negotiations in which countries demonstrated polarized positions: at one extreme, some participants such as the United States and the European Union were in favour of preserving a multi-stakeholder model; at the other extreme, countries such as the Russian Federation proposed the creation of a multilateral agency to be responsible for Internet governance. Between these two extremes, Brazil and other countries defended the multi-stakeholder model but preferred to maintain multilateralism for dealing with issues that involve sovereignty.

In response to the incidents of cyberespionage reported at the United Nations General Assembly meeting in 2013, a Global Multi-Stakeholder Meeting on the Future of Internet Governance (NetMundial) was hosted in April 2014 by the Brazilian Internet Steering Committee (CGI.br) and INet, a forum of international entities involved in Web governance. The meeting focused on the preparation and discussion of principles for Internet governance and on a roadmap for development of its ecosystem.

The debate over the institutional structure of Internet governance is not the central point of the discussion, which must focus on the purpose of that governance and the capacity to organize a space for communication and collective construction. The Internet has challenged the systems of the traditional mass communications industry and the one-way relationship between information producers and consumers. With a design that allows individuals to express themselves freely, to exchange points of view, and to create their own space with a scope and effectiveness previously impossible, the digital environment has made it possible to serve more effectively the objectives that justified traditional regulation of the media.

Despite the widespread belief that the Internet is unregulated and the persistent difficulty in applying standards, the Web is subject to policies, self-regulation mechanisms and agreements between the industry and government that enable it to function. Benkler (2000) proposes a system for identifying the questions surrounding Internet governance, which he arranges in three layers. The first layer refers to physical infrastructure and management of the IP networks (land-based and submarine cables, satellites, wireless communication systems and Internet exchange points (IXPs)). The second or logical layer corresponds to the administration of Internet protocols and unique identifiers, including routing servers, domain names and IP addresses. The third layer refers to the contents transmitted and the activities performed via the Internet, such as trade, communication, education, health management and entertainment which, in turn, have powerful economic, social and cultural effects.

Decisions on Internet governance, including its physical and logical layers, must take into account the speed and convergence of technological change, the elimination of physical and geographical barriers, and the decentralization of information and data. These decisions will determine whether the digital environment remains a common environment with growing interaction among peers or whether differentiated national spaces will be created that replicate the traditional communication models, in a context where nearly half of Internet users worldwide experience some type of online censorship, including technical blocking of websites, search result removal, legal take-downs, and induced self-censorship (Masters, 2014).

[13] The Internet Engineering Task Force is a private organization that functions as an informal community with no legal personality.

Although some countries in the region, such as Brazil, have been leaders in fostering discussion and promoting more balanced models, most participate in only a cursory manner: they frequently fail to perceive the magnitude of the problem and its consequences, and at the same time they feel themselves powerless to influence decisions at the highest level. The region has a platform for discussing and agreeing positions in this area: the Digital Agenda for Latin America and the Caribbean (eLAC2018), adopted by 18 countries of the region at the fifth Ministerial Conference on the Information Society in Latin America and the Caribbean in August 2015. The eLAC multi-stakeholder working-group on Internet governance has been one of the most active in this decade-long agenda. From a strategic viewpoint, governments in Latin America and the Caribbean must enhance their understanding of what is at stake, define positions and coordinate them in order to make up for their scant weight in the current governance model.

B. Consolidating the regional contribution

Regional coordination and cooperation in Latin America and the Caribbean has a long track record, backed by broad institutional development. Along with organizations that have existed for many years are others that were established within the last decade. Their scope also varies, ranging from those that encompass the entire region to specific subregional organizations, the most notable examples being those for the Caribbean, Central America and South America.

By tapping these accumulated capacities, the region could enhance its efforts to implement and indeed improve on the 2030 Agenda and the Sustainable Development Goals. The region thus has the opportunity to make a major contribution in all dimensions of progressive structural change. Consistently with the changes in governance for the creation of global public goods, regional coordination must be strengthened and expanded in two essential areas: financing, and production and trade integration, especially in the context of a global digital economy.

1. Reinforcing the financial safety net

The regional financial architecture of Latin America and the Caribbean is one of the most extensive in the developing world. With few exceptions, its history has been tied up with agreements on trade integration, another area where the region has experience covering half a century. Its financial architecture and institutions have been organized around the need to support liquidity and balance-of-payments financing, an effort now centred in the Latin American Reserve Fund (FLAR) and the supply of countercyclical financing by regional development banks.

Regional financial cooperation and integration can play an important role complementary to the global financial architecture. It must strengthen the provision of countercyclical financing to address the impact of external shocks and avoid financial contagion, to mobilize resources for development and to promote intraregional trade as a step towards greater integration among countries of the region. The regional financial institutional structure must be designed to complement the global financial institutions within a multilevel cooperative structure that respects the principle of subsidiarity.

Regional institutions have the credibility and legitimacy to play a more active role in supporting financial system stability. Moreover, as the world financial architecture is still a work in progress, they can contribute to filling gaps in the global structure. In this sense, the regional level has an important role to play in regulating cross-border capital flows as an instrument of macroprudential policy.

Regional institutions can play a significant role in providing countercyclical funding and supplementing the resources that countries receive from institutions such as the International Monetary Fund. As these institutions have the technical capacities needed to help oversee the system's stability, efforts to expand their coverage would strengthen international reserve management policies, support the coordination of macroeconomic and financial policies, and facilitate countries' access to financial markets.

Expanding FLAR will require moving forward with an agenda of coordination among countries. For now, this fund comprises only the Bolivarian Republic of Venezuela, Colombia, Costa Rica, Ecuador, Paraguay, Peru, the Plurinational State of Bolivia and Uruguay. All its members (with the exceptions of Uruguay and Paraguay, which joined recently)

have made timely and expeditious use of its credit facilities. A regional reserve fund with a larger membership and more capital would contribute much to regional financial stability. This proposal is feasible and is supported by the fact that balance-of-payments problems and crises do not necessarily affect all countries of the region simultaneously, so not all will need resources from the fund at the same time.

Other areas where cooperation among countries of the region is needed include the following: (i) encouraging the conduct of bilateral trade in the currencies of the countries involved (as occurs between Argentina and Brazil); (ii) expanding the regional development banking system through the creation of new entities, such as the Bank of the South, and strengthening existing ones (e.g. the Development Bank of Latin America-CAF), which in addition to their role in development financing can help support countercyclical policy measures; (iii) expanding regional reserve funds such as FLAR; and (iv) engaging in currency swaps with main trading partners, and issuing foreign-exchange insurance in contexts where speculation is liable to drive up demand for foreign currencies.

Improving domestic resource mobilization for development also requires progress towards better fiscal cooperation among countries in the region in order to control tax evasion and avoidance and illicit capital flows, by strengthening agreements and coordination arrangements as a complement to efforts at the global level. When it comes to attracting foreign direct investment, countries must avoid a race to the bottom. Competition of this kind, as well as in environmental matters and labour standards, will undermine countries' negotiating positions and produce a negative-sum game.

2. Moving forward with regional integration

The regional space is crucial for diversifying production and exports. Trade within the region accounts for the largest share of exports of manufactures, absorbs the largest number of export products and is supplied by the greatest number of exporting firms, especially small and medium-sized enterprises (SMEs), i.e. firms with the biggest impact on formal employment. As well, it is the natural setting for the creation of production linkages, owing to geographical proximity and complementarity among national economies (ECLAC 2014a, 2014b and 2014c).

