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BOLIVIA SYSTEMATIC COUNTRY DIAGNOSTIC

REBALANCING INCLUSIVE GROWTH TO DEEPEN GAINS ON POVERTY AND INEQUALITY REDUCTION

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ABBREVIATIONS AND ACRONYMS

ADPL	Autonomics and Decentralization Framework Law
AIA	*Asociación de Industriales de Antofagasta* (Antofagasta Industrial Association)
ASFI	*Autoridad de Supervisión del Sistema Financiero (*Entity responsible for the regulation and supervision of the financial system)
B40	Bolivia's bottom 40 percent of the income distribution
BCB	*Banco Central de Bolivia (*Central Bank of Bolivia*)*
BJA	*Bono Juana Azurduy ("*"Juana Azurduy" Conditional Cash Transfer*)*
CB	Conditional Benchmark
CEDLAS	*Centro de Estudios Distributivos Laborales y Sociales (*Research Center for Distributive, Labor and Social Studies*)*
CEQ	Committee to Equity Project
CNPV	*Censo Nacional de Población y Viviendas (*Population and Household National Census*)*
COMIBOL	*Corporación Minera de Bolivia (*Bolivian Mining Corporation*)*
CPF	Country Partnership Framework
DHS	Demographic and Health Surveys
DSA	Debt Sustainability Analysis
ENARSA	*Energía Argentina S.A. (*Argentina Energy S.A.*)*
FAOSTAT	The Food and Agriculture Organization Corporate Statistical Database
FDI	Foreign Direct Investment
FES	*Función Económica Social (*Economic Social Function*)*
GDP	Gross Domestic Product
GEM	Global Economic Monitor
GLT	Gas to Liquid
HIV-AIDS	Human Immunodeficiency Virus Infection and Acquired Immune Deficiency Syndrome
IADB	Interamerican Development Bank
ICT	Information & Communication Technology
IDH	*Impuesto Directo a los Hidrocarburos (*Direct Tax on Hydrocarbons*)*
IMF	International Monetary Fund
INE	*Instituto Nacional de Estadística (*National Statistics Institute*)*
LAC	Latin America and the Caribbean
LMI	Lower-Middle Income Countries
MDGs	Millennium Development Goals
MDRI	Multilateral Debt Relief Initiative
MEFP	*Ministerio de Economía y Finanzas Públicas (*Ministry of Economy and Public Finances*)*
MIC	Middle Income Countries
MMCM	Mio Cubic Meters
MPD	*Ministerio de Planificación del Desarrollo*
NDP	National Development Plan
NyPIOC-AF	*Nación o Pueblo Indígena Originario Campesino o Afro Boliviano (*Afrobolivian or Indigenous Native Peasant Nation*)*
NyPIOCs	*Naciones y Pueblos Indígenas, Originarios y campesinos (*Nations and Indigenous Peoples, Native and Peasant*)*
OBI	Open Budget Index
OECD	Organization for Economic Cooperation and Development (OECD)

PER	Public Expenditure Review
PFM	Public Financial Management
PISA	The Programme for International Student Assessment
PMR	Product Market Regulation
R&D	Research and Development
SCD	Systematic Country Diagnostic
SEDLAC	Socio-Economic Database for Latin America and the Caribbean
SERCOTEC	Technical Cooperation Service
SIGEP	*Sistema de Gestión Pública (*Public Management System*)*
SIGMA	*Sistema Integrado de Gestión y Modernización Administrativa (*Integral Administrative and Modernization Management System*)*
SISN-Web	*Sistema de Información Sobre Inversiones (*Investment Information System*)*
SMEs	Small and Medium Enterprises
SOEs	State Owned Enterprises
STEP	Skills Towards Employability and Productivity
TERCE	*Tercer Estudio Regional Comparativo y Explicativo (*Third Comparative and Explanatory Regional Study*)*
TFP	Total Factor Productivity
UDAPE	*Unidad de Análisis de Políticas Económicas y Sociales (Analytical Unit for Social and Economic Policies)*
UNICEF	The United Nations Children's Fund
USKLEMS	United States Capital, Labor, Energy, Materials, and Services
VIPFE	*Viceministerio de Inversión Pública y Financiamiento Externo (*Vice Ministry of Public Investment and External Financing)
WBG	Word Bank Group
WDI	World Develoment Indicators
WHO	World Health Organization
YPFB	*Yacimientos Petrolíferos Fiscales Bolivianos (*State-owned Petrol Company of Bolivia*)*

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Executive Summary

This Systematic Country Diagnostic seeks to identify the main constraints to sustaining Bolivia's strong performance on reducing poverty and enhancing shared prosperity over the next years. It will analyze the dynamics behind the progress achieved in the past decade on inclusive growth, and identify a number of key constraints for sustaining and consolidating this progress.

Four fundamental economic characteristics and social aspirations have determined Bolivia's development path and are therefore critical for its prospects. These four characteristics are the main entry point for the SCD analysis and frame the exercise of prioritizing main constraints to sustaining inclusive growth:

- First, the strong role of the State in the country's development path: the state-led development strategy is enshrined by the 2009 Constitution and is unlikely to be altered in the medium term. This is a critical factor defining the space for policy reforms.
- Second, a significant wealth in natural resources, and a strong dependence on extractive sectors: Bolivia's natural wealth is high in international comparison, particularly in hydrocarbon and mining potential, but also in forestry and arable land. Due to this natural resource wealth and the trajectory of its economic history, Bolivia is still highly dependent on natural resources and is thus vulnerable to commodity price shocks.
- Third, important geographic challenges: the country's landlocked nature, long distances to the nearest seaports and markets, and a generally challenging topography constitute important natural constraints to economic expansion. These geographic challenges also constitute an important handicap for broad-based and inclusive growth.
- Fourth, a rich ethnic diversity: Bolivia is one of the countries with the highest share of indigenous population, with a rich diversity of different ethnic groups. Despite of the pronounced recent urbanization trend, ethnic diversity continues to mark strongly social and political processes.

A decade of high inclusive growth: strong progress on an unfinished agenda

Significant inroads on poverty and inequality in recent years

Bolivia achieved strong progress on reducing poverty and inequality rates since 2002, outperforming most other Latin American countries. Poverty decreased from 63 percent of the population in 2002 to 39 percent in 2013, and extreme poverty from 37 percent in 2002 to 19 percent in 2013. Progress was more pronounced in urban areas. Poverty reduction was accompanied by a large decline in income inequality. Bolivia's Gini coefficient fell from 60 in 2002 to an estimated 49 points in 2013. Using harmonized data for the LAC region, Bolivia achieved one of the region's largest reductions in poverty, second only to Ecuador.

Growth was markedly pro-poor and benefited strongly the bottom 40 percent of the income distribution Over the past decade, the average per capita income of the poorest two quintiles (called the "B40" in the following), rose at a much faster pace than for the population as a whole, and faster than the B40 in any other country in the LAC region. Average per capita household income grew by 4.6 percent per year between 2002 and 2013, while the average income of the B40 increased by 9.4 percent. Since the moderate poor roughly account for the bottom 40 percent of the income distribution, the two objectives of reducing poverty and increasing income of the B40 (boosting shared prosperity) have conceptually merged in Bolivia's situation.

Progress went beyond increases in income, as living conditions of the poor improved significantly along several other, non-monetary dimensions. Between 2002 and 2013, the proportion of people facing non-monetary deprivations or limited access to basic services like electricity, drinking water, and proper sanitation reduced significantly. This is also reflected by Bolivia having already met the Millennium Development Goals (MDGs) related to malnutrition, literacy, gender parity in education, births attended by

skilled health staff, and extreme poverty. Primary school enrollment is almost universal and net secondary school enrollment is close to 80 percent, placing Bolivia among the top five countries in the LAC region.

Dynamics behind gains on poverty and shared prosperity

The marked pro-poor growth of the past years is fundamentally a result of a favorable external context that had translated into improved labor income opportunities for the poor. The gains on poverty and inequality were largely driven by an increase in labor income and employment of low-income earners. This worked through a direct and an indirect transmission channel. In the case of the former, terms of trade improvements increased the relative prices of some goods produced by the poor, such as in (cooperative) mining and agriculture. In the case of the indirect channel, higher export and fiscal earnings from extractive production, leveraged by the Government's ambitious expansion of public investments reinforced by real appreciation, boosted the demand for low skilled labor, notably in the urban, non-tradable sectors like construction and commerce. This increased demand for low-skilled labor was met by an important urbanization process that brought a large number of rural poor to Bolivia's cities.

Labor market dynamics, in particular improved labor market outcomes, were the main factor behind poverty reduction in past years, more so than in other countries of the region. An analysis of changes in extreme poverty rates by income sources reveals the following picture:

- Labor income: almost two thirds of the decline in extreme poverty in Bolivia (63 percent) is associated with increased earnings per worker, particularly among men. This includes income from wage employment in formal and informal sectors, as well as from self-employment. The improvement in labor income was to a large degree caused by a shift in employment to better-paid sectors and improved returns in sectors where the poor are employed, notably construction and services - even if most of the poor still operate in an informal, low-skill and low-salary environment.
- Non-labor income: the effect of non-labor income, composed mainly by Government and private transfers, accounting for 26 percent. Among LAC countries, Bolivia's B40 have the lowest share of non-labor income. Only 20 percent of household income among the B40 in Bolivia is derived from non-labor sources, lower than Peru (32.5 percent), Ecuador (28 percent), or Colombia (26 percent). As the poorest population is less likely to migrate, private transfers have a regressive effect in Bolivia. Recent efforts have expanded significantly the volume and reach of government transfer programs, however the distributional incidence of these programs is limited given their relatively small size and nearly universal coverage.
- Demographic factors: the increase of number of adults relative to the household size as a result of a secular reduction in the fertility rate explains 11 percent of Bolivia's total poverty reduction.
- Urbanization: Bolivia's "catch-up" on urbanization in relation to other LAC countries also contributed to poverty reduction, by enabling poor migrants to access better remunerated employment opportunities in the urban economy. Earnings of rural migrants to urban areas are almost twice as high as those of people with similar characteristics remaining in rural areas. As a result, 10 percent of the total change in the extreme poverty rate between 2002 and 2013 can be attributed to urbanization, while the remainder can be attributed almost equally to poverty reduction in urban and rural areas, respectively.

Despite substantive progress, poverty remains high and unevenly distributed and large disparities in access to opportunities persist

Despite the impressive progress on poverty reduction, an unfinished agenda remains as large number of Bolivians are still poor or vulnerable, and as poverty and large disparities among geographical zones and groups remain. As 40 percent of Bolivians are still in a situation of poverty and 20 percent in extreme poverty, efforts to reduce poverty and inequality remains very much an unfinished agenda. A large fraction

of households that are now above the poverty line is vulnerable to falling back into poverty if hit by economic shocks. This is a critical concern, as the main factors lifting them out of poverty were largely associated with forces that may easily be reversed. This is reinforced by the persistence of large income disparities, and by certain groups remaining with a higher propensity to be living in poverty than others. The extreme poor are significantly more likely to live in rural areas, to be indigenous, and to have low levels of education than the other income groups. Also, poverty is still very unequally distributed among municipalities, with many rural municipalities having more than half of their population of living in extreme poverty. Indigenous poverty has decreased substantially and tended to converge to non-indigenous levels, but is still larger than non-indigenous poverty, in particular in rural areas.

Bolivia also faces still important gaps and disparities in social outcomes, with rural areas lagging behind in particular. In the case of health, lack of access to adequate health care services during pregnancy, post-natal and childhood, and lack to proper sanitation, particularly among the poorer, rural, and indigenous groups stand out, despite of significant investment in these areas in the past years and improvements along many dimensions. In addition, there are challenges in provision of health services to the economically active population, as Bolivia lags behind other countries in the region as regards prevention of infectious diseases. Access to education presents a similar picture: enrolment in critical initial education is low relative to other countries in the LAC region, and varies significantly across groups. Similar gaps appear again at the secondary level. The existence of large educational disparities across groups as well as substantial shortcomings in quality could undermine the country's potential in the long term. While data and analysis on educational outcomes are limited, there are indications of persistent disparities also between men and women, as well as across ethnic groups.

Strong economic performance over the past decade

Bolivia can look back on a strong economic performance over the past decade, both in terms of growth and macroeconomic and fiscal stabilization, which laid the foundations for gains on poverty reduction and shared prosperity. Growing commodity exports and prudent macroeconomic management helped turn around the macroeconomic imbalances and low growth that were undermining Bolivia's economic and social stability in the early 2000s. The country was able to take advantage of an exceptional external context - Bolivia has benefitted more than most other countries from terms of trade gains, and also benefited from other favorable events like a sizeable debt relief - to reach high rates of growth and accumulate sizable fiscal and external buffers. As mentioned above, these positive economic developments are also the origin of advances on poverty reduction and shared prosperity.

Bolivia's growth performance stands out both in a historic context and compares generally well with relevant peers, yet this strong economic performance did not allow closing the income gap to most other regions. The past years' high growth rates are a significant improvement when compared to the disappointing and erratic economic performance in the second half of the 20th century. Similar to peer countries with similar characteristics, Bolivia managed to capitalize on a conducive external context to boost growth and strengthen macroeconomic balances, outperforming many of them in terms of accumulation of buffers yet lagging behind others in terms of growth in exports and investment levels. However - similar to the LAC region as a whole - the effect of the strong performance on convergence was only modest and pales against the achievements of other countries like Japan, Korea and China in closing the income gap with the United States.

While on the demand side, public investments and exports were the main sources of growth, on the supply side, growth was propelled by a large expansion of extractive activities. Backed by higher commodity-related revenues, public investments expanded significantly, reflecting the state-led development strategy followed since 2006. Public investment hence was the main driver of growth, followed by net exports.

Growth decomposition analysis reveals that extractive industries accounted for 1.1 percentage points of the 4.7 percent average annual growth between 2002 and 2013, pushed by high prices and strong demand. This was followed by dynamic aggregated demand spurring economic activities in other sectors, including construction and services. Agriculture in turn registered a poor performance due to structural constraints that prevented production from taking advantage of higher food prices.

The current growth path is imbalanced

Bolivia's current growth path is seriously imbalanced as the economy was not able to correct its productivity lag. Between 2003 and 2013, the country's productivity growth was far below the Region's top performers. The lack of increases in productivity is particularly serious in non-extractive sectors. In fact, the small productivity gains observed in the last decade resulted mainly from labor reallocation from agriculture to services and other non-tradable sectors, while within most sectors, labor productivity has actually declined.

A second dimension of the imbalanced growth path relates to private investment remaining at low levels. Despite the dynamic public investment, total investment is low as private investment is among the lowest in the LAC region. As a result, the contribution of capital accumulation to growth is well below the regional median. Moreover, the bulk of (foreign) private investment goes to extractive sectors. After discounting foreign investment, the remaining private investment amounts to barely two percent of GDP in 2013.

Prospects for a more balanced growth path with higher productivity and private investment are hampered by constraints to growth and productivity at the level of individual firms. While there is limited firm-level data and analysis in Bolivia, analytical findings show that limited growth and low productivity of firms are the main challenges that Bolivia's private sector faces today. There are indications of factors that lead to this, such as limited market competition and efficiency that results in an imbalanced structure of the enterprise sector that is dominated by many small firms operating to a large extent in informality.

The growth path is also imbalanced through its structural shift to service sectors which offers limited prospects for higher skilled jobs and thereby creates the risk that future growth in skilled labor supply would not be met by demand. The analysis of current patterns of growth reveals a dominance of capital-intensive extractive sectors, and non-tradable sectors characterized by informality and low value addition. This stands in contrast to the likely changes in the composition of the labor force due to the demographic dividend, rapid urbanization, and the rapid expansion of education. A much larger share of educated people will look for work, hoping to access skilled jobs, mostly in urban areas.

The strong dependence of Bolivia's economy on natural resource extraction makes growth prospects vulnerable to potential production capacity bottlenecks emerging in the coming years - notably in the gas sector. Low levels of investment in exploration in the last years have eroded reserves, as exploitation has increased while only limited new production capacity has been added. As a result of limited investments in exploitation, the reserves-to-production ratio has decreased from 21 years in 2009 to only 12 in 2012. Bolivia could start facing constraints in meeting increasing domestic and external demands as early as 2017. A similar trend is observed in mining, where investment has focused on upgrading or maintaining existing operations, while exploration has practically come to a halt. Even if new large-scale exploration activities were to begin immediately, long maturity cycles would mean that such constraints might still emerge in the medium term, both for hydrocarbon production and mining. This constitutes a significant risk to growth prospects as gas production and exports are critical for external and fiscal balances while mining exports substantially affect the current account and labor and income opportunities for the poor.

Narrowing the productivity gap in agriculture could significantly enhance its contribution to growth, yet this would require a change in the current model of agricultural growth, from expansion of land use to sustainable intensification of production. Agriculture is the second most important source of goods exports today, while it has a more important role for employment generation, particular for indigenous groups. The fast

expansion of the agricultural frontier has undoubtedly been the driving factor in the sector's growth, yet further expansion is limited with a third of Bolivia's land area already being used for agriculture. This model of growth through expansion is highly dependent on primary commodity trade, with limited value addition to the economy. It is also exposed to weather and price shocks and soil degradation, and has taken an important toll on the environment, notably in the form of deforestation. Sustainable intensification of agricultural production is therefore critical both for increasing productivity, as well as reducing the negative impact on the environment, notably deforestation and land and water over-use.

Less favorable external economic context limits macroeconomic and fiscal room for maneuver

The current downturn in external economic conditions, notably the falling gas prices, has significantly altered Bolivia's prospects for sustaining growth. As commodity prices will likely recover only partially over the medium term, this shock could have long-run effects on growth. The macroeconomic framework prepared for the SCD projects a decrease in growth rates from 5.3 percent in 2014 to about 3.8 percent starting in 2018. Lower gas prices also have a significant negative effect on fiscal and external balances as the hydrocarbon sector accounts for almost half of total exports and one third of fiscal revenues, while mining and agricultural exports account for about one third and one sixth of total exports, respectively.

Bolivia's sizable fiscal and external buffers help cushion the effects of lower commodity prices, yet it is unlikely that these buffers will permit to totally offset them. Bolivia's large macroeconomic buffers (total public debt at below 40 percent of GDP, international reserves at around half of GDP, and cash fiscal savings at the Central Bank amounting to one quarter of GDP) should allow cushioning the effects of the downturn and protecting growth by way of maintaining public investments at high levels, and delaying devaluation. An analysis conducted for the SCD concludes that the debt sustainability outlook remains solid, under assumptions of only modestly recovering commodity prices, and continuous prudent macroeconomic and fiscal policies. However, the fiscal expansion needed for this would eventually consume these buffers, and pressure on macroeconomic balances might increase, notably if the rigid exchange rate regime remains in place. This calls for a gradual adjustment of policies to the new reality of a less favorable environment, while concomitantly efforts are renewed to develop new, non-extractive sources of growth.

Sustainability risks related to natural resource depletion

Bolivia's current path of inclusive growth is extensive in the use of natural resources and as such vulnerable to important sustainability risks. From an economic standpoint, Bolivia's large stock of natural wealth implies that its depletion is generally not a binding constraint for growth prospects, at least not in the short and medium term. Yet the depletion of natural resources has other, more localized effects, detrimental for the people, in many cases disproportionately affecting the poor. These effects are enhanced by the implications of climate change, and by demographic trends, most notably the important rural-urban migration of the past years.

Assessing main challenges related to natural resource depletion requires a differentiated discussion. This is also the case as Bolivia's diverse geographical landscape implies that environmental issues vary greatly across the territory, in form and in extent. Sustainability risks are particularly pronounced in the case of water resources, forests and soils, as these resources currently face the greatest strain. Exposure to climate variability or natural disasters has increased significantly in the past years, threatening to affect critically economic livelihoods of many Bolivians. The main findings of the assessment of the main environmental sustainability risks are as follows:

- An increase in competing demands for water resources is increasingly becoming a critical development challenge, and supply is becoming more limited and less reliable in some river basins, notably in the Highlands and Inter-Andean Valleys. Water supply is negatively affected by climate

change, which has reduced ice and snow surface, and growing watershed degradation. This has widespread effects on welfare, as it affects negatively human health, through limitations in access to safe drinking water and sanitation coverage. Eco-systems are also negatively affected.

- The rapid rate of deforestation may not constitute a constraint to inclusive growth, as forests still cover more than half of Bolivia's territory, yet it has important negative effects on other environmental variables. Bolivia's forest cover was destroyed at the rate of about 0.4 percent per year from 2000 to 2012, which puts Bolivia among the 12 world-leading countries in deforestation. Deforestation destroys natural habitats and threatens biodiversity and increases the probability for erosion, which in turn reduces soil quality and increases the risk for flooding. A key underlying reason for rapid deforestation relates to strong incentives to expand land use for agriculture.
- The scale of land degradation in Bolivia is large by regional comparison. Inadequate land use through deforestation, over grazing, or agriculture on slopes causes land degradation. This in turn has negative impacts on water supply and land erosion.
- Climate variability has increased in Bolivia over the past years, and simulations point to climate change posing a serious threat for environmental sustainability. Due to its geographical and socio-economic characteristics and low institutional capacity to mitigate climate risks, Bolivia is highly vulnerable to climate change. As a result of increased climate variability, the amount and frequency of extreme climate events has already increased. Climate simulations present a robust picture of significant warming and drying for Bolivia by 2050.
- For related reasons, Bolivia is also highly exposed to natural disasters, such as extreme rainfall, flash floods, droughts and landslides. The poor and marginal groups are particularly vulnerable to such hazards. Relative to other countries in the LAC region with similar rates of extreme poverty, the proportion of people affected or threatened by natural events in Bolivia is higher. The poor and marginal groups are particularly vulnerable to disaster risks.
- While Bolivia's rapid urbanization has created opportunities for improving access of the poor to services and income opportunities, it has also created challenges with respect to increased pressures on the environment. As discussed above, rural-urban migration has had a positive effect on the income of the poor, and growing cities are emerging as important vehicles for inclusive growth. Urbanization has increased the demand for service delivery, while at the same time created an opportunity for more cost-effective service delivery. A large part of Bolivia's urbanization is characterized by low-density expansion of smaller cities. This has moved the urban sprawl to more marginal, exposed areas, increasing risks to environmental sustainability and exposure to natural disaster risks.

Three main challenges to deepening welfare gains for the poor

To sustain its significant improvements in income opportunities for the poor in a less favorable external context, Bolivia requires a significant rebalancing of its current model of inclusive growth. The analysis of trends and dynamics on poverty reduction in recent past singles out growth in labor income of the poor as the main factor behind poverty and inequality gains. The impressive gains on poverty reduction, inclusive growth, and macroeconomic stabilization provide a solid basis for consolidating this progress. However, analysis also brings out clearly that these dynamics cannot be sustained over the coming years, for the following main reasons:

- The external economic context is much less favorable and is likely to remain that way for the foreseeable future. This would significantly reduce the trends on terms of trade that have benefited labor incomes of the poor, through direct and indirect transmission channels.
- The current model of poverty and inequality reduction has relied heavily on increasing income and job opportunities of the poor employed in unskilled and semi-skilled jobs pertaining to non-

tradable sectors, mostly in informality. The demand for outputs from these sectors is fueled by growth in the capital intensive extractive sector. These dynamics will eventually meet a natural limit without new sources of growth emerging in the rest of the economy. In fact, signs of slowing down in poverty reduction has already been observed in the last few years. Furthermore, this trend in labor demand stands in contrast to the composition of the labor force rapidly changing towards a growing share of better-educated persons looking for skilled jobs, mostly in urban areas.

- The current growth model is characterized by an extensive use of natural resources, which compounds the important environmental sustainability risks that Bolivia is facing.

Rebalancing Bolivia's model of inclusive growth means primarily shifting to a growth model towards non-extractive sectors that have potential for higher productivity growth and labor absorption. This would require a gradual reform process, addressing key short- and long-term challenges. Three main, interconnected challenges emerge from the analysis: i) safeguarding fiscal and macroeconomic sustainability; ii) developing non-extractive sectors; and iii) enhancing access to opportunities, while reducing disparities. The detailed discussion of these challenges reveals a number of key constraints to sustaining inclusive growth, as systematically captured by the prioritization exercise.

Challenge #1: safeguarding macroeconomic and fiscal sustainability

Meeting the challenge of safeguarding macroeconomic and fiscal sustainability in a deteriorating external outlook is a precondition for sustaining gains on poverty and inequality reduction. To move to a model of inclusive growth based on a better-developed non-extractive sector with higher productivity will require a gradual and long process. While this process is carried out over the next years and other sources of growth are developed, it is critical to safeguard macroeconomic and fiscal stability, in particular by maintaining a significant flow of revenues from the extractive sector. The deterioration in the external context heightens the importance and urgency of this.

Bolivia enjoys a strong starting position to face this deterioration in the external context, yet there are risks of emerging imbalances in the absence of adjustment of policies and advances on institutionalization. The solid fiscal and currency reserves accrued over the past years, and a strong credibility for prudent policy making earned through the past years' record should put Bolivia in relatively strong position to face the now less favorable external economic context. However, safeguarding this strong starting position will require adjusting fiscal and macroeconomic policies, and strengthening of institutional anchors for policy making.

Maintaining an adequate inflow of revenues from extractive exports, notably of gas is particularly critical for safeguarding economic stability and growth prospects. Ensuring a continued flow of significant levels of revenues from extractive production is critical while other sources of growth are being developed. The lack of investment in exploration in past years is an important constraint in this regard. A number of key constraints have curtailed exploration investments in past years, most notably the high appropriability risks related to the legal and regulatory environment of the extractive sectors and disincentives created by hydrocarbon subsidy schemes.

Challenge #2: Developing non-extractive sectors with higher productivity

Meeting the critical challenge of developing non-extractive sectors will require a more dynamic private sector. The analysis so far points to developing higher productivity, non-extractive sectors as a critical challenge to sustaining advances on reducing poverty and increasing shared prosperity. In the absence of meeting this challenge, there will be insufficient income opportunities for the growing number of better educated people looking for work, particularly in urban areas; and reliance on volatile commodity markets will continue, as will the depletion of increasingly scarce natural resources.

Despite of the sound external context and prudent macroeconomic management in the last decade, Bolivia was unable to make much progress on developing alternative sources of growth or attracting investment in non-extractive sectors. This suggests that the development of these sectors is challenged by structural factors that may become more relevant in a low commodity price environment. Such an environment could also reduce the already low private sector willingness to invest, while the Government's capacity to compensate for the lack of private investment would become more limited.

The analysis based on the Bolivia Sources of Growth Study identified the main constraints to investment and growth in non-extractive sectors. This analysis uses a conditional benchmarking and an inclusive growth diagnostic methodology to identify those factors that are — or are not — the most binding constraint for private investment in non-extractive sectors at this moment and in a longer-term perspective.

The analysis points to appropriability problems as the main binding constraints in the short term, and infrastructure, logistic services, and education quality as potential binding constraints in the medium term. The findings suggest that at the economy-wide level, micro-economic policy failures, including regulatory uncertainty, high tax burdens, and overly restrictive labor regulations, are the immediate binding constraints to investments in non-extractive sectors (and – in forms specific to hydrocarbon and mining sectors – the same is true for extractive sectors as mentioned above). In the medium term, after the binding constraints are addressed, continued efforts to improve infrastructure, logistics services and education quality would be needed in order to unleash growth in these sectors.

Challenge #3: Main constraints to reducing gaps and disparities in access to human opportunities

Despite of improvements in most areas in recent years, large disparities in access to basic services remain across geographical areas and social groups, which result in unequal social outcomes. Outcome indicators in health and education, as well as access indicators related to basic social and infrastructure services have improved across the board, for all Bolivians. Nevertheless, Bolivia has not been able to close important gaps in access to opportunities, with rural areas (particularly highland areas with large indigenous populations) lagging significantly behind. Addressing the main constraints behind the reducing these disparities is critical, as equality in access to opportunities is both an important social value for Bolivia, as well as a critical factor to permit the poor to benefit from opportunities offered by inclusive growth. In this context, broader governance challenges, notably regarding transparency and accountability, also appear as key constraints, as they limit the participation of many Bolivians in decision-making processes, notably the allocation of resources. Progress on implementing several legal initiatives underway in this regard could contribute to addressing these governance challenges.

Improvements in gaps and persistent disparities in access to services have been limited by a sub-optimal distribution of resources as well as by insufficient capacity to deliver those services, but there is no clear evidence on this being caused by an insufficiency of resources. An analysis of public spending patterns finds a lack of geographic coherence with basic needs. There is no clear evidence that gaps and persistent disparities in access are caused by a lack of resources, with the exception of a few sectors, notably health. The main limitations appear to be found elsewhere: first, an inadequate vertical and horizontal distribution of these resources, caused mainly by a lack of coordination between planning and budgeting and between levels of government; and second, limited institutional capacity to execute public programs and service delivery, notably at the local level, as well as deficiencies in horizontal and vertical coordination.

The discussion of the main constraints to reducing disparities also reveals that fiscal policy in Bolivia has a generally regressive impact, despite efforts in recent years to enhance spending programs directed at the poor. Large fuel subsidies and unrestricted access to tertiary education, as well as the absence of direct taxes are the main culprits for Bolivia's entire tax-and-transfer system having a lower impact on poverty and inequality than similar systems in Argentina, Brazil, Mexico, and Uruguay. Existing fuel subsidies are

particularly relevant in this regard as they not only benefit proportionally more the non-poor but also create additional distortions, including disincentives for hydrocarbon exploration investments. Similarly, while direct social transfers to beneficiaries have been strengthened with a view to improving access to basic social services, their impact on the poor could be further enhanced by increasing the transfer amounts and their coverage and improve their targeting to better reach the poorest.

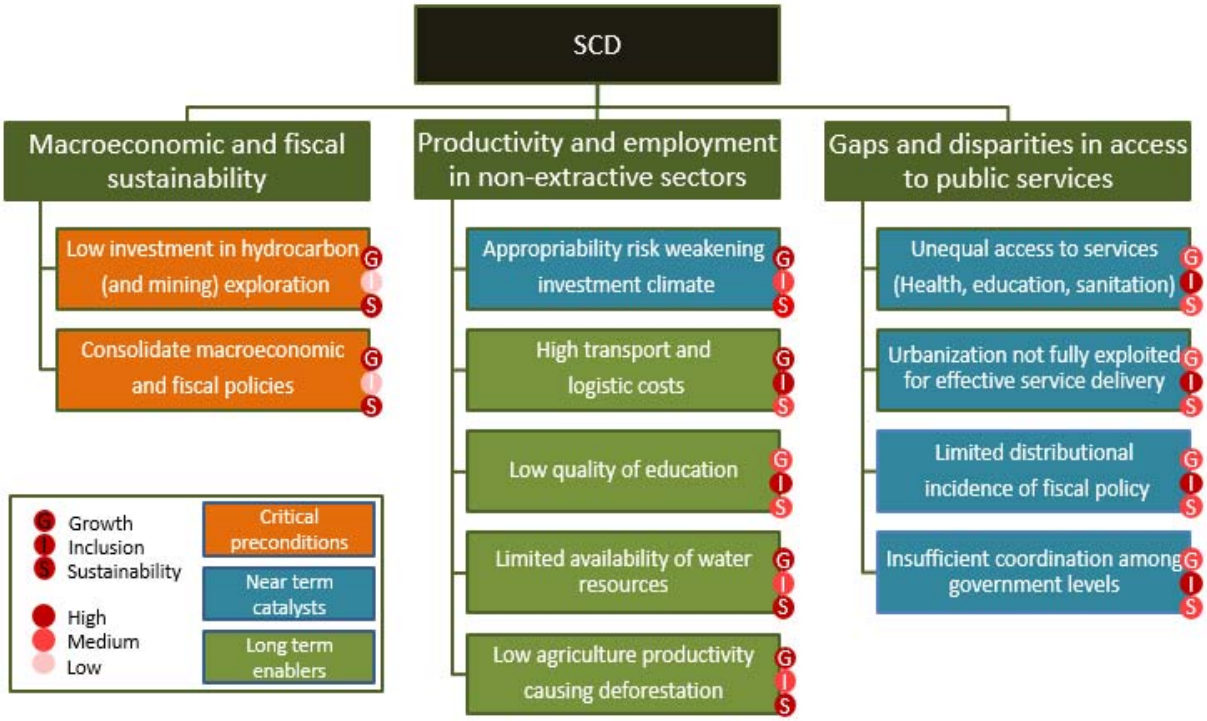
Priorities for sustaining gains on reducing poverty and enhancing shared prosperity

A prioritization exercise was conducted with a view to prioritizing the main constraints emerging from the SCD analysis, informed by several rounds of consultations with key stakeholders in Bolivia, and within the World Bank Group Country Team. The prioritization exercise is framed by the four fundamental economic characteristics and social aspirations that determine Bolivia's development path in the long term. In a first step, 11 priority constraints are identified, emerging from the analysis of Bolivia's recent experiences with poverty reduction and shared prosperity as well as the discussion of the three challenges for sustaining these gains. These 11 constraints and their link to the three main challenges are portrayed in Figure 1. A review of these constraints through a number of impact and context filters resulted in grouping the constraints in three buckets, as follows:

- "Critical preconditions" for sustaining inclusive growth over the next years and thereby providing time and resources for engaging on a structural shift to non-extractive sectors with higher productivity. Two priorities constraints are considered critical pre-conditions for sustaining inclusive growth: 1) ***increasing investment in exploration for extractive production*** by way of reducing the high appropriability risks and the disincentives embodied in the existing regulatory framework for the hydrocarbon and mining sectors***;*** and 2) ***maintaining and deepening effective macroeconomic and fiscal policies***, through an adjustment of macroeconomic and fiscal policies to the new context and a more institutionalized approach to policy making.
- "Near term catalysts" that have a potentially important impact in the short or medium term on creating income for the poor and reduce disparities in the short and medium term. These constraints are critical to jumpstart progress on increasing private investment and productivity in non-extractive sectors, and to make an inroad on the challenge of disparities in access to opportunities. The following constraints fit this description well: 3) ***high appropriability risks weakening the investment climate***, which includes high effective tax rates and cumbersome tax procedures, rigid labor regulations, and low governance standards; 4) ***low distributional incidence of fiscal policies***, notably as regards hydrocarbon subsidies; 5) ***some regions and groups lagging behind in access to basic services***, particularly as regards limited access to health care services for women and children, inadequate quality of education and very limited access to early education opportunities, and inadequate access to basic infrastructure services, notably the lack of improved sanitation in rural and urban areas, as well as limited access to electricity and drinking water in rural areas; 6) ***insufficient coordination across and between government levels*** resulting in a lack of coherence between resource allocation and needs of the poor; and 7) ***urbanization not properly exploited for effective service provision***, which is a factor for promoting inclusive growth in urban areas, and reducing environmental footprint of economic activities.
- "Long term enablers" that prepare the ground for the structural shift mentioned above. In this bucket belong two constraints that do not surface as binding constraints today, but would in the future constitute constraints for shifting the structure of the economy to non-extractive sectors with higher productivity and capacity to generate employment: 8) ***high transport and logistics costs***, resulting from Bolivia's geographic handicap and cumbersome cross-border procedures; and 9) ***insufficient education quality***, particularly at the secondary level, which is also critical for reducing disparities. Three constraints and opportunities that are critical for mitigating sustainability risks

and are at same time long term constraints to growth and hence belong to this third bucket; 10) ***unsustainable and low productivity agriculture growth***, which has contributed natural resource depletion, notably rapid deforestation, through the expansive production model, while suffering from low productivity and limited value addition; 11) ***limited availability of water resources and irrigation infrastructure, the former*** due to increasing competing demands, pollution loads and climate change impact, which has led to a degradation of watersheds; and the latter due to low public and private investment in irrigation.

Figure 1: SCD Priorities



- This SCD analysis also found several important knowledge gaps that would need to be addressed to understand better underlying dynamics and limitations. These gaps call for both collection of and/or access to statistical data, and new in-depth analysis. The SCD attempted to cover partially some of these gaps through additional background analytics, yet some of the required analytical endeavors are beyond the SCD's scope and time schedule. Analytical work on the following main knowledge gaps in the following years could therefore be beneficial to improving the evidence base for policy making in Bolivia: i) spatial analysis of poverty dynamics; ii) the impact of climate change and natural disasters on poverty; iii) learning achievements and quality of education; iv) firm-level data and analysis on innovation and investment in intangible capital; v) potential for productivity and employment growth through services; vi) product market competition; vi) the impact of recurrent State market interventions; and vii) public spending patterns and quality.

1. Introduction: SCD objective, methodology, and structure

1. **The objective of this Systematic Country Diagnostic (SCD) is to identify the priority constraints Bolivia faces in sustaining its gains on reducing poverty and enhancing shared prosperity over the next years.** It will analyze the dynamics behind the progress achieved in the past decade on inclusive growth, and identify a number of key constraints for sustaining and consolidating this progress.

2. **The SCD begins, in Chapter 2, with a presentation of four characteristics that make Bolivia special, including its State-led development strategy, large natural resource wealth, difficult geography and landlocked condition, and rich ethnic diversity.** These fundamental characteristics are somewhat fixed in that they could only be altered in the long term (if at all). They therefore influence significantly Bolivia's dynamics on inclusive growth. These characteristics are critical in framing the analysis presented in Chapters 3 and 4, and in the prioritization exercise presented in Chapter 5.

3. **In Chapter 3, this SCD presents an in-depth evaluation of the generally positive evolution in growth and in the reduction of poverty and inequality over the past decade.** It provides not only a better understanding of the dynamics behind this evolution, but also its limitations, notably the prevailing large disparities in access to services despite significant progress, and its key sustainability risks.

4. **An assessment of the recent past and current context concludes that there is a need for enabling new inclusive growth engines, particularly through increased private investment and higher productivity.** The urgency of this is framed by now less favorable external conditions that are not likely to be temporary. Chapter 4 makes a case for rebalancing the path of inclusive growth, and presents three main challenges in this sense: sustaining macroeconomic and fiscal stability, developing non-extractive sectors with higher productivity and a lower environmental footprint, and reducing gaps and disparities in access to opportunities. The discussion of these challenges reveals a number of priority constraints, a key input for the prioritization exercise.

5. **Finally, in Chapter 5 the SCD presents the findings of a prioritization exercise aimed at producing a restricted list of prioritized constraints, as well as a list of knowledge gaps identified in the different parts of the analysis.** The exercise identifies the main constraints emerging from the preceding analysis, particularly of the three main challenges, and then employs a mixed approach for prioritizing them. A number of filters are applied for this purpose, related to the impact on the main dimensions on inclusive growth and sustainability and others that relate to contextual factors. This chapter also synthesizes the main knowledge gaps highlighted in different parts of the document.

2. Setting the stage: What makes Bolivia special?

6. **Any effort to sustain gains on poverty reduction and shared prosperity in Bolivia cannot ignore the country's key characteristics and social aspirations.** The SCD identifies four essential characteristics that define Bolivia's reality: first, a strong role of the State in the country's development path; second, a significant wealth in natural resources together with a strong dependence on extractive sectors; third, important geographic challenges – including the country's landlocked nature; and finally, a rich ethnic diversity along with an urgent need to foster inclusion policies. These characteristics will be at the core of the exercise of prioritizing main constraints to sustaining inclusive growth.

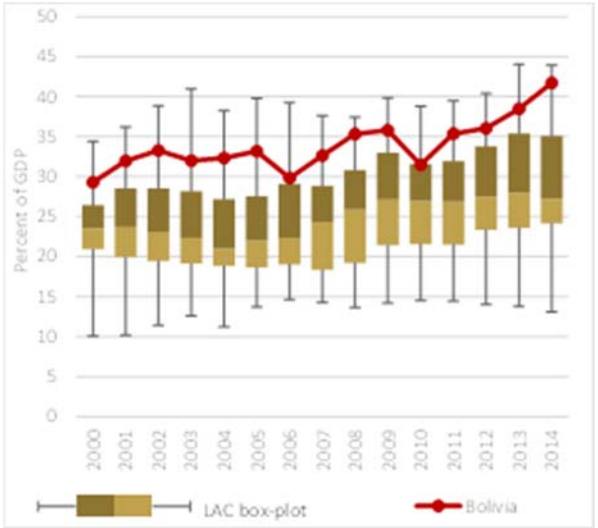
2.1 A state-led development strategy for Bolivia

7. **Since President Morales took office, the Bolivian State increased its role as a critical actor in the new development model.** In 2006, President Morales took office for the first time with strong popular support and reversed some of the market-oriented policies adopted in the two previous decades – including the nationalization of the hydrocarbon sector. The 2006 National Development Plan (NDP) sought to increase the State's participation in strategic economic sectors, pro-actively channel resources to labor-intensive sectors, introduce new social programs and scale up existing ones, and ensure greater country ownership of its development process. It also called for social and political reforms through a new Constitution, adopted in 2009. The 2014 Bicentennial Patriotic Agenda 2025 maintains these principles while establishing a broad set of policy objectives, including the eradication of extreme poverty, the improvement of social services, the industrialization of natural resources, productive development and economic diversification, among others.

8. **As reflected in the 2009 Constitution, the balance of political power has been altered through new consultation mechanisms and reforms in resource ownership policies.** The 2009 Constitution recognizes 37 indigenous nations, emphasizes the social and political rights of the indigenous population, and calls for a stronger intervention of the State in the economy and in the exploitation of natural resources. It also establishes that public services are fundamental rights and that the Government should have a greater role in their provision. At the institutional front, the Constitution formalizes the autonomy of subnational governments, thus deepening the decentralization agenda initiated in the 1990s. It also introduces the instrument of national referendums to decide on critical national issues and remove elected authorities, as well as the popular election of judges for a number of judicial institutions.

9. **The Government has gradually increased its participation in the economy through public enterprises, direct financing of prioritized sectors, and public investment.** Production in strategic economic sectors were nationalized, including hydrocarbons, electricity, and telecommunications, while several new publicly owned firms were created in other sectors such as food, mining, manufacturing, and banking. The Government has sought to deepen the industrialization process by participating directly in hydrocarbon, mining, and energy activities. Benefiting from the increased gas export earnings of the last decade, public investments have also increased substantially, including investments in infrastructure projects, while new public institutions and mechanisms have been created to channel financial resources to prioritized sectors, such as food production and SMEs, particularly in rural areas. Other initiatives to promote productive development include providing technical assistance to rural producers, creating agriculture insurance, and improving infrastructure in roads and irrigation. As a result, the current economic development strategy resulted in a substantial increase in public expenditures, which was already large in regional comparison. (Figure 2).

Figure 2: General government expenditure



Note: the Box-plots include only countries with more than 1 million population.
Source: IMF.

10. **The Government has taken an active stance on regulating markets, and some decisions may have counterproductive effects in the medium term**. Price controls and export bans have been used occasionally to mitigate inflation upsurges in certain staples, resulting usually from international food inflation or natural disasters. In certain cases, there are indications that the restrictive policies applied led to reduced production in subsequent years. Through the 2013 Financial Services Law, the Government defined minimum interest rates for savings and established credit quotas and a set of maximum interest rates for productive and social housing loans. In the medium term, these constraints risk reducing the financial institutions' capitalization, liquidity and solvency. Similarly, yearly increases in the real minimum wage, a second Christmas bonus, and other labor benefits were introduced to maintain strong relations with the organized labor force. In a more challenging economic context, these may add further stress to an already overregulated formal labor sector.

11. **The Government has also increased investments in social sectors and in social transfer programs, which are mostly categorical or universal in character**. In addition to a large number of important infrastructure projects, large investment programs have been initiated to improve access to water and housing, and to eradicate illiteracy. The Government has also scaled up cash transfers in benefit of the older population (*Renta Dignidad*) and created conditional cash transfers for schoolchildren (*Bono Juancito Pinto*) as well as expectant and new mothers and their infants under two (*Bono Juana Azurduy*). These programs are not strictly targeted to the poor as they are mostly categorical or have a universal character.

12. **The Government has maintained popular support over the years.** Progress towards the Government's agenda and a favorable external economic context allowed President Morales to maintain high levels of popularity, leading to his reelection in 2010 and in 2014. Although some measures had limited impact on improving wellbeing for the lower income groups (for instance, poorly targeted conditional cash transfers) and others were probably counterproductive in the medium term (price controls and export bands), they have served to create a strong image of a proactive Government that tackles the Bolivians' "day-to-day" problems. Communication efforts have also been effective in mobilizing support for an important role of the public sector in the economy and in the management of the natural resources.

