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ORIGINAL ARTICLE

Peru: The External and Internal Adjustment Challenge

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Abstract

This paper sketches some of the main external and internal macroeconomic challenges confronting Peru over the near- and medium-term. It argues that Peru's main macroeconomic challenges could be summarized in three main headings:

First, the Peruvian economy is currently in a period of transition from the biggest resource boom since the mid-1950s to a "new normal" characterized by weaker foreign demand, falling metal prices and expectations of rising interest rates at the international level. Transition to a "new normal" has its own challenges, which, in the case of a small open economy like Peru, are currently being heightened by the abovementioned global conditions.

Second, transition to a new normal is happening under robust initial conditions, which could be summarized by the Peruvian economy's sound macroeconomic fundamentals, and its underlying flexibility. Such flexibility helped the economy dealing with the upswing of the mining development boom and should help us in the downswing.

Third, macroeconomic policy—particularly monetary and exchange rate policy—is helping in this adjustment, although a successful transition may need to be supported by a number of structural policies, that are noted in the paper.

Key words

Transition, Macroeconomic policy, exchange rate

JEL Code: E 43; E52

Resumen

Esta nota esboza algunos de los principales desafíos macroeconómicos externos e internos que enfrenta Perú en el corto y mediano plazo. La nota centra la discusión de los desafíos en tres grandes acápites:

En primer lugar, la economía peruana se encuentra actualmente en un período de transición de la bonanza minera más grande desde mediados de la década de 1950 a una "nueva normalidad" caracterizada por una demanda externa débil, caída de los precios de los minerales, y expectativas de aumento en tasa de interés a nivel mundial. La transición a una "nueva normalidad" tiene sus propios retos, los cuales, en el caso de una economía pequeña y abierta como el Perú, están exacerbados por un entorno externo macroeconómico débil.

En segundo lugar, la transición a una nueva normalidad está sucediendo en condiciones iniciales robustas, lo que podría resumirse en sólidos fundamentos de la economía peruana, y su flexibilidad macroeconómica subyacente. Esta flexibilidad ayudó a la economía durante la fase de expansión del boom minero y debe también ayudarla en la fase descendente.

En tercer lugar, la política monetaria y, sobre todo, la política de tipo de cambio ayudó—y está ayudando—en este ajuste, aunque una transición exitosa a la "nueva normalidad" podría beneficiarse de un número de políticas estructurales resumidas en el documento.

Palabras clave

Transición, Politica Macroeconomica, taza de cambio

JEL Code: E 43; E52

I. Introduction

This paper reviews the external and internal macroeconomic challenges confronting Peru over the near- and medium-term. It argues that Peru's main macroeconomic challenges could be summarized in three main headings:

First, the Peruvian economy is currently in a period of transition from the biggest resource boom since the mid-1950s to a "new normal" characterized by weaker foreign demand (mainly from a key trading partner, China), falling metal prices (Peru's top export goods), and expectations of rising interest rates at the international level. Transition to a "new normal" has its own challenges, which, in the case of a small open economy like Peru, are currently being heightened by the abovementioned global conditions.

Second, transition to a new normal is happening under robust initial conditions, which could be summarized by the Peruvian economy's sound macroeconomic fundamentals, and its underlying flexibility. Such flexibility helped the economy dealing with the upswing of the mining development boom and should help us in the downswing.

Third, macroeconomic policy—particularly monetary and exchange rate policy—is helping in this adjustment, although a successful transition may need to be supported by a number of structural policies. The latter include: (i) further-opening of the economy, while supporting new sources of growth in the tradable goods sector and sustainable foreign direct investment economy-wide; (ii) fostering a strong growth of fixed capital formation in machinery and equipment, which is, unfortunately, relatively expensive by regional standards; and (iii) adding flexibility in the local labor market to increase labor productivity and sustain wage and employment growth

despite the hardening of international (and domestic) market conditions. Such containment of unit labor costs (ULCs) should, in turn, support a lasting surge growth in private investment and increase potential output.

The paper elaborates on each of the issues identified going forward. It sketches macroeconomic trends in Peru's main trading partners, as they represent an important ("exogenous") contributor to the adjustment that Peru is going through. It then focuses on the adjustment that is either due or taking place in the Peruvian economy.

II. The External Environment

Peru's main trading partners consist of four main country blocks. These blocks include the Latin American country block (including, mainly, Brazil, Chile, Colombia, Ecuador, Mexico, Bolivia, Panama, Argentina, and Venezuela), the United States, China, and the European Union.