Formally speaking, the region experienced a surge of integration activity over the last decade. A number of mechanisms and forums were added to the traditional ones, giving rise to a dense network with multiple memberships and, in some cases, generating duplications and inconsistencies among the various bodies. Public discourse attributed much importance to production integration, sometimes even to the detriment of trade integration. In practice, however, the regional economic space has become increasingly fragmented. Differing visions of development, especially in South America, have meant that, instead of striving for convergence, integration mechanisms have operated as watertight compartments. In this context, barriers to intraregional trade have proliferated, discouraging the production integration that the various schemes were supposed to promote.

Latin America and the Caribbean remains one of the regions of the world with the lowest ratio of intraregional trade: around 18% of total trade, compared to 63% in the European Union and 50% in North America and in East and South-East Asia. Intraregional trade is also markedly procyclical: in 2015, while the value of exports from the region to the world dropped by 14%, the value of those within the region itself fell by 21%.

In the complex outlook now facing the region, it is even more urgent to take up the economic integration agenda once again. The renewed interest expressed by MERCOSUR members in exploring options for working together with the Pacific Alliance could be an important catalyst in this process.

The possibility of taking maximum advantage of the potential offered by the regional market, in terms of scale and the generation of production chains, is directly linked with the rules applicable to trade and investment in the region. The greater the degree of regulatory fragmentation, the higher will be the transaction costs facing businesses (and SMEs in particular): for example, the need to meet differing standards for the same product, depending on the market to which it is exported. Gradual harmonization or mutual recognition of technical, sanitary and environmental standards —not only within the various integration arrangements but also between them— would do much to foster trade and economic integration within the region.

The same logic applies when it comes to trade facilitation. According to information for 2015 on 19 countries of the region, all have achieved significant progress in implementing measures in this field (ECLAC, 2015b).

These advances would have a greater impact if they were coordinated at the regional or at least the subregional level. For example, in order to streamline regional value chains, the countries involved should agree on the criteria that a firm must satisfy in order to be an authorized operator, or on the required content of advance rulings. As well, regional or subregional coordination is essential in designing procedures to guarantee full interoperability of countries' single windows for foreign trade.

Allowing cumulation of origin[14] among several countries would promote shared production and therefore production integration. All the subregional integration accords contain mechanisms of this kind, but they do not always apply between members of different schemes. Moving forward in this area would help to scale up production integration from the subregional to the regional level.

Industrial policy in the region has been traditionally devised and implemented with a view to favouring national objectives. Nevertheless, if the intent is to promote cross-border production chains, action at the national level may be inadequate and even ineffective if, for example, the policies implemented in the countries participating in the same chain are mutually contradictory rather than reinforcing. For this reason, national industrial policies should be formulated with plurinational components. The coordination of national industrial policies admittedly poses political, technical and even budgetary challenges. Consequently, such initiatives must be approached gradually and in stages. The internationalization of SMEs is one specific sphere on which such efforts could focus initially.

While production integration among countries is heavily shaped by the policy framework in place, it also depends on the availability of adequate infrastructure in the areas of transport, logistics, energy and telecommunications (including broadband). Major plurinational initiatives are being pursued in all these spheres, such as the Initiative for the Integration of Regional Infrastructure in South America (IIRSA) —a technical forum of the South American Infrastructure and Planning Council (COSIPLAN) of the Union of South American Nations (UNASUR)—, the Mesoamerica Project and the Andean Electrical Power Interconnection System. However, the implementation of projects defined as priorities needs to be expedited.

3. Creating a single digital market

Developing the region's digital economy will require policies to expand network infrastructure and reduce access costs, to strengthen the digital ecosystem (in particular in the areas of content creation and social networking where, despite mass use, the regional supply is still limited), and to move from the consumer Internet to the industrial Internet (ECLAC, 2015a). From the regional standpoint, the most urgent strategic objective is to create a digital common market.

Lowering cross-border barriers will facilitate the accessibility and distribution of digital goods and services, boosting the quality of supply and reducing the costs of access by taking advantage of economies of scale and of networking, which Latin American firms now lack for competing at the global level. Building a single digital market will require incentives to expand telecommunications infrastructure, to reduce legal and regulatory complexity, to harmonize rules relating to security, privacy, standards, data traffic and tax burdens, and to diminish transaction costs for the intraregional goods trade.

This medium-term effort will be greatly facilitated if results can be achieved quickly on issues now under consideration in the region, such as building a continental fibre optic ring and laying submarine cables to other regions, eliminating roaming charges for data transfer, and harmonizing policies for allocation of the radiofrequency spectrum. The creation of the digital common market can be based on national and regional institutional advances that are rarely present in other areas: examples are the Digital Agenda for Latin America and the Caribbean (eLAC2018) and the Mexico City Declaration, approved in August 2015 at the fifth Ministerial Conference on the Information Society in Latin America and the Caribbean, which recognized the need to move toward this objective.

A digital common market would facilitate analytical work on big data and the Internet of Things, which are essential for the big push that will drive the transition from the fossil fuel economy to one based on renewable energy.

[14] Cumulation of origin allows products originating in a member country of a free trade area and processed in another country within the same area to be considered as originating from the latter.

C. National policies for progressive structural change

1. Redefining macroeconomic policy

Achieving progressive structural change demands a sustained process of investment and productivity enhancement, which in turn requires stability and predictability. Macroeconomic policy can play a fundamental role here, by minimizing the amplitude and frequency of economic cycles and helping to sustain investment and the pace of productivity growth at levels that will allow for continuous expansion and utilization of production capacity.

Today, the prevailing macroeconomic policy style is characterized by the following features: (i) it views macroeconomics from an exclusively short-term perspective; (ii) it affords priority to controlling inflation; (iii) it sees monetary policy as the principal countercyclical tool, giving the monetary authority a special legal status and relegating fiscal policy to a secondary plane; and (iv) it promotes exchange-rate flexibility through full opening of the financial and capital accounts, on the assumption that expanding the sources of financing will help to boost the process of accumulation in developing countries. In this context, other equally desirable objectives such as full employment or financial stability are afforded less importance, and fiscal policy and macroprudential regulation are relegated to a subsidiary role.

In the ECLAC vision of macroeconomics, short-term policies can have long-term effects: the evolution and dynamics of the business cycle and its characteristics have an impact on growth of the capital stock, and hence on the production structure and its long-term performance. From this viewpoint, articulating the short and long terms requires policies aimed at managing not only the level of aggregate demand but also its composition, and the effects of financialization on macroeconomic management must also be taken into account (ECLAC, 2010 and 2012).

A broader spectrum of objectives requires a more extensive set of instruments (Stiglitz, 1998). A macroeconomic policy geared towards development must look beyond inflation control to expand the instruments of countercyclical policy beyond the traditional monetary policy tools. This must be understood in a broader sense, including credit and macroprudential policies for achieving nominal and financial system stability. A macroeconomic policy for progressive structural change must have three pillars: expanding the countercyclical role of fiscal policy, redesigning the institutional context for monetary, exchange-rate and credit matters, and strengthening macroprudential policy in the external sphere.

(a) Expanding the countercyclical function of fiscal policy

Fiscal policy is the countercyclical instrument par excellence, and it must not be confined to the quantitative control of the public accounts. Its tools may be of an exogenous nature or they may be endogenous (automatic stabilizers). The strategy for its operation focuses on expanding fiscal space during the upswing of the cycle, by increasing fiscal savings and, above all, by reducing the external debt in order to soften financial constraints and alleviate adjustment needs, a particularly severe problem in Caribbean economies (see box VI.1). This policy has a broad range of tools linked to tax policy and to public spending and investment.

Box VI.1
Debt relief for the Caribbean small island developing States (SIDS)

In 2013, 5 of the world's 20 most indebted countries by public debt-to-GDP ratio were in the Caribbean: Antigua and Barbuda, Barbados, Grenada, Jamaica and Saint Kitts and Nevis. The total combined debt of the Caribbean amounted to US$ 46 billion, or 71% of subregional GDP. Although the severity of the burden varies among countries, the public debt problem is widespread enough to make it a subregional issue that needs to be urgently addressed. This situation has been aggravated by a decline in foreign direct investment (FDI) relative to levels before the outbreak of the global economic and financial crisis in 2008, and by slow economic growth and high levels of unemployment, especially among young people.