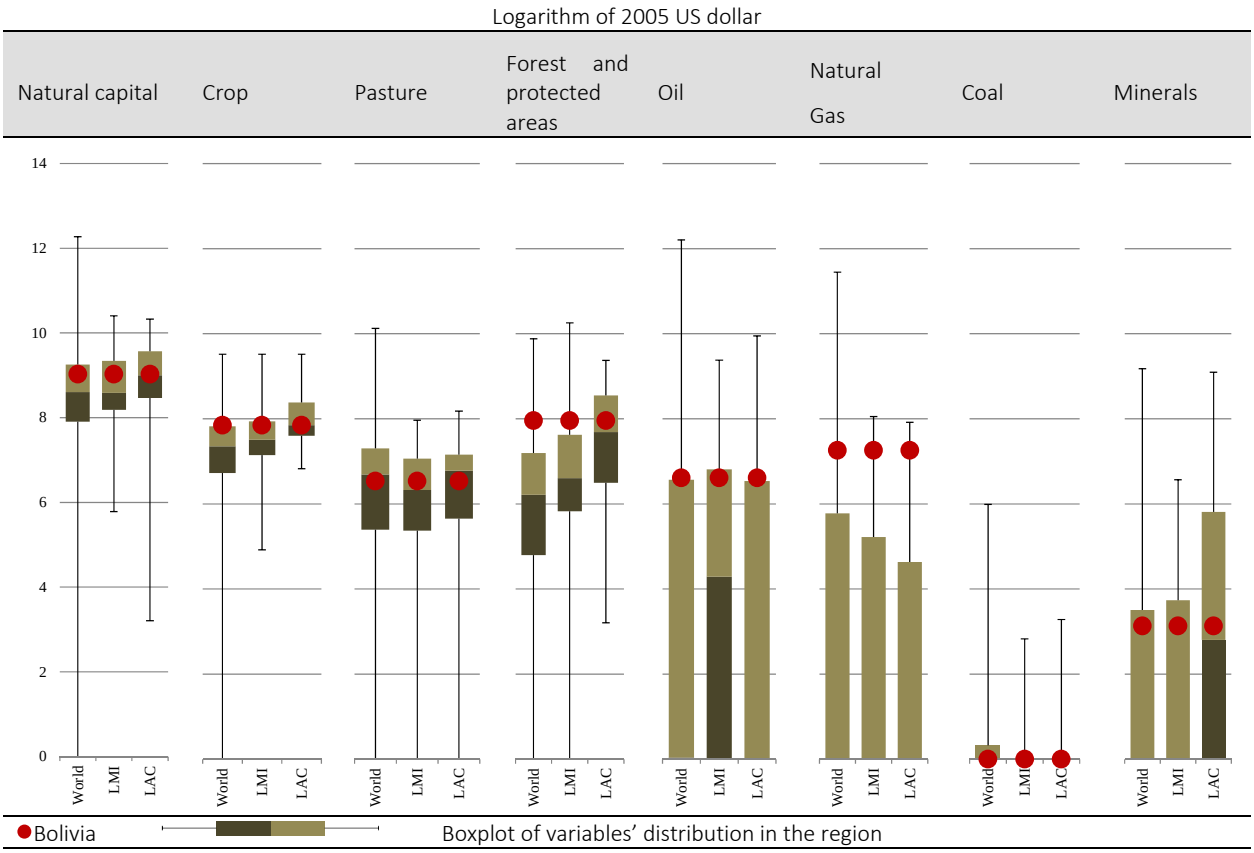
2.2 Bolivia is rich in natural capital and dependent on natural resource extraction

13. **Bolivia's per capita natural capital is relatively high.** According to the latest available data (2005), Bolivia's per capita natural capital is close to the Latin America and the Caribbean (LAC) median, which is high in global terms (Figure 3) (World Bank, 2011). In accordance with its traditional image as a mining country, Bolivia's current mining capital is significantly above the LAC regional median. Bolivia is not an oil exporter, but its per capita value of natural capital related to oil is close to the higher quartiles in all comparison groups. Per capita natural capital linked with natural gas is among the highest in the world. Natural capital related to crops is close to the LAC regional median and close to the highest quartiles observed in the distribution of all countries and of lower middle-income (LMI) countries. In forestry and protected areas, Bolivia's natural capital also compares favorably. In terms of pasture, Bolivia's per capita natural capital is close to the medians of the three comparison groups.

14. **Bolivia has significant potential in the hydrocarbon and mining sectors.** An estimated 56 percent of its territory could potentially hold oil or gas reserves, while current exploitation reaches only 15 percent of its area. Potential for mining is also significant: according to the Canadian Fraser Institute's Best Practices Mineral Potential Index for 2014, Bolivia ranks 73rd of 122 countries, higher than countries such as China

and several countries from Africa, Asia and Europe.[1] Currently, three known large deposits could lead to large-scale mines in the short term—Malku Khota (silver), Mutún (iron ore), and Salar de Uyuni (lithium).

Figure 3: Per capita natural capital, 2005



Source: The Changing Wealth of Nations

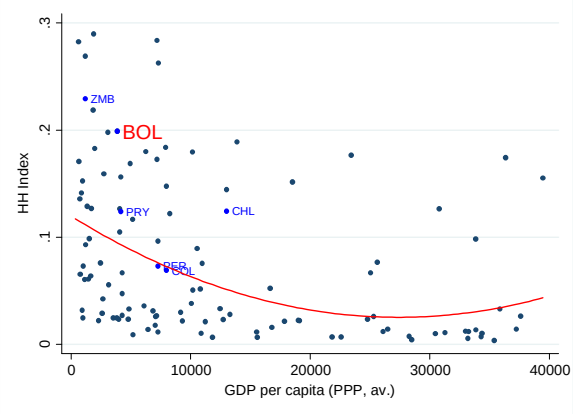
Note: Zeros and negative logarithms were transformed into zeros. Latin American Countries (LAC) Lower-Middle income countries (LMI)

15. **Due to its natural resource wealth and the trajectory of its economic history, Bolivia is still highly dependent on natural resources and is thus exposed to commodity price shocks.** The country's economic history has been influenced strongly by commodity export cycles: silver peaked at the beginning of its history, tin since the beginning of the past century through the mid-1980s, soybean and zinc from mid-1980s to the late 1990s, and natural gas and a handful of metals since the beginning of this century. Bolivia has traditionally been unable to capitalize on commodity price and export booms to embark on a sustainable growth path and reduce its exposure to prices shocks. Rather, throughout its history, the fall of commodity prices recurrently triggered economic slowdowns, macroeconomic instability, and political turnovers. Bolivia's current export concentration, as measured by the Herfindahl–Hirschman Index, is once again well above what would be expected for its development level (Figure 4). High commodity prices in the past decade and growing mining and natural gas export volumes have deepened further Bolivia's dependency on commodities. Extractive industries contributed 14 percent points to the overall export growth (20 percent) between 2004-06 and 2010-12 (Figure 5). Moreover, extractive sectors are critical for

[1] This index measures the country's "pure" mining potential under the hypothesis that its policies and regulations are best practices. However, Bolivia substantially falls to 105 when considering its sector policies, which substantially reduces the country's attractiveness to invest in mining, where Bolivia ranks in position 95.

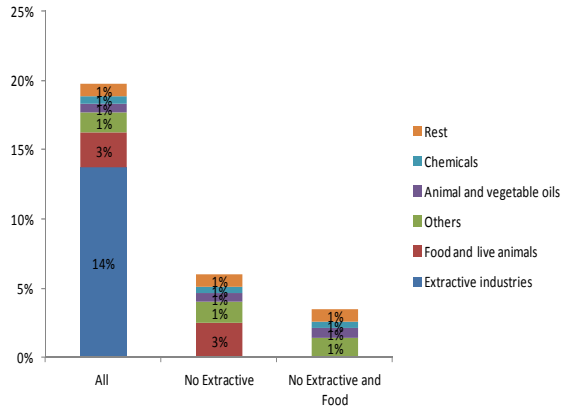
macroeconomic stability as mining and hydrocarbon exports account from about four fifth of total exports and gas-related fiscal revenues account from about one third of total fiscal revenues.

Figure 4: Export concentration



Source: UN Comtrade data in 2011.
Note: This figure presents export concentration along the economic development process. Each dot represents a country; the normalized Herfindahl–Hirschman Index (HHI) for exports is in the vertical axis while the GDP per capita is in the horizontal axis. The line is the lowest smoother.

Figure 5: Export growth decomposition
(2010-12/2004-06)



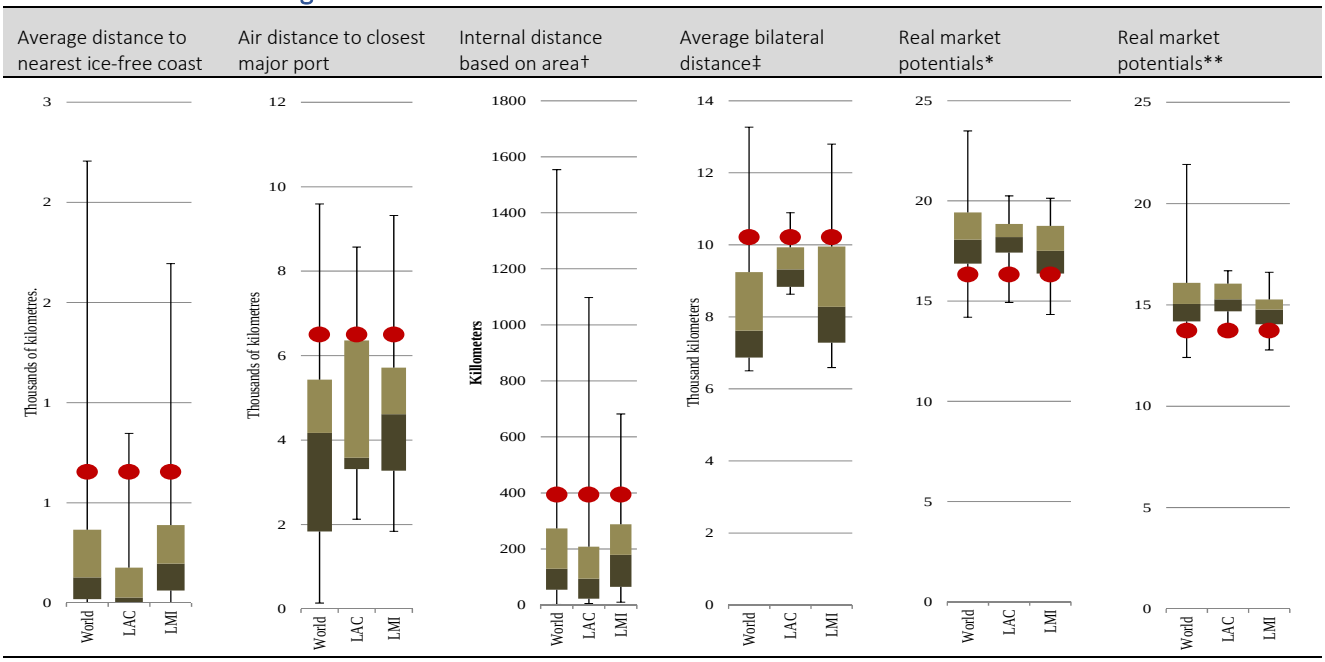
Source: Authors' calculations using COMTRADE data.
Note: Sectoral export contribution is computed as the sector's annualized export growth multiplied by the sectoral share in exports

2.3 Bolivia's development is challenged by a difficult geography

16. **The country's landlocked nature, long distances to the nearest seaports and markets, and a generally challenging topography constitute important natural constraints to economic expansion**. Bolivia belongs to a group of forty-three countries that do not have direct access to the sea. Distance to the nearest coast and to the closest major port is one of the largest in all comparison groups (Figure 6). The ruggedness of Bolivia's terrain is not particularly high, as flat lowlands and highland characterize a large part of the country. Nevertheless, the arrangement of high mountain ranges seriously hampers connectivity. In effect, the main metropolitan area (the cities of La Paz and El Alto together) is located in the highland plateau, between two mountain ranges. Most non-traditional exports need to cross both mountain ranges and the in-between plateau to reach Pacific Ocean ports. Access to the Atlantic Ocean is even more difficult due to underdeveloped infrastructure and long distances. Bolivia's internal distances are also very large, well above the higher quartile of all comparison groups. Its average distance to other markets is above the higher quartile of all comparison groups, even among LAC countries that face particularly long distances (World Bank 2010). In fact, Bolivia has the worst market access among South American countries, approaching the situation of several landlocked African countries (Figure 7).

17. **These geographic challenges also constitute an important handicap for broad-based and inclusive growth.** They impact negatively Bolivia's competitiveness by increasing the cost of imports and exports and constrain connectivity within the country. There is a premium on transport costs as the country's three main urban centers are located in different terrains: La Paz-El Alto in the highlands, Santa Cruz in the lowlands, and Cochabamba in the intermediate valleys. These challenges also reduce the country's capacity to provide productive infrastructure and social services, hindering access to market and human opportunities of people living in isolated areas. These connectivity problems are compounded by the fact that population density is among the lowest in the world, making it difficult to provide productive and social services to all people in an efficient manner.

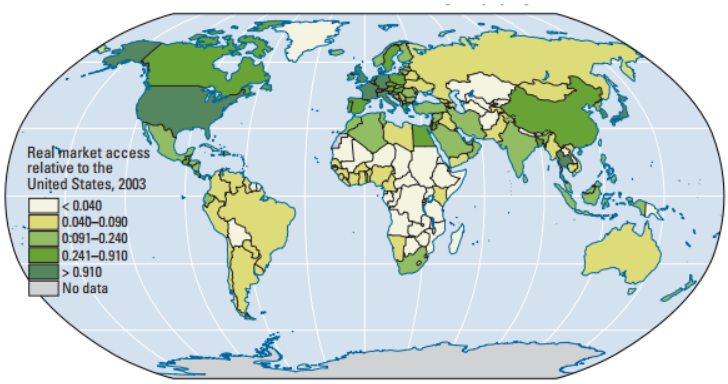
Figure 6: Selected indicators on distance to sea and markets



Source: CEPII, Research and Expertise on the World Economy; Gallup, Sach, and Mellinger, 1999

Note: Latin American Countries (LAC), Lower-Middle income countries (LMI). (†) The internal distance measure is based on the assumptions that production is concentrated in a single point at the center of a disk with the same area of the country and consumers are uniformly distributed (Mayer and Zignago, 2011). (‡) The geodesic distances are based on the distance between the most populated city of each country. (*) Based on Redding and Venables (2004), which measure the real market potential (market access) as a sum of expenditures of all countries in the world, weighted by bilateral trade costs. (**) Based on Head and Mayer (2004) which propose an alternative measure taking into account the impact of national borders on trade flows.

Figure 7: Market access relative to the United States



Source: World Bank, 2010

2.4 Rich ethnical diversity marks social and political processes

18. **Bolivia is one of the countries with the highest share of indigenous population.** The 2009 Constitution recognizes 37 indigenous nationalities. According to the 2012 Population and Housing Census, 41 percent of the population self-identifies as indigenous *(Naciones y Pueblos Indígenas, Originarios y Campesinos*). Quechuas and Aymara account for almost 36 percent of the population while the other 35 groups account

for only 5 percent. Approximately 30 percent of the population is indigenous based on their mother tongue, 16 percent Quechua and 10 percent Aymara.

19. **Ethnic diversity is an important political factor.** Despite important demographic changes in past years, notably the strong migration trend, ethnic diversity remains an important social and political issue.[2] Most of the mestizo population has maintained cultural and economic links with its indigenous origins, even those that are now living in urban areas. This generates a relatively strong political cohesion around issues such as inclusion or protection of natural resources. Similarly, some development initiatives, including the construction of roads and hydrocarbon exploration, frequently generate tensions with indigenous groups living in affected areas.

3. A decade of high inclusive growth in Bolivia: strong progress on an unfinished agenda

3.1 Significant inroads on poverty and inequality, with large poverty pockets remaining

20. **Over the past decade, Bolivia has made significant inroads on reducing poverty and increasing shared prosperity.** This Chapter shows how poverty and inequality has declined substantially in rural and urban areas as the poor saw their earnings rise at a faster pace than the average. Ten years ago, Bolivia's bottom 40 percent of the income distribution (the B40) were equivalent to its group of extreme poor. Today, the B40 are still below the moderate poverty line - roughly corresponding to the group of the moderate poor[3] - yet only half of them are extreme poor.

21. **While this impressive progress has benefitted Bolivians across all geographical zones, ethnic groups, and gender categories, too many Bolivians are still deprived of decent livelihoods, and important disparities remain.** The discussion of the progress is therefore nuanced by the findings of almost 40 percent of the population remaining poor, and still limited access to opportunities for many people, especially in rural areas. The important advancements have only partially corrected pervasive disparities in access to income and other opportunities, pointing to an important unfinished agenda of consolidating and sustaining gains on poverty and inequality going forward, as discussed in the following sections.

Large gains on poverty and inequality in international comparison

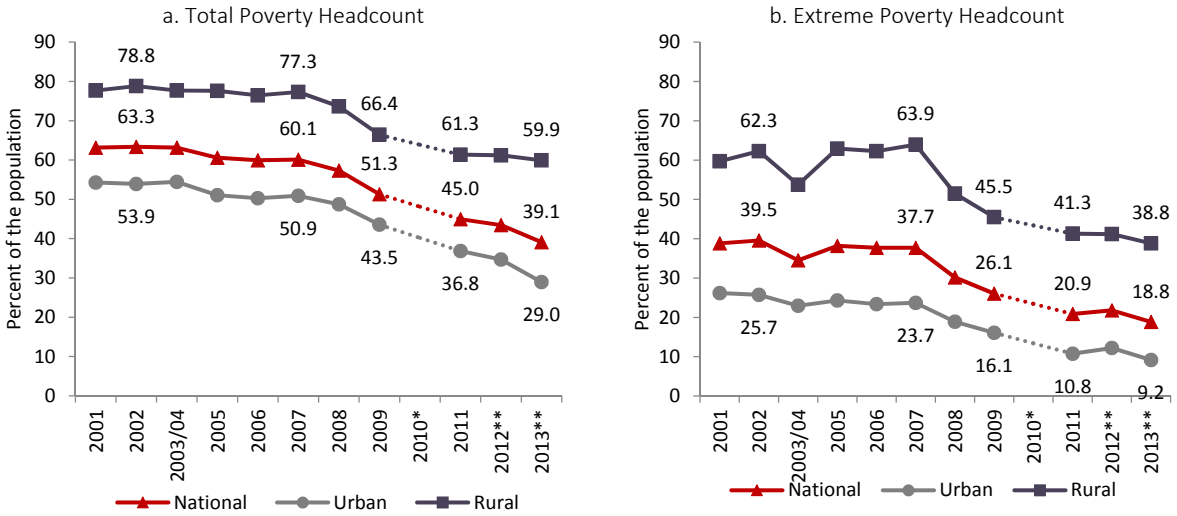
22. **Poverty and inequality rates have declined substantially in Bolivia since 2002.** Poverty decreased from 63 percent of the population in 2002 to 39 percent in 2013 (Figure 8).[4] In urban areas, poverty fell from 54 to 29 percent, while in rural areas it fell from 79 to 60 percent. Similarly, extreme poverty decreased from 37 percent in 2002 to 19 percent in 2013 - from 26 to 9 percent in urban areas and 62 to 39 percent in rural areas. Poverty reduction was accompanied by a large decline in income inequality. Bolivia's Gini coefficient fell from 60 in 2002 to an estimated 49 points in 2013. Similar reductions in inequality were observed both in urban and rural areas, where the Gini coefficients fell by 11 and 9 points, respectively. While the timing of the poverty reduction have been subject to debate due to methodological changes, the general view is that the overall magnitude of improvements from the beginning to the end of the decade has been substantial (Box 1).

[2] Due to changes in the census questionnaires, it is not possible to use a comparable definition based on self-identification through time. Based on the people's mother-tongue, the share of indigenous population decreased from 36 percent in 2001 to about 30 percent in 2012 as Spanish became the mother-tongue of children of indigenous migrants to urban areas.

[3] As a consequence, in this document there is limited use of the concept of B40, as when addressing the (moderate) poor, this also encompasses the B40.

[4] Given that the official poverty rates were not available at the time of the preparation of this document, 2012 and 2013 poverty rates are authors' estimates, based on publicly available official survey data.

Figure 8: Recent Poverty Trends in Bolivia



Source: *Ministerio de Planificación del Desarrollo, Unidad de Análisis de Políticas Sociales y Económicas* (UDAPE).
Note: Estimates from the *Encuestas de Mejoramiento de Condiciones de Vida* (2001 and 2002), *Encuesta Continua de Hogares 2003/04, and Encuesta de Hogares* (EH) 2005-2013 carried out by the *Instituto Nacional de Estadística of Bolivia* (INE). *Data is not available for 2010. The figure shows the simple average of the 2009 and 2011 rates for 2010. **The 2012 and 2013 poverty rates are authors' own calculations based on publicly available, official survey data.

Box 1: Is there truly a break in trend after 2007?

Bolivia's welfare gains experienced over the last decade are impressive, in particular when considering that most of the monetary improvements appear to have occurred in a relatively short period, starting in 2007. In 2007-08, the proportion of extreme poor declined from 38 to 30 percent, with gains in both urban and rural areas. Moderate poverty rates experienced similar, though relatively smaller, positive improvements after 2008, when the rate fell from 57 to 51 percent. Faced with these sizeable changes, it is reasonable to examine whether these improvements are a statistical artifact driven by shortcomings of the data and methodological changes for measuring poverty, or whether they reflect real, widespread improvements in economic conditions, or a combination of both.

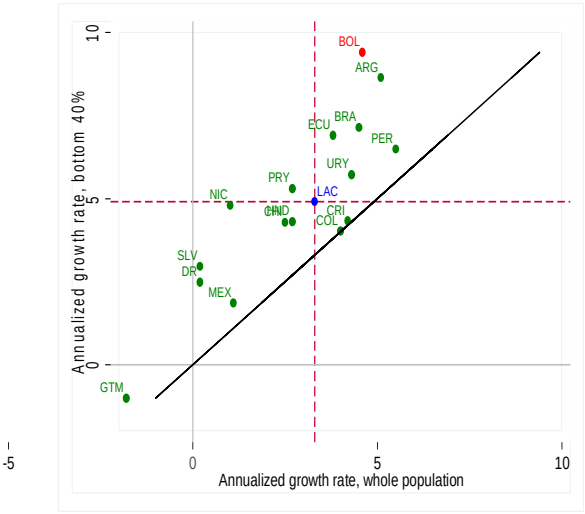
Along these lines, recent research found that changes in the sampling methods, the questionnaire – particularly on income sources, imputation of family income methods, and deflation of poverty lines made the comparability of poverty estimates over time difficult (Uribe and Hernani-Limarino, 2013). Taking these modifications into account, an alternative extreme and moderate poverty series was produced in which the problems of comparability are ameliorated. Two main lessons can be drawn from this analysis: first, the improvements in poverty and inequality may have started a few years earlier than what the official estimates suggest, around 2003-05 instead of 2007-08; second, while the timing of the poverty series' break might differ, the overall magnitude of the improvements between 2002 and 2011 is consistent with official results, if not a bit larger because the initial poverty rate is estimated at a higher level than the official one.

A similar analysis carried out by the World Bank concludes that the decline in poverty observed since 2007 is robust to various changes in the definition of the income aggregate and to the update of the value of poverty lines. This analysis tests whether the findings on the declining poverty trend are robust when taking into account potential problems of comparability over time and reliability of the data, and consistent with findings based on the analysis of other available indicators. Going forward, it would be critical to ensure comparability of the poverty and welfare estimates by introducing methodological improvements on a less frequent basis and synchronized across different areas of changes (sampling, questionnaire, imputation methods, etc.).

23. **Poverty reduction over the past decade was significant relative to other Latin American countries, but comparable to other commodity-rich countries worldwide**. Using harmonized data for the LAC region, Bolivia achieved one of the region's largest reductions in poverty, second only to Ecuador. However, Bolivia's performance is less exceptional when compared to energy exporters in other regions, such as Azerbaijan and Kazakhstan, which experienced significantly larger poverty declines over the same period.

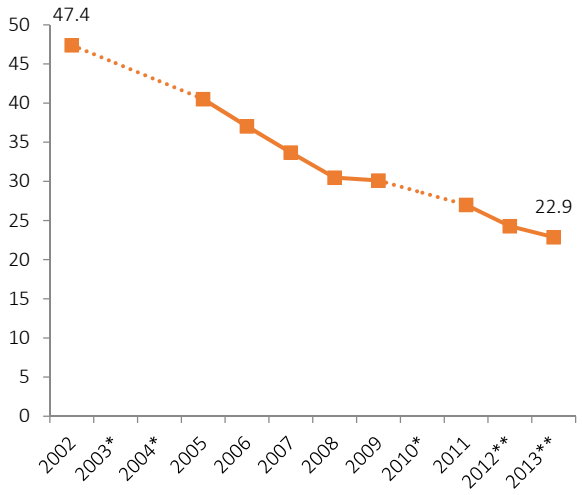
24. **Over the past decade, growth was markedly pro-poor and benefited strongly the bottom 40 percent of the income distribution.** The average per capita income of the poorest two quintiles, the B40, rose at a much faster pace than for the population as a whole, and faster than the bottom 40 percent in any other country in the LAC region (Figure 9). Average per capita household income grew by 4.6 percent per year between 2002 and 2013, while the average income of the B40 increased by 9.4 percent.[5]

Figure 9: Shared prosperity in LAC, circa 2003-2012



Source: SEDLAC (World Bank and CEDLAS). Note: Annualized average income growth, circa 2003-2012. For Bolivia the period corresponds to 2002-2013.

Figure 10: Multidimensional poverty



Source: Calculated from 2002-13 household surveys. 2003, 2004 and 2010 are interpolation between years.

25. **Living conditions of the poor improved significantly along several other, non-monetary dimensions.** Between 2002 and 2013, the proportion of people that faced deprivations in at least three of seven non-monetary dimensions halved, from 47 to 23 percent (Figure 10).[6] The 2012 Population and Housing Census revealed an increase in the share of households with access to electricity, drinking water, and proper sanitation (Figure 11). Moreover, Bolivia has already met the Millennium Development Goals (MDGs) related to malnutrition, literacy, gender parity in education, births attended by skilled health staff, and

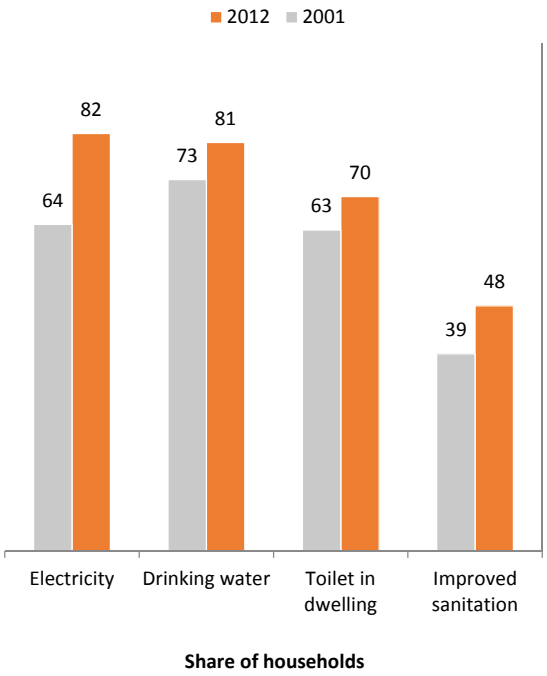
[5] This is based on regionally harmonized data which allows for comparisons across LAC countries (SEDLAC harmonized household surveys). Using official data, very similar results are found. Between 2002 and 2013, average real per capita income grew 4.9 percent per year for the whole population, while for the bottom 40 percent it rose at 9.5 percent.

[6] Seven dimensions were considered in determining multidimensional poverty: lack of assets (household does not possess two or more of the following items: television, telephone, means of transportation, or refrigerator), lack of electricity, lack of flush toilet or pit latrine, no household member has completed five years of schooling, any 7- to 15-year-old child in the household is out of school, the home is constructed with precarious wall materials, and lack of running water in the dwelling. A household is considered multidimensional poor it is deprived in at least three of these seven dimensions.

extreme poverty. Primary school enrollment is not far from universal and net secondary school enrollment is close to 80 percent, placing Bolivia among the top five countries in the LAC region. [7]

Figure 11: Progress in non-monetary dimensions

a. Change in coverage of basic services, 2001 and 2012



b. Selected MDG indicators

	Baseline	Most recent
Malnutrition prevalence (% children under 3)	41.7 (1989)	18.5 (2012)
Mortality rate under 5 (per 1,000 live births)	129 (1989)	58 (2011)
Infant mortality (per 1,000 live births)	81.9 (1989)	48.6 (2011)
Maternal mortality ratio (per 100,000 births)	416 (1989)	229 (2003)
Births attended by skilled health staff (% total)	33 (1996)	71 (2012)
Prenatal care (at least 4 consults, %)	32 (1989)	72 (2008)
Pentavalent vaccination <1 y.o (%)	68 (1994)	80 (2012)
Primary completion rate	69 (1992)	90 (2011)
Female-male literacy rate, 15-24 years old	0.98 (1997)	1.00 (2012)
Female in Municipal councils	19 (2004)	43 (2010)
Female working in non-agriculture activities (% total female employment)	31 (1999)	36.4 (2012p)

Source: a. Calculations based on 2001 and 2012 *Censo Nacional de Población y Viviendas (CNPV)*, INE. "Improved water" includes piped, public tap, protected dug well, "Improved sanitation" includes piped sewer system and septic tank. b. UDAPE (2013) *Séptimo Informe de Progreso de los Objetivos del Milenio en Bolivia*, La Paz. In the "most recent" column, indicators in red represent the cases in which the MDG goal for 2015 has not yet being met.

Dynamics behind gains on poverty and shared prosperity

26. **The marked pro-poor growth of the past years is fundamentally a result of a favorable external context that had translated itself directly - through increases in relative prices of goods produced by the poor, and indirectly - through demand expansion fueled by public investment, into improved income opportunities for the poor.** The gains on poverty and inequality were largely driven by an increase in income levels and employment of low-income earners. Two main channels worked in favor of this evolution: first, terms of trade improvements increased the relative prices of some goods produced by the poor, such as in mining and agriculture; and second, higher export and fiscal earnings from extractive production, leveraged by the Government through an ambitious expansion of public investments, reinforced by real appreciation boosted the demand for low skilled labor, notably in the urban, non-tradable sectors like construction and commerce. This increased demand for low-skilled labor was met by an important urbanization process that brought a large number of rural poor to Bolivia's cities.

27. **To better understand the dynamics behind the gains on poverty and inequality, the next section examines the connection between the sizeable economic expansion fueled by public investment and the disproportionally high gains in income of the poor.** In particular it analyzes how labor market dynamics

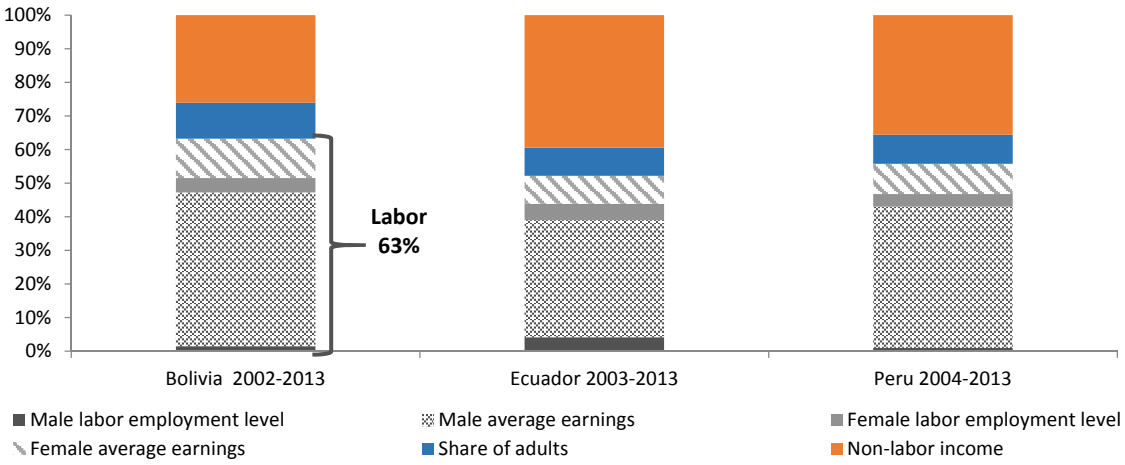
[7] *Ministerio de Educación – UNESCO* (2014).

played a critical role in increasing job and income opportunities for the poor, particularly through shifts of the poor to better paid jobs and increases in their return to labor. Other, less important factors, such as non-labor income growth are also considered. Certain limitations to the current dynamics become apparent, and point to challenges in sustaining inclusive growth going forward.

Labor market dynamics as key factor behind poverty reduction

28. **Improved labor market outcomes accounted for a large part of extreme poverty reduction in past years, more so than in other countries of the LAC region**. Figure 12 displays the relative importance of the various factors responsible for the reduction in extreme poverty Bolivia between 2002 and 2013. It also compares the decomposition with Ecuador and Peru. More than half of the decline in poverty in Bolivia (63 percent) is associated with increased earnings per worker, particularly among men. This includes income from wage employment in formal and informal sectors, as well as from self-employment. This is followed by non-labor income, composed mainly by Government and private transfers, accounting for 26 percent, which is smaller than in neighboring countries. In Ecuador and Peru, where progress in poverty reduction was similar, the contribution of non-labor income to extreme poverty reduction was 39 and 36 percent, respectively. Finally, the increase of number of adults relative to the household size as a result of a secular reduction in the fertility rate explains 11 percent of Bolivia's total poverty reduction vis-à-vis 8 and 9 for Ecuador and Peru, respectively.. In Bolivia, the number of babies born per women fell markedly from 6.04 in 1974 to 3.3 in 2011.

Figure 12: Decomposition of changes in extreme poverty between circa 2002 and 2013 by sources of income, as percentage of total change



Source: Calculations based on SEDLAC (CEDLAS and the World Bank), using the international poverty line of USD 2.5 per person per day. "Share of adults" is the proportion of people between 15 and 69 in the household. "Non-labor income" includes government and private transfers and imputed rent for owner occupied dwellings. This Shapley Decomposition analysis separates changes in poverty rates by income source. Methodology based on Barros, R, M. Carvalho, S. Franco, and R. Mendoca (2006) "*Uma Análise das Principais Causas da Queda Recente na Desigualdade de Renda Brasileira*". *Revista Económica, vol 8*(1), pp. 117-147.

29. **The improvement in labor income was to a large degree caused by two factors: i) a shift in the type of jobs the poor occupy, from worse to better-paid sectors; and ii) improved returns in sectors where the poor are employed**. Bolivia's poor gained access to better paying jobs over the past years, a shift facilitated by changes in relative prices - high commodity prices and real appreciation – in favor of certain economic sectors. Yet, this shift did not change the fact that most of the poor still operate in an informal, low-skill and low-salary environment. While both factors were at play throughout the period, the intensity of these two forces varies across time. The shift of households in the B40 towards paid (as opposed to unpaid) and more profitable activities has been continuous and gradual since the beginning of the decade. Instead, the

growth in returns from labor, and in particular, for those in the second quintile –who left extreme poverty- have accelerated since 2007.

30. **Increases in earnings had a much larger impact on poverty than the increase in overall employment of the poor.** Increase in adult employment contributed to only 5 percent of extreme poverty reduction, as there have been limited changes in labor participation and unemployment: women labor participation has been increasing, but only slowly and unemployment rates have decreased from an already low level. The situation of low unemployment rates is reinforced by the high capacity of the informal sector and rural economy to absorb labor.

31. **There has been a sizeable and progressive movement away from unpaid labor to wage employment among poor households, while informality has remained at high levels**. In 2013, almost one third of paid workers in the first two quintiles were wage employees, up from 20 percent in 2002 (Figure 13). Despite this improvement, the wage employment rate among the poor remains at half that of the rest of the population and this situation is more pressing from women. The other two-thirds of the poor labor force remain engaged in unpaid and self-employed activities, associated with informality and low levels of productivity. While modestly decreasing throughout the decade, at 66 percent in 2013, informal employment remains ten percentage points higher in Bolivia than that of its neighbors, such as Peru and Ecuador.

Figure 13: Working age adults according to category of employment

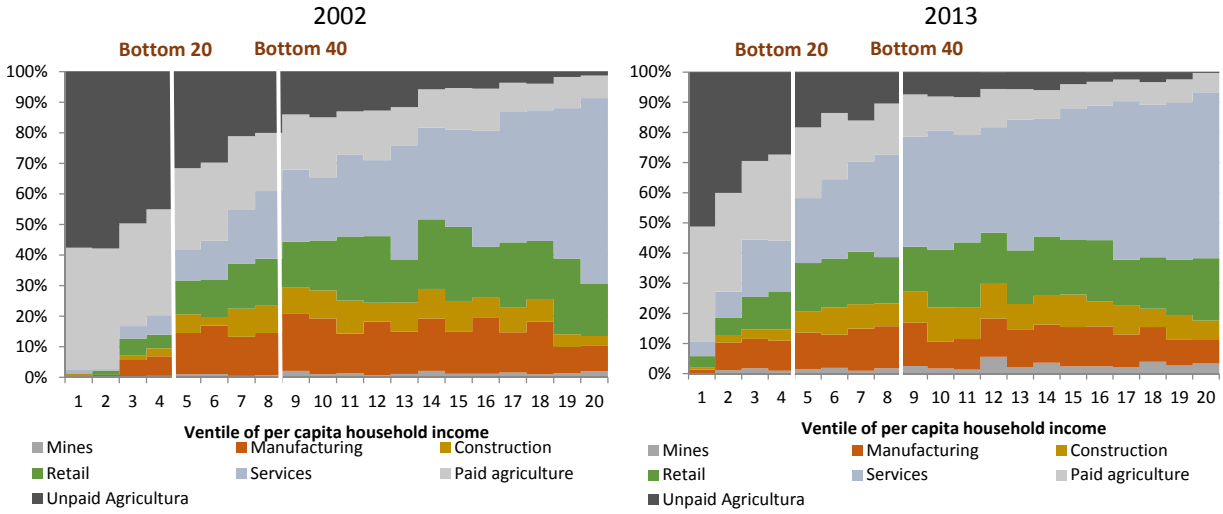
Source: Calculations based on *Encuesta de Mejoramiento de Condiciones de Vida* 2002 and *Encuesta de Hogares* 2013 (INE).

32. **While women have increasingly engaged in paid activities, in 2013 one third of all adult women continued to be largely unpaid and another third inactive**. Among the B40, the proportion of women in the age group of 14 to 64 years engaged in paid activities reached 29 percent by 2013, vis-à-vis 64 percent among men. Still, the position of women in the labor market has improved. Between 2002 and 2013 female workers became twice as likely to work as wage employees (9 percent), and slightly more likely to be self-employed (19 percent). Women's entering the labor market to paid activities has been the main driver of the recent increases in labor force participation in Bolivia (one of the largest in the region).

33. **In addition to the increased number of earners among the B40 households, workers are having access to better paid activities, with migration to urban areas playing a critical role.** The share of people working in agriculture decreased due to the large migration to urban areas. Migrant workers have been absorbed by services and construction (Figure 14). The proportion of individuals in the bottom two quintiles

working in the service sector has more than doubled from 9 percent in 2002 to 20 percent in 2013, with the largest increases in the second quintile. Employment in construction -the third highest paid activity- has risen by over 30 percent between 2002 and 2013, though construction still employed only 5 percent of the workers in 2013. In contrast, unpaid agriculture has become less important as a source of employment among the B40 (except for those at the very bottom of the distribution), declining from 40 percent in 2002 to 27 percent in 2013.

Figure 14: Distribution of employment by sector and ventile of household income, 2002 and 2011



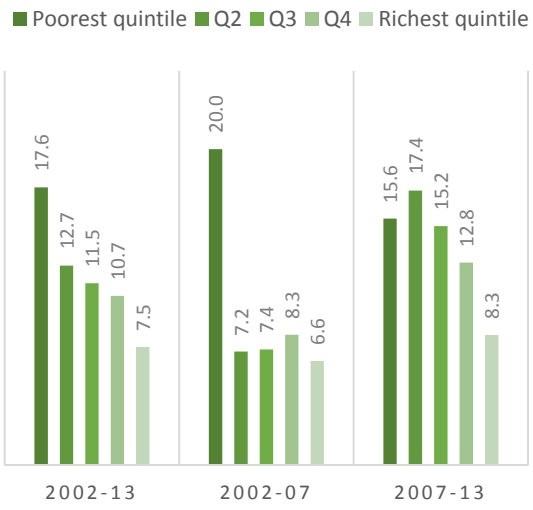
Source: Calculations based on *Encuesta de Hogares*, 2002 and 2013 (INE).

34. **Hourly labor income growth has improved throughout the income distribution, but its effect was strongest among the bottom quintiles**. Between 2002 and 2013, average hourly earnings grew at an annual rate of around 3.2 percent. The bottom quintile experienced high rates of hourly earnings growth beginning in 2007, though starting from very low levels (a fourth of the hourly incomes of the second quintile) (Figure 15). For those in the second and third quintiles, those who had escaped extreme and moderate poverty, respectively, the acceleration of hourly earnings began a year later, in 2008.

35. **Hourly labor income improved most in sectors where the poor population was previously employed or is increasingly employed.** The largest gains in hourly income earnings from 2007 to 2013 were observed among agricultural workers (at 10 percent and 8.6 percent per annum for self-employed and wage employees, respectively), as well as other activities that have become increasingly important sources of employment among the poor such as construction and manufacturing (with growth rates of 7.3 per annum and 7 percent per annum, respectively) (Figure 16). In those sectors where the participation of the poor has risen, such as construction, services, and retail, hourly income growth is likely driven by higher labor demand, spurred by public investment (in particular, construction).

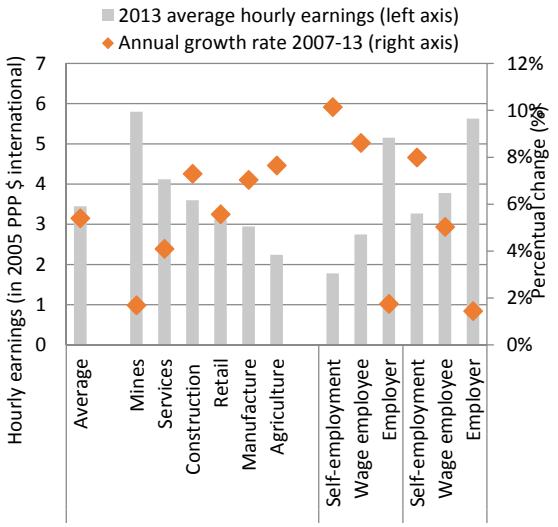
36. **However, the rise in hourly earnings may be related more to changes in relative prices than to increases in productivity**. In the agriculture sector, for instance, small farm holders have not increased significantly their production throughout the period. Therefore, increases in earnings may well reflect more the favorable effect of improved agricultural prices observed in the second half of the decade as opposed to productivity increases (Eid et al, 2015). The real value of the minimum wage, which was mostly unchanged from 2002 to 2010, soared starting in 2011 (from approximately Bs570 to Bs830). However, given the still high levels of informality in the labor market, the impact of the minimum wage on the incomes of the poor is expected to be limited.

Figure 15: Hourly labor income growth, by quintiles of per capita household income (annualized rates)



Source: *Encuestas de Hogares, INE.*

Figure 16: Hourly income in 2013 and annualized growth 2007-13, by economic activity



Source: *Encuestas de Hogares, INE.*

37. **This analysis also shows that the relatively smaller contribution of increases in women's labor income to poverty reduction is associated both with their lower participation in paid activities, as well as with the slower growth rate of earnings growth vis-à-vis those of men.** Among the B40, the proportion of labor income earners among women is half that of men. This results in a lower participation in women's income in total household income. In addition, women's average earnings among the lowest two quintiles grew at a slower pace than men's. Between 2002 and 2013, female hourly labor incomes grew at an annual rate of 4.8 percent relative to 7.2 percent among men. This is partly explained by their lower participation in the high-growth sector of construction, but also by the lower earnings growth observed in sectors where women are overrepresented such as retail and services (especially in the first years of the decade).

Demographic trends: important role of urbanization and reduction of dependency rates

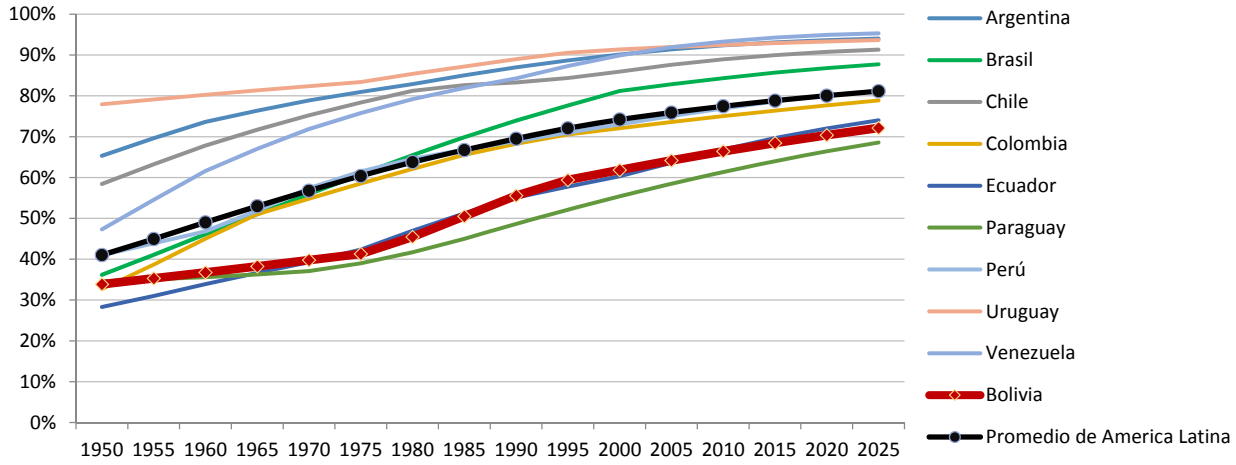
38. **The shift towards better paying jobs mirrors two important demographic trends: the falling dependency rates and the accelerating urbanization process**. The dependency rate has been consistently falling. A lower rate of fertility implies that the proportion of potential income earners is now higher than it was ten years ago. An estimated 11 percent of the reduction in extreme poverty is attributable to the fall in the dependency rate.

39. **The significant and accelerating migration from rural to urban areas has benefited the poor in particular.** Although Bolivia's urbanization process started relatively late, the country has been rapidly approaching urbanization levels of other Southern American countries. Between 1950 and 2012, Bolivia's urban population grew at an annual rate of 3.7 percent, almost five times as fast as population growth in rural areas (World Bank, 2014). The urban population increased from 34 in 1950 to 67 percent (6.75 million people) in 2012 and may reach 72 percent in 2025 (Figure 17).[8] In this process, the share of the poor living in urban areas rose from 39 percent in 2002 to more than 50 percent in 2013.

[8] Small- and medium-sized cities grew at a faster rate than Bolivia's three main cities (Cochabamba, La Paz, and Santa Cruz), though the areas surrounding these cities have grown considerably, as well.

40. **Rural-urban migrants have benefitted from the labor and income opportunities created in urban areas in past years.** Earnings of rural migrants to urban areas are almost twice as high as those of similar individuals that stay in rural areas. As such, migration to urban areas represents an important mechanism for social mobility and poverty reduction (Box 2). An Oaxaca style decomposition shows that 10 percent of the total change in the extreme poverty rate between 2002 and 2013 can be attributed to urbanization, while the remainder can be attributed almost equally to poverty reduction in urban and rural areas, respectively.