Trade with Latin America has almost doubled (as a share of total exports of goods and services) during the last 18 years and represents around 21 percent of Peru's exports of goods and services (Table 1). Except for Mexico, Peru's exports to each of the other Latin American countries have increased sharply, likely during the period along rapid growth in private consumption and investment recorded in all those countries. The years 2014 and 2015 have not been particularly good for Latin America. This mainly reflects Brazil's and Venezuela's recessions that create an important drag on overall growth in the region. Notably, Peru's exports to Brazil and Chile are in the order of US$2 billion dollars, each, or about a total of 10 percent of Peru's total exports. Exports of services to both countries are also important and growing. Commodity exports to Venezuela

are more limited, hovering around US$500 million dollars in recent years.

Trade with the U.S. has been traditionally very important, with the American market being a key destination of Peruvian exports of minerals and agro-industrial goods for long. Total exports to the US, averaging about US$7 billion in recent years (including a large contingent of gold exports) have remained somewhat stagnant since 2008, as the American economy struggled with the macroeconomic effects stemming from the 2008/09 global financial crisis.

Table 1

Peru: Direction of Trade: Exports of G &S, 1997-2014 (In % of total exports G & S)

	1997-2002	2003-2007	2008-2014
Latin America	12.6	26.1	20.8
USA	27.4	18.6	17.8
China	5.6	9.0	12.7
EU	9.1	9.3	12.2
Switzerland	6.8	6.4	7.0
Japan	5.6	4.1	4.1
Other countries	33.0	26.7	25.4

Source: INEI & IMF.

Despite setbacks, the good news is that, the American economy is currently recording above-average, albeit volatile, growth and the unemployment rate is around estimates of full employment (5.1 percent). Monetary policy in the US remains accommodative, and thus supportive of aggregate demand, with the Federal Funds Rate within a 0-.25 percent margin. The expectation is that at some point before too long, the health of the American economy would be sufficiently strong for the Federal Reserve to start a process of monetary policy normalization and increase leading interest rates. A stronger US economy would benefit the global economy, including Peru, although global financial markets may need to be carefully monitored for volatility and potential crises, given that the policy rate in the US has been almost zero for about 7 years.

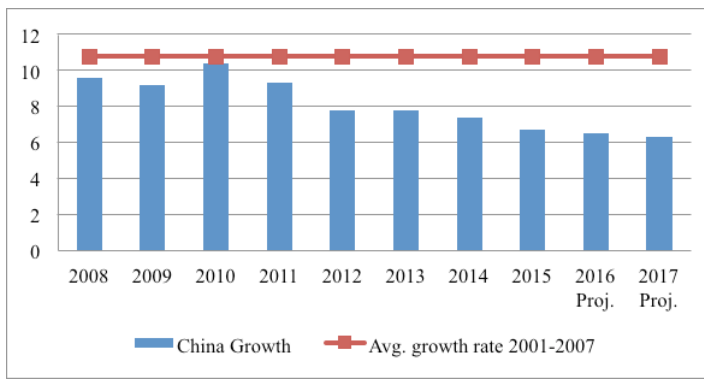
Economic and financial developments in China—a key destination for Peru's exports of raw materials (minerals and fishmeal)—are always in the news and merit, possibly, some longer explanation. **Note that China represents some 13 percent of our total exports, more than twice the share in the late 1990s, early 2000s**. Indeed, China is currently the second largest economy in the world and has been an important destination of raw materials from developing and emerging market countries, including Peru, in the last decade. Those inputs of raw materials helped propelled a massive boost in Chinese export manufacturing products and supported very high rates of domestic investment.

The news (somewhat old to date) is that the Chinese export-oriented and investment-intensive growth model now yielding lower GDP growth rates than before (i.e., a reduction in actual and potential output growth) and China is also dealing with a number of structural problems (Chart 1).

These structural challenges include, in particular,

- **Transiting from an investment-led growth to consumption-led growth**. For one, China's private consumption as a share of GDP is around 40 percent, compared to rates of 60 to 70 percent in countries with comparable income per-capita. For example, private consumption in Peru, with a per-capita income of about US$6.000 at current exchange rates (or just some 10 percent higher than China´s per capita income) is about 63 percent of GDP, a measure that is broadly in line with world averages.
- **Dealing with demographic change, as the working age population declines and the overall population ages**.
- **Dealing with financial "repression",** understood in terms of existing interest rate subsidies and directed credit. As well as, "shadow banking" and property market constraints.