The debt challenge is compounded by the slack performance of the domestic private sector, partly due to a reduction in government activity, especially infrastructure investment. In addition, the subregion is highly vulnerable to extreme events and the burden of the attendant costs for rehabilitation and natural disaster risk reduction. Therefore, compelling arguments abound for a debt relief programme for Caribbean countries, particularly those for which the burden is unsustainable. Furthermore, the Caribbean's heavy debt problem was not the outcome of policy missteps. Rather, it is rooted in a series of external shocks, compounded by structural weaknesses and vulnerabilities as small island developing States (SIDS) exposed to natural disasters and the impacts of climate change.

The Economic Commission for Latin America and the Caribbean (ECLAC) has proposed a strategy of debt relief aimed at broadening the fiscal space and helping to engineer much-needed economic growth in the member States, while addressing the effects of climate change. Specifically, it proposes

Box VI.1 (concluded)

a menu approach to tackling the debt problem, since the debt composition is heterogeneous. Some countries have large multilateral debts while others owe a significant proportion of their public debt to private creditors.

The proposed menu has several components. First, multilateral institutions would gradually write off 100% of the multilateral concessional debt stock, contingent on approval from donors and on the condition that the States involved place the equivalent amount of the annual servicing of existing multilateral concessional debt, in local currency, in a trust fund over a period of 10 years. ECLAC also proposes the establishment of a Caribbean Resilience Fund (CRF), which would be used principally for funding climate change adaptation and mitigation.

Second, in the case of countries which owe a sizable percentage of public external debt to private creditors, a debt buy-back scheme is proposed to reduce both service payments and the debt stock. Such a scheme would be pursued on the basis of deep discount in the secondary markets and new loan agreements by creditors at lower costs, having regard to continuing borrowing requirements.

Member States would undertake to pursue structural reforms in order to address short- and medium-term challenges. The debt relief would thus be contingent on the fulfilment of obligations to carry out sustainable fiscal consolidation programmes and would be based on agreements between creditors and debtors.

Source: Economic Commission for Latin America and the Caribbean (ECLAC).

(i) Public investment

At a time of economic slowdown or recession such as many countries of the region are now experiencing, the most important autonomous component of countercyclical fiscal policy is public investment which, in addition to influencing the business cycle, brings with it positive medium and long-term impacts. This means that public investment spending must be protected, and must not be treated as an adjustment variable during the downswing of the cycle.

The importance of fiscal policy as a countercyclical tool is confirmed by estimates of the fiscal multipliers. In Latin America, an increase of one unit in fiscal spending during the downside of the cycle (countercyclical policy) generates an increase of 1.5 units in GDP after two years, while a fiscal spending cut of one unit during the recessionary period (procyclical policy) causes GDP to fall by four units. A similar increase in spending during the upswing (procyclical policy) generates a GDP gain of only one unit, again after two years, while the same cut in expenditure during the upswing (countercyclical policy) has no significant effect (ECLAC, 2015c).

These outcomes indicate that expanding fiscal space during an upswing for use during adverse times not only stabilizes GDP but also produces a greater average growth rate, since the expansionary effect of using fiscal space (expenditure) exceeds the decline in growth generated at the time it is created (the effect of the savings on GDP during the upswing is in fact close to zero). Secondly, not pursuing countercyclical policy and making procyclical adjustments during the downswing leads to "the worst of all worlds", for it is at this time that adjustment has the largest negative impact. These outcomes show that financial criteria designed for the very short term should not be applied to fiscal policy, whose effects and efficiency become apparent only over a longer period.

Protecting public investment requires a fiscal framework that includes investment promotion, and this means, on one hand, creating the necessary fiscal space to finance public goods and building the capacities to manage them, while on the other hand generating the conditions whereby public investment crowds-in private investment to achieve development objectives. A pro-investment fiscal framework must also link public capital spending to productivity in the economy (Pollin, 2012).

(ii) Automatic stabilizers

Endogenous tools such as automatic stabilizers reduce instability, for they are triggered as a function of the business cycle. The collection of some taxes is proportional to national income and expenditure. The concept of automatic stabilization can be readily extended to the realm of public spending, and should be used more frequently in the region. On the spending side, unemployment subsidies and automatic inflation adjustments to social benefits and pensions for the most vulnerable sectors will help to sustain consumption levels at times when the private and external sectors are powerless to do so. Unemployment benefits are also an important component of an inclusive social safety net.

The most effective countercyclical tax is income tax, the amount of which declines when incomes of private agents fall below a specified threshold, and their available income accordingly rises. This heading also includes taxes on revenues from the exploitation of natural resources, which can vary in a countercyclical manner with fluctuations in international commodity prices (ECLAC, 2012). Natural resource governance, then, is crucial to macroeconomic management (see box VI.2).

Box VI.2
Natural resource governance

ECLAC has pointed to the need to institute governance over natural resources, through sovereign policies and institutions that will determine —primarily in the case of the extractive industries— the ownership, capture, distribution and investment of the related rents, in order to ensure that they contribute to progressive structural change. In this respect, four challenges facing the region have been identified:

(i) Construct a long-term government strategy and policy to ensure that the natural resource sectors contribute to the goals of production diversification, structural change and social inclusion. Mechanisms need to be established for the public management of resource rents: these can include intergenerational savings and investment funds and stabilization funds, such as those introduced in the Bolivarian Republic of Venezuela, Brazil, Chile, Mexico, Peru, and Trinidad and Tobago, as well as by various developed countries. It is important to ensure transparency and social control over the management, use and investment of the rents captured by governments from natural resources, and to earmark them for capital spending.

(ii) Update taxation systems to introduce progressiveness into the State's share in windfall profits resulting from price hikes: this will require greater coordination among countries so as to move towards a common position that avoids tax competition.

(iii) For infrastructure works and investment megaprojects (particularly in extraction and other natural-resource-related activities) there should be mechanisms in place for prior, free and informed consultation with the affected communities, especially in indigenous territories. This means that governments will have to develop the capacity to incorporate the rights-based approach in public investment projects, and to oversee private investments so as to ensure that the local communities and territories receive a portion of the benefits.

(iv) Strengthen the public capacity to prevent and resolve the growing number of socioenvironmental conflicts associated with development of extractive industries. Most countries of the region have yet to institute consultation and compensation mechanisms for reconciling the rights of parties and social stakeholders via the administrative route, thereby avoiding litigation.

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of H. Altomonte and R. Sánchez, "La gobernanza de los recursos naturals en América Latina y el Caribe", Santiago, ECLAC, 2015, unpublished.

(iii) Fiscal policy from the sectoral and spatial standpoints

In an agenda for progressive structural change, fiscal policy must be understood in dynamic terms, and in relation to the other areas of the economic system. This means, on one hand, articulating it with other policies, such as industrial and technological policies. It is not only the countercyclical nature of fiscal policy that is important here, but also the sectors that it targets, and this raises the issue of strategic selection and coordination of policies. On the other hand, it must be articulated with environmental policy in order to shift profitability among sectors, internalize negative externalities, and reduce the rate at which non-renewable resources are being exhausted.

A difficult but necessary step in this direction is gradually to reduce subsidies for fossil fuel consumption and to introduce environmental taxes. Soft financing (i.e. subsidized from government funds) for the development of energy from renewable sources is another instrument to be considered.[15] This is what ECLAC has in mind when it calls for an environmental Keynesianism, i.e. the establishment of fiscal incentives that will sustain activity and promote the transformation of the production structure.