Figure 17: Share of urban population in selected South American countries. 1950 to 2025



Source: World Bank (2014), based on data from United Nations, 2012.

Box 2: Opportunities and challenges through urbanization

Bolivia's rapid urbanization has created opportunities for improving access of the poor to services and income opportunities.[9] Urbanization is a key element explaining the progress in poverty and inequality reduction. Migration has had a positive effect on the income of the poor moving to urban areas, and through agglomeration effects and economies of scale. In addition, the rise in the proportion of people with improved access to basic services is in part driven by migration to the urban sector, where the coverage is higher.

Rapid urbanization constitutes an opportunity for improving the provision of basic services. Growing concentration of people living in urban areas allow for more cost-effective delivery of services. However, Bolivia's urbanization process, which consists mainly in a rapid but low-density expansion of urban areas, reduces this opportunity as it makes it more difficult for local governments to keep up with rapidly growing demand. In general, deficiencies in service provisions are comparatively larger for smaller cities that have been receiving large migration (World Bank 2014). In addition, lack of proper wastewater treatment and its environmental impact has become in recent years a major issue, especially in cities like La Paz that does not have a wastewater treatment plant. Hence, enhancing capacity for urban planning, particularly among smaller cities, appears as key to improving access to public services.

But urbanization has also created challenges, notably as regards to increased pressure on the environment. Large cities are experiencing densification, but low-density expansion in smaller cities has resulted in growth into more marginal, exposed areas, increasing risks to environmental sustainability and to natural disasters. For instance, high urbanization rates have increased population exposure to outdoor air pollution, which has become a serious

[9] Based on a WBG study on opportunities and challenges in Bolivia's urbanization process (World Bank 2014).

problem in cities at more than 2000 meters above sea level, such as La Paz, El Alto, and Cochabamba.[10] Low density-expansion in growing cities can also give rise to longer commutes and correlated externalities of air pollution and congestion. By stretching the capacity of municipal governments, rapid population growth in urban areas can also have negative impacts on the environment due to lack of adequate sanitation services, solid waste collection systems, etc. Limited planning, execution and financial capacity at the subnational level, and lack of coordination between different government levels, have hampered sufficient adaption of service delivery quality and reach to these growing urban areas.

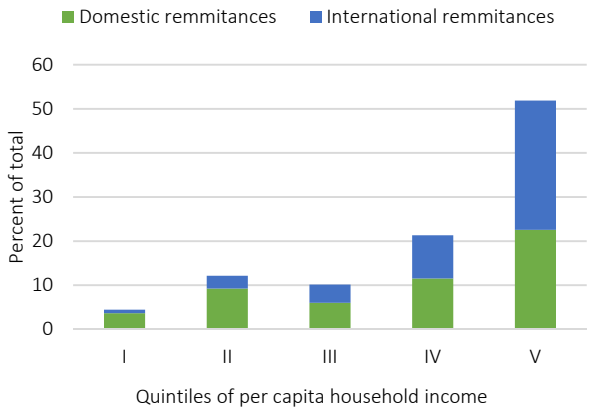
Non-labor income with limited impact on poverty despite scaled up transfer programs

41. **Non-labor income improvements have contributed to the reduction of poverty and inequality, yet in a more modest way.** Among LAC countries, Bolivia's B40 have the lowest share of non-labor income. Using regionally harmonized data, only 20 percent of household income among the B40 in Bolivia is derived from non-labor sources, lower than Peru (32.5 percent), Ecuador (28 percent), or Colombia (26 percent)[11]. As the poorest population is less likely to migrate, private transfers may be regressive. Moreover, private non-labor income also tends to be regressive as the poorest population has few assets to raise additional earnings from factor markets.

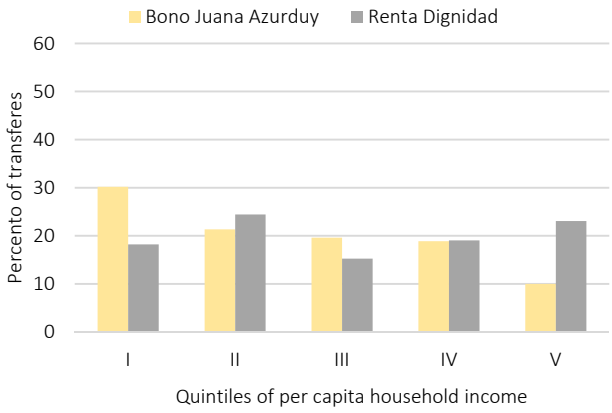
42. **While remittances grew rapidly between 2002 and 2013, they had a limited impact on poverty reduction due to their concentration among the top 60 percent of income earners.** Domestic and international transfers represented around 5 percent of the total household income in both 2002 and 2013. During this period, family transfers from abroad grew at an annual rate of almost 9 percent while domestic transfers fell 0.5 percent—international remittances increased tenfold from US$100 million in early 2000 to about US$1 billion in 2008 and remained around that level thereafter despite the volatile international context. By 2013, more than 90 percent of all international remittances were accrued by families in the top 60 percent of the income distribution (Figure 18.a). While the poor do benefit from private transfers, most come from within the country – mostly from urban to rural areas, though there are also some urban to urban transfers.

Figure 18: The role of public and private transfers

a. Distribution of public transfers across quintiles of per capita household income, 2013



b. Distribution of public transfers across quintiles of per capita household income, 2013



Source: Calculations based on *Encuesta de Hogares 2013,* INE.

[10] Outdoor air pollution has an important health impact associated with cardiovascular diseases, lung cancer in adults, acute respiratory diseases (particularly in children), and mortality from diseases such as pneumonia. The 2010 average concentration of ambient particulate outdoor pollution (PM 10) in Cochabamba is 75 ug/m3 while in La Paz is 42 ug/m3, which is significantly higher than WHO threshold levels. (Source: World Bank (2006), "Bolivia, Public Policy Options for the Well-Being of All).

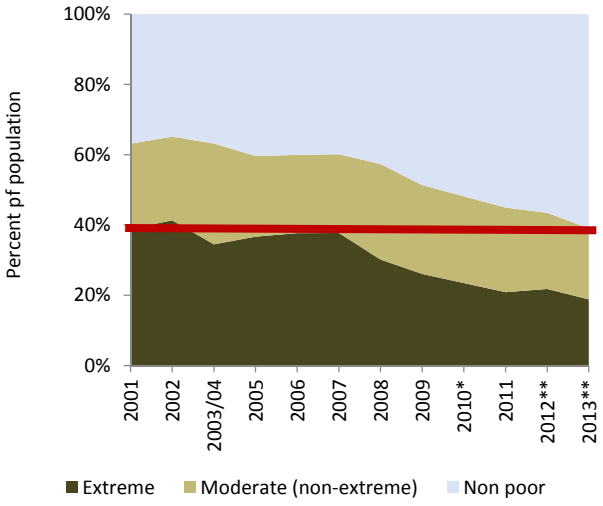
[11] Calculations based using SEDLAC data (CEDLAS and World Bank).

43. **Recent efforts have expanded significantly the volume and reach of government transfer programs, but overall they represent a mixed picture in terms of contribution to households' income.** In the past decade, non-contributory transfers to elderly people (*Renta Dignidad*) were expanded and new conditional cash transfers created and subsequently enlarged, linked with school attendance (*Bono Juancito Pinto*) and medical care for pregnant women and children under two (*Bono Juana Azurduy*). *Renta Dignidad* has the widest coverage and most generous transfer representing 1.6 percent of GDP in 2012. Hence, it has a significant impact on household income and consumption (Escobar et al, 2012). However, the distributional incidence of the programs is limited, as shown in Figure 18.b. *Renta Dignidad* is universal in design, each quintile receives about one fifth of the total. *Juancito Pinto* and *Juana Azurduy,* have had a limited direct impact on poverty due partially to their aggregated amount that totals 0.4 percent of GDP in 2011. These programs and their impact are discussed more in detail in Chapter 4.3.

Despite substantive progress, poverty and vulnerability remains high and unevenly distributed

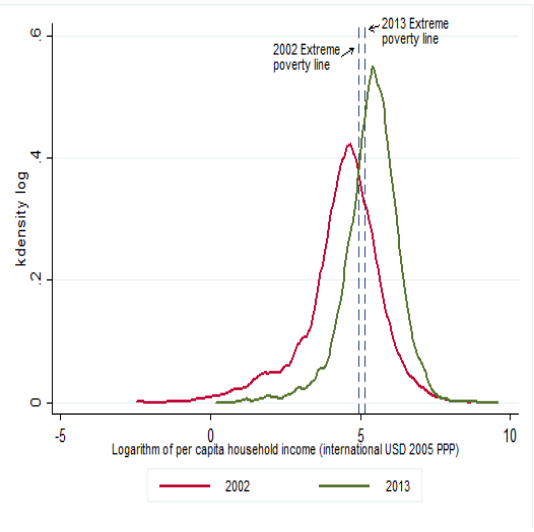
44. Despite this impressive progress, 40 percent of Bolivia's population remains in a situation of moderate poverty and 20 percent in extreme poverty. In 2001, the share of the population living below the official extreme poverty line was close to 40 percent (Figure 19). Hence at that moment the B40 were equivalent to the group of the extreme poor. In 2013, as a result of the poverty reduction process described above, only one fifth of the total population remains under the extreme poverty line, while the B40 now are equivalent to the group of the poor. As discussed in the following sections, the generally positive trends on poverty have not benefited all Bolivians to the same degree. As a result, large income disparities persist, and certain groups remain with a higher propensity to be living in poverty than others.

Figure 19: Change in relative size of income groups and composition of the B40, 2001-2013



Source: *Encuesta de Hogares 2002 and 2013*, INE

Figure 20: Shift in income distribution over time



Source: *Encuesta de Hogares 2002 and 2013*, INE

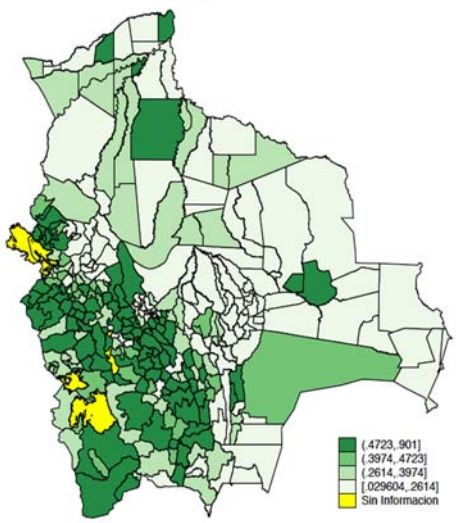
45. Furthermore, a large fraction of households that are now above the poverty line is vulnerable to falling back into poverty. A large share of Bolivia's non-poor population finds itself at an income level that is just above the moderate poverty line, making poverty incidence very sensitive to income variations that could be caused by different kinds of shocks (Figure 20). Yet as the income group just below the poverty line is also large, this population distribution should also be conducive to sustaining growth with continued positive effects on poverty reduction in the coming years.

46. **This vulnerability is emphasized by the fact that the main forces leading many out of poverty were closely associated with factors that might deteriorate in the years to come**. Increased earnings in agriculture appears to have been associated more with an increase in hourly income due to better international prices rather than increased productivity. Indeed, the slowdown in rural poverty decline since 2011 is partly associated with a less rapid growth in hourly earnings among the B40 in agriculture, consistent with data of the sector-specific deflator. Additionally, the non-agriculture activities in which employment grew most among the B40 were not the most productive ones – importantly, not manufacture - but instead sectors that could be more affected by an economy slowdown.

47. **While the progress on poverty reduction was widespread across the country, important disparities remain, such as the unequal distribution of poverty across municipalities, with many rural municipalities lagging with still high poverty rates.** Between 2001 and 2011, approximately half of Bolivia's municipalities experienced significant reductions in extreme poverty, according to information from the monetary poverty maps (Figure 21).[12] However, extreme poverty rates at the municipal level still span over a wide range of about 3 percent to close to 100 percent. Nearly a third of all municipalities have extreme poverty incidence greater than 50 percent. Even within the poorest department, Potosí, there are large differences in extreme poverty across municipalities. In addition, municipalities have witnessed disparate progress throughout the decade. Almost a third of municipalities (109 out of 339) had at least half of their population in extreme poverty in 2001 and in 2011 (the "lagging behind municipalities"). Another third (130 out of 339) also had an initial incidence of extreme poverty above 50 percent but managed to decrease it below this threshold by 2011 (the "improved municipalities"). Finally, a third group (105 out of 339) had lower than 50 percent extreme poverty rates at the beginning and end of the decade (the "better off").

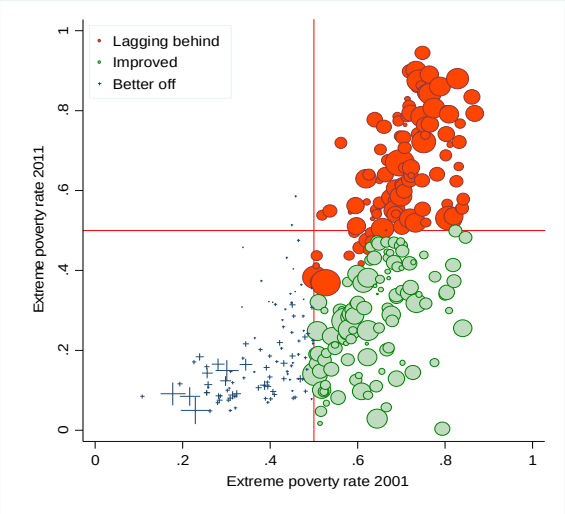
Figure 21: Distribution of municipal level extreme poverty and change

a. 2011 Extreme poverty map at the municipal level



Source: Based on 2011 income-based poverty maps, using 2011 Encuesta de Hogares and 2012 CNPV (UDAPE-World Bank).

b. Extreme poverty at the municipal level, 2001 and 2011



Source: Based on 2001 and 2011 income-based poverty maps (UDAPE-World Bank). Changes across categories are statistically significant

[12] In the other half of municipalities the point estimates in most cases indicate poverty reductions, but these are not statistically significant.

Knowledge gap- Spatial analysis of poverty dynamics: analysis of how and why monetary and non-monetary poverty vary widely across municipalities, geographic areas, and between urban and rural areas

48. **The extreme poor were significantly more likely to live in rural areas, to be indigenous, and to have low levels of education, compared to the non-extreme poor and the non-poor.** In 2013, approximately 7 of 10 extreme poor lived in rural areas. In contrast, only 2 of 10 non-poor lived in rural areas (Table 1). Moreover, 64 percent of the household heads in extreme poor households were indigenous, compared to 22 percent of the non-poor household heads. The extreme poor presented very low levels of education: the education of household heads in extreme poor households was on average 5.8 years, which is 1.6 and 4.9 years lower than household heads in non-extreme poor and non-poor households, respectively.

49. **Indigenous poverty has decreased substantially and tended to converge to non-indigenous levels, but is still larger than non-indigenous poverty, in particular in rural areas.**[13] Between 2002 and 2013, poverty among the indigenous population decreased greatly from 62 percent to 39 percent. The *Quechuas* have experienced the largest gains among the two main indigenous groups, narrowing the gap with the *Aymara*. Despite these improvements, extreme poverty for people belonging to indigenous groups in rural areas is still twice that of the non-indigenous – 51.6 compared to 22.5 percent, respectively (Table 2). Within urban areas, though, extreme poverty rates for the indigenous population decreased at a faster pace than those of the non-indigenous, closing the gap between the two groups. By 2013, the incidence of extreme poverty among indigenous in urban areas was 13.7 vis-à-vis 8.4 percent among non-indigenous groups.

Table 1: Profile by poverty condition in 2013

	Extreme poor	Non-extreme poor	Non-poor
Age of household head	49.5	48.5	47.9
Female household head	22.5	26.6	25.8
Years of education of household head	5.8	7.4	10.7
Household head is indigenous	63.9	40.3	21.7
Share of members age 0-12	27.5	24.5	16.7
Share of members age 13-18	13.3	12.0	9.4
Share of members age 19-70	49.1	52.8	67.6
Share of members age 70+	10.1	10.7	6.4
Household size	4.4	4.0	3.4
Dependency ratio	0.7	0.6	0.4
Living in rural area	68.2	40.1	22.7

Source: Calculations based on 2013 *Encuesta de Hogares*, INE

Table 2: Poverty rates for the indigenous and non-indigenous by area, 2002 and 2013

[13] In 2011, approximately 30 percent of the Bolivian population was indigenous based on their mother-tongue, 16 percent Quechua and 10 percent Aymara. Using an alternative (often preferred) definition based on self-identification, according to the 2012 Population Census around 40 percent of the population in Bolivia self-identified as belonging to an indigenous group (*Naciones y Pueblos Indígenas, Originarios y campesinos –NyPIOCs)*. Unfortunately, due to changes in the household survey questionnaire throughout the 2000s, it is not possible to use a similar definition to study the poverty profile. The category "Indigenous groups" is used throughout the text as a shortening for "people belonging to one indigenous group". It is recognized that each indigenous nation (NyPIOC) has its own particular cultural identity, language, historic tradition, institutions, and *cosmovisión*, so the aggregation into a single group might not be appropriate.

	Indigenous in rural areas			*Indigenous in urban areas*			*Non-indigenous in rural areas*			*Non-indigenous in urban areas*	
	2002	*2013*		*2002*	*2013*		*2002*	*2013*		*2002*	*2013*
Extreme poor	75.1	51.6		36.9	13.7		51.9	22.5		22.7	8.4
Non-extreme poor	13.5	22.0		28.3	19.6		22.0	20.0		28.2	19.8
Non-poor	11.4	26.4		34.8	66.8		26.1	57.6		49.1	71.8
In bottom 40	72.8	74.3		33.0	34.7		49.7	43.4		22.8	29.2

Source: Calculations based on 2002 and 2013, *Encuesta de Hogares*, INE. Notes: Indigenous definition based on language.

Gaps and large disparities also in social outcomes and access to services, with lagging rural areas

50. **Bolivia still performs poorly in several important health-related outcome indicators, despite important improvements, and displays large disparities in these indicators.** The infant mortality rate is one of the highest in the LAC region, second only to Haiti and above other countries such as Nicaragua and Honduras with similar levels of development. There are also large variations by region: infant mortality is almost twice as high in rural areas compared to urban ones, and close to four times as high for those in the poorest quintile relative to the richest one (World Bank 2014b). Child and infant mortality are particularly worrisome in the department of Potosí. Chronic malnutrition in children below 3 years is 18.5 percent at national level but reaches 26 percent in rural areas and almost 40 percent for those in the bottom quintile of the distribution. Poor nutrition and lack of early stimulation services can lead to significant delays in cognitive and psychosocial development that are hard to overcome later in life. Additionally, highland departments (La Paz, Oruro and Potosi) –with large concentration of indigenous groups- present the highest maternal mortality rates and the lowest levels of institutional deliveries (Silva and Batista, 2010).

51. **These gaps and disparities in social outcomes are partly related to the lack of access to adequate health care services during pregnancy, post-natal and childhood, particularly among the poorer, rural and indigenous groups.** In the past decade, Bolivia has made significant investments in reducing maternal-child mortality in the poorest groups and increasing access to essential health care. The *Bono Juana Azurduy* (BJA) has proven effective in providing incentives for families to participate in regular health visits and improve babies' weight at birth. Institutional births and prenatal care have risen significantly, from around 60 percent in 2003 to over 70 percent by the end of the decade (UDAPE 2013). Although institutional births are still very far from the LAC average of 93 percent, Bolivia has met the corresponding MDG target (UNICEF 2014). Coverage of births attended by skilled personnel is lower among women belonging to indigenous groups, particularly in rural areas (60 percent vis-à-vis 87 percent among non-indigenous women –[14] and extremely low among families in the bottom quintile (36 percent relative to above 90 for the richest two quintiles)[15]. With an average of 80 coverage of the pentavalent vaccination, Bolivia is off-track towards achieving the 2015 MDG target of 95 percent (which is also the LAC regional average). In 2012, 270 out of 339 municipalities were considered at risk to achieve this target (UDAPE, 2013).

52. **In addition, Bolivia faces challenges in the provision of health services to the economically active population.** The country lags behind other countries in the LAC region in prevention of infectious diseases among adults such as HIV-AIDS, malaria, and tuberculosis, which often affect more the most vulnerable, with limited access to health services to prevent and treat diseases, leading to financial losses. The incidence of tuberculosis continues to be a public health problem with 123 per 100,000 individuals affected (vis-à-vis 29 per 100,000 in the Americas in 2013, and the second largest in the region, after Haiti), with the

[14] World Bank (2014b).

[15] World Bank 2012, based on 2008 Bolivia DHS.

highest incidences among those 55 years or older and 15 to 25 years old[16]. As of 2008, only 42 percent of the population was covered by social security or health insurance.

53. **Access to education presents a similar picture: enrolment in critical initial education is low relative to other countries in the LAC region, and varies significantly across groups.** Early childhood is a critical stage of development that forms the foundation for children's future wellbeing and learning. It has been shown that early interventions can have long lasting impacts on intellectual capacity, personality and social behavior. Programs like *PAN Manitos* in El Alto, and *Kallpa Wawa* in Tacapari, targeted to low-income and indigenous Quechua populations, respectively, are positive examples, but are still very small (Vegas and Santibanez 2009, Araujo, Lopez-Boo and Puyana 2013). Only 7 percent of children aged 3 attend any formal education institution, and those that do are mostly in urban areas and from non-poor families. Less than half of all children aged 4 to 5 attend initial education (compared to more than 75 percent in neighboring countries such as Ecuador, Peru, Chile and Argentina, though above Paraguay), and only 35 percent among the extreme poor do so, vis-à-vis 53 percent among the non-poor. Attendance among indigenous groups is lower than for the non-indigenous – 43 percent for Aymara, 41 percent for Quechuas, and 36 percent for other indigenous, relative to 48 percent among non-indigenous families[17].

Figure 22: Coverage of basic services: education and health

Source: Based on *Encuesta de Hogares,* 2013. a. Age ranges considered were 3 for pre-kinder, 4 to 5 for preschool, 6 to 11 for primary and 12 to 17 for secondary. b. "Institutional birth" is defined as birth attended by a doctor, nurse or assistant nurse or midwife. Note that the average figure from *Encuesta de Hogares* differs from official national estimates. Updated version of World Bank (2014b).

54. **These gaps close at the primary level but appear once again at the secondary level.** Primary enrolment rates stand at 90 percent, which is short of the MDG goal of universality. Net enrolment rate to secondary reaches 76 percent nationally, but among the extreme poor and those in rural areas is 10 percentage points lower. Enrolment among 12 to 17 year olds presents wide variations across municipalities, from 60 to 97 percent.

[16]WHO (2014). Global Health Data Repository.

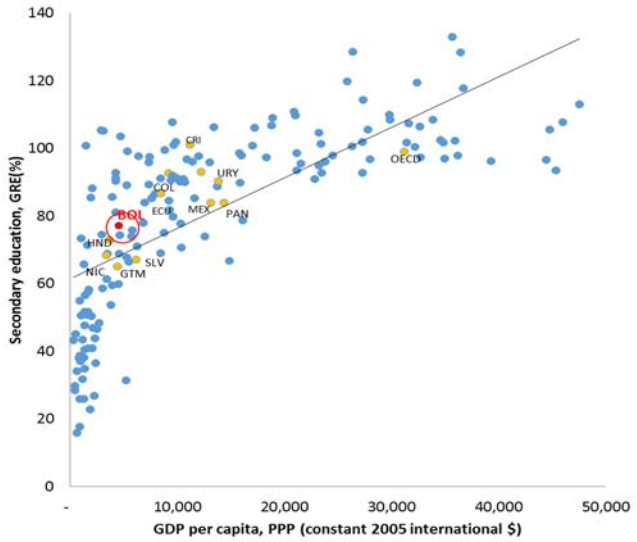
[17] As proxy for belonging to specific indigenous groups, children were classified according to the language spoken at home declared by the head of household. The report follows the convention used by UDAPE for ethnicity, based on language as opposed to self-identification.

55. **The existence of large educational disparities across groups as well as substantial shortcomings in quality could undermine the country's potential.** Attendance to secondary school in Bolivia, at 77 percent, is higher than in comparator countries with a similar level of GDP. Nonetheless, there are still large gaps in attendance across rural and urban areas at secondary level, and across municipalities, and a third of students in grades 5 to 8 are behind for their age (Figure 23)[18] . Bolivian students' learning for each year at school is much lower than other countries in the LAC region, which in turn perform poorly relative to other countries in the world, second only to Sub-Saharan Africa. This, together with the prevailing high return to unskilled activities (and the negative return to secondary), has led to low incentives to remain in school. The situation is similar at the tertiary level, where the quality of education is perceived to be insufficient for obtaining proper employment. According to *Latino Barómetro*, only 22 percent of individuals strongly agree that higher education is a good step for getting a job. This compares, for instance, with a 49 percent response in Paraguay.

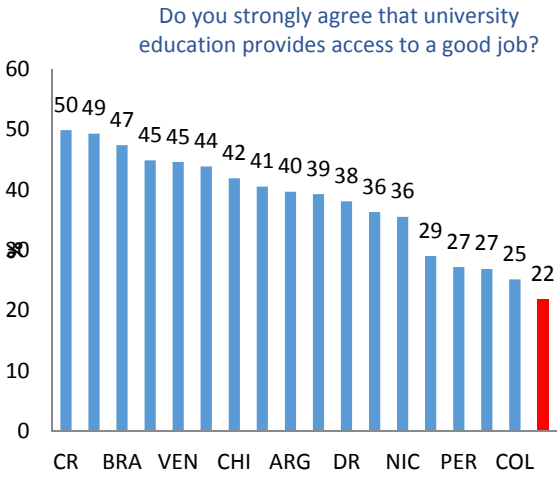
Knowledge gap - learning and quality of education: participation in regular internationally comparable learning assessments for different levels of education, such as TERCE (LLECE-UNESCO) for primary school students or PISA for 15 year old children would provide important data and analytical basis for policy making in education.

Figure 23: Education

a. Secondary education, gross enrollment rate (%)



b. Satisfaction with tertiary education



Source: a. WDI, b. Latino Barometro

56. **Educational outcome indicators show persistent disparities also between men and women, as well as across ethnic groups.** Gender-based differences in literacy and school completion are larger for indigenous groups (particularly among *Aymara*), compared to non-indigenous, though these gaps have been closing for the younger cohorts. Indigenous adult women are 27 and 23 percentage points less likely to complete primary and secondary school, respectively in comparison to non-indigenous men.[19]

[18] UNICEF (2011).

[19] Based on World Bank (2014b), 'Bolivia: Challenges and constraints to gender equality and women's empowerment', June; and Reimão and Taş (2014), 'Education Gaps in Gender among Indigenous and Nonindigenous Groups in Bolivia', unpublished.

57. **Disparities in the accumulation of human capital across population groups are later reflected in the labor market**. The largest number of non-skilled workers belong to the indigenous labor groups. Also, being non-skilled is the more frequent status for indigenous (41 percent for men and 54 for women, vis-à-vis 24 and 27 percent for non-indigenous groups). Two-thirds of the workers in the lower-paid agriculture sector belong to one indigenous group (1 million out of 1.4 million workers) and almost half of all indigenous workers are employed in this sector (Jemio et al 2015). Gender disparities in the labor market are not reflected as much in terms of participation (Bolivia presents one of the highest female participation rates in the LAC region) but rather in the types of the activities in which women are involved as well as in the earnings differentials. Two thirds of women are in conditions of vulnerable employment,[20] which is more than twice the average rate for the LAC region (30.6 percent). Relative to men, women are more represented in commerce and services activities that tend to be highly informal. The gross gender gap in monthly labor income has increased in the last decade: from 0.71 in 2000 to 0.65 in 2008 (World Bank, 2012).[21]

Box 3: Women's access to opportunities is still limited: insights from a perception survey

Despite important progress towards improving gender equality in access to endowments and economic opportunities, some outcomes for Bolivian women continue to be poor, both in absolute terms and in comparison to men with ethnicity conferring cumulative disadvantage. Results of a recent Perception Survey on Women's Exclusion and Discrimination help understand the situation of indigenous and non-indigenous women and their capacity to take advantage of existing services and economic opportunities:[22]

- **Discrimination is felt by a large share of Bolivian women:** there are many different traits that can be the basis for discrimination, often reinforcing each other. One in five interviewed women felt discriminated against as a woman, but this applied more than twice to indigenous than to non-indigenous women.
- **Discrimination and social norms affect women's access to economic opportunities**: while the female labor force participation is relatively high in Bolivia, women– to a much larger extent than men – engage in part-time or vulnerable employment in informality and low-productivity sectors. Social norms, in combination with the level of individual agency, can either help or hinder the women's capacity to take advantage of existing opportunities, especially in the economic sphere. 20 percent of female respondents strongly agree that the man should provide for the family, and more than half agrees that the man should earn more than the woman underlining the persistence of gender stereotypes that depict the man as the principal breadwinner. When looking for a job, 31 percent consider that it is easier for a man to get it than a woman; and 25 percent felt discriminated in the job search. Indigenous women are particularly affected with 27 percent having experienced discrimination compared to 23 percent of non-indigenous women.

[20] The World Bank Development Data Portal (2012) defines vulnerable employment as "unpaid family workers and own-account workers as a percentage of total employment"; and "Own-account workers are workers who, working on their own account or with one or more partners, hold the types of jobs defined as "self-employment jobs" and have not engaged on a continuous basis any employees to work for them. Own account workers are a subcategory of "self-employed"."

[21] Gross gender gap does not control for personal and job characteristics such as occupation, activity of level of education. Calculating the gender wage is sensitive to factors such as the methodology used, underlying data, sample size, etc. There are mixed results from studies that explore the extent to which gender and ethnic wage gaps can be attributed to differences in observable characteristics.

[22] The Perception survey, collected between December 2013 and March 2014, is representative at the national, department and urban/rural levels, and includes a special sample of lowland and highland indigenous communities. It includes a rich set of indicators on violence against women, education, health, labor, participation, trust and discrimination, and can be found at: http://www.coordinadoradelamujer.org.bo/observatorio/index.php/indicadores. It was conducted by a Bolivian NGO, La *Coordinadora de la Mujer*, supported by the World Bank Group and the Spanish international development agency (AECID).

- **Lack of resources is the main reason why women discontinued their studies**: a vast majority of women (92 percent) wishes to study more. 44 percent of female students who discontinued their studies mention that limited financial resources forced them out of school. Other important factors impede girls from attaining higher levels of schooling include labor market, domestic care work and pregnancy.
- **Freeing up women's time could have important positive effects on household productivity**: the need for flexible work hours, limited opportunities in the formal labor market, and the gender wage gap force women to seek economic opportunities in the informal economy, at the cost of labor rights, pensions, and other benefits. Starting their own firm is a way to generate income when the labor market access and options are limited, but female entrepreneurs tend to be concentrated in less productive, smaller sized firms.[23] The 2007 Bolivian Micro-Enterprises Survey, indicates that 59.5 percent of female firm owners perceive child and family care responsibilities to be an obstacle to firm operation and growth (World Bank, 2010). If women would spend less time on unpaid household and care work, 43 percent would dedicate more time to paid work, and 26 percent would study more. Over half of indigenous women express that they would spend freed up time in paid work.

Table 3: Access to basic infrastructure services in 2001 and 2012

	Electricity		Drinking water		Improved sanitation	
	2001	2012	2001	2012	2001	2012
Nacional	0.64	0.82	0.73	0.81	0.44	0.53
Area						
Urban	0.89	0.96	0.90	0.92	0.60	0.70
Rural	0.25	0.57	0.46	0.59	0.18	0.23
Municipalities by poverty rates						
Low (< 25)	0.92	0.91	0.91	0.88	0.68	0.65
hinter mediate (>=25 & <50)	0.73	0.65	0.80	0.64	0.47	0.28
High (>=50)	0.27	0.54	0.48	0.59	0.17	0.18
Municipalities by population size						
Small (< 10,000 inhabitants)	0.28	0.61	0.50	0.61	0.16	0.22
Medium (>=10,000 & <50,000 inhabitants)	0.40	0.68	0.58	0.69	0.24	0.31
Large (>=50,000 inhabitants)	0.89	0.94	0.88	0.90	0.63	0.72

Source: 2001 and 2012 CNPV, INE. "Drinking water" includes piped, public tap, protected dug well, "Improved sanitation" includes piped sewer system and septic tank for urban areas and piped sewer system, septic tank and half of cesspool for rural areas.

58. **Finally, there are also large variations in access to basic infrastructure across the country, and again, the deficiencies are more prevalent in rural areas and in those areas that are predominantly indigenous.** Significant progress has been made in access to electricity or drinking water for most areas of the country – four out of five Bolivians now have access to electricity and drinking water (Table 3: Access to basic infrastructure services in 2001 and 2012). As mentioned earlier, this expansion was driven in part by migration to urban areas that have a higher coverage of basic services. But, it also reflects significant improvements in the coverage rates in both rural and urban areas, particularly for electricity and access to drinking water. Despite these improvements, more than half of the population still does not have access to improved sanitation, making it difficult for Bolivia to achieve the MDG target of 64 percent coverage by 2015, and most importantly, to reduce infant mortality and malnutrition.[24]

59. **Rural areas tend to have around half of the service coverage of urban areas, and poorer and smaller municipalities tend to lag behind others** (Figure 24). In fact, while the provision of sanitation has improved in the last twenty years (from 0.6 to 0.7 percent and 0.18 to 0.23 percent in urban and rural areas,

[23] The differences in productivity between female-owned and male-owned businesses are mainly a function of the business size and sector of operation, but a range of factors play a role: the differences in levels of education, access to and use of productive resources, networks and markets and access to training and business development services (World Bank, 2011; World Bank, 2010).
[24] Spears, D. (2013).

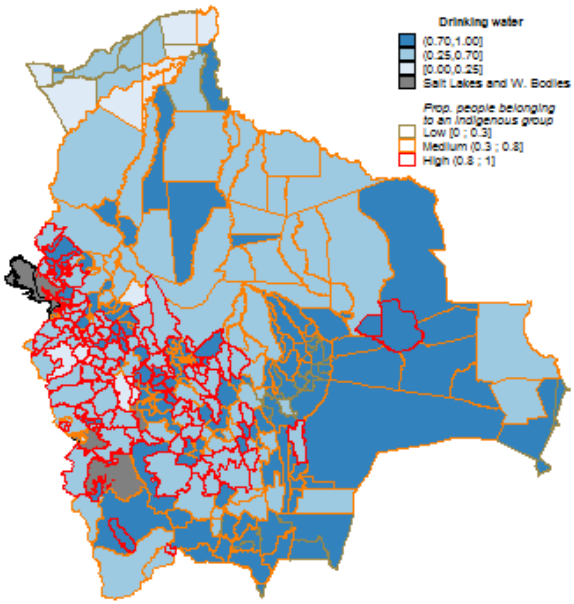
respectively), the gap between urban and rural areas is larger at present than at the beginning of the 2000s (0.42 and 0.47 percent in 2001 and 2012, respectively). The coverage of water and proper sanitation services by municipality, juxtaposed with areas with a high proportion of indigenous population (red border) is presented in Figure 24. To a large extent, this reflects the fact that indigenous communities tend to live in rural and highland areas where delivering basic infrastructure is more challenging.

3.2 Strong but unbalanced economic performance

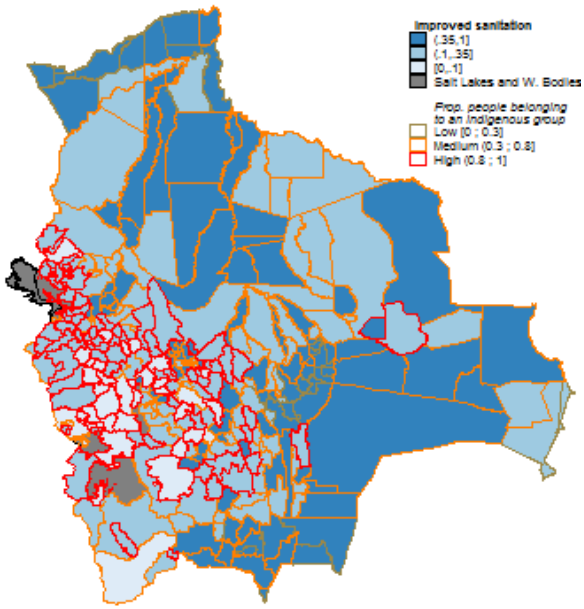
60. **Bolivia can look back on a strong economic performance over the past decade, both in terms of growth and macroeconomic and fiscal stabilization**. Growing commodity exports and prudent macroeconomic management helped turn around the macroeconomic imbalances and low growth that were undermining Bolivia's economic and social stability in the early 2000s. The country was able to take advantage of this exceptional external context to reach high rates of growth and accumulate sizable fiscal and external buffers.

Figure 24: Coverage of basic services by concentration of indigenous population

a. Drinking water



b. Improved sanitation



Source: Based on 2012 CNPV. "Drinking water" includes piped, public tap, and protected dug well, "Improved sanitation" includes piped sewer system and septic tank for urban areas, and piped sewer system, septic tank and half of cesspool for rural areas. Indigenous group is defined according to the self-identification as belonging to a *"Nación o Pueblo Indígena Originario Campesino o Afro Boliviano" (NyPIOC-AF)*

61. **This section analyzes in-depth the growth dynamics and highlights imbalances in the growth model that could become challenges to sustaining inclusive growth in an external economic context that has now turned less favorable**. This is done by examining in more detail the growth dynamics of the past years, showing how the Bolivian economy as a whole benefited from the positive external context and embarked on a path of high and inclusive growth, how this was used to improve macroeconomic and fiscal balances and how the growth and macroeconomic dynamics led to changes in labor markets and relative prices favorable to the poor. The analysis includes a comparison with other countries that faced a similar positive terms of trade shock, and Bolivia's convergence (or lack of) with other regions. The findings show that the

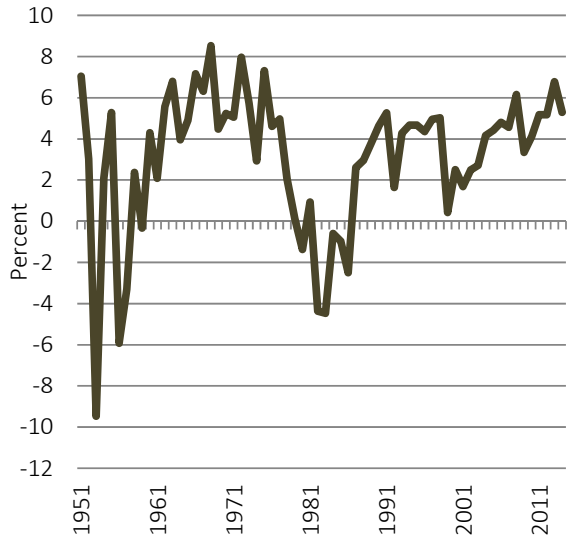
growth dynamics were particularly pronounced in non-tradable sectors that rely on low-skill jobs, were based on limited productivity gains, were highly vulnerable to shocks to the extractive sectors, and were constrained by sluggish non-extractive entrepreneurship. An evaluation of the agriculture and services sectors reveals that there is large unexploited potential for these sectors to become new sources of growth. All of this points to a need for rebalancing the current growth model, particularly given the changed external context.

Solid growth performance and effective macroeconomic management

62. **Bolivia maintained robust economic growth over the last decade.** On average, Bolivia's GDP grew 4.9 percent annually between 2002 and 2013, and its growth has been more stable than the LAC region's performance. For instance, in 2009 Bolivia's GDP grew 3.9 percent while several countries in the LAC region registered negative rates. Similarly, while many LAC countries experienced slowing growth in recent years, Bolivia's growth reached a record 6.8 percent in 2008 and remained above 5 percent in 2014.

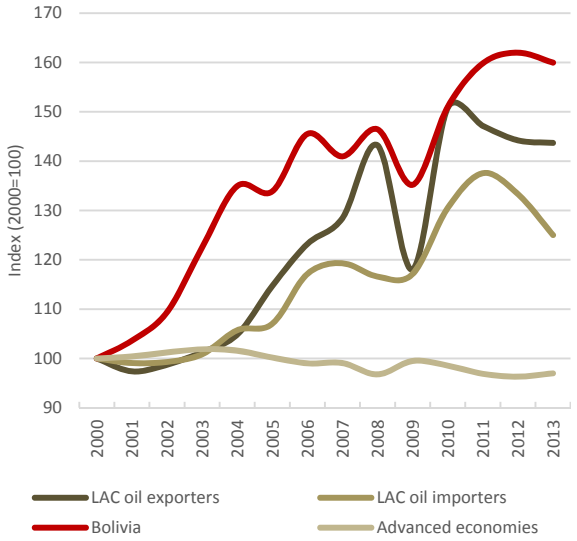
63. **This solid growth performance also stands out in relation to the poor and volatile performance of previous decades, while a look back in history provides some reasons for caution in terms of long-term growth prospects.** The past years' high growth are a significant improvement when compared to the disappointing and erratic performance in the second half of the 20th century when growth averaged only 2.7 percent per annum as a result of alternating periods of relatively high growth with strong recessions (Figure 25). There have been similar growth spurts in the past, though. Bolivia traversed a period of high growth during the 1970s, also in a context of high commodity prices, which was then followed by the debt crisis and deep recession in the first half of the 1980s.

Figure 25: Bolivia' GDP growth 1950-2014



Source: INE

Figure 26: Terms of trade



Source: INE

64. **The recent strong growth performance is linked to an exceptionally favorable external environment, in particular high commodity prices, but also to significant levels of remittances and external debt relief.** Bolivia has benefitted – more than most countries - from terms of trade gains that substantially increased foreign currency inflows and fiscal revenues (Figure 26). The volume of gas exports increased significantly as gas production and exports were fostered by massive investments in exploration in previous decades, and by continued exploitation investments in recent years. High mineral prices encouraged launching operations of the giant, capital-intensive San Cristobal project, which began exploitation in 2007. Bolivia

also benefited from a sharp increase in remittances and a sizable external debt relief. Remittances increased from under US$100 million in 2003 to more than US$1 billion in 2008 and remained around that level despite economic downturns in Spain, United States and Argentina - the main sources of remittances. In the context of the Multilateral Debt Relief Initiative (MDRI), the IMF, World Bank, and IADB forgave about US$3 billion in Bolivia's public debt between 2006 and 2007.

65. **Besides boosting growth, the favorable external context and a prudent macroeconomic management allowed Bolivia to accumulate important internal and external buffers.** Bolivia has transitioned from an economy with persistent problems to a robust economy with ample buffers (Table 4). The external environment and prudent macroeconomic policies allowed Bolivia to reverse its imbalances: the current account deficit turned into a surplus starting in 2003, a high fiscal deficit reverted its trend also starting in 2003 and turned into a surplus since 2006, and gross public debt fell from about 94 percent of GDP in 2003 to around 37 percent in 2013. Public sector deposits increased from about 8 percent of GDP in 2002 to 27 percent in 2013; international reserves increased from about US$1 billion (10 percent of GDP) in 2002 to more than US$14 billion (46 percent of GDP) in 2013; non-performing loans in the banking sector decreased from 30 percent of total loans in 2002 to only 1.5 percent in 2013. Inflation has also remained under control despite periodic upsurges resulting from local climatic events and increases in international food prices.

Table 4: Key economic indicators

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
GDP growth (%)	2.5	2.7	4.2	4.4	4.8	4.6	6.1	3.4	4.1	5.2	5.2	6.8	5.3
Inflation rate (%)	2.4	3.9	4.6	4.9	4.9	11.7	11.8	0.3	7.2	6.9	4.5	6.5	5.2
Nominal exchange rate (Bs/$)	7.5	7.8	8.1	8.0	8.0	7.6	7.0	7.0	7.0	6.9	6.9	6.9	6.9
Total investment (% of GDP)	15.6	12.7	11.7	13.0	14.3	16.1	17.2	16.5	16.6	19.0	18.2	19.1	20.9
Public investment (% of GDP)	5.5	5.2	6.6	6.9	8.1	9.4	9.8	9.5	9.5	10.5	10.4	11.3	12.7
Private investment (% of GDP)	10.1	7.5	5.1	6.1	6.2	6.7	7.5	7.0	7.1	8.4	7.8	7.8	8.2
Fiscal balance (% of GDP)	-8.8	-7.9	-5.5	-2.2	4.5	2.6	4.0	0.4	1.7	0.8	1.8	0.7	-3.2
Revenues (% of GDP)	24.6	24.1	26.8	30.9	34.5	34.4	38.9	35.9	33.2	36.2	37.8	39.2	37.3
Hydrocarbon revenues	2.5	2.8	3.6	6.7	10.5	9.4	13.4	11.3	10.2	11.5	13.0	13.5	12.4
Expenditures	33.4	31.9	32.3	33.1	30.0	31.8	34.9	35.4	31.5	35.4	36.1	38.5	40.6
Net public debt (% of GDP)	81.2	89.7	83.0	74.5	42.7	27.9	21.0	23.3	18.5	14.6	11.2	10.3	13.4
Gross public debt*	88.8	97.7	91.6	84.0	56.2	42.0	38.3	41.0	39.7	36.6	36.6	37.0	37.9
Public deposits at Central Bank	7.6	8.1	8.6	9.5	13.5	14.1	17.3	17.7	21.2	22.1	25.4	26.7	24.5
Current account (% of GDP)	-4.5	1.1	3.8	5.9	11.3	11.5	11.9	4.3	3.9	0.3	7.3	3.8	0.0
International reserves (% of GDP)	10.8	12.1	12.8	18.0	27.7	40.5	46.3	49.5	49.5	50.2	51.5	47.2	46.3
Banks loans (% of GDP)**	30.4	27.9	24.5	24.9	22.5	23.1	21.4	22.9	26.4	27.3	29.3	31.4	35.5
Non-performing loans (%)**	19.6	18.9	15.8	12.4	9.3	5.9	4.5	3.7	2.3	1.7	1.5	1.5	1.5
Dollarization (% of deposits)**	92.7	91.1	87.1	81.9	74.6	63.4	53.2	52.3	43.3	36	28.1	22.8	18.3
M3' growth (%)	-2.4	5.1	0.9	13.6	18.1	28.9	19.2	20.4	12.5	17.7	20.2	16.2	15.6

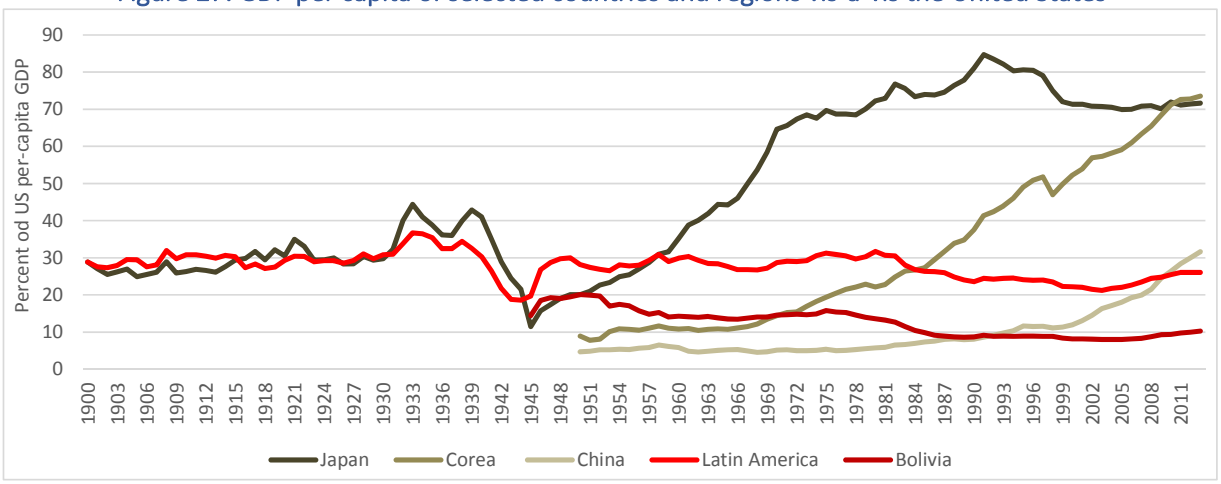
Note: (*) Public debt includes total external debt, municipal internal debt, treasury external debt with private sector, Central Bank credit to public sector and Treasure debt with other financial public institutions. (**) Since 2014, it only include multiple banks.
Source: National Statistics Institute, Central Bank of Bolivia, MEFP, Financial Institution Supervision Authority and staff estimates.