Figure 1. China: Real GDP Growth Rate, 2008-2017 (In %)



Source: IMF.

Comforting, however, is that China is still growing at relatively high rates (5 percent to 6 percent, depending who you read) and the Chinese authorities are acting to address the economy's deceleration, although the judge is still out assessing the impact of those policies. Recent policies to support China´s growth include, among others: (i) the reduction in benchmark interest rates and bank reserve requirements to support liquidity, particularly, in a context of large capital outflows; (ii) increased public spending in infrastructure; and (iii) the highly publicized nominal depreciation of the Renminbi against the US dollar.

In sum, China is no longer growing (or expected to grow) at the extraordinary rates of the past. Yet, growth in China persists at a relatively high rate and Peru needs to make the most from this important trade relationship, while being aware of the risks for Chinese growth (and financial stability) and thus for our exports.

For the global economy as a whole—including the EU—the situation is that economic growth remains weak, although it is being supported by a number of events. The latter refers mainly to low oil prices, less of a drag in terms of fiscal consolidation supported by accommodative monetary policies. Yet, as noted above, the high point, globally, is the ongoing recovery of the US economy—despite volatility in the monthly industrial data—and the hope that the Chinese authorities deal effectively with the downswing of their own business cycle.

All in all, as a total, our trading partners are projected to grow by about 2.5 to 2.7 percent a year during the next two years. These growth rates compare with rates in the order of 4.0 to 4.5 percent a year, a decade ago.

Table 2

Peru Trading Partners: Growth Performance & Prospects, 2013-16
(Growth rates in In percent)

	Weights 1/	2013	2014	2015	2016
Latin America	20.8	3.2	0.6	0.7	2.4
USA	17.8	2.2	2.4	2.9	2.7
China	12.7	7.7	6.7	6.5	6.3
EU	12.2	-0.4	1.5	1.7	1.7
Switzerland	7.0	1.9	2.0	0.8	1.2
Japan	4.1	1.6	0.9	1.5	0.4
Other	25.4	1.6	2	2	2.5
Total weights	100.0				
Weighted growth rate		**2.6**	**2.3**	**2.3**	**2.7**

Source: BCRP and IMF.
1/ Refers to country weights in 2008-14 exports of Goods & Services.

III. Internal Adjustment Challenge

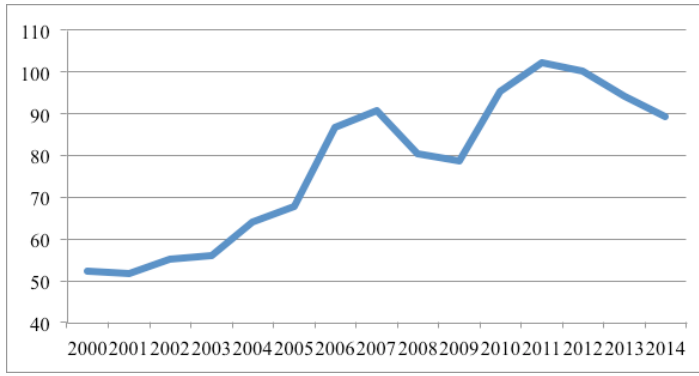
As the world economy adjusts to a "new normal" in terms of global trade and GDP growth, Peru also needs to adjust and maximize opportunities from such a change. This section summarizes Peru´s economic record and resource reallocation to date; the initial conditions as Peru enters the downswing; and the challenges ahead for policy makers.

The journey so far

The broad picture of Peru's macroeconomic developments during the last 15 years, say, could be depicted in three broad phases, as evidenced, as well, in other mining countries around the world.