The State should use its influence on the process of capital accumulation to favour investments that will facilitate territorial integration, coordinating initiatives so as to permit localized activities and overcome poverty traps. Although local initiatives may involve much smaller amounts than big national infrastructure projects (as they are concentrated in community investments), they are important for achieving the 2030 Agenda for Sustainable Development and they can have a significant impact on long-term growth, through inclusion of the rural population.

(b) Redesigning the institutional context in monetary, exchange-rate and credit matters

(i) Monetary and exchange-rate policies

Besides affecting the cost of credit and the level of aggregate demand through determination of the interest rate structure in the economy, monetary policy influences agents' portfolio decisions, including exchange rates. This highlights the close relationship between monetary policies and the exchange-rate strategy. The challenge for central bankers is to coordinate monetary and exchange-rate policies so that the quest for nominal stability does not generate currency dynamics hostile to development, or that the quest for a degree of currency competitiveness does not lead to inflation higher than is desired or advisable.

[15] Available evidence for the United States suggests that the fiscal multiplier is much greater for sectors linked to the green economy than for those linked to production with high carbon emissions (Pollin, 2012).

To the extent that its fluctuations affect all prices in an economy, the level and behaviour of the nominal exchange rate will be crucial for controlling inflation, for determining the conditions of competitiveness, for the distribution of income, and for the equity position (because it affects the value of assets and liabilities denominated in foreign currency).

Experience in the region suggests that the nominal exchange rate has a volatile behaviour that is accentuated with the free movement of international capital flows. It behaves like any other financial asset, in that it responds to the expected returns on futures markets, with a heavy speculative component. In this context, managing the exchange rate is crucial and is becoming an increasingly significant challenge. The dynamics (typically procyclical) of international financial flows tend to influence exchange rates by inducing sharp appreciation in boom times (and depreciation in recessionary phases), with destabilizing effects on the current account, the fiscal accounts and agents' equity positions, to some extent independently of the level of the local interest rate.

The actual capacity to use exchange-rate policy to cushion the effects of international financial cycles will depend on the manoeuvring room of the monetary authority, which in turn will be a function of the stock of international reserves. If a countercyclical exchange-rate policy designed to promote a degree of stability in the rate is not to be hostage to large movements in interest rates or in the central bank's stock of reserves, instruments and institutions must be developed to diversify the resources used for administering the exchange rate.

(ii) Credit policy

As private credit is notoriously procyclical, especially during a downturn, the monetary authorities must, in addition to monitoring inflation, pay special attention to the dynamics of the financial cycle and its relationship to the level of activity and other macroeconomic variables such as the exchange rate.

An active credit policy can help delink the flow of credit from the interest rate structure consistent with nominal and financial stability. Policies that subsidize credit for production and innovation can be effective, particularly in situations where domestic interest rates must be raised. Credit policies can be implemented through the public banking system or through policies promoted by the central bank in coordination with the commercial banks. In any case, credit policy must be coordinated with industrial and technological policies. In addition, the financial system can tilt the composition of investment in favour of sustainability, as will be discussed in analysing industrial policy for the environmental big push.

(c) Strengthening macroprudential policy in the external sphere

The goal of macroprudential policy is to regulate and maintain stability of the financial system at the aggregate level, by minimizing the systemic risk, i.e. the risk that financial services will be interrupted by a total or partial breakdown of the financial system, which can have major adverse repercussions on the real economy. For this reason, the authorities seek to reduce the accumulation of fragile financial structures (Minsky, 1982 and 1986), to watch for excessive shrinkage in the balance sheet of financial institutions, and to prevent external flows from becoming a source of instability.

In a setting dominated by concerns over the balance of payments and financial openness, the more closely an economy is integrated into international credit markets the less room there will be for the adoption of countercyclical macroeconomic policies. The regulation of cross-border capital movements needs to be given due priority in macroeconomic policy. Regulations can be applied to capital inflows and outflows, and they include measures to regulate prices (for example, taxes on portfolio investments by non-residents or taxes on the purchase of external assets by residents) and to regulate quantities (restrictions or limitations on capital inflows and outflows, minimum deposit requirements, special licences for the entry of foreign direct investment and other financial transactions).

The limitations posed by the fixation on the balance of payments and financial openness not only constrain the capacity to apply countercyclical policies. Just as important as the effectiveness of these regulations is the way the composition of the flows is managed, and its impact on sector balance sheets. While there has been a tendency to restore some of these regulations in recent years, Latin America and the Caribbean remains the region with the laxest capital controls.

An additional economic and political consideration is the growing capacity of international financial markets to restrict the manoeuvering room of local economies. The veto power of the international financial markets is not

limited to macroeconomic policy, but includes sovereign decisions on institutional or regulatory matters. What is frequently regarded as a positive attribute of unrestricted openness on the financial and capital account —the ability of financial markets to dissuade the application of economic policies that are deemed inconsistent— can in fact obstruct the implementation of a gamut of policies, ranging from regulation of the financial system to the introduction of progressive taxes.

2. Broadening social protection for equality

The new development agenda presents an opportunity to undertake more solid commitments to eradicate poverty, reduce inequality and build universal social protection systems.

Generating employment with built-in rights is a strategic challenge for the region, and presupposes the integration of macroeconomic and sector policies. This is a fundamental consideration for reducing inequality, promoting social inclusion, building autonomy and enhancing citizenship, as recognized in the Sustainable Development Goals. It is also the best mechanism for expanding social protection.

Job creation will be a particularly stiff challenge in a context where advances in information technologies and artificial intelligence are likely to mean a growing role for robotics. These trends will not only eliminate jobs whose content can be readily codified and thus digitalized, but will also change the content of the jobs that remain or are created. Over the long term, the production of new goods and services will generate jobs in areas where they do not even exist today, but there will be heavy social costs during the transition. Public policies must reduce those costs as far as possible, through a combination of mass training programmes throughout working life and the establishment of universal social security systems.

The region's uneven production base has left large swathes of society unprotected, although the situation has improved over the last decade as a result of the joint impact of economic growth and specific policies (Amarante and Arim, 2015). In this context, there is a broad spectrum of policies available for strengthening labour markets to promote greater equality. They include:

(i) Increasing labour market formalization through investment promotion laws with incentives to this end, special and simplified regimes for categories of workers (such as those in domestic service), procedures that facilitate the registration of workers and employers, workplace inspections, pro-formality tax deductions, expansion of coverage to contributors' family members, simplified tax arrangements that combine social security and tax components, and special regimes for small taxpayers.
(ii) Raising the minimum wage because of its positive impact on reducing poverty and inequality.
(iii) Reinforcing forums for collective bargaining and social dialogue to reduce wage dispersion and shorten the working day, as well as promoting union membership and freedom of association, eliminating all forms of discrimination and eradicating child labour, forced labour and indentured labour.
(iv) Implementing or consolidating unemployment insurance programmes, broadening their financing base (from contributions to general revenues) and eligibility criteria (from formal workers with seniority to workers in more insecure and temporary forms of employment). There is a need for national public employment systems that will include and supplement such insurance, along with labour intermediation services, skills certification and training.
(v) Promoting the economic empowerment of women through active policies to help them find jobs and to provide training for upgrading their skills, rules and programmes that promote equal opportunities and treatment and eliminate wage discrimination, and indirect measures to balance the demands of work and family life. Caregiving should be part of social protection, and national systems or networks offering this service should be consolidated.
(vi) Articulating training systems with education systems, so that students can move readily between the two.

To make social protection universal, the coverage and quality of services will have to be enhanced in various areas, such as retirement allowances, pensions and other transfers to older persons, health insurance services, and cash transfers to families with children.