66. **In an international context, Bolivia's performance compares favorably, though not outstandingly, with relevant peers.** An analysis conducted for the SCD compares Bolivia's macroeconomic performance with relevant peers selected for their similarity in per capita GDP levels in 2002 (at the outset of the last growth cycle) and terms of trade gains between 2002 and 2013. This analysis is presented in detail in Annex 1. These comparator countries are Yemen, Peru, Egypt, and landlocked Mongolia, Uzbekistan, and Zambia. Bolivia - as most countries within this group - capitalized on the conducive external context to boost growth and strengthen macroeconomic balances while avoiding the political conflicts that prevented Yemen and Egypt from following the same path. Bolivia also accumulated stronger buffers than Zambia and Mongolia that presented sizable external and fiscal deficits, and behaved in this sense closer to Peru and Uzbekistan.

Yet Bolivia's growth rates lagged behind Mongolia, Uzbekistan, Zambia, and Peru, where exports and investment levels were higher.

67. **However, this strong economic performance allowed only for a modest convergence to the United States in per capita GDP terms.** Bolivia's GDP per-capita increased from 8 percent of the U.S. GDP per-capita in the early 2000s to about 10 percent in recent years. This is in line with the LAC region's performance as a whole, which saw an increase in GDP per-capita relative to the U.S. from 21 percent in early 2000s to 26 in recent years. Nevertheless, Bolivia's improvement is relatively small, especially considering that its GDP per-capita relative to the U.S. had decreased from 20 percent to 10 percent in the second half of the past century. More importantly, however, Bolivia and the LAC region's growth performance pale against the achievements of other countries like Japan, Korea and China in closing the income gap with the U.S. (Figure 27)

Figure 27: GDP per capita of selected countries and regions vis-à-vis the United States



Source: Madison project and WDI

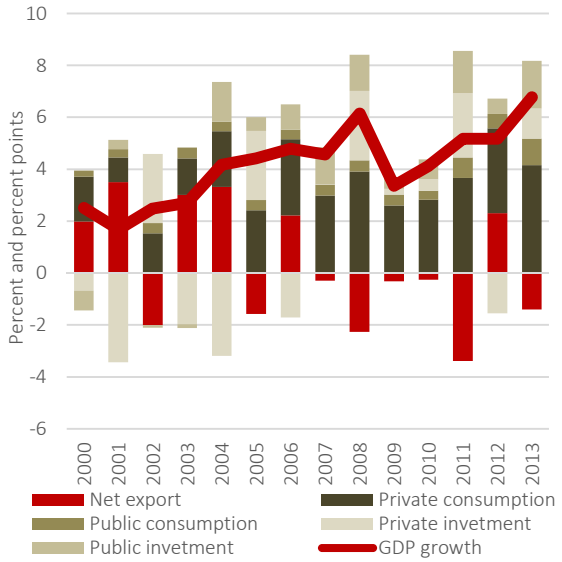
Commodity boom spurs demand to boost growth

68. **On the demand side, public investments and exports were the main sources of growth.** Backed by higher commodity-related revenues, public investments grew at an average annual rate of 12.9 percent between 2003 and 2013, reflecting the state-led development strategy followed since 2006. Led by natural gas and mining, exports grew at an average of 6.8 percent between 2003 and 2013 becoming the second driver of growth on the demand side, behind public investment (Figure 28). This positive trend was partially offset by imports, which grew 6.0 percent on average between 2003 and 2013.

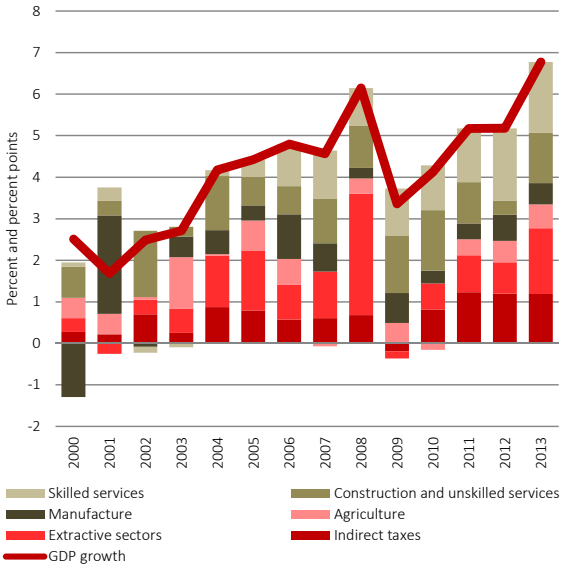
69. **On the supply side, growth was propelled by a large expansion of extractive activities.** Between 2002 and 2013, extractive industries accounted for 1.1 percentage points of the 4.7 percent average annual growth. Gas production increased significantly, pushed by a large and growing demand from the principal export markets, Brazil and Argentina. In parallel, high mineral prices triggered a rapid expansion of Bolivian mining cooperatives, mostly engaged in alluvial gold mining and exploitation of old mine tailings. High mineral prices also encouraged the launching of operations of the giant San Cristobal project, an ambitious mining venture that saw investments in exploration intensify in the early 2000s, when prices became more favorable, and production coming on stream in 2007. Strong aggregated demand spurred economic activities in other sectors, including construction, services (including finance, transport, and communications), and also manufacturing. Agriculture in turn registered a poor performance due to structural constraints that prevented production from taking advantage of higher food prices.

Figure 28: Growth decomposition

Expenditure contribution to growth, 2003–2013



Main productive sectors' contribution to growth, 2003–2013



Source: INE

Growth model faces limitations as productivity and private investment remain low

70. **The characteristics of the growth cycle accelerated job creation and wage increases in the non-tradable, low-skill, tertiary sector, but its dynamics could face natural limits going forward.** From 2000 to 2012, labor creation and wage increases were concentrated in non-tradable sectors, such as services and construction, where jobs are typically of lower quality, most frequently in the informal sector, and with little improvement over time. In contrast, wage levels in jobs that require higher education or are in traditionally highly paid fields stagnated.[25] These results are behind the strong reduction in poverty and inequality, described earlier. Since factors associated with productivity, such as workers' level of education, explain only a small portion of the recent wage changes, a continued generation of job and income opportunities cannot be taken for granted. In effect, there are limits to increases in wages in non-tradable services relative to wages in the rest of the economy, in the absence of commensurate relative changes in productivity between these sectors.

71. **Low productivity growth linked to high informality constitutes a potential limitation to Bolivia's strong growth performance**. Between 2003 and 2013, the country's productivity growth was close to the modest LAC regional median, and far below top performers such as Uruguay, Panama, the Dominican Republic, and Peru (Figure 29).[26] The lack of increases in productivity is particularly serious in non-extractive sectors. For

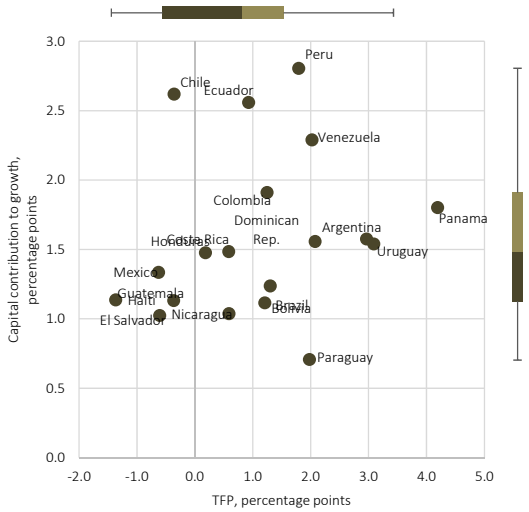
[25] Canavire-Bacarreza and Fernando Rios-Avila (2015). Hernani-Limarino and Eid (2014) also find declining returns to education to explain much of the fall in inequality. This evidence is consistent with the findings of the World Bank's Sources of Growth Study that returns to secondary education relative to those of primary education have fallen close to zero. Additional analytics conducted for the SCD using the 2012 STEP Skills household survey (World Bank), which measures cognitive and non-cognitive skills among workers, indicates that there are potential skill mismatches between labor demand and supply as workers from more skilled occupations and technical career are much more likely to think that they are overqualified for the job.

[26] These trends are worrisome considering that, in the last decade, TFP growth is probably overestimated in resource-based economies where growth was boosted by the external context. In the long term, Bolivia's TFP growth approaches zero since 1950.

instance, in agriculture, soybean yields (2.2 ton/ha) are lower than in Brazil (3.2), Paraguay (2.9), and Argentina (2.6), and soybeans are Bolivia's most important non-traditional export. Similarly, Bolivia has been unable to reduce labor informality – which concentrates low productivity activities – as more than half of urban employment is informal.

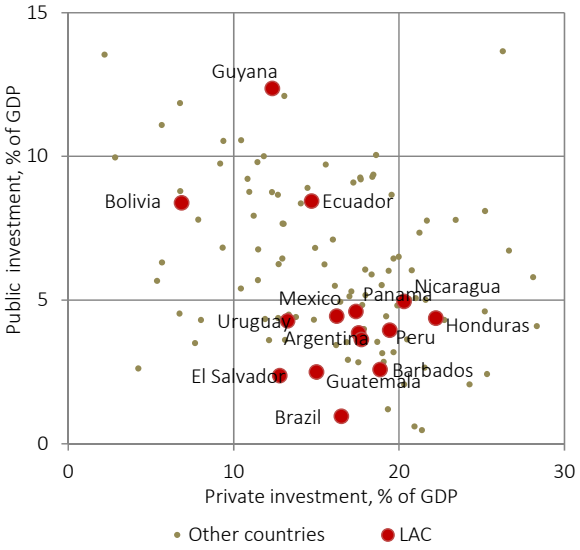
72. **Disappointing advances on productivity are linked to the low level of private investment.** Despite the strong level of public investment related to the existing development model, total investment is low as private investment is among the lowest in the LAC region (Figure 30). As a result, the contribution of capital accumulation to growth is well below the regional median. Moreover, the bulk of (foreign) private investment is allocated to extractive sectors. After discounting foreign investment, the remaining private investment amounts to barely two percent of GDP in 2013.

Figure 29: Capital and Productivity Contribution to Growth in LAC, 2003–2013



Source: Own calculation

Figure 30: Average Public and Private Investment in LAC, 2003–2012

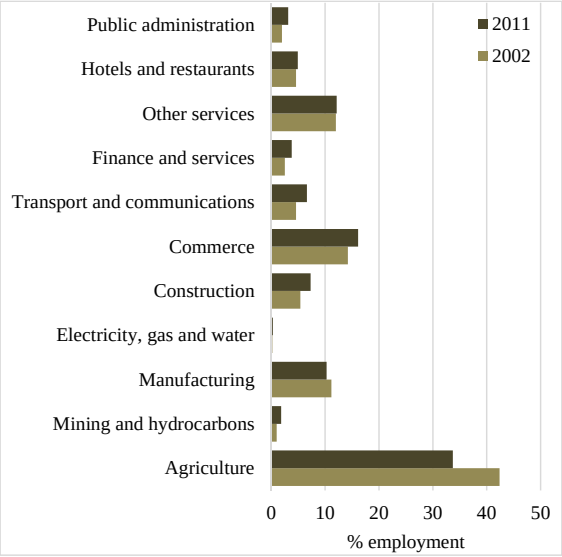


Source: WDI

73. **The current growth pattern allowed for only a limited increase in labor productivity.** The small productivity gains observed in the last decade resulted mainly from labor reallocation as employment shifted from agriculture to services and other non-tradable activities, which absorbed self-employed and low-skilled workers in slightly more productive tasks (Figure 31). Within sectors, labor productivity has actually declined, except for manufacturing and agriculture (Figure 32). In 2011, Bolivia's labor productivity in services recorded the lowest level and the second lowest growth rate in the LAC regions (

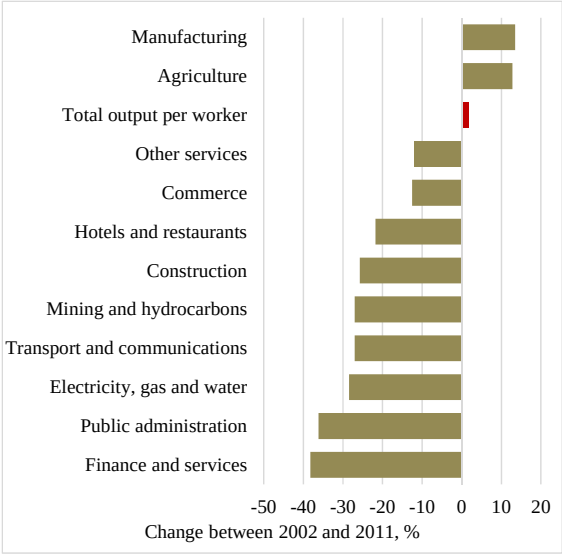
74. Figure 33). These trends are particularly worrisome considering that the poorest population tends to be employed in sectors with very low productivity such as agriculture, wholesale and retail and construction. Boosting productivity in most unskilled labor-intensive sectors, such as traditional agriculture and unskilled services would have more potential for poverty reduction, despite its modest impact on aggregate growth.

Figure 31: Changes in employment structure



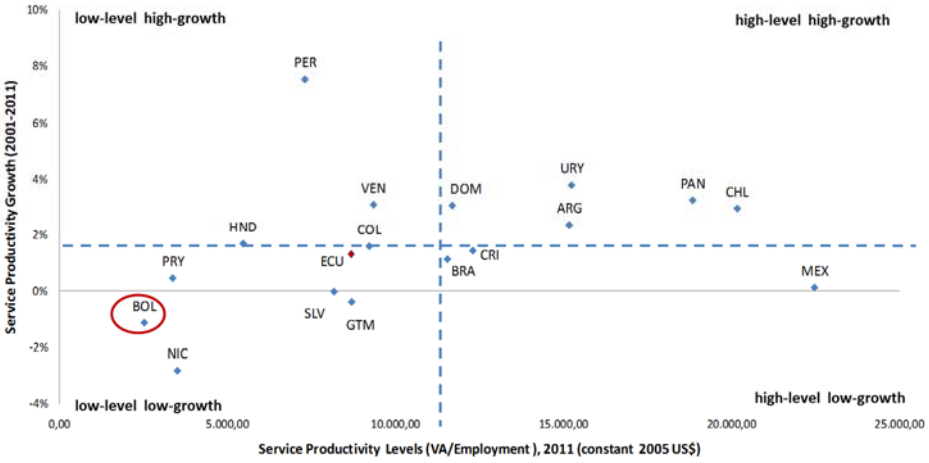
Source*: Encuesta de Hogares 2002 and 2011*

Figure 32: Changes in labor productivity, 2002-2011



Source*:* National Accounts. INE

Figure 33: Levels and growth in labor productivity in the service sector (2002-2011)



Source: WDI 2014

75. **Looking ahead, the current model's lack of demand for higher skilled jobs creates the risk that future labor demand will may be unable to absorb the increasing supply of skilled labor**. The **composition** of the labor force will likely look increasingly different in the future, due to the demographic dividend, rapid urbanization, and the rapid expansion of education. A much larger share of educated people will look for work, hoping to access skilled jobs, mostly in urban areas. In order to sustain income gains and demand for higher quality jobs, there is a need to develop tradable sectors rather than capital-intensive extractive sectors. This is critical to reach higher productivity and bolster higher skill labor creation.

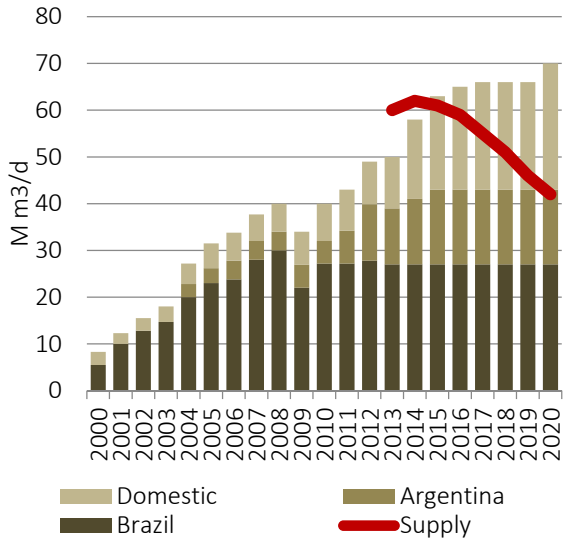
Potential shortcomings in production capacity in extractive sectors as risk to sustaining growth

76. **The strong dependence of Bolivia's economy on natural resource extraction makes growth prospects vulnerable to potential production capacity bottlenecks emerging in the coming years - notably in the gas sector.** Low levels of investment in exploration in the last years have eroded reserves, as exploitation has increased while only limited new production capacity has been added. Even if new large-scale exploration activities were to begin immediately, long maturity cycles would mean that production gaps might still emerge in the medium term, both for hydrocarbon production and mining. This constitutes a significant risk to the current growth model as gas production and exports are critical for external and fiscal balances while mining exports substantially affect the current account and labor and income opportunities for the poor.

77. **Gas production could reach a plateau in the next few years due to lack of exploration, while demand is expected to continue growing.** As a result of limited investments in exploration, the reserves-to-production ratio has decreased from 21 years in 2009 to only 12 in 2012 (Figure 34). Bolivia could start facing constraints in meeting increasing domestic and external demands as early as 2017. The current contract with Argentina has fixed a gradually increasing demand through 2026 while Brazil's economic size implies an important energy demand in the long term -- beyond the current contract that lapses in 2019. If gas prices remain at current low levels this could lead to reducing further the size of proven reserves, as some could become economically unviable. At current estimates, and in the absence of new proven reserves, gas production could start declining in 2016 while demand is expected to continue expanding. This could result in a need for substantial fuel imports to meet domestic demand by 2020, or in supply limitations.[27] Inability to meet external demand could lead to losing market shares to alternative sources that are being developed in the region: Brazil's hydrocarbon and hydroelectric projects, growing shale gas exploitation in Argentina, and gas to liquid (GTL) plants.

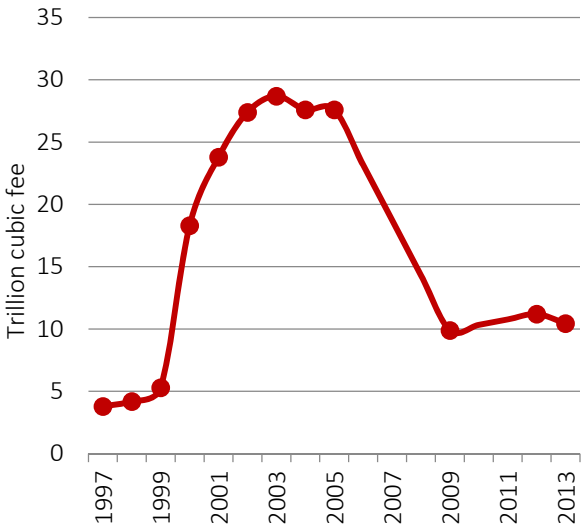
[27] Up to September 2014, YPFB reported a total gas production of around 60 Mio cubic meters (MMCM) per day (p/d) in average. Exports to Brazil averaged around 33 MMCM p/d and to Argentina 16.2 MMCM p/d.. The rest is channeled to the domestic market. However, the current contract with Argentina stipulates a progressive increase until reaching 27.7 MMCM p/d by 2026. If production stagnates in the next few years, Bolivia will have to restrain gas selling to one of its clients. According to YPFB, priorities for gas distribution are already defined as follows: 1) the domestic market must be fully supplied; 2) the Brazilian demand must be met, in accordance with a Gas Supply Agreement with PETROBRAS; 3) the Argentine demand must be satisfied, in accordance with a Gas Supply Agreement with ENARSA; and 4) any other market that may be secured by Bolivia.

Figure 34: Gas demand real and projected and supply capacity (with current reserves)



Source: YPFB, Ministry of Hydrocarbon and Energy and Staff estimates

Figure 35: Proven natural gas reserves in Bolivia

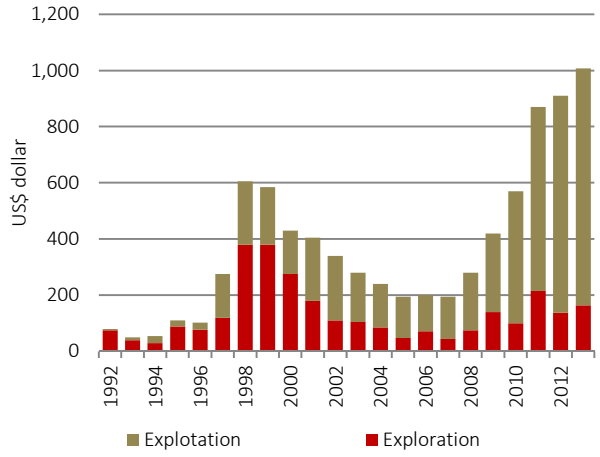


Source: YPFB

78. **Supply bottlenecks could also jeopardize the Government's ambitious plans for industrial processing of hydrocarbons and other energy-related projects.** Energy independence is a key strategic objective of the Government and an aggressive expansion plan has been adopted in the energy sector, including the industrialization of hydrocarbons. There are currently two thermoelectric plants under construction for an estimated capacity of over 200Mw (roughly 20 percent of present total capacity). Half dozen other industrialization investments have been proposed, including an ammonia and urea plant (requiring an investment of US$844 million) and an ethylene and polyethylene plant (between US$1.7 and US$2.1 billion). The success of these undertakings critically depends on a growing domestic supply of natural gas.

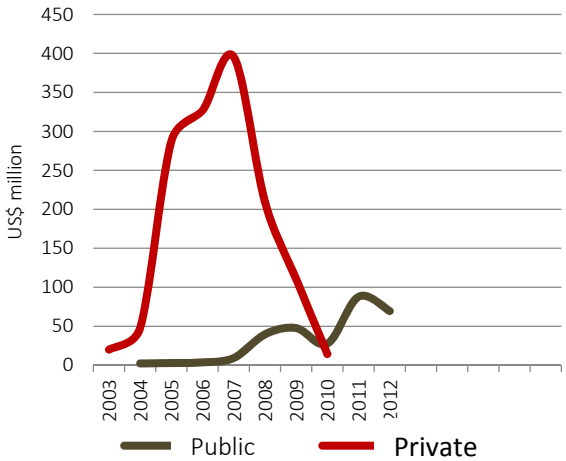
79. **A similar trend is observed in mining, where investment has focused on upgrading or maintaining existing operations, while exploration has practically come to a halt**. Unlike other mining countries where investment and production responded dramatically to the price boom, Bolivia's output increase was driven more by price than quantity increases. Investments in the sector fell from US$404 million in 2007 - a peak explained by the giant San Cristobal project, to an average of only US$67 million from 2010 to 2012 as modest increases in public investment were unable to offset a sharp reduction in private investment. Cumulative mining investment between 2003 and 2011 (US$1.5 billion) is very low when compared to other mining countries such as Chile (US$29 billion), Argentina (US$10 billion), Peru (US$8 billion), and Zambia (US$3 billion). Without measures to promote large-scale investment projects, the mining sector's output could decrease by as much as 30 percent in the next decade. In this scenario, cooperatives and small-scale mining, which have limited investment capacity, would dominate the mining sector – with the possible exception of lithium. This would mean lower efficiency, lower technological innovation, and a declining contribution of mining to the economy.

Figure 36: Exploration and exploitation investment in the hydrocarbon sector



Source: YPFB

Figure 37: Investment in mining in Bolivia



Source: Ministry of Planning (Vice-ministry of Public Investment and External Financing) and Ministry of Mining and Metallurgy.

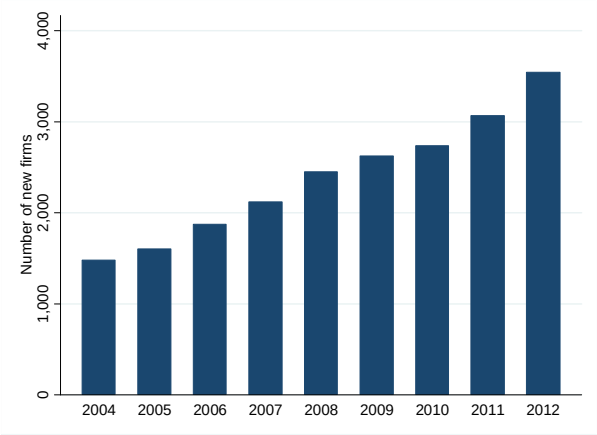
The firm level: many entrepreneurs, high informality, slow growth and low productivity

80. **Analytical findings indicate that constraints to growth and productivity at the level of individual firms hampers prospects for a more balanced growth path with higher productivity and private investment.** An analysis based partially on firm-level data conducted for the SCD finds that limited growth and low productivity of firms are the main challenges that Bolivia's private sector faces today. There are indications of factors that lead to this, such as limited market competition and efficiency that results in an imbalanced structure of the enterprise sector that is dominated by many small firms operating to a large extent in informality.

Limitations to post-entry growth rather than entry appear to be holding back private investment

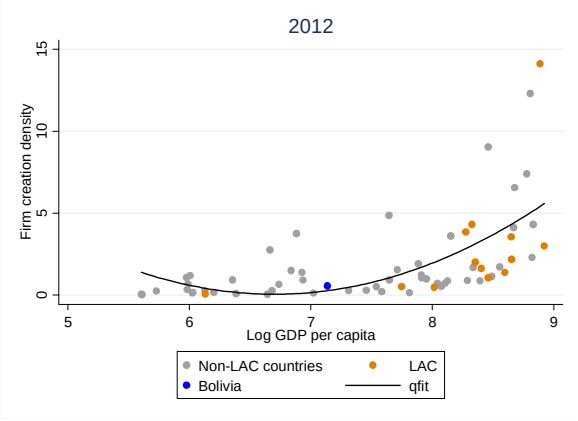
81. **According to the pattern of firm creation, entry does not seem to be the main problem for private investment**. Between 2004 and 2012, there has been a sustained increase in the number of newly registered limited liability formal firms, leading to a doubling in the number of new firms (Figure 38). Conditional to GDP per capita and population, the rate of entry is in line with what would be expected for Bolivia's level of development. Since this only takes into account formal businesses, and informal entry is assumed to be even easier, Bolivia has a high rate of overall business creation.

Figure 38: Number of new limited liability firms



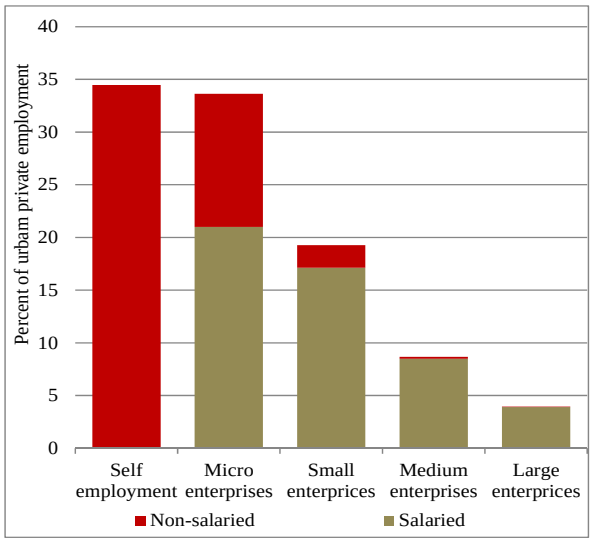
Source: WB Entrepreneurship database (Klapper and Love 2011). The data refers to the number of newly registered limited liability companies. Data for Bolivia from *Fundempresa*.

Figure 39: Entry rate and GDP per capita



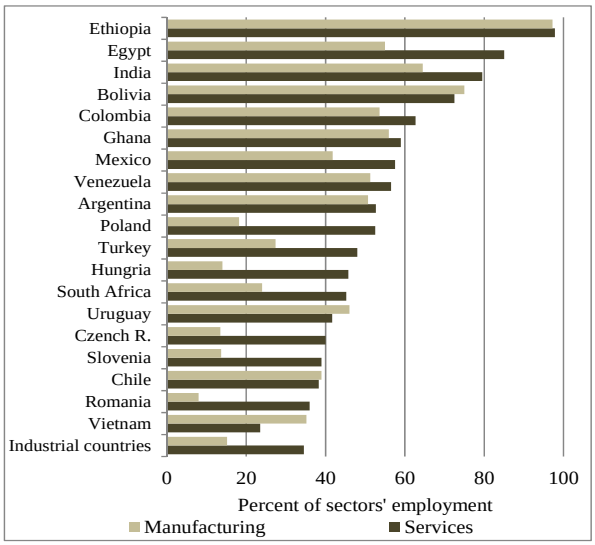
Source: Staff estimates using WDI and WB Entrepreneurship database. Firm creation density is the number of new firms per 1,000 working age people.

Figure 40: Distribution of private urban employment by firm size



Source: Household survey, 2012. Note: Salaried includes workers, employees, and business people who receive salaries. Non-salaried includes self-employees, family workers, unpaid enterpreneurs and production cooperatives.

Figure 41: Manufacturing enterprises with fewer than ten workers in selected countries

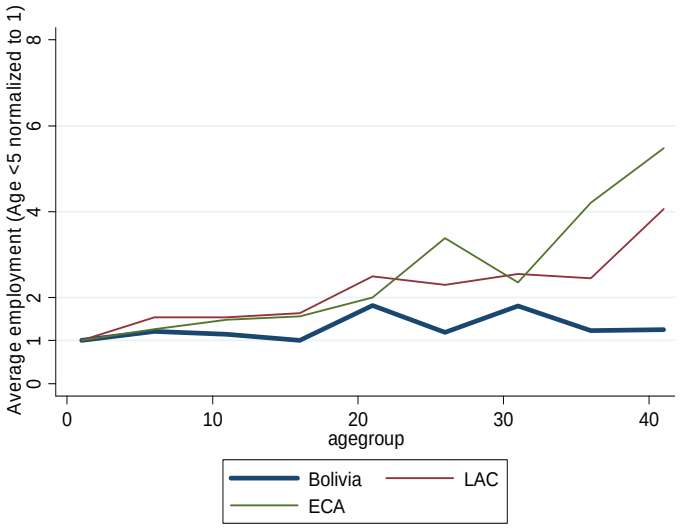


Source: World Bank, 2012

82. **However, most existing firms in Bolivia are of micro or small size.** Using household surveys and discounting for public sector employment, self-employment accounts for one-third of total urban employment, micro enterprises (2-4 employees) for another third, small firms (5-19 employees) absorb one-fourth, medium sized firms (20-99 employees) account for less than one-tenth and large firms generate 4 percent of total employment. Hence, almost three quarters of paid employees work in micro and small enterprises. Almost 80 percent of registered manufacturing and service establishments in Bolivia have less than 10 workers (World Bank 2012), one of the highest shares in the world. This value may be underestimated as firm-level surveys rarely cover informal firms, where businesses are even smaller on average.

83. **The presence of many small firms is linked to limited growth after entry**. Figure 42 plots the size-age profile of firms using the World Bank Enterprise Survey data. It shows that firms in Bolivia barely grow even decades after their creation. Average employment by age is well below the LAC regional average, which itself is behind other regions such as Eastern Europe and Central Asia.

Figure 42: Firm average employment by age group



Source: Staff estimates using Enterprise Survey, 2006 and 2010. Employment includes full time permanent employees, extreme values (at the country-year level) are dropped

Indications of limited competition in the Bolivian economy

84. **Moreover, productive firms do not appear to expand faster.** In the absence of detailed firm-level data on inputs, fixed capital, and outputs, it is not possible to analyze productivity at the firm level. However, limited data from the Enterprise Surveys show that past labor productivity (measured by lagged sales per worker) is not associated with higher growth (measured by the 3-year employment growth rate). In other words, other factors besides productivity are affecting the firms' capacity to grow.

85. **The lack of correlation between productivity and growth at the firm level and large productivity dispersion suggests potential problems with market competition and efficiency.** Table 5 presents the ratios of average labor productivity (sales per employee) of formal firms in the top and bottom productivity quartiles for three aggregate sectors in Bolivia in 2006 and 2010. Bolivian firms in the top productivity quartile are up to 50 times more productive than firms at the bottom quartile. When compared to Chile, there is much more dispersion of productivity among Bolivian firms across sectors. In a competitive environment, more productive firms would grow and gain greater market share, but this finding suggests that Bolivian firms may be facing limited competition.

Potential for productivity gains through enhancing the conditions for innovation

86. **Large productivity gaps at the firm level suggest potential for aggregate productivity gains.** When compared to Chilean firms (as a proxy for the international productivity frontier), there is evidence of substantial labor productivity gaps at all levels of the productivity distribution among Bolivian firms.[28] Closing such productivity gaps with the "international" frontier could generate substantial productivity

[28] Kapp and Sanchez (2012) find a similar pattern for TFP for manufacturing using 2006 data only. More specifically, they find that Bolivian firms consistently appear at the bottom of the TFP distribution among a group of LAC countries. Moreover, the TFP gap between Bolivia and other LAC countries is present at all levels of the distribution and the best Bolivian companies are far below the best performing countries in the LAC region. When labor productivity is used, productivity of small Bolivian firms is entirely dominated by that of small firms in Chile or Argentina, suggesting the importance of increasing labor productivity among SMEs.

gains within the economy.[29] Recent research suggests that there is potential to improve aggregate productivity by providing access to information and investing in skill and capability upgrading at the firm level. While there is limited data on innovation for Bolivia, empirical evidence from Latin America has found that the rate of catch up to international technical frontiers increases with innovation efforts at the firm level (Brown et al. 2014). Broadly-defined innovation, including improvements in organization or management practices, have also been found to be relevant for increasing productivity, even in micro and small firms.[30]

87. **Bolivia's rate of innovation, as measured by the number of registered patents, is low.** Although low, Bolivia's research and development (R&D) expenditure (0.2 percent of GDP) is close to the median of both countries in the LAC region and the LMIs. However, Bolivia might be falling short in terms of R&D outcomes. In Latin America, Bolivia ranks the second lowest, above Haiti, in the number of patents per capita granted by the U.S. Patents and Trademarks Office. Lederman et al. (2014) shows that the number of patents per capita in Bolivia also falls below what would be expected given its income level and export relationship with the U.S. (Lederman et al. 2014).

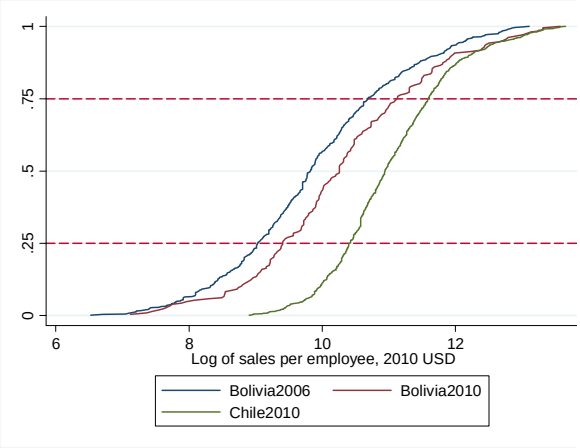
Table 5: Labor Productivity Gaps

	Labor productivity gap (p75/p25) by sector		
Sector	Bolivia 2006	Bolivia 2010	Chile 2010
Capital intensive manufacturing*	20.1	50.0	12.1
Other manufacturing	19.9	13.9	9.3
Services	25.7	27.7	9.9

**Food & chemical products: based on USKLEMS data on capital elasticity*

Source: Staff estimates using ES data in 2006-2010.

Figure 43: Productivity distribution compared to an "international frontier"



Source: Staff estimates using ES data in 2006-2010.

[29] The literature identifies as main determinants of firm productivity both the business environment, including competition, regulations, and flexibility of labor and intermediate input markets, as well as firms' own investment decisions on innovation and human capital. See Syverson (2011) for a review.

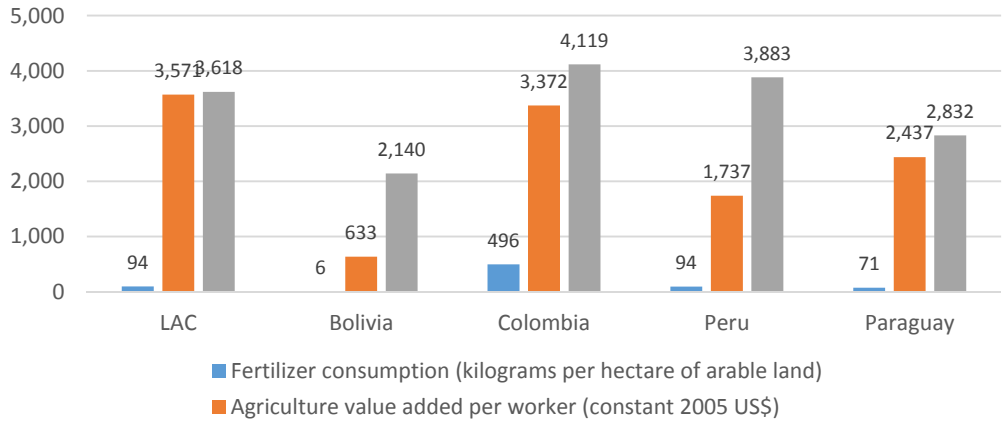
[30] Hsieh and Klenow (2014) find that slow growth in Indian and Mexican firms relative to U.S. firms can be explained by their lower post-entry investments in *organizational capital*. Bloom and van Reenen (2007) and Bloom et al. (2013, 2014) further suggest that better management practice is associated with significant increases of productivity at the country and firm level. McKenzie and Woodruff (2015), in particular, find that management capacity does not only matter for large firms. Productivity of MSMEs in developing countries also improves with business practices, which in turn are positively correlated with the owners' level of human capital. Businesses, however, are often unaware of their own management quality as well as information on new management practices. This literature suggests that there is potential to improve aggregate productivity by providing access to information and investing in skill and capability upgrading at the firm level.

Knowledge gap - firm-level analysis on innovation (in a broad sense)**:** address lack of data and analysis on firm's investment decisions in innovation to better understand constraints to realizing within firm productivity gains in Bolivia. This should allow for distinguishing between different types of intangible capital as innovation can be broadly defined to encompass a diverse spectrum, from the generation of new knowledge and scientific expertise, to the adoption of existing knowledge and improved organizational and process-related competencies. Each of these aspects of innovation has a different role for firm productivity, depending on the types of firms.

The current agriculture growth model is limited by low productivity and faces serious sustainability risks

88. **There is an important potential to improve the agriculture sector's contribution to economic growth and poverty reduction.** Beyond the extractive sector, agriculture still emerges as the most important source of goods exports to date.[31] Moreover, unlike the capital-intensive extractive sector, agriculture has a much more important role for employment, particular for indigenous groups. [32] At least 30 percent of the total labor force and 75 percent of the rural labor force still depend directly or indirectly on agriculture.[33] Narrowing Bolivia's productivity gap in agriculture and diversifying into higher value added products could significantly expand the sector's contribution to growth and income of the rural population.

Figure 44: Agricultural productivity and input use indicators for Bolivia, 2008-2012 averages



Source: WDI, 2013. Indicators are measured as follows: Tractors per 100 sq km of arable land; Use of fertilizer is the fertilizer consumption in kilograms per hectare of arable land; Cereal yield in kg per hectare; Worker productivity as agricultural value added per worker. Use of fertilizers, Cereal yield and Worker productivity are rescaled by a factor of 10 (i.e. the original values are divided by 10) to ensure visual compatibility.

89. **However, enhancing employment and productivity in agriculture would require a change in the current model of agricultural growth, from one that is based on expansion of land use, to sustainable intensification of agriculture**. The expansion of the agricultural frontier in the lowlands and the concentration of agricultural production on few commercial crops has undoubtedly been a driving factor in the sector's growth, with mechanization of production and the creation of economies of scale. The soybean production area, for example, expanded by 66 percent in the last decade, reaching 1,023,960

[31] Between 2004-2006 and 2010-2012, the food and live animals product group is the biggest contributor to growth in non-extractive merchandise exports. Food and live animals, and animal and vegetable oil are two only product groups with a revealed comparative advantage (RCA) at a similar level with extractives.

[32] Jemio et al (2015).

[33] Agriculture Census 2013. Agriculture broadly encompasses crops, fruit, livestock and forestry production and processing.

hectares in 2011 (FAOSTAT). With a third of Bolivia's land area already being used for agriculture (3 percent cultivated land and 32 percent pasture) (WDI, 2013), further expansion of the agricultural frontier is not likely to continue being a driver of growth as scale or production alone do not generate the multiplier effects necessary for sustained economic development. This model is highly dependent on primary commodity trade, with limited value addition in Bolivia's economy. It is also exposed to weather and price shocks and soil degradation. Because of subsidies on diesel, the mechanized frontier expansion has also been very costly both in terms of fiscal resources and in terms of production costs.

90. **Reorienting the agricultural growth path would need to consider the diverse structure of Bolivia's agricultural sector**. Several industries (especially soybeans) involve commercially oriented large- and medium-scale farms and agribusiness companies (Box 4). Others, such as quinoa, are less organized and comprise many small-scale commercial producers. In addition, growing state intervention in certain sub-sectors as reflected in price fixing (e.g., bread, sugar, chicken and milk), export restrictions (e.g., soybeans, sugar, corn and meat), and the creation of public enterprises (e.g., sugar and dairy), is slowing private investment and creating entry barriers for new actors. Consequently, private investment is hampered by different constraints, ranging from economies of scale or informality (e.g., livestock and quinoa), land and credit issues (e.g., lack of a strong cadaster system), to a lack of competition (e.g., dairy sector).

91. **To maximize potential gains on inclusive growth, a differentiated approach would be needed.** More commercially oriented products, such as oilseeds, are more capital intensive and at present benefit mostly non-indigenous populations. Others, such as cocoa and quinoa, have the potential to generate higher employment gains for unskilled and indigenous workers.[34] In any event, the skills and technical capacity of the poor would need to be upgraded for them to take advantage of future increased opportunities of integration in commercial value chains in the agriculture.

92. **A re-orientation of Bolivia's agriculture growth model is also called for in the broader context of effective and sustainable natural resource management.** As discussed further below, the model of increasing production through extension, mostly of cultivated area, with limited regard to productivity gains has taken an important toll, notably in the form of deforestation of highly diverse rainforests, releasing about 200 million tons of carbon annually.

93. **Sustainable intensification of agricultural production is critical for reducing the negative impact of agriculture on the environment, notably deforestation and land and water over-use**. Irrigation plays a key role in enhancing productivity, mitigating water scarcity and the effects of drought, and more generally for climate change adaptation. However, irrigation already accounts for 80 percent of water use and its expansion would further increase competition for scarce water resources. In some river basins, water balance is already critically affected, or close to being affected by over-exploitation. Hence, irrigation expansion[35] would need to be accompanied by better overall resource management and consideration of new water sources. Contamination poses an increasing risk for agricultural production, such as through the use of untreated water for irrigation.

[34] For example, labor shares in value added for the oilseed sectors was only 31 percent in 2012, compared to 93 percent for cocoa and 84 percent for other crops. Moreover, labor shares by the indigenous population in oilseeds is only 9.8 percent, less than half of the labor shares by non-indigenous groups.

[35] The Government has ambitious plans to increase irrigation. *Plan Mi Riego* stipulates an increase from 300'000 ha of irrigated land to 800'000 ha by 2025.

Box 4: Case studies: sector-specific constraints in agriculture

Quinoa: Quinoa exemplifies both the potential and the challenges of the Bolivian economy. Owing to rising global demand, which grew 1500 percent during the period 2002-2013, quinoa exports have increased 20-fold from 2004 to 2012. This extraordinary growth has put quinoa among Bolivia's top 20 export products in 2012.