The first phase could be characterized by a very strong/ significant improvement in terms of trade (commodity prices), which only slowed down with the outbreak of the 2008 financial crisis (i.e., sharp drop in food and energy prices and deflation in the US). Thereafter, the terms of trade peaked again in 2011, before starting to decline. Yet, even after the recent drop, the terms of trade are much higher than the levels registered in the early 2000s. (Chart 2)

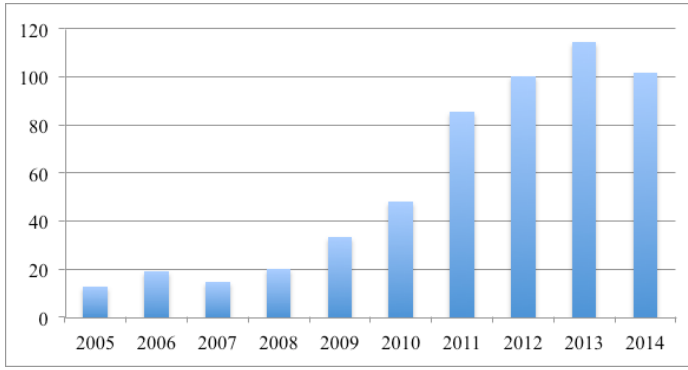
Figure 2. Peru: Terms of Trade, 2000-2014 (Index, 2012=100)



Source: BCRP, INEI and authors' estimate.

The second phase has been a very large increase in investment in the mining sector, i.e., Peru's resource sector (Chart 3). The latest information published by the National Institute of Statistics and Information (INEI) indicates that total mining investment undertaken in Peru between 2007 and 2014 was around US$46 billion, which is broadly in line with the amount of US$53 billion in mining investment outlays reported in the study by the Peruvian Institute of Economics (IPE 2012). The bulk of this investment was in the exploration of copper (some US$30 billion, including, notably, Las Bambas in Apurimac, Cerro Verde's expansion in Arequipa, and Quellaveco in Moquegua).

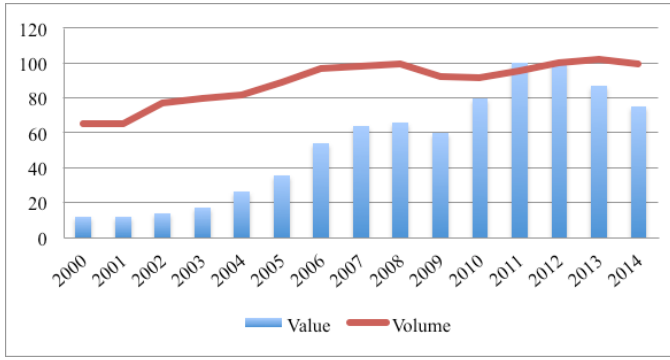
Figure 3. Peru: Mining Sector Investment , 2000-2014 (Index, 2012=100)



Source: BCRP, INEI and authors' estimate.

The third phase has been a sizeable increase in mining export receipts, in particular, and export volumes to a lesser extent, albeit extraordinary by historical standards (Charts 4). Mining export volumes (copper, iron ore, and zinc, in particular) rose sharply between 2000 and 2008/09 and recovered again in 2012/13, in the aftermath of the global recession. During 2014/15, export volumes have remained somewhat stagnant, albeit at a high level for historical standards. In dollar terms, copper export receipts peaked to about US$26 billion in 2010-13, compared with export receipts of about US$6.3 billion in the early 2000s. Gold exports have also been very profitable for Peru, totaling some US$8-9 billion dollars in recent years, compared with export revenues of less than US$2 billion in the early 2000s; this has been largely on account of the evolution of international gold prices. Zinc and Iron ore export receipts have averaged about US$1.5 billion and US$800 million, respectively, during the last 5 years.

Figure 4. Peru: Mining Exports: Volume & Value, 2000-2014 (Index 2012=100)



Source: BCRP, INEI and authors' estimates.

While the three phases of mining sector development have overlapped, we are very much in the third phase with sizeable mining production for historical standards, although the terms of trade and investment flows are much lower than a few years ago. Going forward, export volumes may show some resilience despite the reduction international prices, as marginal costs of production reportedly remain below international prices due to sizeable past investment outlays in the mines. At the same time, current investment will be gradually converging to more "normal" levels, as construction works of mega-mining projects: Toromocho (Junín), Constancia (Cusco), and Las Bambas (Apurimac) come to an end and exports take off.

Resource reallocation to date

Notably, during the first two phases of the resources boom there was an important reallocation of resources within the Peruvian economy. This was important to avoid bottlenecks and possible overheating in the markets for goods, labor and other factors of production.