When it comes to contributory benefits, there is more to be done than simply promoting labour formality. The new challenges facing the region lie in improving the scope and design of cash transfers to families with children as instruments for expanding social protection, and strengthening their linkages with cross-cutting policies, particularly in education and health, and workplace inclusion programmes.

Care policies must be conceived and designed as universal policies with a focus on rights, and not just on the effects they will have on the economy by boosting the labour supply. Such policies are especially important in light of the ageing of the population in many countries of the region. The agenda must include broadening the coverage of day-care facilities and preprimary schooling, and extending the school day, along with programmes of support and assistance for older persons and persons with disabilities. There is also a need for a cultural shift that will distribute household tasks more equitably between men and women.

At the same time, priority must be given to policies to promote and safeguard the civil, political, economic, social and cultural rights of indigenous peoples and Afro-descendent populations. Countries must demonstrate their commitment to the first group by budgeting the funds needed to implement the United Nations Declaration on the Rights of Indigenous Peoples and to give full effect to Convention No. 169 of the International Labour Organization (ILO) of 1989 on Indigenous and Tribal Peoples in the 15 countries of the region that have ratified it. Governments must step up their efforts to promote participation and to respect the autonomy of these peoples. They must also support fulfilment of the commitments acquired at the World Conference against Racism, Racial Discrimination, Xenophobia and Related Intolerance, relating to the rights to health, education, access to the labour market and social protection, as well as political representation (Antón and others, 2009; Hopenhayn, Bello and Miranda, 2006).

Implementing these proposals will involve some important institutional challenges. National legislation is needed to provide a legal foundation for social commitments in the area of rights. Inter-agency organization and coordination capacities must be strengthened. The social sphere in countries of the region is still segmented by sector and, worse, kept separate from the economic sphere, and there is a hierarchical structure that subordinates social institutions to the economic authorities. Overcoming this dichotomy and achieving vertical integration between the national and subnational levels of government are both essential for developing a sound institutional structure for the social sphere.

The establishment of clear and verifiable rules and procedures for implementing social policies and programmes would help make their implementation more efficient, less discretionary, and less subject to political interference. In order to give policies and programmes greater legitimacy in the eyes of the citizenry, greater emphasis will have to be placed on accountability mechanisms and the provision of public information on their operation.

All of the foregoing will require greater fiscal space to ensure adequate and stable funding, and those resources must be raised, as declared in the Sustainable Development Goals, in ways that will promote equality, in particular through progressive taxation.

There is room to move forward on several fronts simultaneously. The elimination of fossil fuel subsidies and the taxing of polluting activities (so as to align social and private costs) will expand the fiscal space for countercyclical and industrial policies, and at the same time will shift incentives towards less carbon-intensive activities. A policy that penalizes the use of private transportation and makes public transport more attractive by guaranteeing quality standards will also serve to reduce pollution and inequality. Strengthening indirect taxation and eliminating the preferential treatment of capital gains (on which taxation is too low) will broaden fiscal space and promote equality. Similarly, extending taxes on assets will help reduce the asymmetry in the taxation of capital and of labour, reducing the regressive bias in that area.[16] Steps must also be taken to combat the high levels of tax evasion and avoidance, which, in the region, amounts to some US$ 320 billion a year, equivalent to 6.3% of regional GDP (ECLAC, 2015e), part of which feeds the illicit flows analysed above. Greater redistribution can also be achieved by reducing preferential treatment and lowering the income level at which top tax rates kick in.

The high degree of labour informality and the diversity of public and private regimes in the region tend to diminish the income from social security contributions. Policies that would reduce this informality would fulfil the dual role of enhancing social protection and boosting State resources to guarantee universal access to rights.

A social protection policy that is sustainable over the long term must be closely associated with skills development and workforce participation with rights. The idea that "social issues are not played out in the social sphere alone" is more valid than ever in a globalized international economy where achieving full employment requires workers who can switch quickly into the new activities and tasks imposed by accelerating technical progress. Making benefits universal, thereby providing a social safety net for workers, and providing them with training and education

[16] In recent years, several countries have undertaken reforms to augment personal income tax revenues by raising tax rates, reducing exemptions (especially on income from capital, such as interest and dividends), establishing minimum taxes, and increasing surveillance on large taxpayers (ECLAC, 2015d).

are essential components of a new economy that is more exposed to market fluctuations and technology shocks. Productivity-enhancing policy is just as important as redistribution policy for supporting equality. This will require new institutions as well as worker-employer compacts that look beyond the short term.

3. Implementing environmentally-focused industrial policies

The first decade of this century saw a resurgence of the debate over industrial and technology policy in Latin America and the Caribbean, something that had long been absent from the economic policy agenda. At that time, the Schumpeterian-evolutionist-structural synthesis provided an analytical basis for rethinking those policies (Peres and Primi, 2009), looking beyond static comparative advantage (static or Ricardian efficiency) toward activities with high long-term development potential (Keynesian and Schumpeterian efficiencies). To this was later added a concern for the environment as a key component of social, economic and environmental sustainability.

Progressive structural change implies that the economy will move forward on a low-carbon growth path, in which production and emissions will be gradually decoupled. This will demand the development of technological capacities and innovations focused on sustainability. Capacities for climate change mitigation and adaptation do not emerge spontaneously: building them will require an integrated package of investments —an environmental big push. The coordination problems described by Rosenstein-Rodan (1943)[17] and the learning problems analysed by evolutionary economics are especially acute in this case. For example, countries will need policies to coordinate efforts in many different spheres if they are simultaneously to switch to cleaner energy sources, expand efficient urban transit systems, control pollution throughout production chains, articulate new energy sources and production, and match labour demand with the supply of capabilities, skills, training and education. They will have to combine supply-side efforts to change innovation paths and the energy mix with education that will encourage the use of public goods and shift the development pattern. The environmental big push, then, is a concentrated investment effort to redefine patterns of production and consumption, based on learning and innovation.

(a) The environmental big push and production diversification

Environmental policies are frequently viewed by businesses, especially the smaller ones, as restricting their production possibilities or their international trade prospects. Yet environmental innovations can become competitive assets for firms: regulations in this area ultimately boost their competitiveness. ECLAC thus believes that the environmental issue offers a great opportunity for a technological and production transformation that will lay the basis for creating high-quality employment. Creating national centres to analyse, monitor and evaluate the implementation of intended nationally determined commitments will make it easier to achieve these goals. Such centres should have sector-specific technical and management capabilities.

The energy sector will play a key role in redefining the style of development. Technical progress has lowered the costs of renewable energies to levels that make them competitive with fossil fuels, even in the absence of incentives. The region has advantages in the generation of renewable energies, in particular hydroelectric, solar and land-based wind energy. While the prices of some of these energies are already lower than those of conventional sources, there is still the challenge of reducing their intermittency so as to make them reliable as base energy supplies.[18] More decisive support for the incorporation of renewable energies, by cutting fossil fuel subsidies, taxing carbon emissions and adjusting regulations for purchase, generation and transmission, would facilitate a faster switch-over to cleaner energy sources. Renewable energies also have the potential to generate backward linkages, as has happened with solar and geothermal energy.

New opportunities for production diversification are emerging from the application of information technologies to production and the increased density of the industrial fabric, as current technologies and the energy mix are redefined. Examples include the management of smart cities, the expansion of mass transit, the processing of biodiversity, the development of biomaterials and the bioeconomy, eco-labelling, and renewable energy sources, as well as the production of renewable energies, with consequent development of their value chains. Each of these activities represents a production diversification option for an agenda of progressive structural change.

[17] In his 1943 article on "Problems of industrialisation of Eastern and South-Eastern Europe", Rosenstein-Rodan called for large-scale investment plans to promote industrialization.