Opportunities: Quinoa is the only Bolivian agricultural export with high quality and a leading world market share. Royal quinoa in particular, has a close monopoly in the organic quinoa market and contains opportunities for further diversification to medicinal or cosmetic by-products. As a labor-intensive sector comprised of some 70,000 smallholders in Bolivia's most disadvantaged regions, quinoa can also play an important role for increasing shared prosperity. The sector has benefited from improved organization of small farmers and coordination with suppliers through business associations. In 2007, through the introduction of new technology, installed capacity for the industrial processing of quinoa tripled. This change was coupled with price increases and, as a result, lifted primary production in at an unprecedented pace (Birbuet 2009).

Challenges: The sector faces major challenges to increase productivity and promote the Bolivian brand. At present, Bolivia is the leading exporter of quinoa, but Peru is gradually gaining market share. Peruvian supply was helped by major productivity improvements, as Peruvian quinoa has been adapted to low altitudes with much higher productivity as compared to that in the Bolivian highlands. As Bolivia has yet to find an effective strategy to differentiate its product, its market position is exposed to the risk of commoditization due to new demand trends. On the supply side, the sector faces important bottlenecks due to the structure of the value chain that includes many smallholders, leading to low innovation, high costs to ensure quantity and quality to match markets' needs, and losses to smuggling. There is also unclear potential to increase productivity due to soil degradation and climate change risks. Diversification to pharmaceutical products presents a significant opportunity but also requires major investments in R&D that the state sector is as of yet ill equipped to provide.

Soybean: In contrast to quinoa, soybean is a commodity that still has a long value ladder to climb. The sector is characterized by larger scale commercial production in the lowlands with a sizable FDI presence (e.g. Cargill, ADM). Bolivia has some comparative advantage in land availability and quality but private investment in this sector has been hampered by various constraints: lack of a proper export infrastructure, a land regulatory framework which prevents farmers to use land as collateral, export restrictions, and overall regulatory uncertainties that have put large companies in the state of "stop and wait". Though Bolivia has narrowed its productivity gaps in recent years, a lack of regulatory incentives has slow downed progress in biotechnology investments. As other countries are constantly applying new technologies, this biotechnology gap will likely set back the recent gains in productivity.

(Source: Luz Diaz "*Desarrollos Recientes en el Mercado Internacional de la Quinua*", Bolivia Sources of Growth (chapter on trade), CABOLQUI interview, IFC sector notes)

Knowledge gap - the "puzzle" of low agriculture productivity growth: Between 2003 and 2013, value added per worker in the agriculture sector grown at one of the lowest agriculture productivity growth rate in Latin America. This is despite a very low initial productivity in the context of fast urbanization and positive terms of trade gains. Additional analysis is needed to pin down the specific investment climate constraints underlying this disappointing performance.

3.3 Risks to sustainability of current path to inclusive growth

94. **Bolivia's current path of inclusive growth is extensive in the use of natural resources and vulnerable to important sustainability risks.** Some of these risks are already affecting inclusive growth and its prospects, such as those related to demographic changes – urbanization in particular (which at the same time offers opportunities), macroeconomic and fiscal developments, unsustainable use of natural resources, or climate change. In fact, exposure of the Bolivian people to climate variability, or natural disasters has increased

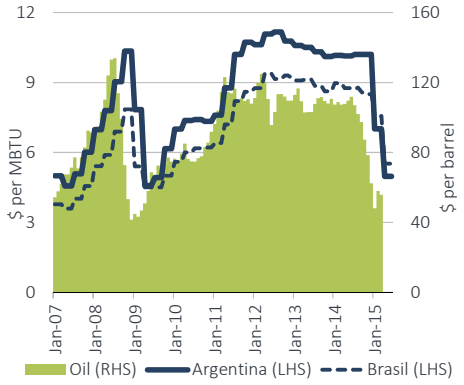
significantly in the past years, threatening to affect critically economic livelihoods of many. The main sustainability risks and how they constitute a current or future obstacle to maintaining positive trends on poverty and inequality reduction are discussed next.

Less favorable external economic context limits macroeconomic and fiscal room for maneuver

95. **The recent sharp drop in commodity prices, in particular international oil prices, has significantly changed the external context of Bolivia's economy.** The value of gas exports has decreased sharply from US$1,042 million in the first two months of 2014 to US$748 million in the same period of 2015 as oil prices halved from about US$100 per barrel in mid-2014 to about US$50 in the last few months (Figure 45). The impact of the fall in oil prices on Bolivia's economy has been gradual as contractual gas export prices are moving averages of past prices of oil derivatives. Yet, as the declining trend has continued, the impact has fully arrived. Prices of Bolivia's other export commodities (zinc, tin, gold, or soybean) have also diminished but their impact on external and fiscal balances is less pronounced.

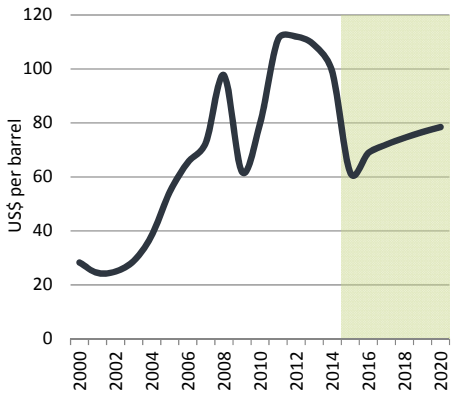
96. **As most sources consider that commodity prices will recover only partially over the medium term[36], the shock could have long-run effects on Bolivia's growth potential**. Lower gas prices have a significant negative effect on fiscal and external balances as the hydrocarbon sector accounts for almost half of total exports and one third of fiscal revenues. Mining and agricultural exports have a more modest impact on fiscal accounts, but lower prices have a sizable impact on external accounts as mining and agricultural exports account for about one third and one sixth of total exports, respectively. In this scenario, lower commodity prices may additionally restrain investments in extractive sectors, which in turn would limit increases in gas export volumes in the short run and affect reserve levels in the long run. Currently available reserves may also be affected by lower prices, as some fields would no longer be commercially exploitable. In addition, the negative terms of trade shock could affect investment opportunities in the local market, thus reducing the private sector's willingness to invest in some non-tradable sectors such as construction or services.

Figure 45: Oil price and gas export prices



Note: Dated Brent, light blend 38 API, fob U.K.
Source: GEM, INE, YPFB and staff estimates.

Figure 46: Oil price prospects



Note: Dated Brent, light blend 38 API, fob U.K.
Source: IMF

[36] The IMF (2015) assumes that after averaging US$60 per barrel in 2015, oil prices will only increase slowly, reaching US$80 per barrel in 2020.

Despite sizeable buffers, gradual adjustment to the changed external context is warranted

97. **Bolivia's sizable fiscal and external buffers help cushion the effect of lower commodity prices, but some balances are already degrading.** After eight years of fiscal surpluses, the fiscal balance turned into a deficit of 3.2 percent of GDP in 2014 due to the high level of public investment, unplanned expenditures to address the effect of early 2014 climatic disasters, and compensations for former nationalizations. Similarly, the current account surplus decreased from 3.8 percent of GDP in 2013 to near balance in 2014 as imports grew more than exports. Nevertheless, Bolivia has large macroeconomic buffers: total public debt is below 40 percent of GDP, international reserves attain around half of GDP, and cash fiscal savings at the Central Bank amount to one quarter of GDP. These buffers allow Bolivia to cushion the effect of the external context and to protect growth by way of maintaining—or even expanding in the short run—public expenditure (including high priority social programs), and delaying devaluation. In fact, while growth in most LAC countries has already slowed, Bolivia has been able to maintain growth above 5 percent based partially at least on a compensatory expansion of public investment.

98. **However, it is unlikely that these buffers – ample as they are – will permit Bolivia to totally offset the effect of a protracted slump in commodity prices and its impact on external and fiscal balances**. The fiscal expansion needed for this would consume these buffers over time. Assuming that commodity prices will not recover to levels of the recent past any time soon, efforts to maintain growth solely through domestic demand would be counterproductive. Such a strategy would likely bring a return to macroeconomic volatility and could further deteriorate the investment climate. This calls for a gradual adjustment of policies to the new reality of a less favorable environment, while concomitantly efforts are renewed to develop new, non-extractive sources of growth.

99. **Without new sources of growth, lower commodity prices would decelerate growth in the upcoming years.** The macroeconomic framework prepared for the SCD shows that assuming oil prices improve very modestly in the upcoming years approaching to US$80 by 2020, Bolivia's growth would decrease from 5.3 percent in 2014 to about 3.8 percent starting in 2018 (Table 6). The public expenditure expansion announced by the Government would allow growth to reach 4.3 percent in 2015, but low commodity prices and the Government's commitment to long term sustainability would prevent additional expansionary efforts thereafter. Fiscal and external balances would likely deteriorate as a consequence. The fiscal deficit is projected to increase from 3.2 percent of GDP in 2014 to 5.9 percent in 2015 as the Government maintains robust public investments, and then stabilize at around 2.5 percent of GDP in later years as oil prices recover modestly and some fiscal consolidation is sought. The current account would turn into a deficit in 2015, reaching 6.0 percent of GDP, due to lower commodity prices and growing imports needed to sustain public investment, and real appreciation. With a gradual recovery of commodity prices and macroeconomic consolidation—which would include depreciation—the current account deficit is projected to converge to 4.1 percent of GDP in 2018.

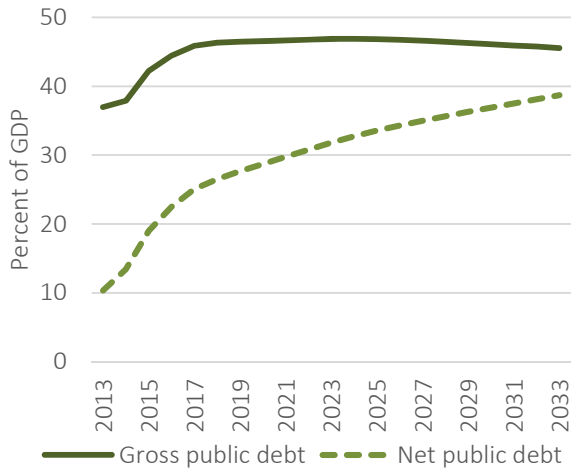
Table 6: Medium term prospects

	2013	2014	2015	2016	2017	2018	2019	2020
GDP growth (%)	6.8	5.3	4.3	4.1	4.0	3.8	3.8	3.8
Inflation rate (%)	6.5	5.2	4.5	4.0	4.0	4.0	4.0	4.0
Nominal exchange rate (Bs/$)	6.9	6.9	6.9	6.9	7.1	7.2	7.4	7.6
Total investment (% of GDP)	19.1	20.9	20.5	19.9	19.4	18.9	18.9	18.9
Public investment (% of GDP)	11.3	12.7	12.2	11.7	11.1	10.6	10.6	10.5
Private investment (% of GDP)	7.8	8.2	8.3	8.2	8.3	8.3	8.3	8.3
Fiscal balance (% of GDP)	0.7	-3.2	-5.9	-4.8	-3.6	-2.5	-2.3	-2.4
Revenues (% of GDP)	39.2	37.3	32.4	32.2	32.4	32.4	32.3	32.0
Hydrocarbon revenues	13.5	12.4	8.5	8.4	8.6	8.7	8.8	8.6
Expenditures	38.5	40.6	38.3	37.1	35.9	34.8	34.6	34.4
Net public debt (% of GDP)	10.3	13.4	19.0	22.5	25.1	26.5	27.7	28.7
Gross public debt*	37.0	37.9	42.2	44.4	45.9	46.3	46.5	46.6
Public deposits at Central Bank	26.7	24.5	23.2	21.9	20.8	19.8	18.8	17.8
Current account (% of GDP)	3.8	0.0	-6.0	-5.3	-4.2	-4.1	-4.0	-4.1
International reserves (% of GDP)	47.2	46.3	42.3	37.9	34.0	31.8	29.7	27.3
Banks loans (% of GDP)**	31.4	35.5	..	..	..	..	..	..
Non-performing loans (%)**	1.5	1.5	..	..	..	..	..	..
Dollarization (% of deposits)**	22.8	18.3	..	..	..	..	..	..
M3' growth (%)	16.2	15.6	..	..	..	..	..	..

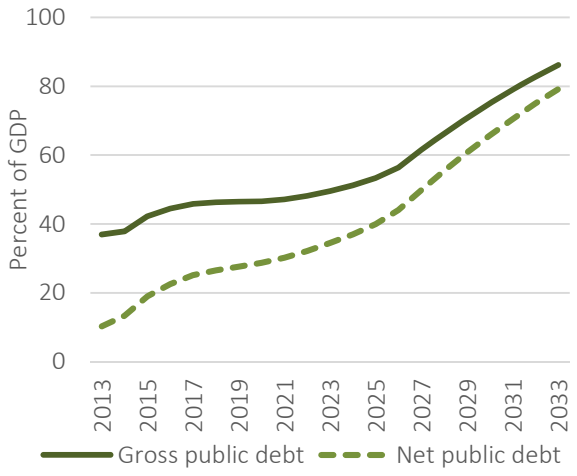
Note: (*) Public debt includes total external debt, municipal internal debt, treasury external debt with private sector, Central Bank credit to private sector and Treasure debt with other financial public sector institutions. (**) Since 2014, it only include multiple banks.
Source: National Statistics Institute, Central Bank of Bolivia, MEFP, Financial Institution Supervision Authority and staff estimates.

Figure 47: Public Debt to GDP ratios under different scenarios

Baseline scenario: Modest recovery of commodity prices, but gas exports are sustained



Extreme scenario: Poor recovery of commodity prices and oil exports last in 2025



Note: Public debt includes total external debt, municipal internal debt, treasury external debt with private sector, Central Bank credit to private sector and Treasure debt with other financial public sector institutions.
Source: National Statistics Institute, Central Bank of Bolivia, MEFP and staff estimates.

Debt sustainability outlook remains solid, yet downside risks need to be heeded carefully

100. **Debt ratios are likely to remain below thresholds, but the external context is reducing room for maneuver.** After years of high commodity prices, Bolivia's external and fiscal risk was reduced significantly.[37] However, the new external context poses new challenges, which were assessed through a debt sustainability analysis (DSA) conducted for the SCD. The baseline scenario of the DSA assumes commodity prices recovering modestly over time, the Government maintaining a prudent macroeconomic and fiscal stance, private investment remaining low, and gas exports levels remaining sufficiently high to honor contracts with Brazil and Argentina. Under this baseline scenario[38], total gross public debt is expected to increase from 37 percent of GDP in 2013 to 45 percent in 2033, remaining below the usual thresholds. That Bolivia begins in a solid position through its large fiscal reserves helps, as the use of public deposits to partially finance fiscal deficits supports this positive debt outcome. In this scenario, public deposits are expected to decrease from 25 percent of GDP in 2013 to only 7 percent of GDP in 2033 thus increasing net public debt from around 10 percent to close to 40 percent of GDPj

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102. **This sustainable debt path is vulnerable to important downside risks linked to the performance of gas exports and fiscal policy**. An alternative scenario was built for the DSA to assess the exposure of debt to gas exports being limited by production capacity bottlenecks. In this scenario, Bolivia would not be able to invest in exploration, and gas exports would begin to decrease in 2020, finally reaching zero in 2025. Public debt would become unsustainable, as gross public debt would increase to close to 86 percent of GDP in 2033 and net public debt to about 79 percent of GDP. Despite large macroeconomic buffers, Bolivia could

[37] The IMF's latest Article IV report (2014) stated that debt ratios were expected to continue declining in the medium term in a baseline scenario that assumed positive trends on commodity prices. The risk of debt distress was qualified as low. Debt ratios sharply deteriorated only in an extreme scenario where, in the absence of any additional exploration in the hydrocarbon sector, gas exports were severally cut in mid 2020s.

[38] The baseline scenario projects the following macroeconomic performance: growth converges to around 3.6 percent after 2019, inflation to 4 percent, the fiscal deficit to 2.8 percent of GDP and the current account deficit to 4 percent of GDP, while the exchange rate is devaluated after 2016 in order to prevent larger real appreciation.

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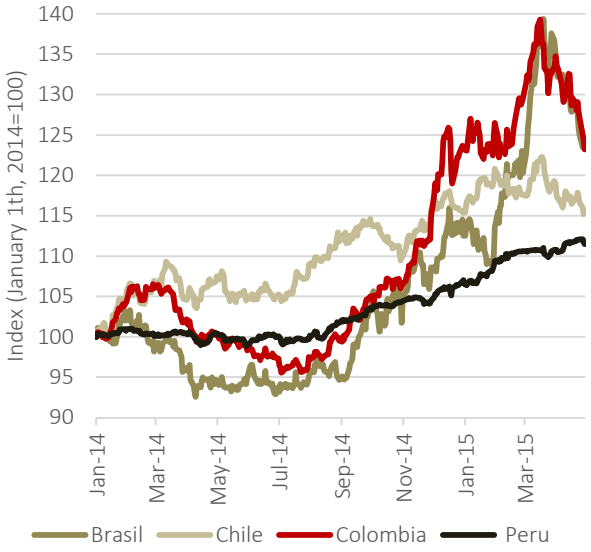
enter into an unsustainable debt path in the long run if current gas export levels are not maintained, even if some fiscal efforts to contain expenses are implemented. In other words, the Government would need to apply a significant fiscal contraction and devaluation to compensate for the reduction of gas exports. This would have a serious negative impact on growth, poverty reduction and shared prosperity.

Potential overvaluation of the real exchange rate

103. **Another macroeconomic risk relates to possible over-valuation of the real exchange rate in the current low commodity price environment[41].** The recent and important fall of commodity prices is largely perceived as a permanent shock. As the nominal exchange rate is still held constant, there are signs of the real exchange rate being overvalued. This is caused mainly by lower commodity exports having substantially reduced foreign currency inflows in the current account. If the Central Bank were to maintain its current exchange rate policy in a low commodity price environment going forward, it would need to use its large buffers to manage depreciation pressures. At end-2011, the Central Bank stopped any nominal exchange rate movement – thus joining a small number of LAC countries with fixed exchange rates, such as Argentina, Venezuela or dollarized Ecuador. The rigid exchange rate allowed the Central Bank to anchor expectations and support strongly a massive de-dollarization process in a context of appreciation pressures. However, in the current situation, devaluation pressures exacerbate the policy conflict the Central Bank is facing: devaluation reduces Bolivians' purchasing power, affecting real income and aggregated demand, and risks reverting financial de-dollarization.

104. **As many of its neighboring countries are functioning under flexible exchange regimes, Bolivia has likely lost competitiveness relative to them**. Since late 2014, many countries in the LAC region have faced sizable depreciation pressures due to falling commodity prices and, to a lesser extent, the uncertainty surrounding U.S. interest rates. In countries with flexible exchange rate regimes, such as Brazil, Chile, Colombia, Mexico, and Peru, the exchange rate rapidly depreciated (Figure 48). This implies an important loss of competitiveness for Bolivia as these countries represent more than half of Bolivian exports and a quarter of Bolivian non-traditional exports (extractive sector exports are much less sensitive to real exchange rate movements).

Figure 48: Daily exchange rate in selected countries



Source: World Bank

105. **With the rigid exchange rate policy in place, lower commodity prices imply a potential overvaluation of the real exchange rate, but the extent and implications of this is not clear**. In effect, a permanent reduction of the terms of trade implies a devaluation of the equilibrium real exchange rate. However, there is a need for an in-depth examination of the recent evolution of real exchange fundamentals - such as foreign

[41] During the last decade, Bolivia faced strong appreciation pressures, linked to the historically high current account surpluses – due to improving terms of trade – as well as to sizable capital inflows. All along the last commodity cycle, the Central Bank allowed international reserves to accumulate thus reducing appreciation pressures. At any rate, the real exchange rate significantly appreciated by almost 40 percent between 2005 and 2014. Nevertheless, this real exchange appreciation has not been linked to overvaluation as the factors behind it were perceived as permanent. In effect, the latest IMF Article IV report (2014), as well as Colque (2012), and Cerezo and Salazar (2012) concluded that the real exchange rate presented no evidence of large and sustained overvaluation, as it was mostly driven by long-term changes in its fundamentals.

financing to the public sector or the output gap – to properly assess the extent and consequences of such a potential misalignment.

Sustainability risks related to natural resource depletion

106. **As presented in Chapter 2, one of Bolivia's key characteristics relates to its abundant natural resources and its economic structure that is heavily based on exploiting this natural wealth.** This implies that economic production is leading to depletion of natural resources over time. However, from an economic standpoint, Bolivia's large stock of natural wealth implies that, in general, this depletion is not necessarily a binding constraint for growth prospects, at least not in the short and medium term. (There are some exceptions to this, as discussed below.) Also, the depletion of natural resources can have other, more localized effects, detrimental for the people, in many cases disproportionately affecting the poor. These effects would be enhanced by the implications of climate change, and by demographic trends, most notably the important rural-urban migration of the past years.

107. **Assessing main challenges related to natural resource depletion requires a differentiated discussion**. For this, findings specific to water resources, forests and soils are presented separately, as these are the natural resources that currently face the greatest strain. Bolivia's diverse geographical landscape implies that environmental issues vary greatly across the territory, in form and in extent.

Increased scarcity and degrading quality of water resources

108. **An increase in competing demands for water resources is increasingly becoming a critical challenge for Bolivia's development, and is especially worrisome as supply is becoming more limited and less reliable in some river basins, notably in the Highlands and Inter-Andean Valleys.** On the demand side, increased population pressures, urbanization as well as more resource-intensive forms of production–notably through the increased use of irrigation-lead to competing demand for water resources in some river basins. Water supply is limited through the effects of climate change (see below), and increased contamination and other practices, notably watershed degradation. Water contamination is widespread due to untreated wastewater and pollution loads from industries, including mining.

109. **The increasing scarcity and degradation in the quality of water resources through over-use and growing contamination load has widespread effects on welfare.** Increased water scarcity and degradation of its quality affects negatively human health, through limitations in access to safe drinking water or the use of untreated wastewater for the irrigation of crops). Most municipal and industrial wastewater is untreated. Eco-systems are also negatively affected. Scarcity and degradation of water quality also limit income opportunities such as in agricultural production and mining and industrial production. The effects of climate change-are a key factor behind the less reliable supply of water as discussed below.

Rapid deforestation

110. **As forests still cover more than half of Bolivia's territory, this natural resource does not constitute a constraint to inclusive growth, yet the rapid rate of deforestation is a critical challenge.** Bolivia's forest cover is being destroyed at the rate of about 0.4 percent per year. In absolute terms, the total loss was estimated at 3 million hectares from 2000 to 2012, which puts Bolivia among the twelve countries in the world with the highest deforestation.[42] However, data is unreliable and efforts to improve monitoring capacity and transparency would be critical. Deforestation is detrimental in itself, as it destroys natural habitats and

[42] Hansen, M.C.; P. V. Potapov; R. Moore; M. Hancher; et al. (2013), "High-Resolution Global Maps of 21st-Century Forest Cover Change", Science Vol. 342 no. 6160 pp. 850-853. DOI: 10.1126/science.1244693.

threatens biodiversity. But, it also increases the vulnerability to natural disasters. Deforestation increases the probability for erosion, which in turn reduces soil quality and increases the risk for flooding.

111. **A key underlying reason for the rapid rate of deforestation relates to strong incentives for economic actors to expand land use for agriculture and livestock**. Over 50 percent of deforestation is attributable to the expansion of mechanized agriculture, followed by cattle ranching and small-scale agriculture.[43] Control on gaining land through deforestation is lax, permits are obtained easily, and there are hardly any fees or taxes for gaining and using newly gained land for agricultural production. Also, land is cheap when compared to prices in neighboring countries (on average land costs 10 percent of the cost in Brazil). Inputs are also cheap (subsidized diesel). Agricultural growth in recent years was based mainly on expanding land use, with limited-and in the case of many products no or negative-growth in productivity. As discussed later, there is a need to move to a new growth model based on sustainable intensification, notably through increased and improved use of irrigation.

Bolivia - a leading case of land degradation in the LAC region

112. **With over 40 percent of its territory affected,[44] the scale of land degradation in Bolivia is large by regional comparison.** Inadequate land use through deforestation, over grazing, or agriculture on slopes causes land degradation. This in turn has negative impacts on groundwater recharge, flood generation, landslides and sedimentation in reservoirs. Soil loss reduces fertility and agricultural productivity. Between 1954 and 1996, the estimated area of eroded soils increased from 236,833 km^2 to 428,700 km^2, an increase of 86 percent. Land degradation is mainly located in the departments of Oruro, Potosí, Chuquisaca, Tarija, La Paz, Cochabamba, and Santa Cruz.

Large and increasing vulnerability to climate change and natural disasters

113. **Climate variability has increased in Bolivia over the past years, and simulations point to serious effects of climate change on the country**. Bolivia's geographical location, its high share of economically vulnerable and poor population, and its low institutional capacity to mitigate climate risks render it vulnerable to climate change. Rainfall has become more concentrated in time as well as location. As a result, the amount and frequency of extreme climate events has increased (

114. Figure 49.a). Climate simulations[45] present a robust picture of warming and drying for Bolivia by 2050. The most likely range of warming amounts to 2 to 3 degrees Celsius. Predicted changes in precipitation are negative for most parts of the country, ranging between 10 to 50 percent relative reduction. This scenario would likely decrease the amount of snow pack and mountain glaciers, representing an additional stress on Bolivia's water resources. The main results of these simulations are very robust. Still, it is critical to improve understanding of climate change in Bolivia, with a view to providing a stronger basis for incorporating climate change considerations better in national development plans and strategies.

[43] Müller, R.; D. Müller; F. Schierhorn; G. Gerold; P. Pacheco (2012), "Proximate causes of deforestation in the Bolivian lowlands: an analysis of spatial dynamics". Regional Environmental Change 12: 445–459. http://link.springer.com/article/10.1007%2Fs10113-011-0259-0

[44] Hugo, Gualterio (2006), "Trends in Land Degradation in South America". In: "Management of Natural and Environmental Resources for Sustainable Agricultural Development". Proceedings of a Workshop held from February 13-16, 2006, in Portland, Oregon. Edited by R. Stefanski and P. Pasteris.

[45] Source: Reichelt, T. (2014). *Desarrollo de Escenarios de Cambio Climático para Bolivia*. (Analytical Project for the Government of Bolivia, conducted by the University of Utah). The main results of this study are very robust. In particular, they are independent from the type of global climate model used as basis for the regional model.

115. **For geographical reasons, Bolivia is highly exposed to natural disasters associated especially with extreme rainfall, flash floods, droughts and landslides; the poor and marginal groups are particularly vulnerable to such hazards.** Relative to other countries in the LAC region with similar rates of extreme poverty, the proportion of people affected by natural events in Bolivia is higher (

116. Figure 49). By 2012, based on the Municipal Risk Index developed by the Bolivian Ministry of Development Planning, a large number of Bolivians were exposed to natural hazards: 43 percent of the population were living in areas of potential high flooding, 17 percent in areas of potential forest fire, and 16 percent in areas of potential drought. The poor and marginal groups are particularly vulnerable to disaster risks, especially the elderly, rural women and children who have limited ability to migrate to urban areas in search of employment, as well as indigenous peoples who depend on hunting and gathering.[46]

117. **There have been a large and increasing number of catastrophic events, with a large share of Bolivians affected, and sizeable economic losses; disaster risk management capacity has improved yet still remains limited**. Data shows an increasing trend of events and victims resulting from disasters since the early 1960s (

118. Figure 49, panel a.).[47] Between 1996 and 2000, the increase of people affected was multiplied by almost five times, while population growth was roughly 50 percent in this period. Between October 2013 to May 2014 alone, 129 municipalities (nearly 40 percent) were declared in an emergency situation, with a total of 82,302 families affected and an estimated cost of US$384 million. The increase in catastrophic events has its causes in the growing strain on natural resources, coupled by the increase in climate variability. There have been important efforts to improve disaster risk management capacity in the country and to move from a disaster response-focus system to an ex-ante disaster risk management system. However important challenges remain in this regard.

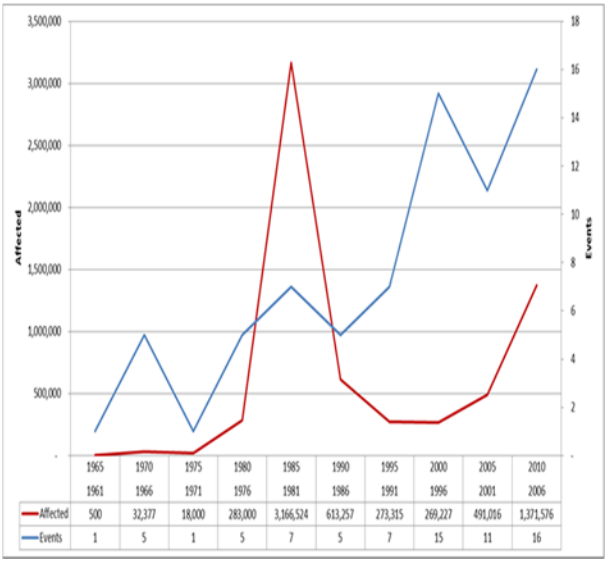
Figure 49: Growth in number of catastrophic natural events and affected population

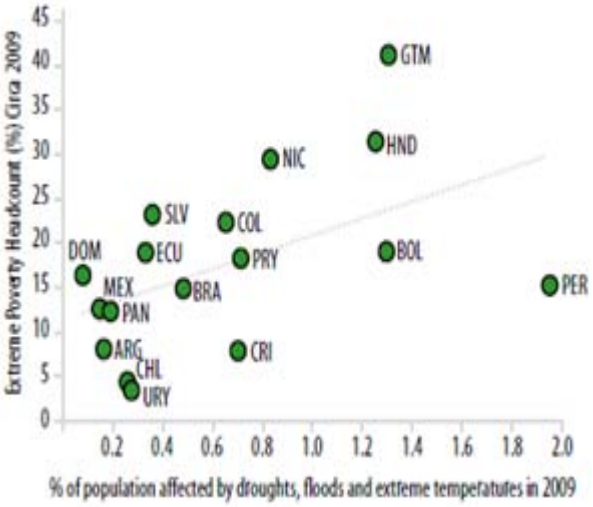
a. Bolivia 1961-2006

b. Extreme poverty headcount and catastrophic natural events in Latin America

[46] The Government and the WBG are currently working on a study to assess the vulnerability of poor and marginalized groups to disaster risks.

[47] Unidad de Análisis de Políticas Sociales y Económicas (UDAPE) - Banco Mundial (2015), "Evaluación de Daños y Pérdidas por Eventos Climáticos: Bolivia 2013 – 2014".





Source: a. World Bank, b. World Bank (2013), on the basis of WDI.

Knowledge gap – impact of climate change and natural disasters on poverty reduction: there is clear sense that the poorest Bolivians are over-proportionally vulnerable to extreme climate events and natural disasters, yet only limited statistical data and analysis is available. The authorities are working with the WBG on the preparation of such a study.

Urbanization brings challenges and opportunities for inclusive growth and environmental management

119. **Bolivia's rapid urbanization has created opportunities for improving access of the poor to services and income opportunities.**[48] As explained in Chapter 3, urbanization is a key element explaining the progress in poverty and inequality reduction. Migration has had a positive effect on the income of the poor, and through agglomeration effects and economies of scale, growing cities are emerging as important vehicles for inclusive growth. The analysis presented in Section 4.2 shows that urbanization has increased the demand for service delivery, access to which has generally improved, even if in some cases (sanitation, in particular) it has not kept pace with population growth in cities. Urbanization also creates an opportunity for more cost-effective service delivery.

120. **In turn, urbanization has also created challenges, notably with respect to increased pressures on the environment.** While large cities are experiencing densification, a large part of Bolivia's urbanization is characterized by low-density expansion of smaller cities. This has moved the urban sprawl to more marginal, exposed areas, increasing risks to environmental sustainability and exposure to natural disaster risks. Rapid population growth in urban areas is stretching municipal governments' capacity for service delivery. As discussed in Section 4.2, limited planning, execution and financial capacity at the subnational level, and lack of coordination between different government levels has hampered an adequate adaption of service delivery quality and reach to these growing urban areas.

4. Three main challenges to deepening welfare gains for the poor

4.1 Rebalancing Bolivia's model for inclusive growth by meeting three main challenges

121. **Through a decade of strong growth with equity, Bolivia has built a strong basis for addressing an important unfinished agenda on reducing poverty and inequality.** The preceding Chapter shows that Bolivia comes out of a decade with strong inclusive growth that compares well with other countries in the LAC region. Strong growth and prudent management has provided sizeable buffers of fiscal and foreign currency reserves, a heightened general sense of political and economic stability, and valuable experiences on the dynamics between growth and poverty reduction. This is a solid basis to address the country's important unfinished agenda in respect of the twin goals: almost 40 percent of Bolivians remain poor, and almost 20 percent in extreme poverty, and a large fraction of the non-poor households are vulnerable to falling (back) into poverty if a shock were to ensue.

122. **Going forward, growth with inclusion will remain the main strategy for reducing poverty and increasing shared prosperity in Bolivia.** While there is scope to strengthen social safety nets, most poor Bolivians will improve their livelihoods by improving their ability to generate more income. This closely connects the two concepts of poverty reduction and increasing shared prosperity, particularly since Bolivia's moderate poor today correspond roughly to the bottom 40 percent of the income distribution.

123. **However, to sustain improvements in income opportunities for the poor, Bolivia requires a significant rebalancing of its current model.** The analysis of the dynamics of the recent past singles out growth in labor

[48] Based on a recently finalized WBG study on opportunities and challenges in Bolivia's urbanization process (World Bank 2014).

income of the poor as the main factor behind poverty and inequality gains. This income growth has been fueled through the improvements in Bolivia's terms of trade, both directly – through price increases of (agricultural and mining) goods produced by the poor – and indirectly – through demand expansion stimulated by growth in public investment. However, the analysis also brings out clearly that these dynamics cannot be sustained over the coming years based on the following:

- First and foremost, the external economic context is much less favorable and is likely to remain that way for the foreseeable future. The international oil price shock is widely regarded as permanent, and hence prices for Bolivia's gas exports could at best be expected to rebound only modestly from current low levels. This would significantly reduce the dynamism of the direct and indirect transmission channels that have been behind the increase in labor incomes of the poor.
- Second, maintaining the current model of poverty and inequality reduction would likely be challenging, even if the favorable external economic context were to remain in place. This model has relied heavily on increasing income and job opportunities of the poor employed in sectors demanding unskilled and semi-skilled labor, mostly in informality. Its main growth engine, the extractive sector, is capital intensive. This dynamics, which has resulted in observed negative returns to education, stands in contrast to the composition of the labor force rapidly changing towards a growing share of better-educated persons looking for skilled jobs, mostly in urban areas. The current model would not be able to generate sufficient opportunities for these persons. Shifting to an inclusive growth model that generates job and income opportunities for a better skilled work force is also a social choice, as expressed by the Government's strategic goal of economic diversification.
- Finally, the current growth model is characterized by an extensive use of natural resources, which compounds the important environmental sustainability risks that Bolivia is facing. This refers notably to rapid deforestation, and competing demands on increasingly limited water resources, as well as environmental challenges caused by the urbanization trend. Relying more on productivity gains for maintaining high growth rates, notably in in sectors like agriculture and services would hence also contribute to reducing sustainability risks.

124. Rebalancing Bolivia's model of inclusive growth means primarily shifting to a growth model in which non-extractive sectors are the main engine for creating job and income opportunities. This would require a gradual reform process, addressing key short- and long-term challenges. Three main interconnected challenges emerge from the analysis: i) safeguarding fiscal and macroeconomic sustainability; ii) developing non-extractive sectors; and iii) enhancing access to opportunities, while reducing disparities.

125. This Chapter discusses in depth the three main challenges to deepening welfare gains for the poor and also identifies the main constraints pertaining to each of them. These three main challenges flows directly from the analysis of the experiences in the past with sustained gains on economic growth and poverty reduction presented in Chapter 3, and is framed by Bolivia's four main characteristics identified in Chapter 2. This will set the stage for the prioritization exercise presented in Chapter 5.

126. The three challenges are highly interconnected. The analysis points to importance of shifting to a new model of inclusive growth through a gradual process that can be completed only over the longer term. While this process is underway, it is critical to safeguard macroeconomic and fiscal stability, in particular by maintaining a significant flow of revenues from the extractive sector, notably given the deterioration in the external context. However, creating improved income opportunities for the poor can only has its desired effect if the challenge of enhancing access for lagging regions and groups to opportunities for improving their livelihoods is addressed in parallel.

4.2 Challenge #1: safeguarding macroeconomic and fiscal sustainability

127. **Meeting the challenge of safeguarding macroeconomic and fiscal sustainability in a deteriorating external outlook is a precondition for sustaining gains on poverty and inequality reduction**. To move to a model of inclusive growth based on a better-developed, higher productivity non-extractive sector will require a gradual and long process. While this process is carried out over the next years and other sources of growth are developed, it is critical to safeguard macroeconomic and fiscal stability, in particular by maintaining a significant flow of revenues from the extractive sector. The deterioration in the external context heightens the importance and urgency of this.

128. **Bolivia enjoys a strong starting position to face this deterioration in the external context, yet there are risks of emerging imbalances in the absence of adjustment of policies and advances on institutionalization.** The solid fiscal and currency reserves accrued over the past years, and a strong credibility for prudent policy making earned through the past years' record should put Bolivia in relatively strong position to face the now less favorable external economic context. However, safeguarding this strong starting position will require some adjustment to fiscal and macroeconomic policies, and strengthening of institutional anchors for policy making.

129. **Maintaining an adequate inflow of revenues from extractive exports, notably of gas is particularly critical for safeguarding economic stability and growth prospects**. Ensuring a continued flow of significant levels of revenues from extractive production is critical while other sources of growth are being developed. The lack of investment in exploration in past years is an important constraint in this regard.

A deteriorating external context calls for consolidating the prudent macroeconomic and fiscal stance

130. **The reduction in external and fiscal revenues caused by the substantial fall in international oil prices, calls for consolidating the improvements made in macroeconomic management**. Given the high dependency on natural resource extraction both for fiscal and external balances, the unexpected and massive fall in oil prices constitute an important economic shock for Bolivia. In fact, macroeconomic balances have already been deteriorating, notably in the fiscal balance and the current account. This will require a further strengthening of macroeconomic management, in order to avoid an amplification of these shocks in the local economy, which would also reduce the room for maneuver to advance towards meeting the longer term challenge of rebalancing the inclusive growth model, as discussed in the next Section.

131. **Even though Bolivia is in a strong starting position to face the oil price shock, policy adjustments would be required to avoid the emergence of serious macroeconomic and fiscal imbalances**. Bolivia can draw on substantial fiscal and foreign reserve buffers to provide for a smooth and gradual adjustment to the deteriorating external context. Yet, the strong credibility earned through prudent fiscal and macroeconomic stance during several boom years might be an even more important asset in facing this less favorable context. Cross-country experience shows that managing a downturn is not the same as managing a boom situation. Meeting the changes to Bolivia's economic fundamentals, which are widely perceived as permanent, will require a mix of institutional stability with policy flexibility, as discussed below.

132. **Rigidity in fiscal and exchange rate management constitutes a constraint in the context of the observed deterioration in fiscal and current account balances**. The exchange rate has not been adjusted since end-2011, and this rigidity implies increasing risks in the new context, as shown in the previous Chapter. Similarly, fiscal policies are challenged to find a sound balance between using fiscal reserves already accrued, increasing financing through sovereign borrowing and public spending and revenue adjustments. This balance should lead to avoiding sharp contracting effects in the economy, as well as rapid erosion of debt and fiscal sustainability, as discussed in the context of the debt sustainability analysis presented above.

133. **The recent years have seen progress on strengthening macroeconomic and fiscal management and coordination capacity.** Bolivia's positive record on macroeconomic and fiscal management in the past years is also a story of strengthening capacity in important areas such as financial supervision or debt management, and of more formal high-level policy coordination across institutions. A Macroeconomic Steering Group, which includes the Ministry of Finance, Ministry of Planning, the Central Bank and other key institutions, meets weekly to coordinate macroeconomic issues. A yearly agreement is signed between the Central Bank and the Ministry of Finance concerning the monetary and fiscal program. Other inter-agency committees have been established, such as for debt management and payment systems.

134. **However, the downturn in the external context could expose vulnerabilities due to a lack of institutional policy anchors, and a lack of autonomy of critical institutions.** In this less favorable context, the absence of strong institutional anchors and arbitration mechanisms in macroeconomic policy making may increase tensions among institutions that have increasingly conflicting policy objectives. Scope for strengthening institutionalization exist in several areas:

- Despite the abundant exchange flows and resulting fiscal savings over the past years, no formal savings fund has been created and the accumulated fiscal resources are dispersed over a number of fiscal accounts managed by several public institutions.

- Fiscal and budgetary management is limited by the lack of a multiannual budget, a structural fiscal balance framework, or a medium term debt strategy—despite recent partial advances in these areas.
- Although the Central Bank Law of 1996 had guaranteed the independence of a monetary authority, the 2009 Constitution stipulates that the Central Bank has to coordinate monetary policy with the Ministry of Finance, which in practice has implied making it *de facto* subordinate to fiscal policy. Also, the Central Bank President and Board members have had only *ad interim* staff status and as such could be removed at any time by the President. The Government has therefore a large influence over Central Bank decisions, including the management of the exchange rate that is *de facto* fixed since 2011. Similarly, as part of the current development model, the Central Bank is mandated to provide highly concessional loans to SOEs to finance large endeavors in sectors like hydrocarbon electricity and sugar.
- Likewise, all oversight bodies have lost their autonomy and were transferred to line agencies depending on sector ministries. This includes the critical financial sector oversight body that has been bound to the Government's objectives of increasing credit to the productive sector and widening access to financial services.

Low investments in exploration risks reducing resource inflows from extractive sectors

135. **The previous Chapter highlighted the risks of eroding gas and mining reserves as a result of low exploration investments in the past years.** The observed trends towards erosion of these reserves are a threat to prospects of macroeconomic stability and growth, a threat that could materialize already in the coming years if not rapidly addressed. The main underlying constraints that have curtailed exploration investments, described below, include high appropriation risks related to the legal and regulatory environment of the extractive sectors, disincentives created by hydrocarbon subsidy schemes, low capacity in sector governance, and environmental and social factors.

High appropriability risks – constraints introduced by regulatory and legal framework and price distortions

136. **Limited investments in exploration in hydrocarbon and mining are the result of several factors, with high appropriability risks playing an important role.** Exploration in extractives typically requires massive and risky investments over several years. A stable, predictable and conducive regulatory and institutional framework is needed to ensure the participation of specialized partners, mostly international. Very low levels of exploration investment in the Bolivian hydrocarbon and mining sectors – both of which have significant potential – indicates that a number of factors have restricted the activity of existing private firms in the past years. Appropriability risks play a significant role among the limiting factors to exploration investment. In effect, excessive limitations and/or high uncertainty on repatriating eventual returns are at the heart of this issue, as it creates disincentives for private firms to take on a big part of the exploration investment.[49] As a result, no significant new operations with new foreign partners have taken place in recent years in the extractive sector. Although investment in hydrocarbon exploitation remains relatively high, most of it is being financed through the mandatory reinvestment of profits by the existing firms under the coverage of longer-term contracts with Brazil and Argentina. In the case of mining, investment in both exploration and exploitation are extremely low.

[49] The Constitution and sector regulations imply that the State holds all ownership rights over hydrocarbons reservoirs, YPFB is directly in charge of all hydrocarbon production and trading, private firms can participate under service contract in association with YPFB, approved by Congress and with limited access to international arbitration mechanism—Bolivian courts are the only accepted jurisdiction, if YFPB decides to partner with another firm it must receive more than 50 percent of the share.

137. **Technical and legal limitations of involved state owned enterprises (SOEs) and the incentives framework for private partners are not conducive to taking on exploration risks.** Low technical capacity and legal and constitutional restrictions also prevent Bolivia's State-owned petroleum company (*Yacimentos Petroliferos Fiscales Bolivianos, YPFB*) from taking the lead. For instance, according to the Constitution, YPFB cannot incur losses, which strongly restricts undertaking inherently risky exploration activities. A similar context is faced by COMIBOL, the SOE in mining where, in addition, there is a lack of an updated geological survey that would allow potential private partners (and COMIBOL itself) to engage in promising explorations. Due to the high level of technical capacity required for this activity, international companies would be required. In addition, the current restriction in Bolivia for a mining firm to sell the rights to another firm is a significant limitation for exploration. In effect, mining exploration is mostly conducted by junior enterprises that then sell viable fields to larger companies for exploitation. Finally, mining taxes paid in Bolivia are significantly larger than in neighbor countries (Table 7).

Table 7: Mineral Sector Taxes in Selected Countries, 2012

Country	Tax on Profits & Dividends	Royalties[50]
Bolivia	45.3%	5-7%
Argentina	35%	0-3%
Chile	35%	1.75-6.05%
Peru	32.9%	2-5.75%

Source: Rada (2012)

138. **The regulatory environment is still under construction, thus increasing the uncertainty in extractive sectors.** Regulatory uncertainty has particularly serious consequences in capital-intensive extractive industries, which have very long investment horizons and massive requirements of financial resources. Despite the changes introduced in the 2009 Constitution, a new Hydrocarbons Law has not been promulgated, while the recently approved mining code leaves out critical decisions regarding the tax framework. This situation creates uncertainty for both international oil and mining companies and the State, thereby delaying new investments.

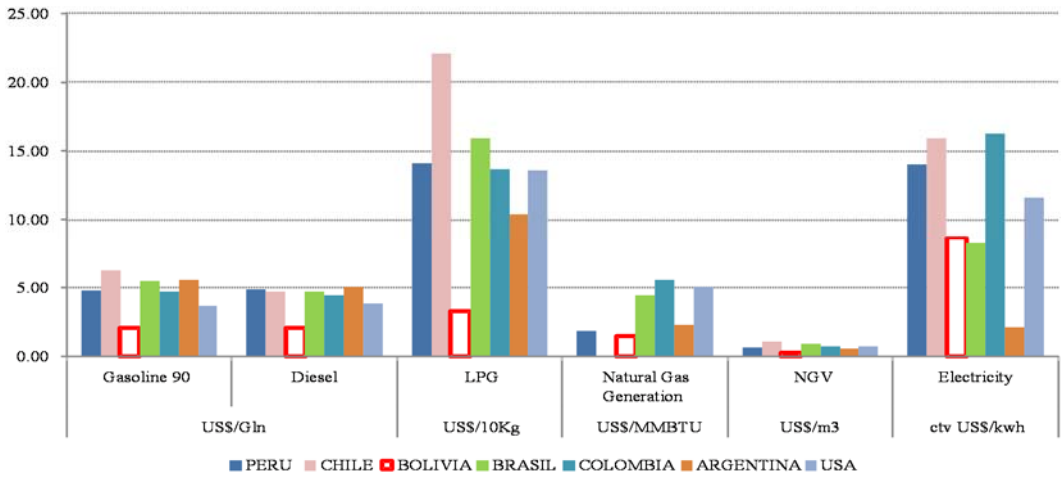
139. **Massive domestic fuel price subsidies distort the energy market and reduce the price received by producing companies, thus also capping incentives to invest in exploration.** Bolivia has one of the lowest energy costs in the LAC region due to massive subsidies (Figure 50). The price of oil has been frozen at US$31.16 per barrel since 2004, which is a strong disincentive for oil exploration. The producer receives only US$10.29 per barrel after discounting taxes, royalties and transportation fees. Domestic oil production does not meet the internal demand for products derived from oil, and hence Bolivia needs to import oil derivatives. Subsidies increase demand for oil derivatives as the automotive fleet grows and smuggling diverts a share of supply. There is also a sizable subsidy to natural gas in the local market. International experience shows that it is more effective to allow oil companies to receive market prices for their production and require them to pay back the State any income that exceeds their costs plus an adequate profit margin via royalties and taxes at flexible rate. This would also help turn the subsidy scheme into a more progressive direct transfer system that targets the poor, as discussed in the context of challenge #3.

140. **In the mining sector, the current context is increasing the role of the labor-intensive cooperative sector, which usually does not invest in exploration.** The cooperative sector has increased significantly the

[50] In Bolivia, the royalty rate varies according to type of mineral; in the other countries, it varies according to profit rates, with the highest royalties when profits reach 65 percent.

number of operations and employment. Cooperatives have created significant employment, going from 55,000 jobs at the beginning of the commodity boom to 132,000 jobs in 2012 according to unofficial estimates. They have also expanded their participation in total mining output to 50.3 percent in 2012. This expansion, mostly in alluvial gold mining and exploitation of old mine tailings was triggered by high mineral prices. However, the cooperative sector does not have the resources or the technical capacity to identify and develop new reserves. Due to its lack of exploration capacity, the cooperative sector often struggles for access to deposits or tailings with other sectors and is accused of invading the properties of other miners, leading to further risks in mining for other actors.

Figure 50: Energy Prices



Source: World Bank (2015)

Constraints related to limited governance capacity, environmental impact and social tensions

141. **Governance capacity in the extractive sector is significantly limited, along all of its dimensions – commercialization, regulation and supervision, and policy making.** There is a lack of separation of functions and of institutional capacity in the hydrocarbons and mining sectors. In the case of hydrocarbons, a stronger role for the regulator and stronger accountability mechanisms for YPFB are required. The main operational efficiency constraints of both YPFB and COMIBOL[51], the state mining company, relate to a lack of performance and efficiency benchmarks, as well as corporate governance standards. Enforcing upon those SOEs the same performance standards as for the private sector, such as productivity levels aligned with comparable private operations and similar investment funding to maintain existing operations, would help improve their competitiveness.

142. **The recent mining boom has increased the sector's environmental impact and brought to light a number of social tensions.** The most pressing problems are related to mercury usage and destruction of river basins in the gold sub-sector. As discussed above, this has created additional pressure on water resources. Socially, the mining sector is also a highly conflictive sector. Although the mining sector registered only 4 percent of the conflicts during the 2010 to 2014 period, the level of violence and duration of these conflicts are higher than the average (Paz 2015). These conflicts are strongly related to the high

[51] While YBFB is already a large player in the hydrocarbon sector, production levels of state mining companies are still small, accounting for 6 percent of mining exports and 5 percent of mining employment. However, it could grow rapidly if COMIBOL exploits large iron deposits in Mutún or lithium reserves in Uyuni. The wage bill of COMIBOL has rapidly increased since mid-2000, when the Government nationalized the Huanuni tin mine, with total employees reaching 4500 in 2011, from around 1000 in 2006.

mining prices and the poorly defined and protected property rights in the sector. Access to water and environmental problems appear also as other conflict triggers.

143. **While the provisions of the 2009 Constitution put emphasis on the environment and indigenous rights in the context of exploitation of natural resources, it is complex to operationalize**. Expectations of indigenous groups have risen and there is no clarity on the extent of the rights and obligations of the different actors. There is currently no unique and well-defined Government strategy to confront the socio-environmental impacts. Mining conflicts usually imply a political negotiation between the involved parties and the Government, partly the result of a weak judicial system. Lower mining prices and revenues may precipitate further unrest before an eventual reallocation of human resources to other sectors ensues.

4.3 Challenge #2: Developing non-extractive sectors with higher productivity

144. **Meeting the critical challenge of developing non-extractive sectors will require a more dynamic private sector**. The analysis so far points to developing non-extractive sectors as a critical challenge to sustaining advances on reducing poverty and increasing shared prosperity. In the absence of meeting this challenge, there will be insufficient income opportunities for the growing number of better educated people looking for work, particularly in urban areas; and reliance on volatile commodity markets will continue, as will the depletion of increasingly scarce natural resources.

145. **Although the sound external context and prudent macroeconomic management have contributed a good economic performance in the last decade, Bolivia was unable to make much progress on developing alternative sources of growth or attracting investment in non-extractive sectors.** This suggests that the development of these sectors is challenged by structural factors that may become more relevant in a low commodity price environment. Such an environment could also reduce the already low private sector willingness to invest, while the Government's capacity to compensate for the lack of private investment would become more limited.

146. **An analysis that identifies the main constraints to growth in non-extractive sectors has been conducted for the Bolivia Sources of Growth Study (World Bank, 2015) and uses the Growth Diagnostic approach to identify factors that could be binding for investment and growth in non-extractive sectors (Annex 2).** This analysis begins with the use of a conditional benchmarking methodology that compares Bolivia to the LAC region, to the LMI countries, and to a hypothetical, comparable "country" for a number of key variables of interest (the conditional benchmark).[52] This approach does not define a single binding constraint to growth, but allows for identifying those factors that are — or are not — the most relevant at this moment and in a longer-term perspective. The Growth Diagnostic approach is then applied, exhaustively exploring hypotheses concerning factors that could be binding for investment and growth.

147. **The analysis points to appropriability problems as the key binding constraint for private investment in non-extractive sectors in the short term, and infrastructure, logistic services and education quality as potential binding constraints in the medium term.** Table 8 summarizes the main conclusions from the analysis. The results suggest that at the economy-wide level, micro-economic policy failures, including regulatory uncertainty, high tax burdens and overly restrictive labor regulations, are the immediate binding

[52] This hypothetical comparator country is constructed by estimating simple cross-country quartile regressions where the indicator is regressed on a set of variables reflecting the key demographic and geographic characteristics and the country's development stage: (i) the Gross Domestic Product (GDP) per capita at constant prices, and its square, to capture nonlinear effects, (ii) population and its square, (iii) population density and its square, (iv) the share of urban population and the share of working age population. Each exercise began with the entire set of variables but only those that were significant—at 10 percent—were preserved in order to keep the models as simple as possible.

constraints to investments outside the extractive industry. In the medium term, after the binding constraints are addressed, continued efforts to improve infrastructure, logistics services and education quality would be needed in order to unleash growth in these sectors.

Table 8: Summary of the Growth Diagnostic Methodology Results

Potential constraints	Relevance for explaining low investment	Other factors to consider
High cost of finance		
High cost of finance	Low: • Private investment in non-extractive sectors did not increase despite the fall in interest rates due to high liquidity	• Limited access to finance for agriculture and manufacturing (high collateral requirement). • 2013 Financial Law might lead to reduced lending, in particular to SMEs.
Low social returns		
Natural resources	Low: • Bolivia's natural wealth is high	• Low productivity in agriculture due to specific issues • Exposure to natural disaster risks with disproportionate effect on vulnerable populations.
Difficult geography	Moderate-high: • Long distance and high mountain ranges and large distance to sea and markets	• Complex geography requires enhanced transport infrastructure and logistics services
Infrastructure	**Moderate in the short term but important in the medium term:** • Infrastructure is close to what is expected for its development level—except access to broadband. Private investment in non-extractive sectors did not increase despite recent large infrastructure investments.	• Infrastructure performs relatively well if compared to current usage, but it is likely to turn into a significant bottleneck if the economy expands (e.g. road density is low). • Limited access to water and sanitation affects rural population and irrigation potential.
Education	**Low in the short run but important in the medium term:** • Returns to education low and decreasing.	• In the medium term, quality of education needs to be improved, notably at the secondary level. • Lack of performance data is critical.
Government failures		
Macroeconomic risks to appropriability	**Low:** • Good macroeconomic figures attained in the last decade was not followed by higher private investment in non-extractive sectors	• More challenging macroeconomic context makes continued stability critical. • Institutionalization of macroeconomic management would provide more confidence for private actors.
Microeconomic risks to appropriability	**High:** • Political stability and rule of law is critical, particularly for large enterprises. • High and resilient informality suggests that entrepreneurs are trying to curb a burdensome regulation. • Total tax rate among the highest in the world. Labor law is outdated (1942) and sets a very rigid labor regulation – prohibition and costs of dismissals are particularly limiting • High degree of smuggling suggest high barriers for formal cross-border trade.	• High uncertainty about scope, timing and nature of Government interventions affects more than the larger role of Government in economy • High informality amplifies problems as competition from informal competitors affects formal enterprises • Tax procedures complex and lengthy, yet not seen as main constraint by private sector • Social security contributions and minimum wage are less of a constraint • Highly complex labor regulation, out of sync with characteristics of labor market (dominated by self-employment and SMEs) • Increasing insecurity in Bolivia, still below regional averages but above MIC median. • Corruption is not perceived as a binding constraint, according to enterprise survey
Market failures		
Self-discovery	**Low:** • Despite real appreciation, the number of exported products has increased and some competitive advantages were developed	• Natural endowment difficult export diversification, in particular when large commodity exports result in real appreciation
Coordination	**Low** • Large industries successfully coordinate activities reducing needs of vertical integration within firms	

Financing costs do not appear to be a binding constraint

148. **The financial sector has been performing strongly and access to finance is now cheaper, but private investments did not follow, suggesting that financing costs are currently not a binding constraint.** Bolivia's financial indicators, such as aggregate savings, deposit rates, non-performing loans, and credit depth information indicate a well-performing financial sector relative to benchmark countries. In line with a healthy financial sector, access to credit is relatively high, as indicated by real interest rates – which are negative – and aggregate credit to the private sector. At a more disaggregate level, data from the Enterprise Survey suggests that the share of firms that have access to a bank loan or use bank loans to finance investments or working capital is above their respective median in LMIs and conditional benchmarks. Moreover, young and small Bolivian firms are less likely to be financially constrained compared to those in other countries around the world, consistent with a well-developed micro-financed sector.[53] Finally, perhaps the most telling signal that financial constraints are not binding is the lack of response of private investment to falling interest rates—both in nominal and real terms— as financial resources became more abundant in the last decade.

Table 9: Selected indicators on access to finance

	±	#	Latin America and Carribean	Middle-Low Income countries	Conditional benchmarking
Gross domestic savings (% of GDP)	+	25.4			
Domestic credit to private sector (% of GDP)	+	41.8			
Bank liquid reserves to bank assets ratio (%)	+	28.3			
Credit depth of information index (0=low to 6=high)	+	6.0			
Bank nonperforming loans to total gross loans (%)	-	1.6			
Real Lending interest rate (%)	-	5.0			
Real deposit interest rate (%)	-	-4.3			
Borrowers from commercial banks (per 1,000 adults)	+	97.2			
Depositors with commercial banks (per 1,000 adults)	+	439.6			
Firms using banks to finance investment (% of firms)	+	27.8			
Firms identifying access to finance as the major constraint (%)	-	10.6			
Market capitalization of listed companies (% of GDP)	+	17.0			

Worse than the worst quartile
Between the best quartile and the median
Between the median and the worst quartile
Better than the best quartile

Source: World Bank Enterprise Survey, WDI. Indicators on relative performance by quartile is derived from quartile regressions of each indicator in a cross-section of Latin American countries, low-middle income countries, or with country characteristics as controls.

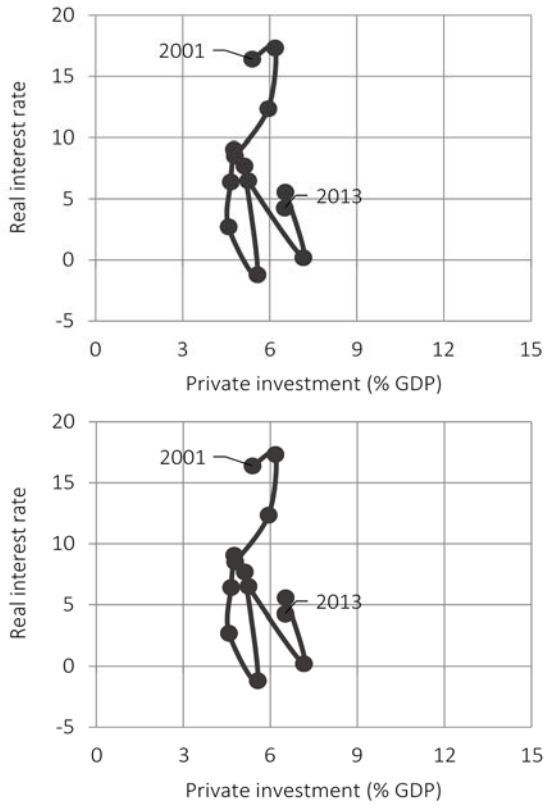
149. **The 2013 Financial Services Law introduces new risks to the financial sector.**[54] Some interventions, such as loan quotas for productive sectors, have been motivated by the stagnation of credit growth in agriculture and manufacturing. However, the effectiveness of such interventions on credit supply will depend on where the root cause of low financing lies. In agriculture, for example, the main constraints to accessing mid-term financing relate to the lack of financial and managerial capability of smallholders, limitations to pledge land as collateral,[55] and difficulties that some intermediaries serving small farms encounter. In some sectors, low credit could also reflect low demand for financial resources. One of the few indicators in which Bolivia underperforms is in the capital market where market capitalization is worse

[53] The Enterprise Survey shows that the share of small firms that identify access to finance as the main constraint is below the median of all comparison groups. A World Bank study (2013) suggests that access to credit for firms less than five years old is one of the best in the world, well above the expected level given Bolivia's per capita income.

[54] The law aims to promote financial inclusion by assigning a more active role to the government and defines among others: (i) mandatory loan allocation targets for productive sectors and social housing, (ii) lending rates ceilings and saving rates floors.

[55] In particular, verification requirements under the Economic Function of the Land (FES) increase tenure uncertainty and limits farmers' ability to use land as collateral.

Figure 1: Investment propensity to real interest rate



Source: BCB and ASFI

than the median of all comparison groups. A potential explanation lies outside the financial sector: firms might be avoiding formal finance sources to avoid visibility and appropriation risks.[56]

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Access to infrastructure does not register as binding constraint to growth in the short term, but would need to be improved in the medium term

151. **Access to electricity, telecommunications, and transport infrastructure do not surface as binding constraints to growth at present.** Around 83.5 percent of Bolivia's population has access to electricity, which is higher than the median of LMIs and conditional benchmarks. At the firm level, indicators often associated with electricity shortages such as the number of power outages, value lost due to outages, and the percentage of firms owning or sharing a generator, are all below the lower quartile of the conditional benchmark for all firms' sizes. Bolivia also outperforms LMIs and the conditional benchmark on access to telephones and internet penetration. While road infrastructure is poorly developed, road usage (number of vehicles per kilometer of road) is still among the lowest in all comparison groups. Finally, despite large public investment in transport infrastructure and increases in fuel subsidies due to higher international oil

[56] Safavian and Winpey (2007) show that manufacturing firms are more likely to opt for informal financing when the quality of the regulatory environment, particularly tax administration and overall governance, is poor.
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prices, there were no significant improvements in private investments or exports in non-traditional sectors. These indicators suggest that road infrastructure has not been a binding constraint in the short run.

152. **Over the medium-term, however, Bolivia's challenging topography, and long distances to sea and markets call for improvements in transport infrastructure and logistic services to reach export markets.** The overall logistic performance is not particularly bad, but the lead times to export (9 days) and particularly import (15.6 days) are above the higher quartiles of all comparisons groups, driven by cumbersome cross-border procedures. Going forward, public investments in infrastructure would also benefit from better planning and targeting. Concurrent congestion and underuse of different road segments, for example, may imply a coordination problem. Considering that most agriculture have low specific value and their more profitable markets could be far away and outside the country, this issue is particularly important as agriculture is where more obvious export diversification opportunities exist. Considering the special characteristics of this sector, in the medium term, other public goods could also be required such as shared storage facilities, quality certification, and export promotion.

Table 10: Selected indicators on infrastructure

	±	#	Latin America and Carribean	Middle-Low Income countries	Conditional benchmarking
Access to electricity (% of population)	+	83.5			
Power outages in firms in a typical month (number)	-	1.2			
Telephone lines (per 100 people)	+	8.4			
Mobile cellular subscriptions (per 100 people)	+	80.7			
Internet users (per 100 people)	+	28.9			
Improved water source (% of population with access)	+	87.7			
Improved water source, rural (% of rural population with access)	+	71.2			
Improved water source, urban (% of urban population with access)	+	95.9			
Roads, paved (% of total roads)	+	10.6			
Vehicles (per km of road)	-	9.8			
Logistics performance index: Overall (1=low to 5=high)	+	2.6			
Lead time to export, median case (days)	-	9.0			
Lead time to import, median case (days)	-	15.6			

Worse than the worst quartile
Between the best quartile and the median
Between the median and the worst quartile
Better than the best quartile

Source: World Bank Enterprise Survey, WDI. Indicators on relative performance by quartile is derived from quartile regressions of each indicator in a cross-section of Latin American countries, low-middle income countries, or with country characteristics as controls.

153. **There are strong indications that access to water could be a limiting factor for rural development.** Access to water in Bolivia is among the worst in most comparison groups, due to the low coverage of improved water sources in rural areas. While water is not likely to be a binding constraint to growth for urban firms,[60] lack of infrastructure to manage water is constraining irrigation and agricultural productivity, and increasing its exposure to climate issues. In the shorter term, irrigation can substantially improve productivity in the highlands and inter-Andeans valleys. This would require narrowing the gap of irrigation infrastructure and improving performance of existing irrigation schemes (including water use efficiency at the farm level).

[60] Urban activities are less dependent on water, and water supply is better in urban areas. The Enterprise Survey also suggests Bolivia firms have relatively low levels of water insufficiencies. However, access to clean water is an issue for households (see section 4.1.3).

The supply of educated workers is outstripping demand, but over the medium term, quality of education could become a critical constraint

154. **Education is not a constraint in the short term.** Bolivia has improved its basic education coverage – literacy and primary completion rates have increased and are above the median of LMIs and the conditional benchmark. At the secondary education level, Bolivia performs better than the median of the conditional benchmark in all indicators. Bolivia also has one of the largest tertiary education enrollment rates in all comparison groups. However, returns to education are low and decreasing, and returns decrease more for higher levels of education.[61] While unemployment has halved in the last decade, unemployment of highly skilled workers was more than twice the unemployment of medium-skilled workers and triple that of low-skilled workers. These results suggest that promoting further supply of education at higher levels without lifting the constraints to labor demand could reduce the education premium, discouraging education instead.

155. **Nevertheless, insufficient quality of education could become a critical constraint over the medium term as non-extractive sectors start developing and demanding a more skilled workforce.** While returns to primary education are close to or above the LAC regional median — except among female wage employment — returns to secondary education are among the lowest in the LAC region, and even negative (

[61] According to Hernani and Villarroel (2011), the average return to an additional year of education has fallen from about 8.5 percent in the early 2000s to only 4.4 percent at the end of the same decade. Returns to primary, secondary, and tertiary education completion fell by 12.8 percent, 15.6 percent, and 38.8 percent respectively.

156.

Figure 51: Return to education by gender and education level

Figure 52: Comparative learning achievement in Latin America

157.). This suggests that skills provided by secondary education are not contributing to improving the population's access to better labor opportunities, and have become only a required step for access to tertiary education.

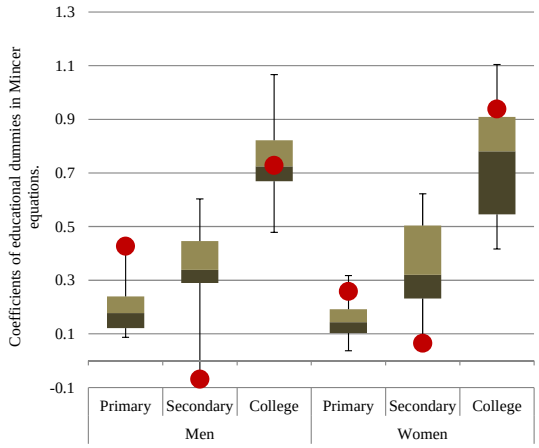
Table 11: Selected indicators on education

	±	#	Latin America and Carribean	Middle-Low Income countries	Conditional benchmarking
Literacy rate, youth total (% of people ages 15-24)	+	99.3			
School enrollment, primary (% net)	+	86.1			
Primary completion rate, total (% of relevant age group)	+	92.5			
Pupil-teacher ratio, primary	-	24.2			
School enrollment, secondary (% net)	+	68.1			
Lower secondary completion rate, total (% of relevant age group)	+	75.1			
Pupil-teacher ratio, secondary	-	18.2			
School enrollment, tertiary (% gross)	+	37.7			
Emigration rate of tertiary educated (% of total tertiary educated)	-	5.8			
Public spending on education, total (% of GDP)	+	7.5			
Expenditure per student, primary (% of GDP per capita)	+	20.7			

Worse than the worst quartile
Between the best quartile and the median
Between the median and the worst quartile
Better than the best quartile

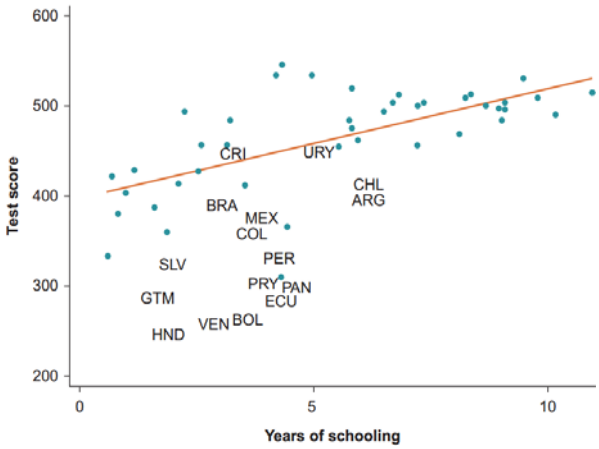
Source: World Bank Enterprise Survey, WDI. Indicators on relative performance by quartile is derived from quartile regressions of each indicator in a cross-section of Latin American countries, low-middle income countries, or with country characteristics as controls.

Figure 51: Return to education by gender and education level



Source: SEDLAC

Figure 52: Comparative learning achievement in Latin America



Source: Reproduced from Bruns and Luque (2015).

158. **While data and analysis on learning results in the Bolivia's education systems is sketchy, several studies confirm the view of insufficient quality and skills mismatches.** The 2012 STEP (Skills Towards Employability and Productivity), a skills measurement survey of urban workers, was analyzed in detail for the SCD and provides an indication of skill mismatches. The STEP Survey results reveal that workers in more skilled occupations were much more likely to think that they were under qualified for their jobs, with the opposite being valid for less skilled occupations. Similarly, according to the latest information available, the average Bolivian student learns much less during each year of schooling than in other countries in the LAC region which itself fares very poorly relative to other regions of the World, except Sub-Saharan Africa (

159. Figure 52). This is consistent with the finding that perceptions of the quality of higher education for employability in Bolivia are the lowest in the LAC region, according to Latino Barometro. Tackling these problems would be critical to allow people to access better labor opportunities, in particular in skilled sectors and emerging activities – for instance, financial services, services to firms and other services that are already employing the largest number of skilled workers.[62] Similarly, the development of tradable sectors such as tourism or software development would also need more qualified employees (Box 5).

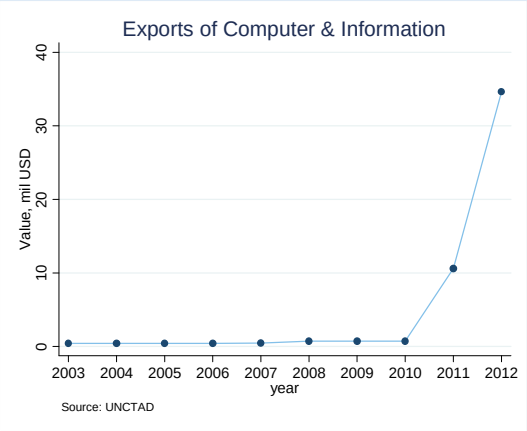
Box 5: What are the promising tradable services?

Can Bolivia jump to a high-tech industry?

Scanning the universe of Bolivian services exports reveals an interesting emerging industry - computer and information. From almost no exports in 2003, the industry increased by more than 80-fold to occupy a non-negligible share of overall services exports in 2012. Underlying this trend is most likely the development of a software cluster in Cochabamba. Led by a pioneering company - Jalasoft – since 2003, there are now more than 30 companies

[62] Jemio et al. 2015, based on 2012 population census and household data.

engaged in business outsourcing, business intelligence, data mining, cloud computing services, etc. The development of this cluster offers many interesting insights about nascent industry and export pioneers.



The pioneer company, Jalasoft, was able to survive and thrive owing to a solid financial position, the ability to attract top Bolivian talent, some of them returnees from abroad, and knowledge of foreign markets. The company was able to bypass many constraints: (i) lack of skills and strict labor code – by investing in its own workforce, training technical graduates for as long as a year; (ii) lack of ICT infrastructure – by buying multiple ISP services; (iii) lack of legal framework – by initiating and proposing its own Intellectual Property Rights draft regulation. What is also interesting is that the company is willing to invest in public goods with a vision to "develop an industry, not just a company", partly mitigating the classic learning externality. Jala has been playing the role of educator and technology incubator, and is making sizable investments in new teaching programs both at the high school and university level. As spillover from Jala's success, a cluster of companies has been able to develop around it.

This example demonstrates an idea in the trade literature that suggests that export successes are essentially rare, random events that cannot be explained or predicted (Easterly et al. 2009). However, once such clusters develop, there might be a role for the government to improve provision of information and other public goods (Cadot et al. 2014), which in this case might be education and ICT infrastructure. As our field interviews suggest, the clustering of software companies in Cochabamba were also encouraged by concentrated demand. This suggests potential agglomeration benefits beyond the software industry.

Nevertheless, is software an answer to Bolivia's diversification challenges? There are many advantages of the software industry, including high value added, low transport costs, low barriers to entry, skill premium signals which can help spur private investment in education and forward linkages with other industries. However, given its skill intensity, the industry would be unlikely to absorb a large amount of labor. The likely answer would be a combination of improvements in many industries, continued accumulation of human capital, and maximizing linkages from emerging successes.

Source: field interviews with Jala Foundation and I-Project Partners and SoG chapter on mining, (Gelb, 2011)

Knowledge gap – potential for productivity and employment growth through services: new data and analysis on services and the use of service for increasing productivity in other sectors would be critical to better understand and address the constraints to competitiveness in Bolivia

Important appropriability constraints at the microeconomic level

160. **Difficulties to attract foreign investment in highly profitable activities suggest that appropriability problems could be discouraging private investment. Bolivia's** FDI inflows are close to the LAC regional median, but are dominated by resource-seeking investments, particularly in natural gas. Furthermore, FDI in the hydrocarbon sector is mostly the result of the mandatory re-investment of profits as no new investors have entered the industry in the last decade despite high gas export prices. Similarly, in the mining sector prices contributed to increasing profitability, but no new large investments have been started since the late 1990s, following the massive San Cristobal project. This problem is not restricted to extractive industries. Bolivia has been unable to attract new large foreign investors in the financial sector despite its high profitability. In cement, beer or milk production, where the economic boom has also boosted profitability, no new significant enterprise has begun operations. This suggests that even when business opportunities do exist, Bolivia is considered as either too risky or too costly to attract new FDI.

161. **Bolivia's appropriability problems are mostly related with microeconomic rather than macroeconomic problems.** Macroeconomic appropriability problems are not a binding constraint. Private investment has remained low despite macroeconomic stability, the last commodity boom, and the resulting accumulation of sizable buffers. Bolivia's difficulty to attract private investment is linked to the risk and costs related to microeconomic issues. In the same sense, high informality[63] is a symptom that a heavy regulation generates costs and risks for formal activities.

Figure 53: Selected indicators on regulatory environment

	±	#	Latin America and Carribean	Middle-Low Income countries	Conditional benchmarking
Rule of Law	+	-0.8			
Regulatory Quality	+	-1.0			
Ease of doing business index (1=most business-friendly regulations)	-	160.0			
Cost of business start-up procedures (% of GNI per capita)	-	78.7			
Time required to start a business (days)	-	49.0			
Average equity restrictions	+	1.0			
AMD 1 on the strength of ADR laws and institutions - Score	+	0.7			
AMD 2 on the ease of initiating and conducting arbitration proceedings - Score	+	0.6			
AMD 3 on the ease of recognition and enforcement of foreign arbitral awards - Score	+	0.7			
Total tax rate (% of commercial profits)	-	82.3			
Tax payments (number)	-	42.0			
Time to prepare and pay taxes (hours)	-	1043.3			
Firms identifying labor regulations as a major constraint (%)	-	5.8			
Firms identifying labor regulations as the major constraint (%)	-	31.9			
Firms identifying tax rates as the major constraint (%)	-	1.2			
Firms identifying tax rates as a major constraint (%)	-	12.2			
Firms identifying practices of competitors in the informal sector as a major constrain (%)	-	37.5			
Firms identifying practices of competitors in the informal sector as the major constrain (%)	-	49.8			
Percent of firms competing against unregistered or informal firms	-	80.5			

Worse than the worst quartile
Between the best quartile and the median
Between the median and the worst quartile
Better than the best quartile

Source: World Bank Enterprise Survey, WDI. Indicators on relative performance by quartile is derived from quartile regressions of each indicator in a cross-section of Latin American countries, low-middle income countries, or with country characteristics as controls.

162. **Policy uncertainty and weak property rights create disincentives for investments, particularly in large-scale sectors.** The new economic model with the State in a leading role, has introduced uncertainties about the role of the private sector. Significant changes were introduced in the ownership of productive resources and rules of the game through nationalizations, a number of new or expanded SOEs,[64] and a regulatory reform triggered by the 2009 Constitution that is still ongoing. Accordingly, Bolivia's rule of law indicator is still among the worst among all comparison groups. According to the Enterprise Survey 2010, 56 percent of firms state that political instability is the major obstacle for their firm's development and the second most important obstacle after informality. Using the 2011 *Encuesta de Percepción Empresarial*, Muriel and Ferrufino (2012) show that 60 percent of entrepreneurs believe that the political and legal context is restrictive or very restrictive. As these surveys are applied outside extractive industries, the financial sector, or utilities, they suggest that the appropriability problems could also be discouraging investment in other sectors.

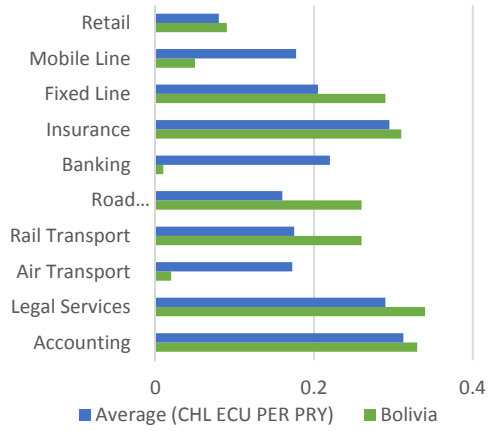
[63] Independently of the definition used, informality is one of the most salient characteristics of Bolivian labor markets.

[64] There are over 60 SOEs in Bolivia in around 30 economic sectors – including non-strategic ones: agribusiness, shipping, construction and public works, food, textiles, financial sector, sugar, honey, cement, fertilizers, seeds, almonds and nuts, cardboard, dairy products, paper, among others. SOEs presence is more pronounced than in neighboring countries, including Mexico, Brazil and Chile.

Knowledge gap – impact of recurrent interventions in markets: SCD consultations with private sector representatives give the impression that concerns on state interventions in the economy are less related to the actual measures that could reduce appropriability than to frequent and unpredictable changes in the rules of the game per se – at the regulatory and, perhaps even more, at the enforcement level. A study that would systematically measure the actual impact of different types of State interventions and their effects on private sector confidence could be valuable in this regard.

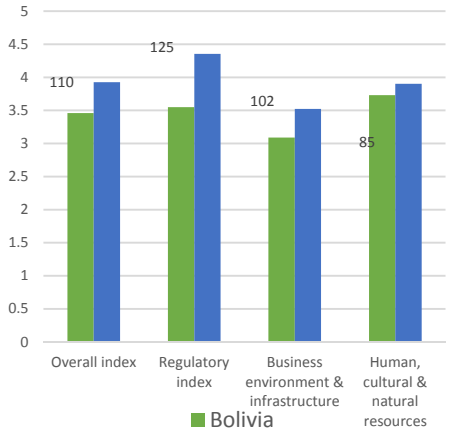
163. **As FDI is characterized by large sunk costs and long-term decisions, policy uncertainty is even more binding for foreign investors,**[65] **particularly given limited investor protection.** Benchmarking results on a range of "Investing across Borders" indicators show that while restriction for FDI entry in Bolivia is in line with conditional benchmark countries, a more critical barrier for FDI might be the absence of key guarantees for investor protection, in particular the lack of recognition of international arbitration to solve investor-State disputes.[66] FDI in agriculture is also negatively affected by general business climate constraints, such as regulatory uncertainty, ad hoc export restrictions, weak land rights, and reduced potential to use land for collateral due to the FES (*Función Económica y Social*) verification process (Box 3). Similarly, in certain transport and communication sectors, Bolivia maintains more restrictive barriers to FDI than neighboring countries (Figure 54). In tourism, Bolivia's regulatory index ranks lowest in the LAC region, and places 125/142 worldwide (Figure 55). Even if Bolivia's potential, as measured by the index on human, cultural and natural resources, is more in line with the LAC regional average, weakness in competitiveness are an important constraint to develop fully the tourism sector's potential, especially since it accounts for the largest share of services exports[67] and is a relatively labor-intensive sector.

Figure 54: Services trade restrictiveness index, by industry



Source: Jafari and Tarr (2014): estimates of ad valorem equivalents of barriers against foreign suppliers of services, derived from services regulations.

Figure 55: Tourism Competitiveness index & ranking



Source: World Economic Forum (2013)

[65] The literature on investment under uncertainty has shown that with irreversibility, higher uncertainty reduces the responsiveness of investment to demand shock. See, for example, Bloom et al. (2007), Baker et al. (2013)

[66] The new Constitution prohibits the state from settling investment related disputes with foreign investors in international arbitration tribunals.

[67] The share of tourism in services exports in 2012 is 43% (UNCTAD).

164. **An overly restrictive labor code and high tax burden discourage formality and firm growth.** The protection of labor rights is a key priority for the Government. Bolivia's labor regulation is based on a seven-decade-old Labor Law, which focuses mainly on worker protection. The main restrictions of labor regulation are rigidities resulting from the prohibition and costs of dismissals, which are generally perceived as one of the most restrictive in the world.[68] Bolivia also belongs to the one-third of developing countries that prohibit fixed-term contracts for permanent tasks. According to the Enterprise Survey 2010, 6 percent of firms identify labor regulation as being the single major constraint and about one-third believe labor regulation as being one of the major constraints—among the highest in all comparison groups. Labor restrictions matter in that they constrain firms' capacity to adjust to changing market and technical conditions, resulting in potential inefficiency losses. In addition, high labor costs create incentives to adopt laborsaving technologies at the expense of jobs.[69]

165. **Another regulatory barrier concerns the overall tax rate**. While corporate income and value-added tax rates are broadly in line with international standards, a high transaction tax results in an effective total tax rate that is among the highest in the world, equivalent to a tax of 83.7 percent on profits, compared with 48.3 percent for countries in the LAC region (World Bank, 2014).

166. **High labor and tax burdens create large wedges in operating costs and profit appropriability among the formal and informal sectors that tends to distort the allocation of resources and lower aggregate productivity.** Data from Enterprise Surveys highlights the relevance of informality in Bolivia: 80 percent of legally established firms state that they are competing with unregistered or informal firms, among the highest in all comparison groups. Moreover, almost half of all enterprises consider informal competitors as a major constraint, while almost 40 percent believe this competition is the major constraint. Lifting tax and labor burdens to increase formalization benefits may help address the root cause of informality and reduce scope for misallocation of resources due to unfair competition. It may also help to generate a virtuous circle where more productive informal firms could become formal, thus taking advantage of economies of scale and other advantages linked with formality—such as easier access to finance, export options, or access to a broader universe of clients requiring formal receipts for tax reasons.[70]

167. **The degree of competition in Bolivia is perceived as low compared with other countries in the LAC region**. According to the Global Competitiveness Report (2014-2015), Bolivia ranks 139th out of 144 countries regarding the intensity of local competition and 114th in relation to the effectiveness of its anti-monopoly policy. Compared to countries of similar GDP, such as Uruguay, Costa Rica and Slovenia or with similar GDP per capita, such as Honduras, Philippines and Sri Lanka, the perceived intensity of local competition in Bolivia is lower (Figure 56 and Figure 57). Moreover, these indicators have shown no significant improvement in the past five years. In fact, discretionary and discriminatory elements (such as strong state presence and price controls) from the ongoing regulatory reform might reduce competition.

[68] Djankov and Ramalho (2008) showed that Venezuela and Bolivia have the most rigid labor regulations in the world. Lora and Fajado (2012) identified Bolivia as the country with the lowest labor flexibility index due to inflexible rules on hiring, high costs of dismissal, and the lack of working-day flexibility. Muriel and Ferrufino (2012) suggest that costs generated by indemnification and eviction are perceived as among the most restrictive obstacles to hiring people, in particular among small and micro enterprises.

[69] See, for example Alesina, Battisti and Zeira (2014).

[70] McKenzie and Sakho (2010) find that in Bolivia, the main benefit from formalizing is through attracting more customers by issuing tax receipts. Profit only increases for firms with 2-5 workers however. For smaller or larger firms, the benefits are more than outweighed by higher taxes.

Knowledge gap – product market competition: to better understand challenges related to (a lack of) competition in Bolivia, more complete data sets of market structure in key sectors, and more in-depth analysis on barriers to entry (and to trade and investment), market concentration, degree of state control, and impact of regulations and policies would be needed. A study applying the product market regulation (PMR) methodology is underway to this end, conducted by the WBG.

Figure 56: Effectiveness of anti-monopoly policy 2014-2015 (7=most)

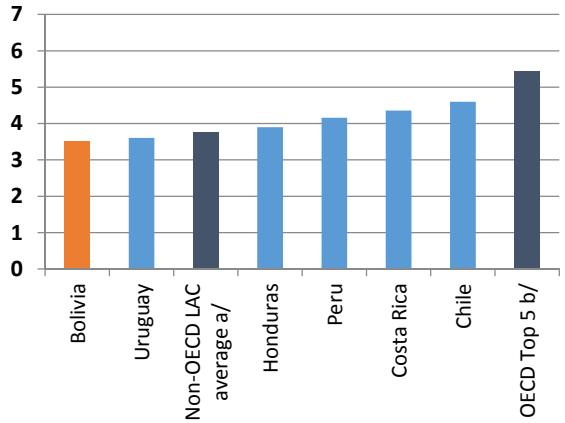
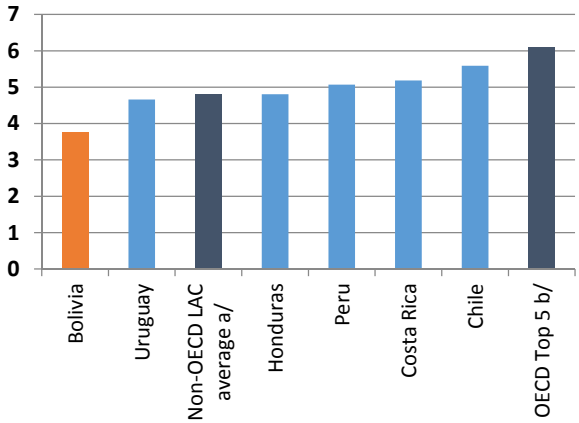


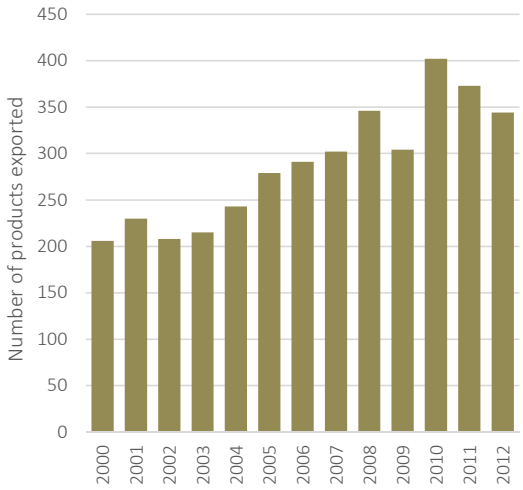
Figure 57: Intensity of local competition 2014-2015 (7=most)



Source: Global Competitiveness Report 2014-2015

168. **In sum, there is an array of challenges to Bolivia's investment climate that are potentially holding back investments in non-extractive sectors.** Those constraints that appear as most salient in the short term– the microeconomic appropriability constraints – critically affect the confidence of the private sector. The lack of a clear definition of the scope of government interventions and rules of the game in general are key factors. Non-controversial reforms, such as to eliminate widespread red tape or the creation of one-stop shops for exports or firm creation could help address this, also as they may facilitate future action on complex and politically delicate issues, such as the reduction of the tax burden and of labor rigidity. Progress in other key areas would require addressing constraints of more long-term nature: transport and logistics in general would benefit from a more coordinated approach and planning; quality of education—particularly secondary and tertiary—also would need to be tackled, with a possible low-hanging fruit being the introduction of comprehensive, internationally comparable educational testing.

Figure 58: Number of products exported



Self-discovery and coordination problems exist but do not seem to be binding constraints

169. **Bolivia's exports are highly concentrated in a few commodities, but some new products are being exported**. As other countries with a large natural endowment, Bolivia's exports are highly concentrated in a handful of commodity products, notably natural gas, some metals, and soybean products. However, this concentration does not imply that a lack of self-discovery of new products is a binding constraint to investment. In effect, the Herfindahl–Hirschman Index for Bolivian exports is not among the highest for natural resource based countries. Non-extractive exports account for one-fifth of GDP, close to the levels observed in Peru, Colombia, and Chile – countries in a higher development stage. Moreover, Bolivia gained comparative advantage in a few products in the last decade: oil seeds and related products (sunflower seeds, oil seeds and oleaginous fruits, peanuts); and metallic chemical byproducts (inorganic bases and metallic oxides, salts of metallic acids) – despite the booming extractive exports and real appreciation. The number of exported products increased from about 200 in the early 2000 to about 350 in the early 2010 showing a strong dynamism in terms of export-product discoveries (**Error! Reference source not found.**).

170. **Coordination problems do not seem the binding constraints to investment in Bolivia**. According to the Global Competitiveness Report, the capacity of local suppliers to provide products in the quantity and quality required is among the worst in all comparison groups. However, the value change breadth and of production process sophistication, is better than the conditional benchmark, despite being worse than the median of LAC region and LMIs. The economic complexity indexes estimated by Hausmann and Hidalgo (2014) increased for Bolivia from about -1.4 in 2009 to -0.7 in 2012. This level is still among the lowest in the LAC region, but is higher than the median of the conditional benchmark, suggesting that Bolivia's complexity is in line with its basic characteristics, including its development stage. Similarly, the lack of vertical integration in thriving industries in non-extractive sectors (cement, dairy, chocolate and quinoa) suggests that coordination problems are not binding constraints.

Figure 59: Selected indicators on coordination problems

	±	#	LAC	MLI	CB
Local supplier quantity, 1-7 (best)	+	3.8			
Local supplier quality, 1-7 (best)	+	3.8			
State of cluster development, 1-7 (best)	+	3.6			
Nature of competitive advantage, 1-7 (best)	+	3.3			
Value chain breadth, 1-7 (best)	+	3.6			
Control of international distribution, 1-7 (best)	+	3.8			
Production process sophistication, 1-7 (best)	+	3.4			
Economic Complexity Index, -1 to 1 (best)	+	-0.7			

Worse than the worst quartile
Between the best quartile and the median
Between the median and the worst quartile
Better than the best quartile

Source: World Bank Enterprise Survey, WDI. Indicators on relative performance by quartile is derived from quartile regressions of each indicator in a cross-section of Latin American countries, low-middle income countries, or with country characteristics as controls.

4.4 Challenge #3: Main constraints to reducing gaps and disparities in access to human opportunities

171. **Equality in access to opportunities is both an important social value for Bolivia, as well as a critical factor to permit the poor to benefit from opportunities offered by inclusive growth.** A pre-requisite of a fair and just society is that every person, regardless of her conditions at birth (such as place or socioeconomic

status of the parents), has an equal chance to accumulate human capital in order to enhance her access to economic opportunities. Being able to be educated and healthy are both valuable in themselves, and, as such, at the core of Bolivia's development strategy. At the same time, strengthening these core human capabilities is also instrumental to allow Bolivia's poor to take advantage of the opportunities offered by the improvements on inclusive growth.