[18] Recent developments in power storage, such as tri-metal batteries, mixtures of salts for capturing concentrated solar energy, and storage by means of water reservoirs, have allowed significant progress, as is evident in Chile, Ecuador and Uruguay.

The region has seen increased investment in less-polluting mass transit systems, but their coverage and quality still need to be improved. In this area, there is much room to embed more information technologies, in particular big data analysis to optimize infrastructure use and enhance its efficiency. A radical overhaul of urban transportation would not only change the face of the region's cities but would also have an egalitarian effect: indeed, it could fulfil a role comparable to that played in developed countries by the aerospace or the telecommunications sector, mobilizing public resources and agencies as well as private firms and workers.

Biotechnologies and technologies based on imitating the behaviour of organisms for adapting to different environmental conditions and processing their wastes (biological intelligence) are expanding the sustainable use of biological resources. The bioeconomy —to the extent that its main objective is to eliminate the use of energy and fossil resources (von Braun, 2015)— represents an effective strategy for decarbonization of the economy and for promoting the environmental big push. This area involves close interaction between the environmental and technological dimensions of industrial policy and the creation of new sectors.

The bioeconomy embraces many interconnected value chains: all agricultural, forestry, fishery and aquaculture activities, the food and beverage industries, and the pulp and paper industry, as well as segments of the chemicals, pharmaceuticals, cosmetics, textiles and energy industries. The region has comparative advantages in this area, thanks to the wealth of its biodiversity (genetic potential), its capacity to produce biomass without compromising natural forests, and the great quantities of agricultural and agro-industrial wastes that go unused. The bioeconomy offers options for rural development and job creation through biomass farming, the development of value chains based on non-food biomass and wastes (bio-inputs for agriculture) and the development of knowledge-based SMEs as part of these value chains.

Many countries of the region have established policy frameworks that, while not explicitly identified as such, are in line with the requirements for developing national bioeconomy strategies. The most notable examples are Brazil, in bioenergy, and Argentina, which already has a strategy that has been discussed nationally and regionally. Capitalizing on the potential of the bioeconomy will require: (i) developing regulatory frameworks in such areas as biosafety and biorisks, protection of biodiversity, and access to genetic resources; (ii) articulating policies for research, development and innovation in the areas of clean non-fossil energy, the use of biotechnology in agriculture and in human and animal health, the development of low-carbon agriculture, and payments for environmental services; and (iii) promoting bioeconomy-based SMEs by creating capacities and reducing access barriers to concentrated markets and to financing.

Changes intended to redirect innovation and investment toward decarbonization of economies must be articulated within a coherent system of incentives and regulations. On the one hand, the system must include the financial sector, increasing the use of instruments such as assessment of environmental risk in investment portfolios (for example, carbon risk indices and stranded assets), risk capital funds (such as the international climate funds), guarantees (such as those used by some bilateral cooperation agencies for financing climate investments) and insurance (such as those operating in the Caribbean). On the other hand, it must redirect investment toward sectors of longer maturity, such as infrastructure. Public financial institutions have an important role to play in bringing about these changes, by gradually withdrawing support for practices that contribute to environmental degradation and that generate inequalities.

The coordination efforts implicit in the environmental big push demand a new generation of policies and a new institutional system. Latin American experience over more than a decade has produced a series of lessons, not all of them fully recognized or taken on board by policymakers.

(b) Lessons for a new industrial policy

The following section describes some lessons arising from the region's experience in industrial policy, successful and otherwise.

First, countries must design policies that can be implemented with the institutional capacities at hand or those that can be developed in the short run. Many an experiment in the region has not moved beyond the formulation stage because its complexity far exceeded the capacity of the institutional structures (regulations and organizations) nominally responsible for implementing them.

Second, policies must be viewed from an operational perspective, and must not become bogged down in debate over such matters as the choice between selectivity and non-selectivity. A recommended course of action would

be to develop, first, policies to boost the productivity of existing firms, using instruments that are widely known in the region, especially in the areas of technological dissemination, access to financing, support for small firms, and training. These policies can be best formulated by focusing on the production chain, so as to guarantee interaction with the business sector, incorporation of the territorial dimension, and articulation among distinct sectors such as agriculture and services.

Upgrading policies frequently impact only a tiny percentage of firms, and they must therefore be supplemented with policies for the development of new activities. There is debate within the region as to whether the most efficient strategy is to move forward with activities that are technologically close to existing ones, or to focus on developing capabilities that are less tied to competitive advantages of the moment but are closer to production trends in the international economy. Such leaps are possible, as the Republic of Korea has demonstrated, but mechanisms must be designed to build a social consensus that will sustain such policies overall several decades in a democratic context.

Thirdly, business dynamics require strong competition policies, combined with solid institutions aimed at fostering good practices in corporate governance. They require a model of corporate governance that ensures internal management, and protects the interests of domestic and foreign, private and government investors. This would incentivize investors to pay more for company shares and bonds and lessen corruption. However, this model would be insufficient to deal with ownership structures concentrated in family groups or government, increasing power of agents (managers) in the decision-making process, and information asymmetries (lack of transparency and disclosure to the market). These situations must be handled with competition policies that penalize anticompetitive practices (collusion) rather than concentrated industrial structures needed in small markets to attain minimum scales determined by technology. Protection of competition faces particularly complex challenges in technological-frontier sectors, where it is necessary to avoid market distortions that hinder innovation.

Some additional lessons can be drawn from experiences with policies to promote the digital economy in Latin America and the Caribbean. Those policies have been among the most successful in the region, in that they have in less than a decade brought Internet use to half the population, a proportion that is rising steadily despite the slowdown in economic growth; moreover, there are now 700 million mobile telephone connections, with 320 million individual users, and private investment in telecommunications doubled between 2005 and 2013.

It is also important to ensure that policies are appropriate to different national contexts and have effective leadership. The progress of the digital economy has been based on regulatory frameworks that recognize different ways of handling the relationship between market, State and society. In the majority of countries there is a virtual duopoly involving a Spanish firm and a Mexican firm, while in other countries State enterprises have a dominant or exclusive presence. In nearly all cases (25 of 28 countries in the region), telecommunications regulation is entrusted to an independent regulator. Public policy has always played a role, particularly through national plans to expand broadband access, which include legislation, regulatory frameworks and financing mechanisms, and digital agendas to promote the accessibility and use of this technology. The formulation and implementation of those plans has often been taken in hand by bodies created for the purpose, such as e-government agencies.

Another lesson relates to the usefulness of sector policies for promoting the adoption of these technologies, particularly in health, education and government. In this last area, which is generally perceived as resistant to change and to modernization, e-government programmes have demonstrated the contrary. Government-imposed rules, such as the obligation to file tax declarations online or the possibility of booking appointments in public hospitals online, have forced firms and individuals to take up the new technologies. At present, seven Latin American countries rank among the world's 50 best performers in terms of e-government, a distinction that occurs with very few other technological variables.

The lessons gleaned can be summarized under five principles that should permeate industrial and technology policies: tailoring to institutional capabilities, continuity, flexibility, involvement of stakeholders, and assumption of costs. These principles form the basis on which short-term policies as well as ambitious strategies, such as the environmental big push, can be built.

D. Conclusion: towards the environmental big push

The next few years will be a difficult time for the world economy, with warning signals looming on the economic, social, political and environmental fronts. Public policymakers must take this scenario into account. While the challenge is enormous, the effects of synergy would be such that progress in one direction will reinforce positive trends in others. It is important that the set of policy proposals in this chapter be coherent so as to produce a virtuous change in production structures. There will be two particularly serious threats to the continuity of these policies: external vulnerability, and tensions on the social front, which will be sharpened by the sluggishness of the world economy and the possibility of another financial crisis.