172. **Improving public sector capacity to effectively deliver services to the population across Bolivia is essential for enhancing access to opportunities for all**. Over the past years, the Government sought to strengthen this capacity, in line with the general thrust of the centrality of the state in Bolivia's development strategy. This has been accompanied by the growth in resources available for the provision of services and investment in infrastructure, as result of the increasing revenues from extractive production. Critical in this regard is the growing role of subnational governments (municipalities in particular) in service provision, due to the acceleration of the process of decentralization of functions and responsibilities to sub-national governments. For this purpose, a large share of revenues from the hydrocarbon tax (IDH) and royalties is distributed to subnational governments.

173. **While this has led to improvements in most areas in recent years, large disparities in access to basic services of similar quality remain across geographical areas and social groups, which result in unequal social outcomes**. As discussed in more detail in section 2.1, outcome indicators in health and education, as well as access indicators related to basic social and infrastructure services have improved across the board, for all Bolivians. This positive record needs to be seen in Bolivia's context of a geographical and cultural diversity, in which ensuring equal access to quality services is particularly challenging. Nevertheless, Bolivia has not been able to close important gaps in access to opportunities, with rural areas (particularly highland areas with large indigenous populations) lagging significantly behind.

174. **In the following, the main constraints behind these remaining gaps and disparities in access to opportunities are reviewed in detail**. Three basic questions are examined for this purpose. The first relates to whether there is a general lack of resources that limits the provision of services. The second relates to whether the resources are distributed according to the needs of the most disadvantaged groups. This is assessed both in terms of the inadequate vertical and horizontal distribution of these resources across and within different levels of Government, as well as through a discussions on potential improvements in the targeting of public spending (and the fiscal system more broadly) on the poor, in particular in subsidy and transfer schemes. The third examines the limited capacity of Government to plan and execute public programs, including a broader discussion on low standards in governance and accountability that limit the participation of the poor in decision making on resource allocation.

Analysis on public spending patterns and their coherence with needs – is it a general question of insufficient resources?

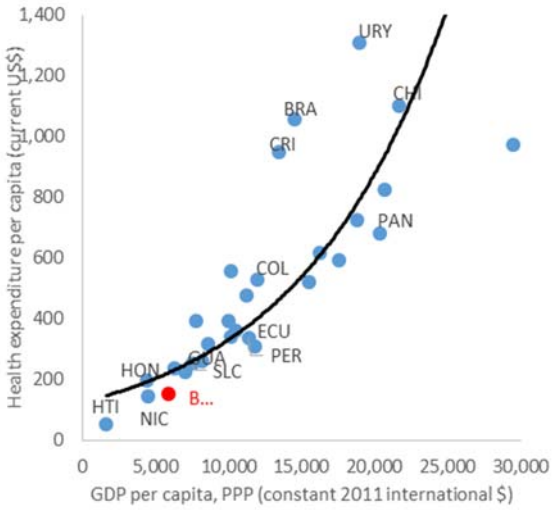
175. **The Government's ability to address gaps and persistent disparities in access to services is limited by a sub-optimal distribution of resources as well as by insufficient capacity to deliver those services, but there is no clear evidence on this being caused by an insufficiency of resources**. This analysis draws from a background study prepared for the SCD on public spending patterns and their correspondence with basic needs (as expressed by poverty levels and social outcome indicators). The analysis finds that at there is no clear evidence that gaps and persistent disparities in access are caused by a lack of resources, with the exception of a few sectors, notably health. The main limitations appear to be found elsewhere: the inadequate vertical and horizontal distribution of these resources; and limited institutional capacity to execute public programs.

Knowledge gap – public expenditure review (PER): to provide a more complete and in-depth insight on expenditure patterns (by sector, functional categories, different levels of government, across subnational government levels) and their impact on policy variables would be timely and useful to inform policy making in Bolivia. The last PER exercise was conducted as far back as 2004.

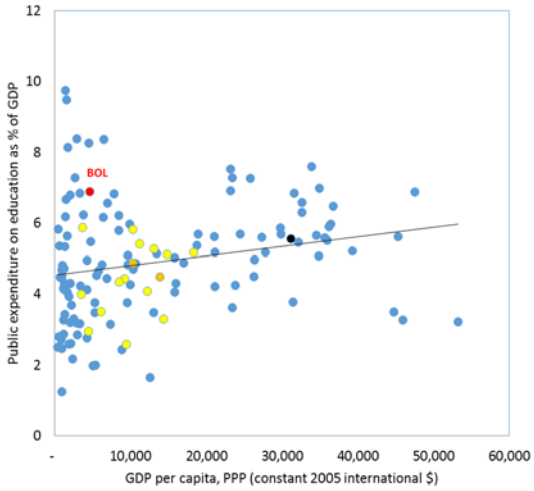
176. **Relative to comparator countries, Bolivia's spending on education is above the standard, but falls short on health.** Chronic and sustained underfinancing leads to limited, poor-quality provision (UNESCO 2009). The Government's spending on education at all levels as a percentage of GDP is high relative to Bolivia's per capita GDP, according to WDI indicators. Public spending on education is close to 7 percent of GDP, two percentage points above the LAC average and among the highest in the LAC region (Figure 60). Therefore, the total amount of resources assigned to education might not be a key factor behind deficiencies in quality or access across groups. In contrast, health spending (private and public), though rising slightly over the last decade, remains among the lowest in the LAC region, after Haiti and Nicaragua, suggesting that this could be one of the binding constraints for the sector. Despite Bolivia's efforts to increase health spending in recent years, it has remained almost constant since 2006 between 5 and 5.5 percent of GDP.

Figure 60: Spending in health and education

Total health spending per capita. Latin American countries, 2013



b. Public spending in education as percentage of GDP. World, 2013



Source: WDI

Analysis on public spending patterns and their coherence with needs – is it a question of sub-optimal distribution of resources?

177. **Subnational governments have benefited from an increase in revenue, but allocation across governments varies greatly and does not match well the needs of (potential) beneficiaries.** Given that taxation remains largely centralized, inter-governmental transfers to subnational levels represent an

important mechanism to increase spending where it is most needed and to reduce vertical imbalances.[71]. The main findings of the background study[72] on public spending patterns finds important discrepancies between resource allocation and needs, in particular, large disparities on "per extreme poor spending":

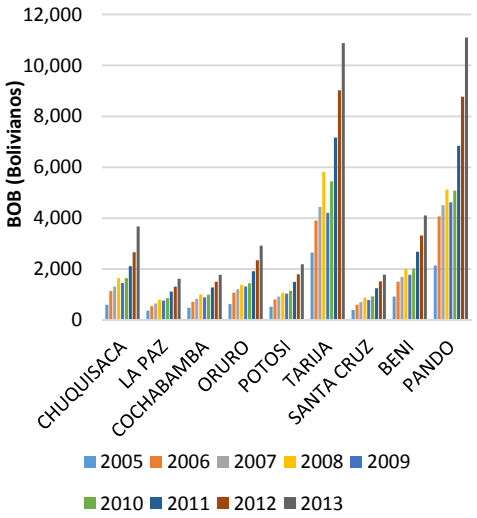
- Municipalities that showed large declines in poverty rates seem indeed to have received - on average - a higher amount of resources from the Central Government throughout the past decade;
- However, allocation of Central Government resources to departments seem to benefit greatly those departments like Tarija and Pando which, after Santa Cruz, have the lowest extreme poverty incidence. The unequal allocation of resources across departments represents a source of political tension between the Central and local governments; and
- Central Government transfers to municipalities appear to follow an inverse pattern to needs. Average transfers to municipalities in 2012 varied from Bs1000 to more than Bs60.000 per extreme poor, and these differences are not explained by the distances of these poor to the extreme poverty line (Figure 61)
- On the contrary: in municipalities where the average distance of the poor to the line is lower, the transfer per extreme poor seems be larger. Additional resources focused towards the neediest municipalities could potentially help close the gap across the country.

[71] Central government transfers amount to around 70 percent of total resources to municipalities, and 90 percent to Departments (Brosio, 2012:6:10). Resources from the IDH constitute around 40 percent of the total resources transferred from the Central Government to subnational governments and 32 percent of production value. The IDH is distributed as follows: 4 percent to each producer department, 2 percent for each non-producer department and 5 percent for the indigenous fund. Of each Department share, 24 percent is allocated to the Department government, 67 percent to municipalities, and 9 percent to universities. Additionally, there is a compensation fund for La Paz, Cochabamba and Santa Cruz in the amount of 9.5 percent of the IDH. Law 358 obliges the Central Government to match the income of a producer Department in case its revenue from the 4 percent IDH share is lower than that of a non-producer. Since in practice all producer departments with the exception of Tarija have lower IDH revenues, 8 out of 9 Departments receive the same IDH amount. Royalties are equivalent to 18 percent of the production value. From this amount, 11 percent goes to the producer departments, 1 percent each for the Departments of Beni and Pando and 6 percent for the National Treasury.

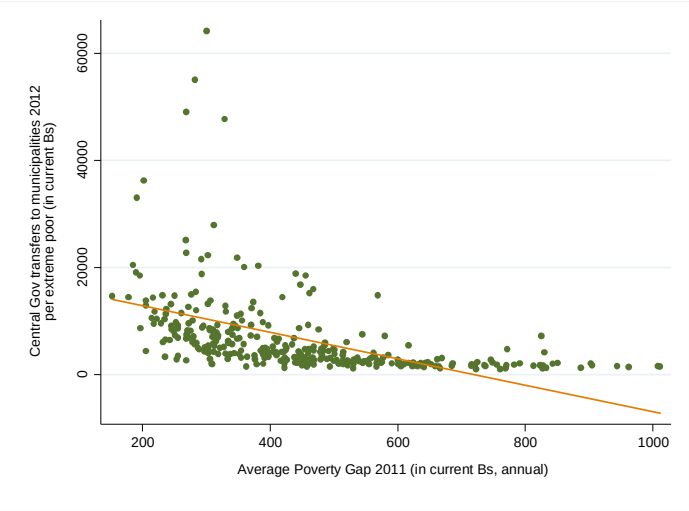
[72] This analysis is largely based on available public investment data, from SISIN-Web. While it provides a considerable degree of detail and encompasses both internal and external resources, information on current expenditure (including wages) is missing, and thus it fails to provide a comprehensive picture of the allocation of resources, particularly at the subnational level. Current expenditure is generated by the MEFP's financial management systems (SIGMA and SIGEP by their Spanish acronyms), and unfortunately, is not integrated with the public investment data recorded on SISN-Web managed by the MPD. In addition, in 2013 approximately 25 percent of the executed public investment budget (in SISIN-Web) is classified as "multi-municipal" and thus it is excluded from the municipal estimate considered here, and hence underestimating the allocation for some of the municipalities.

Figure 61: Central government transfers to subnational governments

a. Transfers per capita to departments, 2005-13



b. Transfers to municipalities per extreme poor and poverty gap, 2012



Source: a. Based on UDAPE, b. Calculations based on data from INE and UDAPE.

Limited progressivity of direct transfers and subsidies

178. **Fiscal policy in Bolivia has a generally regressive impact, despite efforts in recent years to enhance spending programs directed at the poor.** A recent analysis by the Commitment to Equity Project (CEQ) concluded that huge fuel subsidies and unrestrictive tertiary education were behind an overall regressive fiscal expenditure.[73] The tax system is highly regressive. As there are no direct taxes the system relies completely on indirect taxes that are regressive. The share of total tax revenue collected from the bottom decile is more than triple their share of the country's income.[74] This is larger than corresponding shares in Brazil, Mexico, Peru and Uruguay (World Bank, 2014c). Although the poor receive a larger proportion of their income from indirect transfers such as fuel subsidies, the current regime of hydrocarbon subsidies is such that, in 2009, 83 percent of these subsidies were accrued by the non-poor, leaving only 17 percent to the B40. Replacing these subsidies through support more targeted to the poor would permit reaching the most vulnerable while avoiding waste in national budget. In-kind transfers are progressive in absolute terms, but tertiary education –accounting for close to half of Bolivia's total education spending - is relatively regressive, that is, more resources are going to the richer deciles than to the poorer ones. In 2009, Bolivia's entire tax-and-transfer system had a significantly lower impact on poverty and inequality than similar systems in Argentina, Brazil, Mexico, and Uruguay.

[73] Paz Arauco, Verónica, George Gray Molina, Wilson Jiménez Pozo, and Ernesto Yáñez Aguilar (2013) "Explaining Low Redistributive Impact in Bolivia," CEQ Working Paper, January. Data used for this analysis is from 2009. This makes some of the analyses outdated, particularly with respect to the effect of public transfers which, as described above, have been expanded in recent years thus might lead to a current more progressive fiscal structure than in 2009. Therefore, this report highlights the elements of the CEQ-analysis which might have remained more stable.

[74] That is, while the bottom decile holds only 0.7 percent of the Bolivia's market income, it pays 2.3 percent of all taxes collected from individuals. Indirect taxes include *Impuesto al Valor Agregado, Impuesto a las Transacciones, Impuesto Especial a los Hidrocarburos y sus Derivados,* and *Impuesto al Consumo Específico*.

179. **Existing fuel subsidies not only benefit more the non-poor but they also create additional distortions, including disincentives for exploration investments.** International experience shows that artificially low fuel prices are generally regressive in nature, represent a large fiscal burden and encourage smuggling and inefficient allocative decisions (Arze del Granado et al 2010). Fuel subsidies increased from 2.0 percent of GDP in the early 2000's to 5.7 percent in 2013, as the price of a barrel of oil in Bolivia has been frozen at US$31.16 since 2004. Actually, the producer receives much less - around US$10.29 - after taxes and other levies are applied. This has acted as disincentive to investments in exploration and thereby contributed to the challenge of eroding reserves, as companies prefer to engage in gas production most of which is exported at prices linked to international oil prices. Similarly, subsidies on natural gas discourage investment in hydro electricity generation and encourage the use of natural gas to generate electricity despite its high opportunity cost linked to gas exports. In sum, a reformulation of indirect subsidies, particularly on fuel, could have a sizeable impact on the progressivity of fiscal policy.

180. **Direct social transfers to beneficiaries have been strengthened with a view to improving access to basic social services, yet their impact on the poor could be further enhanced.** In recent years, the Government has expanded existing and created additional social transfers programs aimed mainly at improving access to key services, notably in health and education. [75] These non-contributory transfers to elderly people (*Renta Dignidad*) and conditional cash transfers linked with school attendance (*Bono Juancito Pinto*) and medical care for pregnant women and children under two (*Bono Juana Azurduy*) are universal in design, and hence not specifically targeted to the poor. (Box 6). As a result, the efficacy of these programs could be enhanced if the transfer amounts were augmented (at least following the pace of inflation), and their coverage and incentive scheme redefined to ensure that the focus on the poorest is enhanced. These programs' ability to reach the most vulnerable is constrained by the requirement of national identification of beneficiaries, thus effectively excluding families in remote rural communities (Mc Guire, 2013).

Box 6: Bolivia's public transfer system

In the past decade, non-contributory transfers to elderly people (*Renta Dignidad*) were expanded and new conditional cash transfers were created and subsequently enlarged, linked with school attendance (*Bono Juancito Pinto*) and medical care for pregnant women and children under two (*Bono Juana Azurduy*). Together, they represent an important mechanism to transfer resources to the most vulnerable and to break the intergenerational reproduction of poverty and inequality (Apella y Blanco, 2015). Overall, they have been shown to have important effects on improving people's wellbeing and the expansion of service provision, despite their mixed, but modest impact on household incomes.

Renta Dignidad (RD) is a non-contributory pension, established in 1997 (as *Bonosol*). In 2007, the program was renamed *Renta Dignidad*, the eligibility age lowered from 65 to 60, and the amount of the program's transfer was increased. RD transfers around US$29 per month to those without other pensions (83 percent of beneficiaries) and almost US$22 per month to those receiving another pension. This program has the widest coverage of all transfer programs (expanded to over 800,000 by 2010) and most generous transfer representing 1.6 percent of GPD in 2012 (compared to *Juancito Pinto* and *Juana Azurduy* with an aggregated amount of 0.4 percent of GDP in 2011). Recent studies have found that household consumption was 14.5 percent higher in those households receiving transfers than in those that did not (Escobar et al., 2012). However, as the program is universal in design, each quintile receives about one fifth of the total amount transferred.

Bono Juancito Pinto (BJP) was established in 2006 to provide an incentive to school enrollment and to reduce school dropout. The program is targeted to all children enrolled in public or private schools *con convenio* (with special agreements with private administrators, frequently religious orders) at the primary and secondary levels,

[75] The number of beneficiaries of *Bono Juana Azurduy* more than doubled between 2009 and 2011. Similarly, the number of beneficiaries of *Bono Juancito Pinto* grew from about 1 million to nearly 1.7 million between 2006 and 2011.

conditional on their attending at least 80 percent of school days. The amount of the transfer is modest: around US$29 per year, equivalent to only about 1.1 percent of the minimum wage in 2014. (This compares to a similar educational and nutritional program in Peru that transfers approximately US$30 per month.) BJP's selection criteria, based on the type of school in which the student is enrolled (excluding those in private schools), represents an implicit effective targeting mechanism. However, around 4 in 10 of those attending public schools, and 6 in 10 attending private schools *con convenio*, can be classified as non-poor. According to several evaluations, the transfer amount is insufficient to cover the full cost of attending a public school – including the opportunity cost – but BJP has had some impact on enrollment though lesser on attendance (Navarro, 2012). Towards the future, potential expansions to the program could include higher and increasing transfers to raise attendance when the opportunity cost is steeper and a bonus for females to improve secondary school completion rates.

Bono Juana Azurduy (BJA) was established in 2009 in order to lower maternal and infant mortality and reducing chronic malnutrition of children under two. The BJA provides up to US$261 per family for each pregnant woman and child with no formal health coverage for a period of 32 months, conditional on attending pre- and post-natal checks, having an institutional birth, and attending health visits for children. Of the targeted population, at the end of 2014, only 18 percent of eligible pregnant women benefit from the program, and 54 percent of children under two do (Apella and Blanco, 2015). This bono is progressive as, by 2013, half of the transfers were received by families in the B40, while 10 percent were going to the richest quintile. A recent evaluation by UDAPE (*Unidad de Análisis de Políticas Sociales y Económicas* – the Government's think tank) and the Ministry of Health revealed that the BJA had a positive impact on access to services but a limited effect on children's nutrition. The program was found to be effective in raising the early detection of pregnancy, increasing the rate of institutional deliveries, and increasing children's health visits as well as their birth weight. No significant effects were found on pre-natal visits, or on indicators of children's under-nutrition, such as height and anemia.

Given these results, the Government is currently analyzing potential changes to the program to enhance its effectiveness by increasing access, raising the transfer amount and/or changing the incentive structure, ensuring quality of services in rural and disperse areas, and rethinking alternative models to attend urban needs.

Analysis on public spending patterns and their coherence with needs – is it a question of limited capacity in public service delivery?

181. **Strengthening governance and institutional capacity for planning and executing public programs is critical to improve the delivery of quality services for all Bolivians.** Limited capacity in planning and execution of public investments, and service delivery at the local level, as well as deficiencies in horizontal and vertical coordination of public spending programs appear as priority constraints. Public expenditure management suffers from low efficiency (low execution rates) and unequal coverage across the country, and does not correspond well with the needs of the poor.

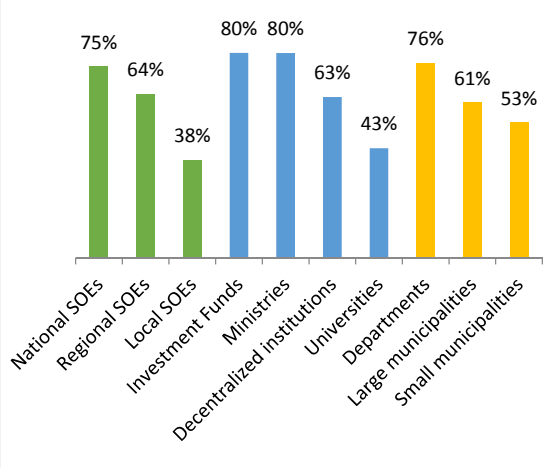
182. **The lack of coordination between planning and budgeting and between levels of government is at the core of the discordances between allocation of resources and needs.** This lack of coordination limits the ability to translate the country´s long term development vision, as set in the *Agenda Patriótica 2025*, for instance, into concrete spending programs with a medium-term orientation. To address this, the Central Government is working on introducing the use of medium-term fiscal and expenditure frameworks. This would also help address the spread of small projects with short duration, which strains the capacity of the managing units, and precludes taking advantage from economies of scale. Several more general institutional and capacity challenges contribute to the lack of connection between planning and spending, including:

- While budget coverage has improved notably in recent years, there are multiple mandatory planning instruments in place at the subnational level, and they are not sufficiently articulated with the budgeting cycle and the national planning exercise;

- Public financial management (PFM) information systems are oriented towards reporting to Central Government but do not facilitate financial management at the portfolio and project level;
- The budgeting monitoring system (SISIN-Web) is not well integrated with the procurement and PFM systems, leading to inconsistencies in the reporting of information and duplication of the requirements for the executing agencies; and
- Planning and execution is affected by additional budget rounds late in the course of the fiscal year. According to the Central Bank, in 2011 the balances of subnational government accounts increased by US$1.5 billion after the initial allocation.

183. **Strengthening institutional capacity will require improving vertical and horizontal coordination in Bolivia's decentralized system**. The process of decentralization[76], which started 20 years ago, has brought about challenges and opportunities for the effective provision of services, particularly at municipal level. Decentralization of functions and responsibilities to municipalities started in 1994, and was corroborated by the 2009 Constitution. The relatively high number of very heterogeneous municipalities (339 currently) leads to significant challenges for those with limited capacity and resources (World Bank 2014).

Figure 62: Budget execution rate of public investment by agency, 2013



Source: Calculations based on data from SISIN-Web.

184. **The capacity of subnational governments to efficiently plan and execute public programs is generally low and varies greatly across the country.** In recent years, public investment budgets for departments and municipalities have doubled and tripled, respectively. Yet, the execution rate relative to allocated budget varies significantly between different levels of governments. On average, in 2013, the department governments executed 76 percent of their total (amended) budget, large municipalities 61 percent, whereas small municipalities reached only an average 53 percent execution rate. Commonly located in more remote rural areas, small municipalities often suffer from limited institutional and operational capacities for project planning and execution. This challenge is reinforced by the observed proliferation of small projects, which are more prominent in small municipalities.[77] Similar disparities in execution rates are found among different sized state-owned enterprises, varying from 75 percent for national SOEs to a mere 38 percent for local SOEs.

[76] The 2009 Constitution expanded an already ongoing decentralization process to four different levels of autonomies (Departmental, Regional, Municipal and Indigenous) with the same hierarchical level. The competencies were set in the Constitution and further detailed in the 2010 Autonomies and Decentralization Framework Law (ADFL). This led to an increase in competencies of subnational governments in the collection of taxes and the provision of productive infrastructure, transport infrastructure and planning. However, the devolved tax authority to subnational governments is narrow, and they continue to depend to a great extent on central Government transfers and hydrocarbon related revenue sources in particular.

[77] In small municipalities, almost 90 percent of resources are concentrated in 40 percent of projects, relative to 21 and 28 percent of projects in large municipalities and Governorships, respectively. In addition, half of the projects in small municipalities have an estimate duration of less than a year, which is significantly lower than in larger municipalities. (Based on SISIN-Web data).

185. **Planning and execution of public programs is further hampered by the lack of a functioning coordination mechanism between different tiers of government**. While the Integral State Strategic Planning System (SPIE) should encompass the subnational governments (Governorships, Municipalities and Indigenous Autonomies), no clear coordination mechanism has been established to ensure the alignment of the Social and Economic Development Plans (PDES by its Spanish acronym) - prepared by each tier of government. These PDES are prepared and approved solely by each subnational government body, and there is no legal requirement for coordination. Also, there is currently no centralized database of the goals and development plans of subnational governments.

Transparency and accountability have improved but still represent a significant challenge for improving the efficient functioning of institutions and fostering well-being for all

186. **Broader governance challenges limit the participation of many Bolivians in decision-making processes, notably the allocation of resources**. Bolivia still scores lowest in terms of budget transparency in the LAC region (13 over 100) according to the 2012 Open Budget Index (OBI) conducted by the International Budget Partnership. Crucially, the limited availability of budget information makes it difficult for citizens to monitor public spending, participate in budget decision-making, and hold public institutions accountable for the use of public resources. The anti-corruption structure is weak due mostly to limited institutional capacity and the scarce resources assigned to its implementation. This is reflected in the very high Corruption Perception Index by Transparency International (2012) where Bolivia ranks 105th out of 183 countries. Finally, institutional weaknesses and political interference also undermine the Judiciary and the extractives industry, with the result that these sectors are prone to corruption. Low scores on the World Governance Indicators on "control of corruption" (33th percentile) and "rule of law" (14th percentile) further highlight governance challenges and the lack of citizens' confidence in public institutions.

187. **Enhancing transparency and accountability appears as a critical constraint that could be addressed by consolidating progress under several legal initiatives underway.** The 2009 Constitution identifies transparency as one of its main principles and several legal initiatives have been introduced to strengthen transparency and accountability, such as a robust Anti-Corruption Law (2010), and new Law of Transparency and Access to Government Information; the Hydrocarbons Law also recognizes citizens' rights to access information on the volume and management of extractive industry revenues. These legal reforms still lack full operationalization, however, as do new opportunities for citizens to participate in tracking public resources and monitoring service delivery.

5. Priorities for sustaining gains on reducing poverty and enhancing shared prosperity in Bolivia

188. **The main purpose of SCD is to prioritize constraints that Bolivia needs to address in order to sustain progress towards eliminating extreme poverty and enhancing shared prosperity**. These constraints emerge from the analysis of poverty and shared prosperity trends in the past years, and sustainability considerations in Chapter 3, as well as the systematic review of main challenges for sustaining inclusive growth in Chapter 4. In this Chapter, these constraints are systematically captured and further distilled, with the help of a prioritization exercise.

189. **A mix of prioritization tools is used to identify the most relevant constraints emerging from the discussion on the three challenges to sustaining inclusive growth**. Bolivia's fundamental characteristics presented in Chapter 2 are framing this prioritization. The inclusive growth diagnostics presented in detail in section 4.3 is at the heart of the prioritization process. The SCD draws directly from its results to identify

priority constraints related to the challenge of developing non-extractive sectors. This is complemented by a systematic qualitative review of constraints related to maintaining a flow of substantial resources from extractive production, improving access of the B40 to human opportunities, reducing disparities on access to human opportunities across the population, as well as mitigating main sustainability risks in the form of macroeconomic or environmental shocks, including climate change.

190. **The prioritization exercise has also been informed by consultations with key stakeholders in Bolivia, and within the World Bank Group (WBG) Country Team**. In-country consultations brought a wide range of views about Bolivia's development perspectives to the SCD analysis (Box 7). Several rounds of consultations with WBG colleagues were also conducted. This included a series of "evidence seminars" on key issues such as private sector development and productivity, governance, environmental sustainability, access to social services, and agriculture. Through these seminars, representatives of different WBG Global Practices contributed valuable arguments backed up by analytical evidence and data to the analysis and the prioritization process.

Box 7: SCD's consultation process

During the SCD preparation, a broad and intensive consultation process took place both within the World Bank Group as well as with a large number of relevant stakeholders in Bolivia.

Missions were conducted in November 2014, February–March 2015, and May 2015. The SCD core team conducted meetings with relevant counterparts (both private and public) to discuss the SCD storyline as well as the identified challenges. The first mission took place at the outset of the SCD preparation process, and discussed the objectives and areas of analysis resulting from the SCD concept note. The team held meetings with authorities in Santa Cruz and La Paz, with the Central Government (Ministry of Land and Rural Development, Ministry of Development Planning), Santa Cruz departmental government, the National Institute of Statistics, the Customs Service and UDAPE, the Government's think-tank. CAF, IADB, FONPLATA – close partners during the SCD preparation – and bilateral donors were also consulted. The team also exchanged with private sector organizations, including CAINCO (the main private industry chamber of Santa Cruz), CBHE (Bolivian Chamber of Hydrocarbon and Energy), and PETROBRAS (oil and gas company).

The second mission aimed at validating preliminary findings. Meetings with authorities included the Departmental government of Cochabamba, the Superintendence of Enterprises (*Autoridad de Fiscalización y Control Social de Empresas*), the Competition Authority (*Dirección Técnica de Defensa de la Competencia y Desarrollo Normativo*), Viceministry of Internal Trade and Export, Superintendence of Telecomm and Transports (*Autoridad de Regulación y Fiscalización de Telecomunicaciones y Transportes*), and Viceministry of Energy Development. The team also met with private sector representatives, including the Private Entrepreneurs Association (CEPB), the National Chamber of Commerce, the National Chamber of Industry, the Private Banks' Association (ASOBAN), the Microfinances Institutions Association (ASOFIN), the Quinua Exporters Chamber (CABOLQUI) and the Construction Chamber (CABOCO). The team gained important insights from visits to non-extractive firms, including Bolivian Foods SA, Cement Bolivian Society (SOBOCE), and Marriot Hotel in Santa Cruz; Roman Jeans (textile), JALA Foundation and IProject Partners Bolivia S.R.L (both software) in Cochabamba. Private think-tanks included the Institute for Advanced Development Studies (INESAD), ARU Foundation, and Study Centre for Labor and Agrarian Development (CEDLA).

The SCD was also widely discussed within the World Bank Group, through several rounds of consultations, including a series of Evidence Seminars – multidisciplinary discussions that involved a large number of sector specialists across Global Practices and the IFC. In April, five Evidence Seminars were carried out on selected issues, based on the findings and knowledge gaps identified during the SCD preparation. The topics discussed in the seminars where: (i) agriculture; (ii) productivity and private sector development; (iii) access to basic services; (iv) environmental sustainability and climate change; and (v) governance/public sector management.

During the 2015 Spring Meetings, consultations with Bolivian authorities took place around a more advanced version of the draft SCD. The team thereby received valuable feedback from the Minister of Development Planning and the Minister of Economy and Public Finances. Finally, during a third SCD mission in May, the advanced draft was presented to multilateral organizations (BID and CAF) and the Donors association (GruS, *Grupo de Socios para el Desarrollo*) that agglutinates most multilateral and bilateral donors in Bolivia.

191. **The choice of a limited number of priority constraints implies neither that there are no other important development opportunities and challenges that Bolivia is facing, nor that those that have been identified are not being addressed**. The SCD priority constraints have been identified with a view to sustaining Bolivia's advances towards the WBG's twin goals of eradicating extreme poverty and enhancing the welfare of the B40. The twin goals, are closely related to but not exactly the same as the priorities of Bolivia's long-term National Development Plan. The constraints were identified independent of whether they are addressed by Government programs or not (most of them are in fact), and hence their choice is not meant to imply that the Government has overlooked them. They were also independent of whether they fall into areas where the WBG is currently supporting Bolivia through financial and technical assistance programs. There are certainly other key constraints that Bolivia will have to address to sustain inclusive growth. Some additional potential constraints came up in the SCD analysis, yet a lack of sufficient evidence made it difficult to include them among the priorities. In this sense, Section 5.2 discusses the knowledge gaps relating to several constraints for which additional analysis and/or data collection would be required.

192. **The prioritization exercise is conducted in two steps**. First, 11 priority constraints emerging from the analysis of the three challenges bare identified. A review of these constraints is then conducted by applying Bolivia-adjusted SCD filters, to systematically assess their overall impact on the poor, impact on growth, inclusion and sustainability, and how to fare in terms of three filters on enabling context. A heat map will be used to show in which area their relative importance falls, which then will be used to group the constraints into three buckets. Through these three buckets, the constraints are discussed in more detail.

5.1 Identification and assessment of priority constraints

193. **The relative importance of the 11 constraints was examined in terms of their potential impact on Bolivia's progress towards the twin goals and capacity to mitigate sustainability risks**. For this purpose, the generic SCD prioritization filters were adjusted to take into account the Bolivia-specific fundamental characteristics, as identified in Chapter 2. All constraints pass the general filter of having a positive impact on the poor. More specific filters include "impact" filters and some filters that helped assess the enabling context in terms of time frame of impact, available evidence (data, analysis), and implementation capacity. The main "impact filters" include the following:

- Impact on sustaining high growth rates: this is singled-out as specific impact filter given the importance of balancing growth by developing non-extractive sectors, promoting a stronger private sector involvement and enhancing productivity. The constraints that are most relevant for this impact filter take into account natural handicaps to broad-based growth (distance to market, complex geography, landlocked nature), the third of Bolivia's fundamental characteristics.
- Impact on inclusion: this is introduced as an impact filter due to the still large inequality in distribution of income and disparities in access to opportunities, which also relates to the rich ethnic diversity, the fourth fundamental characteristic identified for Bolivia. The filter basically reflects in how far the constraint affects income opportunities of the poor, which in the case of Bolivia roughly corresponds to the B40.
- Impact on capacity to mitigate sustainability risks: this is important given that the SCD analysis considers the vulnerability to macroeconomic, environmental, climate change and other shocks as

substantial in the Bolivian context, and given the importance of natural resource wealth for the country and the economy, the second fundamental characteristics.

194. **The results of applying these filters reveals a sense of relative importance of the constraints, as reflected in the heat map in (Table 12), which provides a good basis for discussing the constraints in more detail**. An overview of the results is presented in Table 12 in the form of a heat map. The heat map with its ratings (weak, medium, strong) allows for grouping the 11 constraints in buckets that provide a structure for describing – in the following paragraphs - in which way the constraints affect Bolivia's efforts to sustain inclusive growth. These three buckets are the following:

- "Critical preconditions" for sustaining inclusive growth over the next years and thereby providing time and resources for engaging on a structural shift to non-extractive sectors with higher productivity. Constraints that receive high ratings in the impact filter on growth and (economic) sustainability and have a short time horizon in terms of impact belong to this bucket.
- "Near term catalysts" that have a potentially important impact in the short or medium term on creating income for the poor and reduce disparities. Constraints that are rated as having large impact and/or inclusion and having a short or medium term horizon are included in this bucket, and others that are expected to have a strong impact in the short or medium term.
- "Long term enablers" that prepare the ground for the structural shift mentioned above. There are two types of long term enablers: first, those that become critical constraints to inclusive growth once the economy started shifting towards non-extractive sectors or once basic disparities in access are reduced. These enablers are not critical constraints today, i.e. lifting them today will not necessarily lead to a boost in inclusive growth (while other constraints, the low-hanging fruits are not addressed). The second type of long term enablers include those that reflect sustainability risks that are not economy- or society wide constraints today but could seriously affect the long-term development path through depletion or over-use of resources, reinforced by climate change effects. In any case, addressing these long-term constraints will require preparing the grounds with up-front actions today. Constraints belonging to this bucket would score relatively high on impact on growth and inclusion, or on sustainability, with a long term time horizon.

"Critical preconditions": constraints related to creating the macroeconomic conditions needed for sustaining gains on inclusive growth over the next years

195. **Two priorities constraints, increasing investment in exploration for extractive production and maintaining and deepening effective macroeconomic and fiscal policies are considered critical pre-conditions for sustaining inclusive growth**. The general view is that today in Bolivia, structural constraints are more binding for generating inclusive growth than those related to stabilization policies (Box 8). However, maintaining the hard-earned progress on macroeconomic and fiscal stabilization is a critical precondition for sustaining inclusive growth. This explains the importance of these two priority constraints, which are also highly relevant for addressing sustainability risks. No major capacity limitations to implementing reforms in these two areas are expected, as they are a clear priority for the Government. However, the predominant role of the state in the economy, Bolivia's first fundamental characteristics, is likely to limits the flexibility in terms of macroeconomic and fiscal adjustment:

- Reduced resource inflows and low investments in exploration from extractive production: the main challenge in this area relates to creating better incentives for private investment in exploration, by clarifying the legal and regulatory framework in the hydrocarbon and mining sectors, and strengthening the limited technical capacity, such as the lack of an updated geological survey. Addressing this challenge is urgent, given the threat of dwindling reserves. There seems to be

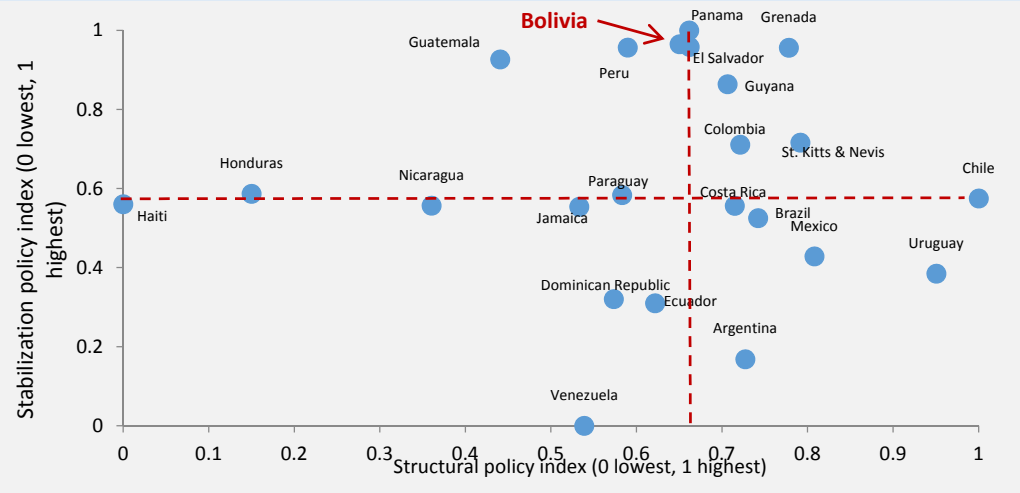
general political will, as long as the changes required do not go fundamentally against the premise of State ownership of hydrocarbon and mining resources.

- The less favorable external context requires consolidation of prudent macroeconomic and fiscal policies: the main challenges in this area relate to allowing for a gradual adjustment to the less favorable context, through prudent use of fiscal reserves and borrowing capacity, as well as adopting a more flexible exchange rate policy; and a main constraint relates to the lack of institutionalized approaches to macroeconomic and fiscal management (such as fiscal or debt rules). The Government has a strong record in this area and the commitment to continue with effective macroeconomic and fiscal policy making.

Box 8: Bolivia has regional leadership on stabilization policies, but lagging on structural policies

The main conclusion of a recent regional study on growth (Araujo et al., 2015) is line with the SCD's finding of strong but imbalanced growth pattern for Bolivia over the past years. The study's results show Bolivia as a regional leader in terms of quality of stabilization, while placing it in the middle of the group of countries on structural policies (Figure 63). A simulation of different policies on counterfactual GDP per capita shows that Bolivia has more to gain from structural reforms – such as infrastructure or trade openness – than from further efforts on macroeconomic and financial sector stabilization.

Figure 63: Bolivia – top scorer on stabilization policies, in the mid-field on structural policies



Source: Araujo et al. (2014)

Table 12: Prioritization matrix – heat map

Main challenges	Priority constrains and opportunities	Potential impact on:			Enabling context filters:		
		Growth*	Inclusion*	Sustainability*	Time horizon***	Evidence-base**	Implementation capacity**
Safeguard macroeconomic and fiscal sustainability	1. Reduced resource inflows and low investments in exploration from extractive production, due to investor uncertainty	Large	Small	Large	Short	Strong	Medium
	2. Less favorable external context that requires consolidation of prudent macroeconomic and fiscal policies	Large	Small	Large	Short	Medium	Strong
Increase productivity and employment in non-extractive sectors	3. High appropriability risks weakening the investment climate (related to tax system and labor regulations, low governance standards)	Large	Medium	Medium	Short	Medium	Medium
	4. High transport and logistics costs	Large	Large	Medium	Long	Strong	Medium
	5. Insufficient education quality, particularly at the secondary level	Medium	Large	Medium	Long	Medium	Weak
	6. Limited availability of clean water supply due to increasing competing demands	Large	Medium	Large	Medium	Strong	Weak
	7. Unsustainable and low productivity agriculture growth leading to rapid deforestation	Large	Medium	Large	Long	Medium	Weak
Reducing gaps and disparities between regions and groups	8. Some regions and groups are lagging behind in access to basic services, notably adequate health care (pregnancy, post-natal and childhood), education (early education), and sanitation	Medium	Large	Medium	Medium	Medium	Weak
	9. Urbanization is not properly exploited for more effective service provision	Medium	Large	Medium	Short	Strong	Medium
	10. Low distributional incidence of fiscal policies (scope and targeting of transfer programs, and revision of hydrocarbon subsidy)	Medium	Large	Medium	Short	Medium	Medium
	11. Insufficient coordination across and between government levels contributing to misalignment of public spending with priority needs of the poor	Medium	Large	Medium	Medium	Medium	Medium

Note: * Small, Medium or Large **Weak, Medium or Strong, ***Short, medium or Long

"Near term catalysts": constraints with a strong impact on inclusive growth in the short- and medium term

196. **Five priority constraints are expected to have strong potential impact on creating new income and job opportunities and reduce disparities in the short and medium term ("the short term catalysts")**. These constraints are critical to jumpstart progress on increasing private investment and productivity in non-extractive sectors, and to make an inroad on the challenge of disparities in access to opportunities. Some of these constraints might face significant capacity limitations:

- High appropriability risks weakening the investment climate: the inclusive growth diagnostics identified high effective tax rates and cumbersome tax procedures, and rigid labor regulations as the main binding constraints. The latter does not necessarily refer to the Government's strong role in production, but rather to frequent changes in the rules of the game and discretionary interventions. As such it relates to the low governance standards as evidenced by Bolivia's low scores in international benchmarking on accountability, transparency and perception of corruption. Some aspects of these constraints might clash with the societal preference (and Government priority) for strong labor protection. The key would be to identify acceptable trade-offs and areas that are less controversial. The Government's commitment to addressing these constraints been evidenced by the adoption of several far-reaching legal reforms, yet they have not been fully implemented thus far.
- Potential to improve distributional incidence of fiscal policies: despite recent improvements, the fiscal system does not correct the market outcome in terms of distribution of income and wealth. Direct taxes are inexistent and social transfer programs are limited in their amounts and their reach to the less well off. The substantial amounts allocated to hydrocarbon subsidies could be used for spending on programs with a much higher progressive impact. Revising the hydrocarbon subsidy scheme would also help address the constraints behind low investment in exploration. Changes could be highly beneficial for reducing inequality, yet are politically difficult to implement (as everywhere around the world), given the vested interests of those that would lose. The current low oil prices could provide on opportunity in this regard.
- Some regions and groups are lagging behind in access to basic services: despite important progress in improving access to basic services in the recent past, some groups and regions are lagging. This is particularly the case for: i) access to health care services for women and children, notably during the stages of pregnancy, post-natal and childhood; ii) inadequate quality of education (see below) in particular, but not exclusively, at the secondary level, as well as very limited access to early education opportunities; iii) inadequate access to basic infrastructure services, notably the lack of improved sanitation in rural and urban areas (also a factor for water-related sustainability risks), as well as limited access to electricity and drinking water in rural areas. This also points to the importance of water management constraints discussed below in the context of sustainability risks. Advancing on the agenda of improving access to basic services is a complex and ambitious endeavor, but there are short term gains that could be achieved within the current capacity and political reality.
- Urbanization is not properly exploited for more effective service provision: The urbanization has been an important factor behind the gains on poverty and shared prosperity, as well as behind the growth dynamics. Urbanization has mixed environmental impacts, as it allows for economic activities with a lower environmental footprint, while at same time increasing competing demands of natural resources in urban areas, resulting in deteriorating availability and quality of water and clean air. Any reform agenda going forward needs to take urbanization trends into account, not only to enhance the reach and quality of service provision, which could benefit from a larger concentration of people in cities (even though part of urbanization is developing as low-density

sub-urbanization), but to address these environmental issues, as well. The unfinished decentralization process is a key constraint for this agenda, reinforced by political tensions between different geographical zones.

- Insufficient coordination across and between government levels: a broader challenge ensues from progress towards the decentralized administration, which is still being implemented. Following the provisions of the Constitution, the role of subnational governments (municipalities, in particular) in service provision is growing, as functions and responsibilities are being decentralized. A large share of extractive revenues is distributed to subnational governments, yet the distribution methodology generates major vertical and horizontal imbalances and a lack of coherence between resource allocation and needs of the poor. Addressing this constraint would also be important for reducing tensions between different regions and citizen groups, yet these tensions could potentially make these reforms challenging.

"Long term enablers": constraints that likely will emerge with the structural shift to non-extractive sectors and constitute sustainability risks in the long term

197. **Among the long term enables, two constraints could become critical to inclusive growth once the economy started shifting towards non-extractive sectors or once basic disparities in access are reduced**. The following constraints stood out in this regard in the results of the inclusive growth diagnostics:

- High transport and logistics costs: Compensating for Bolivia's geographic handicap through transport infrastructure and logistics is one of the long-term constraints. This includes the constraint of cumbersome cross-border procedures (not necessarily tariffs, which are internationally competitive). This agenda is a high priority for the Government, but would require additional time for implementation.
- Insufficient education quality, particularly at the secondary level: this is a second priority identified as a long-term constraint. The lack of international testing benchmarks is a key constraint that could be addressed in the short term. Improving education quality is also critical for addressing the disparity challenge discussed later. Yet it is also a complex long-term agenda that has to maneuver different interests in society.

198. **The final two constrains can be categorized under the second type of long term enablers which characterize long term sustainability risks**. As mentioned previously, in general terms, natural capital is not a binding constraint for Bolivia's growth. However, the depletion of natural resources is an important factor to consider in discussing main constraints to inclusive growth, for two main reasons: first, in the case of water, demand is already surpassing supply, at least in certain areas of the country; and second others, notably deforestation, in which depletion is occurring so quickly that the future environmental equilibrium is coming under threat, even if the stock of the resource (forest) is still abundantly available. These different types of sustainability risks are reinforced by climate change effects, and have contributed to the heightened vulnerability to natural disasters. Addressing the constraints pertaining to this group has win-win potential as they also affect long term inclusive growth potential:

- Unsustainable and low productivity agriculture growth: this constraint has led to natural resource depletion, notably rapid deforestation, as the current model of agriculture and livestock production is based on extensive use of natural resources, low productivity in regional comparison, and limited value addition. There are important natural constraints that partially explain this, such as low soil fertility and topographical handicaps. However, other important constraints are more policy-

related, such as incentives that lead to deforestation, and lack of extension services to support a more productive use of inputs.