The global public good represented by a stable economy committed to full employment will require more active fiscal policies in all countries in order to ensure that the environmental big push in each of them will contribute to achieving the objectives defined at the twenty-first session of the Conference of Parties to the United Nations Framework Convention on Climate Change (COP21). Otherwise, faster growth will be environmentally unsustainable. A Schumpeterian horizon of long-term investments surrounding this push would act at the same time as an investment stabilizer (a countercyclical policy) and would make it possible to pursue a path of technological change and high-quality job creation (a policy of inclusion).

A path of this type will be both investment- and technology-intensive, resulting in high import levels that could hold back growth and compromise employment. For this reason, it will be essential that countries internalize part of the production processes and the skills and capacities they require, and to open markets for the region's exports, in order to avoid current account pressures that could derail the economy from the growth track. Managing the real exchange rate can help achieve this balance, but it has adverse effects on distribution, while its impact on competitiveness is not significant for sectors impacted by the technological revolution —thus it is no substitute for industrial policy. A more proactive stance by countries in regional trade and payments agreements could also help reduce external vulnerability. Macroeconomic, industrial, trade and technology policies must work together if the environmental big push is to be viable and not frustrated by trade imbalances.

Equality is another objective that could face tensions in a crisis setting, as there will be strong pressure to reduce social spending. Consequently, policies to consolidate social advances are important for progressive structural change and for economic stability. On the one hand, universal social protection would set a floor for aggregate demand, which could also act as a countercyclical mechanism; on the other hand, universal access to education and health would have a positive impact on productivity. Without social protection it would be difficult for people to sustain or improve their position in a labour market that is subject to constant shocks from technical progress. Social protection is not an obstacle to development, and to treat it as such is to forget the observation of Schumpeter (1942), to the effect that "motorcars are travelling faster than they otherwise would because they are provided with brakes".

The combination of progress towards a new governance for the creation of global public goods, the consolidation of the region's contribution to this effort and the implementation of national strategies and policies for progressive structural change will thus form the basis for a new development style centred on equality and the environmental big push.

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Epilogue

Partnerships and compacts for a new development pattern

The success of policies to implement the 2030 Agenda for Sustainable Development and to achieve the Sustainable Development Goals will hinge on a new development pattern: a progressive structural change centred on equality and environmental sustainability and based on social coalitions and compacts for governance at the global, regional and national levels. The viability of shifting to such a model rests on a long-term vision and a new correlation of social and political forces, inasmuch as development is essentially a political problem. It will also require means of implementation such as financing, technology, fair trade and an institutional architecture fit for the twenty-first century. As in any major transformation, success or failure will be determined in the political arena and in a review of the equation between State, market and citizens.

The new development pattern will require global public goods such as stable growth for full employment, and environmental stewardship in the fourth industrial and technology revolution. For this to be feasible, four governance mechanisms will need to be put into operation and supported by political coalitions:

(i) The international coordination of economies in favour of sustained investment growth, based on fiscal policies that prioritize low-carbon, more energy-efficient projects. Global environmental Keynesianism is key to building the new style of development by means of a pro-employment expansionary bias.

(ii) A new international financial architecture that reduces both real-economy and price volatility, regulates the impacts of capital flows, better represents the weight of the emerging economies and makes progress towards the reform of the international monetary system.

(iii) Multilateral trade and technology governance that facilitates and extends access to technology and financing so as to decouple growth from environmental impacts, helping close the gaps between countries and regions.

(iv) Shared governance of the key components of the digital economy, a single digital market at the global level and a new regional technology paradigm for building a single digital market in Latin America and the Caribbean.

In democratic societies there is a broad base of political support for active fiscal measures to promote full employment and international economic stability. Such measures are increasingly supported, too, by international and regional institutions, which are concerned about the successive financial crises of recent decades and the possible gestation of a new international crisis.

Public and private stakeholders have a better understanding today of the importance of ensuring a decent minimum income to provide social stability during the inevitable transition to robotics, which will hit employment hard.

The partnership for a new environmental governance will grow stronger as green industries create more good-quality jobs. The technology revolution is an ally, since it reduces the cost of clean energies and makes them more competitive than carbon-intensive ones. Moreover, the growing body of scientific evidence on climate change and the destruction of common resources will add to the political weight of this alliance.

There is considerable convergence between global environmental Keynesianism and economic development. The new governance of international trade and intellectual property rights should foster the uptake of low-carbon technologies and production processes by developing economies. The adaptation to and mitigation of environmental change impacts should be linked to the building of countries' endogenous (human and technological) capacities to overcome their development constraints while preserving the external balance. Under this new approach to development, production diversification and the narrowing of technology gaps are supplemented by mastery of more environmentally efficient technologies. This vision of development extends the political partnership for a new development pattern to a wider range of governments, firms and social groups. True, many of the region's countries carry little weight in the world economy, but together or in partnership with more influential actors, they can and should play an important role in the crucial issues of trade and technology governance.

A new model of governance for development with equality would not only underpin advances in global environmental stewardship, it would also reduce migratory pressures on developed countries and encourage skilled workers in developing countries to follow careers at home.

The response to inequality must be unequivocal: progress towards social justice cannot happen without the explicit will of societies. At the domestic level, countries must universalize social protection and the provision of education and health services to generate proactive —rather than merely defensive or reactive— responses to the uncertainty caused by globalization and the technology revolution.

The universalization of rights is a powerful incentive to expand the partnership for a new development pattern, but would be an empty promise without sustained increases in productivity and competitiveness. The goals of full employment and higher productivity are complementary to those of universal health care, education and social protection. Universal inclusion is based on learning and skills-building to reduce the fear of change and facilitate the integration of workers into a changing production system. Work has an ethical —not just an economic— value; it is not merely a means of production, but also an end in itself.

The firms that emerge under the new development pattern will internalize the new economic incentives for low-carbon activities and mitigation efforts. In this context, Schumpeterian growth is possible on the fronts of accumulation opened up by technology dynamics and environmental protection: the environmental big push. This type of growth will be viable as long as economic actors find the incentives sufficient and stable, and investments are supported by access to technology and financing.

The expectations, plans and declarations of the twenty-first session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21), at which governments voiced their concerns, and the meeting of the World Economic Forum held in Davos in early 2016, which analysed the impacts of the business-driven fourth industrial revolution, reflect the potential for convergence between growth, productivity, employment and development, with a focus on protecting the environment and shared resources. However, certain barriers in the way of progress towards the necessary partnerships need to be identified and overcome.

First, the implementation of the Paris Agreement may clash with the constraints imposed by bilateral and regional trade and investment agreements, and even with some of the rules of the World Trade Organization (WTO). Development and the environment are often the weakest dimensions of these agreements (especially megaregional agreements), which reduce governments' leeway to incentivize or disincentivize activities and technologies, create grey areas that impair regulatory functions, neglect sustainability-related issues, and overlook the principle of common but differentiated responsibilities. And, while trade and investment agreements are binding and contain dispute settlement regulations, the Paris Agreement contains no such enforcement mechanisms.

Second, a new international financial architecture is urgently needed. The ability of international financial agents to move capital and resources across borders and between currencies constrains governments and effectively gives capital veto power over an array of policies. The fact that capital movements are still unregulated, and that tax evasion continues to undermine States, despite the prospect of a new financial crisis in the making, is a testament to the political power of capital. It is imperative to build up global counterweights, from the public sector, to prevent the current set-up —whereby profits are privatized and losses are socialized— from simply continuing.

Third, the difficulties in establishing domestic partnerships are no less acute than those that hamper the construction of global public goods. Most obvious is the contrast between the need for long-term policies and the short-term horizon that predominates among many major stakeholders. The environmental big push requires agreement between political actors, business, trade unions and social stakeholders to maintain and develop activities, institutions and policies that extend beyond electoral cycles. This corresponds to the idea of social compacts advanced by ECLAC in the document *Compacts for Equality: Towards a Sustainable Future,* presented at its thirty-fifth session in 2014, and reaffirmed herein with respect to the new agenda.

Social compacts are crucial for locking in the new development pattern. Institutions and incentives need to be stable over time in order to encourage the emergence of business activities and innovations that provide workers with sustained employment and social protection, and to generate political benefits that cannot be appropriated by specific political parties or interest groups. Compacts should include a cross-cutting range of political and private actors in formulating State policies. Otherwise, there will be little chance of new interests or stakeholders gaining a foothold, or of moving away from disputes over distribution of revenues towards cooperation to raise productivity. A cross-cutting, long-term commitment is the only way to protect the transition to the new development pattern from the pressures exerted by the old one, since the shorter the decision-making horizon adopted by the actors, the greater these pressures will be.

Creating stable incentives for an environmental big push requires action on several fronts, in each case through some type of long-term compact or agreement. The transformation will not materialize without fiscal space for public investment, financing and subsidies required to change relative prices, adjustments to education and vocational training systems, and resources to stabilize a new institutional framework. Furthermore, should it continue, the perverse interaction between the political system and financially powerful corporate or private actors would derail any long-term project. Compacts must encompass stakeholders to guarantee a system of oversight and a balance of power that ensure the transparent use of resources, without bogging down administration, and end the region's strong culture of privilege. This is not an easy balance to strike, but one that is essential given the rapid deterioration of government action when transparency is compromised and checks and balances are weakened.

The starting point for the formation of this transformative social and political coalition is the growing awareness that the current development pattern is unviable and that the preservation of the status quo is imposing mounting economic, social, political and environmental costs. A reality whereby 62 individuals own the same as the world's poorest 3.6 billion, and in which wealth concentration is still rising, is unsustainable. This awareness is evident not just among the low-income groups worst off under the present model, but increasingly among elite sectors concerned by the contradictions of the development pattern, the political tensions that it generates, and the dangers it poses for life on the planet and for humankind.

It is also necessary to identify the interests, actors and coalitions that are needed to bring the shift in the development pattern to fruition within the next 15 years. Overcoming the inertia calls for identifying those subjects in the State-market-society equation that are convinced of the urgent need for a paradigm shift and have the necessary will to form coalitions capable of redressing the mismatch of forces that sustains the interests of the status quo. These must be variable geometry coalitions with a presence in the national, regional and global spheres.

In Latin America and the Caribbean, the building of coalitions and compacts for equality, as proposed by ECLAC, is brought up short by the unresolved tensions and strategic problems that societies in the region are experiencing in the transition to the new model. Challenges include moving from a culture of privilege to a culture of equality and resolving the dilemma between extractivist rent-seeking and a vision for sustainable use of natural resources, ecosystems and cities. Establishing sustainable production and consumption patterns requires a comprehensive, multidimensional approach in which social inclusion, environmental sustainability and economic growth are complementary. For the region, that means a paradigm shift in the functioning of State, market and citizens, and the development of new forms of collaboration among them.

Progress towards the formation of a social and political coalition for structural change requires a strong democratic State with a structure and specialization slanted towards high productivity, robust job creation —requiring a mature private sector that can galvanize growth with employment and innovation— and a citizenry that shows leadership, organization and assertiveness in the exercise of its rights. In Latin America and the Caribbean, the twenty-first-century State must be a democratic State capable of recovering or strengthening (as the case may be) its autonomy

vis-à-vis major economic interests and the national and transnational powers that be. A State capable of avoiding and armour-plating itself against the persistent policy of capture by elites, corporate interests and the structures of political patronage. A State, therefore, with real capacity to impose a culture of legality, to prevent and combat corruption and to ensure access to justice. A transparent, efficient, accountable State, in keeping with the principles of the 2030 Agenda for Sustainable Development, which regains society's trust in its institutions. Yet it is not only the State that is called upon to adapt to the new conditions imposed by the objective of progressive structural change. Markets and firms (especially transnational corporations) also have a fundamental role to play. They must move towards a culture of innovation and productivity, redefining their social responsibility as due compliance with their employment, tax and environmental obligations. Consequently, it is essential to strengthen initiatives in this direction among elite sectors engaged with the new development pattern.

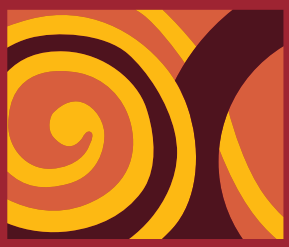
Under twenty-first-century conditions, a strong democratic State is not a closed State, but one that provides open access to information and attaches value to social deliberation, consensus-building, the securing of compacts and joint policy-building. It is a State that develops strong planning, evaluation and participation systems for the formulation and implementation of public policies, and fully adopts the open government paradigm. In public sector operations and interactions with civil society, big data are available and administered under an open government model with a modern public administration based on new forms of interaction between transparency, accountability, citizen participation and collaboration for the coproduction of value.

Open government policies promote practices, values and cultures that help create a platform for a new model of open and collaborative governance. Governments that demonstrate greater transparency, provide information about what they are doing, make their sources and databases available, and publish their development plans and strategies, will encourage public accountability, permanent social oversight, and greater co-responsibility. Sharing data reduces transaction times, boosts the efficiency of public services and delivers intangible benefits such as increased public confidence in institutions.

Despite the difficulties and the distance that separate us from the proposed objective, the region is not starting from scratch. Awareness of the constraints of the status quo, the resurgence of planning, the implementation of progressive social policies with a universalist approach, the demand for honest and transparent government, and the promotion of regional integration initiatives all form part of the response to the prevailing development pattern and the quest for new horizons. Latin American and Caribbean societies are no longer willing to tolerate inequality as a given.

The region must embark on this production shift amid adverse conditions on the international, regional and national levels. Slower global growth and the threat of a new international financial crisis may hit the region hard at a time when regional integration is weak, the fiscal space to respond through countercyclical policies has narrowed or is non-existent, and —with some exceptions— political and governmental institutions have lost prestige. The effect of these factors on the potential for building new coalitions is ambiguous. On the one hand, the limited availability of resources tends to intensify the distributive struggle, making it harder to reach agreements; on the other, as the prevailing development pattern becomes more obviously unviable, the pressure builds for a change in pattern and the formation of new coalitions.

History offers examples: the most recent crises and those of the 1930s and 1980s brought significant changes to political alliances and production patterns. The current questioning of the prevailing development pattern sets a similar challenge for the future. Progressive structural change will depend on each society's choice between two paths: either a return to the old, unsustainable path, associated with an increasingly fierce conflict over distribution and social, institutional and political fragmentation; or a transition to a new development pattern, in which collective action and long-term compacts in democratic societies promote equality, transparency and participation, with a focus on productivity, good-quality employment and environmental stewardship based on the dissemination of new technologies and an environmental big push.



The world is living a change of era. The 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals represent the international community's response to the economic, distributive and environmental imbalances built up under the prevailing development pattern.

This document, presented by the Economic Commission for Latin America and the Caribbean (ECLAC) to its member States at its thirty-sixth session, provides an analytical complement to the 2030 Agenda from a structuralist perspective and from the point of view of the Latin American and Caribbean countries.

The proposals made here stem from the need to achieve progressive structural change in order to incorporate more knowledge into production, ensure social inclusion and combat the negative impacts of climate change. The reflections and proposals for advancing towards a new development pattern are geared to achieving equality and environmental sustainability.

In these proposals, the creation of global and regional public goods and the corresponding domestic policies form the core for expanding the structuralist tradition towards a global Keynesianism and a development strategy centred around an environmental big push.

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