- Limited availability of clean water supply due to increasing competing demands: this is a particularly important constraint, as over-use and implications of increased climate variability that are leading to more frequent and more intense extreme climate events (droughts, floods) as well as urbanization, have led to a degradation of watersheds. This affects both the inclusive growth pathway (increasing agricultural productivity through more and more effective irrigation), as well as exposure to environmental sustainability. There is a consensus for seeking a more sustainable use of natural resources, and it this is an important priority for the Government. Ambitious programs are in place, such as for irrigation ("*MiRiego*"). However, there are also important trade-offs between objectives in this area, notably between expanding production and promoting a more sustainable use of resources.

5.2 Analytical bases of SCD and important knowledge gaps

199. **The SCD analysis is based on the findings of a number of analytical documents, including background studies specifically prepared for the SCD, and existing studies prepared by the WBG and the other institutions**. The SCD analysis drew strongly from recent or forthcoming WBG documents, notably: i) the study on Sources of Growth in Bolivia (2014), which provides an in-depth assessment of Bolivia's growth record in the past years, as well as the transmission between the economic expansion and reduction of poverty and inequality; ii) a note on Poverty and Shared Prosperity in Bolivia that summarizes key findings from recent analyses on poverty and inequality, such as on Human Opportunities (2013), the progressivity of fiscal policy (Commitment to Equity Project, 2014), and the Poverty Maps under preparation by the Government and the World Bank; and iii) a forthcoming detailed study on trends in urbanization and ensuing opportunities and challenges for public policy. These sources were complemented by numerous other analytical inputs, prepared by the Government, the WBG, and external partners. Research by UDAPE, the Government's Think Tank, were particularly useful, notably the MDGs annual reports and recent impact evaluations of existing social programs.

200. **This SCD analyzed Bolivia's path of inclusive growth in a comprehensive way, conducting background analyses that were required and feasible, yet also found several important knowledge gaps that would need to be addressed to understand better underlying dynamics and limitations**. These gaps call for both collection of and/or access to statistical data, and new in-depth analysis. The SCD attempted to cover partially some of these gaps through background work, notably on: i) poverty dynamics, ii) benchmarking Bolivia's macroeconomic performance, iii) firm-level challenges for private sector development, and iv) a "light" Public Expenditure Review. But some of the required analytical endeavors are beyond the SCD's scope and time schedule. These knowledge gaps are marked in the respective passages in the text. They constitute the core of a public policy analytical work program for the following years. The gaps include:

- Spatial analysis of poverty dynamics: the roots behind the important overall poverty reduction of the last decade have been evaluated in this SCD. However, the dynamics of poverty across the country, are less well understood. Understanding better the factors behind the differences in welfare progress across municipalities and regions and between urban and rural areas is a prerequisite for designing and focusing effective poverty-reduction policies. In effect, the evolution of poverty varies widely across municipalities and some of them are lagging in terms of poverty reduction, as shown by the SCD analysis. The specific factors behind this heterogeneity are not clear and would require additional information and deeper analysis. These factors may be related to where booming economic activities are located (mining, gas, quinoa, or soybean, for instance), geographical characteristics (distance to

market, topography, altitude, weather risks), availability and adequate use of assets (education, land, access to finance), or allocation of public funds, among others. This analysis could also shed light on the reasons behind the limited productivity gains in agricultural activities in some areas, despite the important rural to urban migration experiences the in the last decades.

- The impact of climate change and natural disasters on poverty: Bolivia is recurrently hit by climate events such as droughts, floods and frost that affect substantially segments of the population (frequently vulnerable groups in rural areas) and trigger important resource mobilizations. There is information and estimations concerning the overall economic costs of these events as well as about the risk propensity at the municipal level. A comprehensive study on the impact of natural disaster events on poverty and the poor population is underway, which is expected to contribute to designing mitigation strategies with a view to supporting those that are most vulnerable to disasters.
- Learning achievements and quality of education: education is among the most important inputs for growth and inclusiveness. However, little is known about its quality in Bolivia. The STEP survey provides some indication that Bolivia has lower levels of learning compared to selected countries in Latin America, Asia, and Eastern Europe. For instance, the level of reading proficiency for those with upper secondary education is comparable to Ghana and Kenya. Bolivia does not have any updated, comprehensive and internationally comparable test scores that provide a detailed and actionable picture on education quality.
- Firm-level data and analysis on innovation and investment in intangible capital: a sound understanding of innovation – which is at the base of any effort to diversify and increase productivity – starts from understanding firm behavior. Knowledge accumulation is the consequence of investment decisions by private businesses and can be constrained by a number of factors, both on the demand side and on the supply side. There is a need to understand the type of knowledge that is being invested, as innovation can encompass a diverse spectrum, from the generation of new knowledge and scientific expertise, to the adoption of existing knowledge and improved organizational and process-related competencies. Bolivia lacks data at firm level on innovation and investment in intangible capital.
- Potential for productivity and employment growth through services: a competitive services sector is particularly important in Bolivia's context with its challenging geography. Bolivia's low aggregate productivity in services can be attributed to the large share of traditional sectors such as wholesale, retail and personal services. Improving both aggregate productivity and labor demands would require diversification into modern tradable services. In addition, the use of modern finance and business services has also been found to have an important role in improving productivity and reducing trade costs for the industrial sector. New data on trade and the use of services inputs (including Input-Output tables with updated technical coefficients) and analysis will be needed to better understand and address the constraints to competitiveness in Bolivia's services sector.
- Analysis of the "puzzle" of low agriculture productivity growth**:** Between 2003 and 2013, value added per worker in the agriculture sector has barely grown, recording with 3.1 percent one of the lowest agriculture productivity growth rate in Latin America. This slow growth is despite a very low initial productivity in the context of fast urbanization and positive terms of trade gains (the 7 percent growth in urban population share is above the median in LAC, based on WDI data). Additional analysis is needed to pin down the specific investment climate constraints underlying this disappointing performance.
- Product market competition: competition is an important incentive to innovate and usually benefits the final consumer through better prices and products. However, the main factors behind limited competition in different economic sectors are poorly known. More information would be needed on barriers to entry and rivalry, barriers to trade and investment, market concentration and dominant positions, and the degree of state control and its impact through sector regulations and policies. For

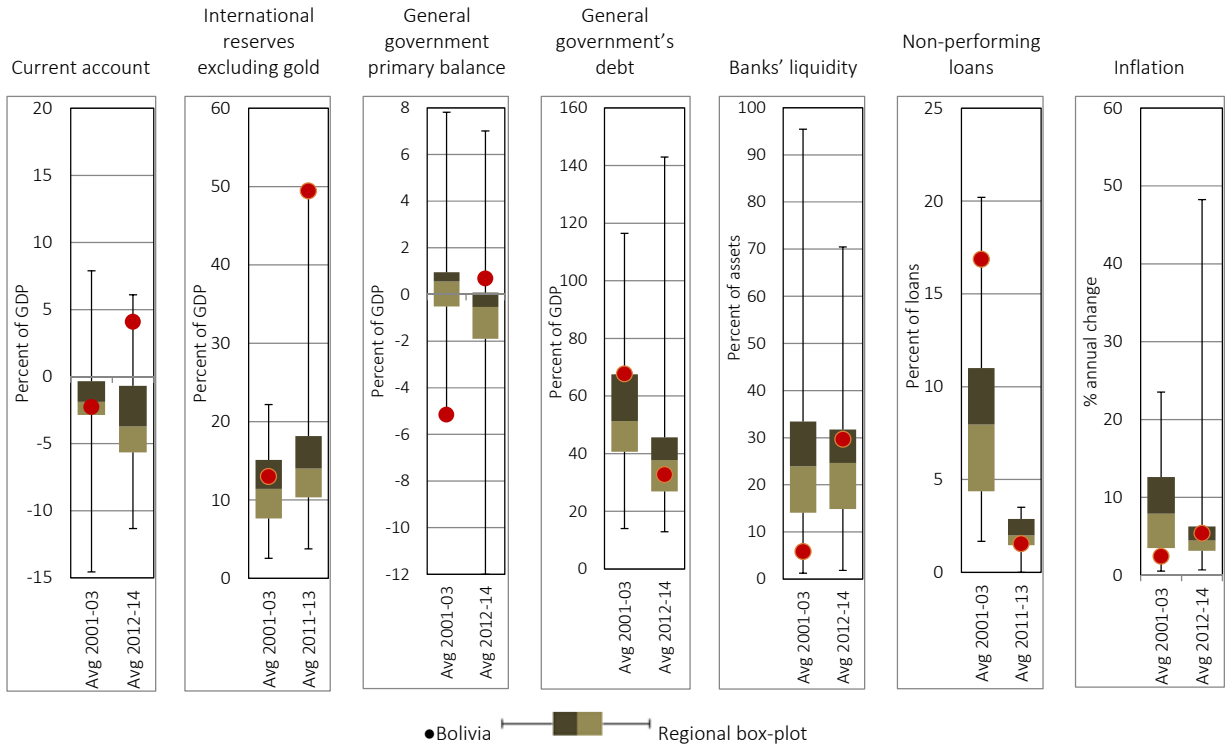
instance, competition in network sectors could affect logistics costs, which represent a medium term binding constraint to growth. In this sector, freight transport is probably highly concentrated (carriers organized into associative structures that confer market share band prices). Better data will shed light on the main competition constraints in different segments of the transport sector. A Product Market Regulation study on Bolivia is currently underway.

- Impact of recurrent State market interventions: in the context of Bolivia's current development model, and in addition to its usual regulatory role, the State is directly involved in markets through several channels (regulations of credit and savings in the financial sector, price caps and export restrictions for staples and other products, direct participations with financing and SOEs in markets that already have private producers, etc.). While some of these interventions are modest in scope, others have much larger objectives and resources involved. Interventions can be in the form of legal and regulatory changes, or of discretionary measures by Government agencies in the economy. However, there is a lack of information and analysis concerning the relative impact of these different types of interventions, their magnitude, and their effects on private sector confidence and other variables such as fiscal accounts.
- Public expenditure analysis: background analytical work has been conducted for the SCD on some dimensions of the effectiveness, efficiency and equity of public spending, a critical tool to boost sustainable growth and ensure inclusiveness. However, a more detailed analysis is needed to identify better the characteristics and shortcomings related to public spending, including social programs, public investments and their effect on certain sectors. An updated, comprehensive Public Expenditure Review (PER)--the last one dates back to 2004—could provide this analysis. Preparation of a PER would require accessing full data sets on budget execution data, both for investment and current spending, at all levels of Government.

Annex 1: Bolivia's economic performance relative to relevant peers

A1. Bolivia's macroeconomic consolidation over the last decade was stronger, in relative terms, than that of its peers in the LAC region. Over the last decade, Bolivia achieved stronger results than the LAC regional medians. Its current account deficit, which was close to the regional standard a decade ago, became one of the LAC region' s largest surpluses in recent years. Following a pattern of chronically low international reserves relative to GDP, Bolivia's reserves are now among the highest of any country in the LAC region. The general government's balance went from having the largest fiscal deficit in the region in the early 2000s to having one of the largest fiscal surpluses. Debt forgiveness, economic growth, currency appreciation, and external and fiscal surpluses brought Bolivia's public debt to only slightly over a generally reduced LAC regional median. A lower percentage of nonperforming loans and higher liquidity ratios improved Bolivia's financial sector performance relative to regional medians. Finally, despite occasional upsurges as noted above, inflation has remained under control despite a robust demand and high economic growth.

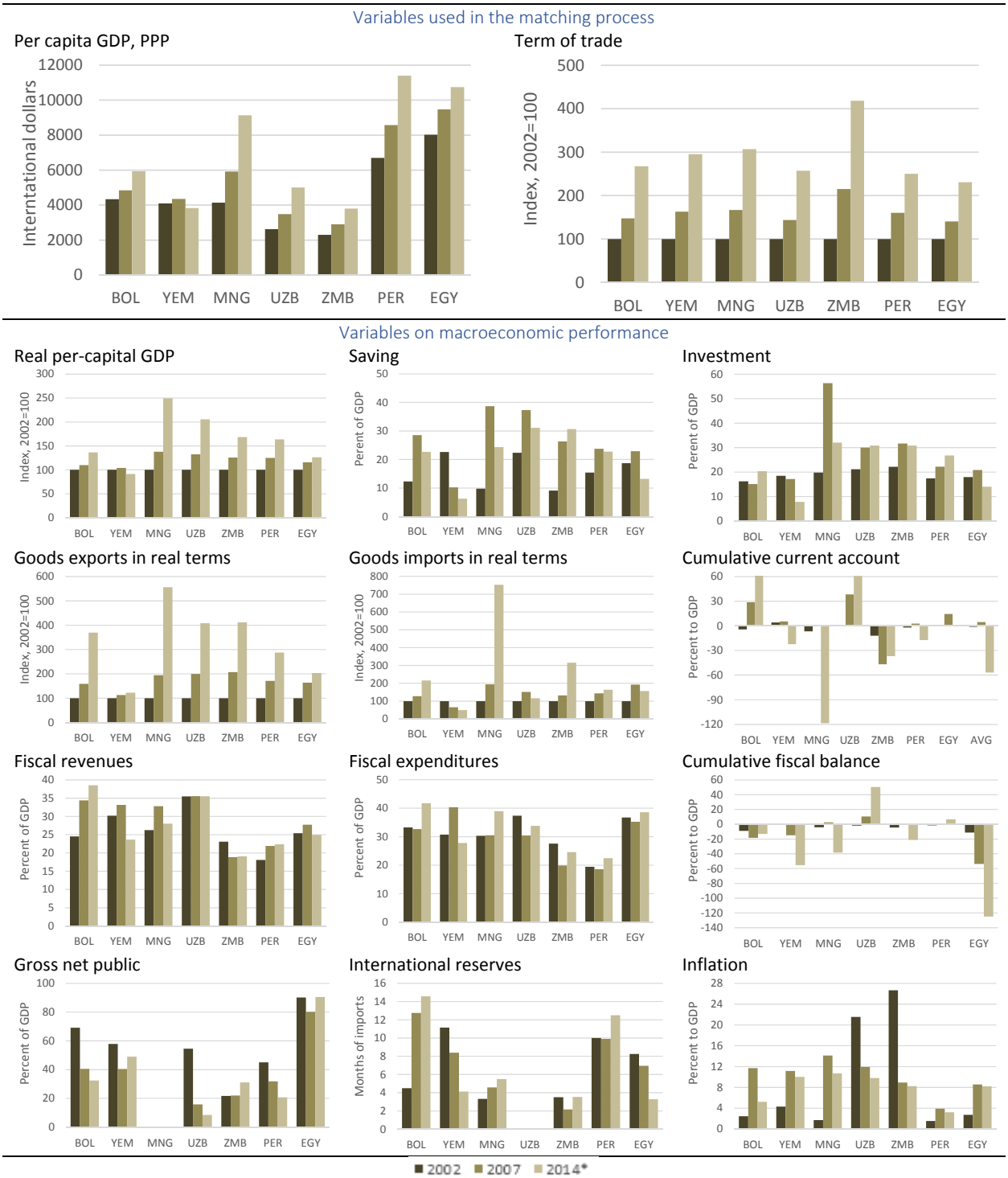
Figure 64: Bolivia's Economic Indicators Relative to the Region, 2001-2014



Note: The Como-box only include countries with more than 1 million population. Three year averages were used to control short tern volatility of most macroeconomics figures.
Source: WEO, WDI.

A2. Bolivia's macroeconomic performance is also comparable to other countries favored by similar terms of trade gains. Bolivia's macroeconomic performance has been compared with countries closer to Bolivia in two aspects: natural logarithm of GDP per capita in 2002 (just before the beginning of the last growth cycle) and terms of trade gains between 2002 and 2013 (Figure 65). Using this methodology, Yemen, Mongolia, Uzbekistan, Zambia, Peru and Egypt are Bolivia's closest comparators. Additionally, these countries are resource-based economies and three of them (Mongolia, Uzbekistan and Zambia) are landlocked.

Figure 65: Bolivia's Economic Indicators Relative to Peers with Similar Gains in their Terms of Trade 2002-2007-2014



BOL (Bolivia) YEM (Yemen) MNG (Mongolia) UZB (Uzbekistan) PER (Peru) EGY (Egypt)

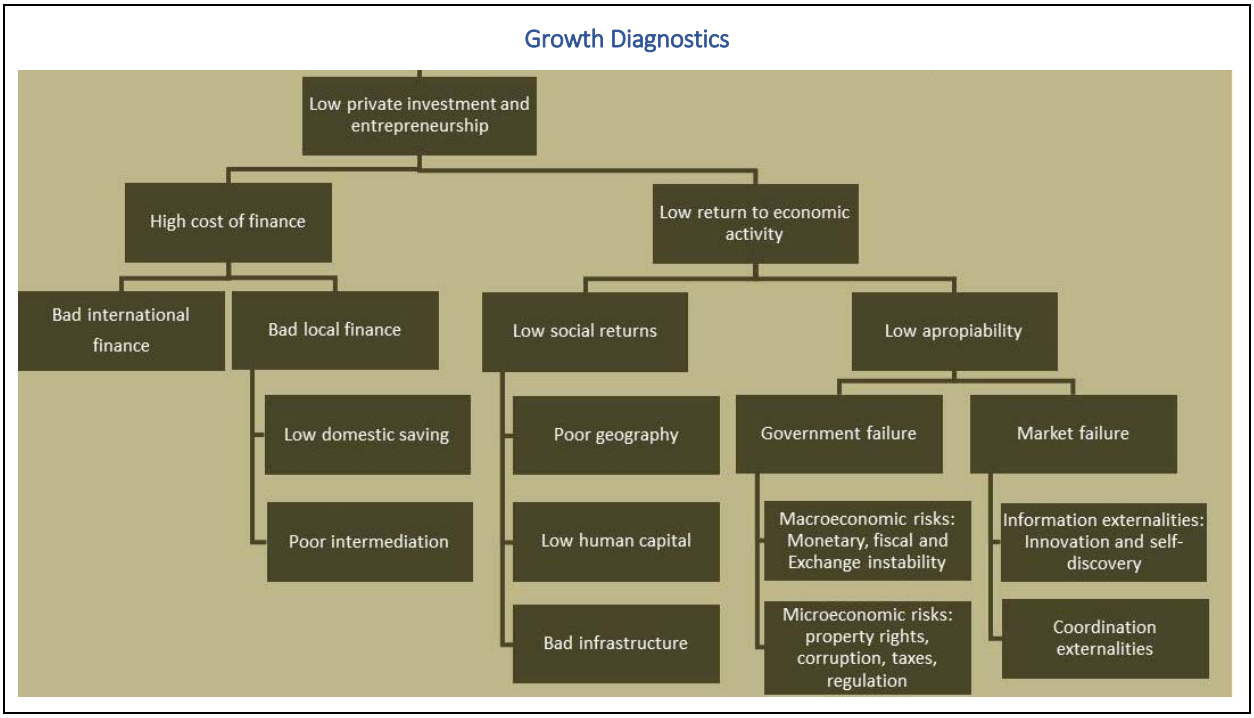
Note: (*) 2012 in the case of international reserves, 2013 in the case of terms or trade and per capita GDP.
Source: WEO and WDI.

A3. Comparison with Yemen and Egypt suggests that Bolivia's good economic performance cannot be explained by the favorable external context alone. Yemen and Egypt also benefited from large terms of trade gains but due mostly to political instability, were not able to spur growth or to consolidate macroeconomic stabilization. Despite sizable trade gains related with oil exports, Yemen has a disappointing economic performance in the last decade due to a deep political crisis and transition exasperated by growing violence—GDP shrinking by 12.7 percent 2011. Yemen's macroeconomic situation is weakened lack of investment and sabotage of fiscal oil facilities, which prevent oil export to growth and generate important fuel and electricity shortages. As a result, Yemen's real per capita GDP stagnated, exports stalled, the share of total investments and savings in terms of GDP decreased, fiscal deficits were sizable, public debt could not be reduced, international reserves fell, and inflation pressures remained high. Similarly, Egypt's performance has been affected by a political transition that undermined economic activity, investment and tourism and triggered large public deficit, rising public debt and the falling international reserves. Hence, Egypt's output and exports expanded modestly, but savings and investment decreased, large fiscal deficits accumulated, and international reserves declined.

A4. Mongolia and Zambia reveal that even if significantly higher growth can be achieved due to better terms of trade, macroeconomic balances may still suffer. Per capita GDP for Mongolia and Zambia grew faster than Bolivia's, as they were able to increase total investment at a higher rate than Bolivia. However, Bolivia achieved stronger macroeconomic balances and built larger external buffers than either of them, thus reducing its vulnerability to a potential price reversal. Mongolia capitalized its vast mineral resources (coal) into high growth but with important imbalances that reduce its resilience to external shocks. In effect, despite a very large increase in exports, Mongolia has run large current account deficits—financed by capital inflows—thus preventing a larger accumulation of international reserves. Similarly, fiscal deficits and inflation have been higher as expenditures have remained high while revenues declined. Based on growing copper production, prudent macroeconomic policy and a sizable debt relief, Zambia was able to stabilize its economy and reduce inflation, but a large current account deficit has prevented it from accumulating larger international reserves, while recent high fiscal deficits have resulted in increases in public debt.

A5. Uzbekistan and Peru achieved higher economic growth and strengthened their macroeconomic balances simultaneously. Supported by high commodity gold, natural gas, copper, and cotton prices and other positive external shocks, Uzbekistan's state-led economy was able to boost domestic demand and reach high economic growth. At the same time, Uzbekistan stabilized its economy, reducing the high inflation of the early 2000s, accumulated large fiscal and external surpluses, maintaining imports under control despite higher and growing investments, and gradually increased the role of private investment. Peru took advantage of high commodity prices to become one of the most dynamic economies in the LAC region and reach strong macroeconomic balances. In effect, Peru has been able to maintain consistent fiscal and external balances throughout the commodity boom, thus maintaining high international reserves and reducing public debt in a context of high economic growth.

Annex 2: Growth Analysis



A1. **This approach builds on the growth diagnostic methodology to identify the main constraints to inclusive growth, systematically exploring alternative hypothesizes.** The growth diagnostic (Hausmann, Rodrik, and Velasco, 2005) aimed to identify the most binding constraints to growth because targeting all distortions at once may be infeasible due to financial and capacity limitations (Corso 2011). When private investment is high and labor demand is dynamic, the binding constraint to inclusive growth may be linked with factors constraining the employability of specific groups, including factors such as low human capital, low ability to acquire skills, or restrictions on access to the labor market. However, when private investment is low—and hence the Hausmann, Rodrik, and Velasco approach becomes more relevant—the main problem may be linked with labor demand restrictions. These may be evaluated applying the growth diagnostic framework analyzing bottlenecks in the business environment. In this sense, labor demand could be constrained by high financing costs or low returns. The cost of financing may be high because the country has limited access to external capital markets or because of problems in the domestic financial market. In turn, a country may have difficulties accessing external capital markets for a variety of reasons, including high country risk, unattractive FDI conditions, vulnerabilities in the debt maturity structure, or excessive capital account regulations. Low domestic savings or poor intermediation may affect local financing. On the other hand, low capital return may be due to a number of factors, including: insufficient investment in complementary factors of production, such as infrastructure and human capital; low land productivity arising from poor natural resource management; low private returns to capital resulting from high taxes, poor property rights, corruption, labor-capital conflicts, and macro instability; or market failures, such as coordination externalities and learning externalities reducing the country's ability to adopt new technologies.

A2. **This approach tests each hypothesis in an effort to identify the binding constraints.** As was the case in the original growth diagnostic approach, inclusive growth analysis organizes the assessment in an eclectic

and flexible way based on the decision tree described above. Decisions trees are useful, but they cannot impose a rigid application since there may be complex interactions among different potential constraints (Hausman, Klinger and Wagner, 2008). In this sense, depending on availability of information, inclusive growth diagnostic allows for eclectically using different methodologies that include time-series analysis, firm and household surveys, cross-country benchmark comparisons, and traditional growth analysis, to test the sequence of the hypothesis proposed by the tree. Hausmann, Rodrik, and Velasco suggested that the analysis should not only focus on absolute development gaps but that prices, peoples' behavior, and economic trends should also be taken into account. They provide criteria to identify a binding constraint to growth that remain valid in the inclusive growth analysis: (i) the shadow price of the constraint should be high, thus showing that this issue is effectively constraining development; (ii) movements in constraint should produce significant movements in private investment; (iii) enterprises should be attempting to overcome or bypass the constraint; or (iv) sectors less exposed to a constraint should be more likely to survive and thrive.

A3. The approach was used as an effort to adopt the country-specific approach of the original growth diagnostic while maintaining some caution on the limitations and scope of these approaches. Unlike the original growth diagnostic approach, the inclusive growth analysis requires distinguishing relevant sectors within the economy and labor market, since the analysis is more concerned about heterogeneities that may impact broad-based growth that involves structural transformation and economic diversification (Lanchovichina, Lundstrom, and Garrido 2009). In effect, rather than focusing only on growth, it involves looking at the pattern of growth, with a particular emphasis on the equality of opportunities for access to productive jobs through higher employment and productivity. In this sense, instead of trying to identify a single short-term binding constraint, inclusive growth analysis has a longer-term perspective since it recognizes the time lag between reforms and outcomes. It is also skeptical of the possibility of finding a single binding constraint, and focuses its attention on multiple outcomes. The goal is to identify a limited bundle of binding constraints, and then to sequence these constraints to maximize inclusive growth. The list of constraints should be limited to avoid reform fatigue, and should be properly ordered to also deliver results in the short run.

Annex 3: BOLIVIA- Hydrocarbons Sector Regulatory Briefing

Legal Framework

The Bolivian State holds all ownership rights over hydrocarbons reservoirs. Exploration, development and production activities are subject to a service provision administration. YPFB, the State-owned hydrocarbons company, is directly in charge of all oil (upstream and downstream) and natural gas production and trading. A company with the intent to perform activities in the sector may only do so by:

- Creating a *Sociedad Anónima* company in association with YPFB entering into a service contract with YPFB, thereby providing a specific service for a specific activity.
- Three types of agreements exist in order to produce oil and natural gas: Shared Production Agreements, Operation Agreements and Association Agreements. Service contracts shall need approval of the Bolivian Congress in order for them to enter into full force and effect.
- Currently, 18 oil and gas companies operate 71 gas fields in Bolivia
- Regarding the Bolivian Constitution (article 366) and the operation of a foreign company in the country, provides that:
- Any and all foreign companies operating in Bolivia, in the hydrocarbons industry, shall be subject to Bolivian courts and laws;
- In no case, shall the State be subject to foreign jurisdictions nor shall it be subject to international arbitration or diplomatic reclamations, being Bolivian courts the only accepted jurisdiction.

The following authorizations are required by any Operator Company to be a participant in the country:

- Incorporation of a company or branch in Bolivia and registration as a commercial entity before the Registry of Commerce.
- Registration as a tax payer before the Inland Revenue Authority (*Servicio de Impuestos Nacionales*).
- Registration as an employer before the Ministry of Labor.
- Registration as an employer before the relevant social security entities (including health and pension funds).
- An Environmental License must be obtained for every project individually from the Vice Ministry of Biodiversity and Forestry Resources and Environment.

Regulatory Framework

The Ministry of Hydrocarbons and Energy is in charge of setting and developing the Bolivian Hydrocarbons Policy. The Hydrocarbons National Agency, ANH (subordinated to the Ministry of Hydrocarbons and Energy) is the sector regulatory agency in charge of regulating, controlling and supervising the transportation, trading and distribution of oil and natural gas, as well as other sector-related activities. The State-owned hydrocarbons company, YPFB, is in charge of:

- The negotiation, execution and performance of oil and gas agreements;
- The direct performance of all activities in the oil and natural gas value chain (exploration, exploitation, transportation, trading and distribution);
- The supervision of oil and natural gas exploration and production activities, when performed by other authorized companies.

The following authorizations are required in the oil and natural gas sector in Bolivia:

- Exploration Activities: The right to explore an area is granted to a participant through an YPFB Agreement, following an international tender process.

- Production Activities: The right to produce oil and natural gas is also granting to a participant through an YPFB Agreement (which may be the same Agreement granted the right for exploration).
- Transportation, Refining and Storage: The right to perform these activities may be granted to a private entity by the ANH, through an administrative license.
- Distribution: Private entities may be granted the right to perform distribution activities (of products derived from oil and natural gas) by the ANH, through an administrative license. To that end, the requesting entity must submit guarantees and comply with specific investment plans.

Annex 4: BOLIVIA- Natural Gas Sector Briefing

Overview:

The total NG reserves in Bolivia are estimated to be 10.45 TCFs (proven) and 3.5 TCFs (probable) for a total of 13.95 TCFs. Potential reserves are estimated at 4.15 TCFs (In accordance with a report issued by GLJ Petroleum Consultants, specifically engaged to update the last public report issued by Ryder Scott in 2009). The total NG production (from January to September of 2014), as reported by *Yacimientos Petrolíferos Fiscales Bolivianos* (YPFB), the State-owned hydrocarbons Company, is around 62.02 MMCM per day, which represents an increase of 6.63%, in regards to the official production reported during the same period in 2013. Bolivia exports an average of 33.36 MMCM of NG per day to Brazil, with an increase of 4.79% in relation to 2013. To Argentina, an average of 16.17 MMCM per day with an increase of 7.56% in relation to 2013.

Recent Trends:

Characteristics of current contracts:

- Contract YPFB - Petrobras (GSA) signed in 1996, length 21 years, from 1999-2019
- Contract YPFB – *Energía Argentina SA* (ENARSA) signed in 2006, length 21 years, from 2007-2026.

In July 2012 an interruptible contract of purchase and sale of GN between YPFB and ENARSA was signed with a term of 15 years up to 2026. It's an independent contract to the one signed i2006 and provides interruptible volumes that do not generate obligations to YPFB nor undertakes reserves (not a take or pay contract).

The price of Bolivian gas exports are set in relation to a basket of fuel, which is sensitive to fluctuations in the international price of crude oil.

Bolivia produces all the NG required by the domestic market, therefore it does not import any NG. On average, domestic consumption from January to September amounted to 10.25 MMCM per day, an increase of 12.87% compared to 2013.

Regulations:

Commercial structure and price band set by the ANH:

- Electric Sector (45.33% of domestic demand); price band from 1.0500 to 1.5485 $us/MCF
- Residential, Commercial, Industrial and Transport Vehicles (45.88%); price 0.98 $us/MCF
- Direct Consumer Sector (8.79%); price 1.0108 $us/MCF

The Bolivian NG Transportation network operates under "open access" rules, subject to concession and regulation by the Hydrocarbons Regulatory Authority "*Agencia Nacional de Hidrocarburos*" (ANH).

The priorities for the distribution (trading) of the Bolivian NG production are as follows (in this specific order): 1) the domestic market must be fully supplied; 2) the Brazilian demand must be met, in accordance with a Gas Supply Agreement executed between PETROBRAS and YPFB in 1996; 3) the Argentine demand must be satisfied, in accordance with a Gas Supply Agreement entered into by ENARSA (the Argentinean public NG company) and YPFB in 2006; and 4) any other market as may be secured by the Bolivian Government.

Bolivia's energy requirements are met by various means. As of November 2013, some 89.7% of all electric power consumed in Bolivia (in the National Interconnected Grid) was generated using NG, which, in turn, represents 48.03% of the country's internal demand of NG.

Annex 5: BOLIVIA- Petroleum Sector Briefing

Overview:

As occurs in the natural gas sector, the Bolivian State through YPFB, is the sole proprietor of all oil fields and reservoirs located in the country and as such, is the only entity capable of commercializing the local production whether in the domestic or export markets. YPFB also participates in all the activities in the industry (i.e. upstream and downstream).

Oil production is concentrated in four departments (equivalent to states): i) Tarija, which produces 68.86%, ii) Santa Cruz, which produces 11.50%, iii) Cochabamba with 8.31%, and iv) Chuquisaca with 11.67% of the national total production.

Bolivia's oil production is transported mainly through oil pipelines, owned for the most part by YPFB *Transporte S.A*. a subsidiary of YPFB. *YPFB Refinación S.A.* another subsidiary of YPFB is in charge of refining Bolivia's oil production, produce a wide range of products, ranging from regular gasoline, to Jet Fuel, Diesel Oil, LPG, AV Gas, etc*. YPFB Logística S.A.*, yet another subsidiary of YPFB, is in charge of transportation and storage of oil.

Distribution and retail of products derived from oil (i.e.: Gasoline, Diesel Oil, etc.) may be performed by private entities duly authorized by the ANH (through a license) and are subject to very rigorous controls. All hydrocarbon prices are fixed and determined by the Bolivian Government, as is the profit margin.

Due to the fact that drug manufacturing needs important quantities of products derived from oil, drug enforcement agencies also control the distribution of such products within the national territory.

Bolivia's energy requirements, especially in the agro-industrial and transportation sectors are highly dependent on products derived from oil and to a lesser degree some other oil by-products, which are used to generate electricity in minor subsystems throughout the country.

The domestic oil production does not fulfil the internal demand for products derived from oil. Bolivia does not import any oil, however, it does import products derived from it.

Recent Trends:

Gasoline: The highest producing fuel in the country, between January-September 2014 an average production of 18,541 Bbl / day was reached. It is the second most consumed fuel in the domestic market. Between January-September 2014 an average of 26,604 Bbl/day was commercialized, higher by 8.44% to 2013. The difference is covered with imported product.

Diesel Oil: The fuel of higher demand in the domestic market, from January to September 2014 has commercialized an average of 30.097 Bbl/day versus a production capacity of 15.284 Bbl/day. Its commercialization is mainly in the departments of Santa Cruz (36.83%), La Paz (20.24%) and Cochabamba (16.29%). As per official figures, Bolivia has imported during the January-September period an average of 439,441 Bbl/month Diesel Oil, 9.58% higher than the average for 2013.

LPG: The production from January to September 2014, had an average of 1124.76 MT/ day. This production guarantees domestic supply, with an average commercialized volume of 630.64 MT/day, 17.41% higher than in 2013. The remaining production, a total of 30,739 MT was exported to Paraguay (92.6%), Peru (5.4%) and Uruguay (2%).

RECON: Official figures show that Bolivia exports reconstituted oil due to the lack of technology in national refineries to process this product. Average production of 224.181 Bbl/month

Regulatory Environment:

The Bolivian Government has launched the "*Agenda Patriótica 2025*" (or Patriotic Agenda 2025), which is meant to be an integral development plan that sits upon 13 main pillars. A main objective of the plan relates

to Energetic Sovereignty, which is basically an aggressive expansion plan in the energy sector that contemplates the industrialization of all hydrocarbons produced in Bolivia.

As part of the Patriotic Agenda 2025, currently there are two thermoelectric plants under construction for an estimated installed capacity of over 200Mw (which represents roughly 20% of today's installed capacity). In order to implement the Patriotic Agenda 2025, the Executive Branch needs the Legislative Branch to approve contracts, pass laws and set the needed framework. Recently the current President was re-elected for the term 2015-2020 with over 61% of the votes. These results give the government control over the Legislative Branch. Therefore, it is foreseeable that during this term the current Hydrocarbons will be replaced in order to accommodate the Patriotic Agenda.

Challenges and Emerging Opportunities:

The legislation applied to the hydrocarbon sector is contradictory and tax regressive (IHD tax equals 32% for small, medium and large fields) which creates a strong disincentive for investment in exploration of small and middle fields, which have lower dry hole probability. In this sense, it is necessary to create progressive tax system that taxes each field according to their level of production, level of reserves, target market and selling price at wellhead.

Subsidized prices cause pressure on domestic demand (automotive fleet grew substantially in recent years) and external demand (smuggling). A change in the methodology is needed for setting domestic prices of major oil derivatives which reflects international benchmarks to a certain degree.

The separation of functions in state institutions it is a priority to attract investment to the sector. Typically, SOEs have two functions: 1) Operators and 2) Management contracts, becoming "judge and jury".

The institutional framework needs to be defined and the current legal framework applied to the sector to promote investment in exploration needs to be clarified.

A hydrocarbons law that allows access of multinational private capital in areas of exploration, production, refining, transportation and commercialization of oil by-products and natural gas is required. The new Hydrocarbons Law should give higher rewards to companies who want to take greater risks.

Annex 6: BOLIVIA- Oilseed Sector Briefing

Overview:

In 2014 Bolivia produced 3M tons of soy at a CAGR 13.4% since 1998. Soy represents the largest agricultural export in Bolivia accounting for 8% of total exports. Productivity in the sector has increased notably in recent years. In 2014 soy productivity in Bolivia was in line with that of Paraguay. The oilseed sector is controlled by the private sector. Recent notable private investments include Nutrioil, the 6th largest soy crusher, recently opening its production in Puerto Suarez.

The Government is incentivizing the oilseed sector as a main driver of economic diversification. To this end, the government is committed to expanding the agricultural frontier by 1M hectares as part of the 2025 agenda (current area of 1M hectares). The expansion of the agricultural frontier would serve the diversification goal as oilseed plantations are rotational and other products, such as sorghum, wheat, sunflower and chia grow in the same area.

Key Players:

Although major global agribusiness firms are present in Bolivia (ADM, Bunge, Cargill, DreyFuss) their operations remain relatively small. Firms are establishing local presence in preparation for more favorable conditions in the sector.

Company	Origin of Capital	Revenues ($ M)	EBIT ($ M)	Operating Margin	Crushing Capacity (Tones)	Storing Capacity (Tones)	Main Products	Principal Export Markets
Industrias de Aceite S.A	Peru	$352	$40	11.3%	450,000	370,500	Grain, Soybean Oil & Meal	Peru, Chile, Venezuela, Colombie, Ecuador
ADM SAO S.A	US	$328	$10	2.9%	390,000	417,500	Grain, Soybean Oil & Meal	Colombia, Peru, Chile, Ecuador
Gravetal	Venezuela	$276	$23	8.2%	700,000	301,500	Soybean Oil & Meal	Venezuela, Colombia, Peru,
Industrias Oleaginosas S.A	Bolivia	$210	$9	4.3%	510,000	270,000	Grain, Soybean Oil & Meal	Colombia, Peru, Chile
CARGILL Bolivia	US	$128	$18	13.7%	N/A	92,000	Grain, Soybean Oil & Meal	Colombia, Peru, Chile, Ecuador,
Nutrioil	Bolivia	$48	$2	3.6%	300,000	150,000	Grain and Soybean Meal	Argentina, Colombia, Ecuador,
Compania Boliviana de Granos	Bolivia	$50	N/A	N/A	326,000	206,000	Grain	Peru
CAICO	Bolivia	N/A	N/A	N/A	60,000	N/A	Grain & Soybean Meal	Peru
ETASA	Bolivia	N/A	N/A	N/A	90,000	N/A	Soybean Meal	Peru, Chile
Total Largest Companies		**$1392**	**$101**		**2,826,000**	**1,807,500**		

Source. Company ASFI Bond Prospectus/Presentacion Foro de Soya. Dr Hernan Zeballos

Recent Trends:

Total production capacity in Bolivia reached 2.7-2.9 million MT/year. The industrial sector has an installed milling capacity of 3.5-3.6 million MT/year. Current milling capacity could absorb an increase of 150-200 thousands hectares, which falls short considering the goal of expanding the agricultural frontier by 1M hectares.

Main Challenges and Emerging Opportunities:

Export logistics constitute one of the most important issues facing Bolivia's agribusiness sector. Currently, Bolivia mobilizes 55% of soy exports through the Pacific (via truck) and 45% through the Parana/Paraguay

River. Increasing export capacity in Puerto Busch is important as it would reduce transportation costs and open markets for Bolivia's soy exports. Improving roads to access the pacific route is also important given the increasing importance of grain exports to Peru, which have grown substantially in recent years.

Export restrictions, imposed in 2012, are a deterrent to overall production growth and a driver of mispricing for the local market, which ultimately impacts farmers. As these restrictions were implemented the differential between Chicago and local prices widened so much that production fell during the following season. Export restrictions have the overall objective of ensuring ample local supply and incentivizing higher value added exports. However, the local market is well covered with current grain production. It is important to highlight that over the past two years, exports of soybean value added products have had no difficulties. In contrast, the government has imposed a highly bureaucratic process of approval for raw grain, which even generated a black market for export permits.

Uncertainty for land property rights is a major deterrent to private investment. There has been progress regarding arbitrary land seizures which have reduced substantially in 2014. However, one major issue that needs to be addressed relates to the reversion of land property rights. More specifically under current regulation, land can be reverted to the government every 2 years if it becomes unproductive or idle. ANAPO- the Association of Producers of Oilseeds and Wheat- suggests the revision cycle should increase to at least 7 years.

In the same vein, agricultural producers face major challenges in accessing credit given that the current land regulatory framework prevents them from using land as collateral. Under current regulation medium to large land owners are subject to land expropriation under the FES verification process (social function of land held every two years), which discourages banks from taking land as collateral. In addition, credit growth is limited for small holders given that agricultural land is indefeasible.

In the soybean segment Bolivia competes with Brazil, Argentina and Paraguay. These countries have taken several steps in the implementation and use of Biotechnology. In Bolivia, the use of Biotechnology stopped with the implementation of a new generation of seed approved by the government in 2003. The implementation cycle of new generation seeds takes approximately 5 years. In effect, Bolivia's productivity gap relative to regional peers has narrowed substantially in recent years. The implementation of the new generation of seeds in 2003 was a main driver of higher productivity.

Going forward Bolivia needs a regulatory framework that supports the use of biotechnology in order to maintain productivity gains. Bolivia remains the only country in the region that has not taken a position for the use of biotechnology. On the positive front, the government has recently adopted a more favorable rhetoric for the use of GMOs but fragmented positions still exist within the government.

Future Perspectives:

Although Paraguay has become a major food exporter, Bolivia has similar to better land conditions relative to Paraguay. It also hosts a vibrant private sector in Santa Cruz, the agribusiness hub for the country. In addition, the presence of global grain players such as ADM, CARGILL and Bunge would allow for further investments if the regulatory framework improves.

Recommendations to incentivize growth in the oilseed industry consist of i: Improving or releasing export restrictions, ii) Establishing clear private land ownership rights, iii) Incentivizing biotechnology to sustain productivity gains, iv) Increasing milling capacity as part of the expansion of the agribusiness frontier goal, v) Developing infrastructure projects that facilitate exports through the Paraguay river, vi) Incentivizing foreign investment, and vii) Promoting educational programs to train agricultural machinery operators.

Annex 7: BOLIVIA- Cattle Sector Briefing

Overview:

Currently, Bolivia restricts meat exports. However, the country has the capacity to grow and become a major supplier of cattle meat in the international market given its relatively large cattle population (~9M).

Challenges and Emerging Opportunities:

The uncertainty around land tenure due to regulation and FES verification is a major challenge for the cattle sector. The reversal of land property creates uncertainty in the sector and prevents access to credit. The "FES", a Social Impact Verification, is performed every two years vs. an agricultural business cycle of 5 to 6 years. Given this mismatch banks are less open grant credit to the sector. As part of the proposal of the agribusiness sector to the government in the Agricultural Summit "*Sembrando Bolivia*", the CAO – the Eastern/Orient Agricultural Chamber- requested an extension of this verification process to seven years with the opportunity for the producer to amend its FES violations. Should compliance not be attained farmers should not be subject to land expropriation. The government has taken substantial effort to reduce arbitrary land occupation, which declined from ~170 occupied private land properties to just 9 in 2014.

In addition, institutions, such as the INRA (National Institute of Agrarian Reforms), ABT (Forest and Land Authority) and in a smaller scale SENASAG (National Agricultural Health and Food Safety) can be unhelpful and sometimes repressive for producers as they create mistrust through arcane processes of verification that ultimately discourage investment. A request has been passed to the government with the need to change the mission of these institutions in order to promote better support for the producer.

Access to finance also needs to improve in the cattle sector. CAO has requested to replicate a bank lending program that contains longer maturities (12 year term) and the opportunity to access finance to purchase land and livestock allowing producers to have greater flexibility in terms of collateral and guarantees. It is important to note that under new banking regulation large banks must lend at least 25% of their portfolio to the productive sector until 2018. The agribusiness sector falls under this category; however, lending to small & medium farmers is limited for the reasons stated above. Therefore, an improvement in access to financing will exist only if the government implements better land regulation.

Relaxing export restrictions is also important, especially given the domestic market's relative small size and rapid growth. The CAO recommends emulating programs such as: "*Brasil Somos Todos*" or "*Paraguay Exporta*". For example, Paraguay produces enough food to feed 60 million people as they generate more income from food exports than Bolivia from gas exports. In terms of priorities, the CAO believes it is necessary to grow the cattle population in Bolivia given that this sector is less susceptible to business cycles as compared to soy. On the back of this, CAO has requested incentives from the Government to buy 1 million animals for livestock restocking (~11% of current population).

To increase export capacity the improvement of export infrastructure, namely Puerto Busch, is necessary. The dredging of the Tamengo channel is an important condition to have direct access to the Paraguay River with larger capacity vessels. In addition, the construction of a railroad from Puerto Suarez - Puerto Busch should also be considered in order to expedite the transportation of commodities from farm to port.

Future Perspectives:

There are initiatives in the private sector that show commitment to the industry and the country in terms of infrastructure and technology. Local producers have invested in advanced technology in line with developed countries and ahead of regional peers. This technology includes automated seeding process through satellite driving tractors, soil fertilization with the support of color satellite photograph efficiency and seeders that fertilize and seed simultaneously.

On the productivity front, although Bolivia has taken important steps in the use of technology for cattle ranching and farming, the country needs clear regulations that incentivize the use of biotechnology to reduce costs.

Recommendations to incentivize the private sector in cattle are: i) Improved Land Regulation related to the FES verification process, ii) Improved access to biotechnology for cattle and farming, iii) Reduced export restrictions, iv) Improved access to finance and v) improved export infrastructure.

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