Elements sketching the reallocation of resources during the upswing of Peru's business cycle include:

1. **The relatively high growth rates of employment creation in the top 9 mining departments during 2001-2008, propelled by work in the mines and the use of the mining ¨canon¨ to finance local governments 'public works (Table 3).**[1] During 2001-2008, employment creation in the top 9 mining centers was almost as large (84 percent) as in the rest of the economy, excluding Lima. Since, 2009, however, job creation in the mining centers has lagged somewhat, compared to developments elsewhere in the economy, but the share of mining sector employment in total employment has remained broadly unchanged (Chart 5). Local and regional governments receipts on account of the mining canon totaled about PEN 33 billion during 1996-2013 (i.e., about 23% percent of the consolidated 2013 GDP of all nine top mining regions) and have been used for public works (i.e., investment projects and infrastructure) according to the legislation.[2]

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1 The mining canon (*canon minero*) is a central government transfer to the local and regional governments hosting mining activities within their jurisdictions. The transfer is equivalent to 50 percent of the income tax paid by the mining companies to the fiscal treasury. The canon is distributed across the various levels of local and regional governments according to a pre-determined formula.

2 See, Sociedad Nacional de Minería, Petróleo, y Energía (2013).

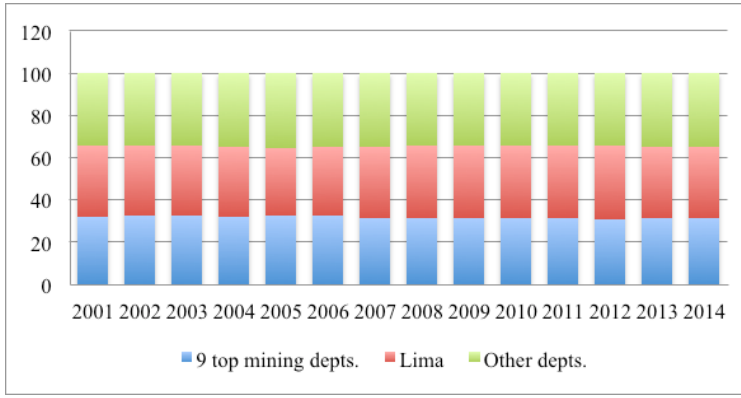
Table 3

Peru: Employment Creation By Department, 2001-2014

Departments	Employment growth rates (In %)			Employment gains (In thousands)		
	2001-2008	2008-2011	2011-2014	2001-2008	2008-2011	2011-2014
Amazonas	19.1	6.0	-2.0	35.1	13.1	-4.5
Áncash	21.0	-0.1	6.0	102.9	-0.7	35.4
Apurímac	12.8	2.4	5.4	27.0	5.8	13.3
Arequipa	17.1	8.3	4.5	90.2	51.1	30.5
Ayacucho	20.1	3.5	7.1	55.2	11.4	24.3
Cajamarca	19.8	-2.7	-0.6	139.0	-22.7	-4.8
Cusco	14.8	3.5	2.9	91.7	24.6	21.3
Huancavelica	12.6	6.9	5.8	25.9	16.1	14.4
Huánuco	19.6	4.1	4.2	69.4	17.5	18.5
Ica	20.3	7.6	2.9	63.5	28.8	11.9
Junín	21.5	4.4	1.1	118.5	29.5	7.8
La Libertad	21.3	8.6	5.0	147.0	71.6	45.7
Lambayeque	28.0	3.8	-0.5	133.5	23.4	-3.2
Loreto	23.4	4.9	5.6	86.8	22.4	26.7
Madre de Dios	43.8	7.1	9.6	20.1	4.7	6.8
Moquegua	16.9	7.6	4.5	13.5	7.0	4.5
Pasco	18.5	16.1	1.5	20.8	21.5	2.3
Piura	20.5	1.7	5.2	146.4	14.9	45.8
Puno	10.9	5.9	4.4	72.5	43.8	34.4
San Martín	29.1	9.2	0.3	90.5	37.0	1.4
Tacna	21.7	3.5	2.7	30.7	6.0	4.7
Tumbes	26.4	6.2	1.7	25.2	7.4	2.2
Ucayali	42.9	8.8	6.6	72.0	21.0	17.2
Lima y Callao	23.6	6.5	1.6	987.5	335.4	90.6
Memo items:						
Top 9 mining departments	18.2	5.3	3.4	750.7	187.8	155.9
All other departments	24.5	5.7	4.1	1879.3	589.9	295.9
All other departments, excl. Lima	24.6	5.6	4.3	891.7	254.5	205.3

Source: INEI & authors' estimates.

Figure 5. Peru: Economic Active Population by Department, 2001-2014 (% of Total)



Source: BCRP, INEI, and authors' estimates.

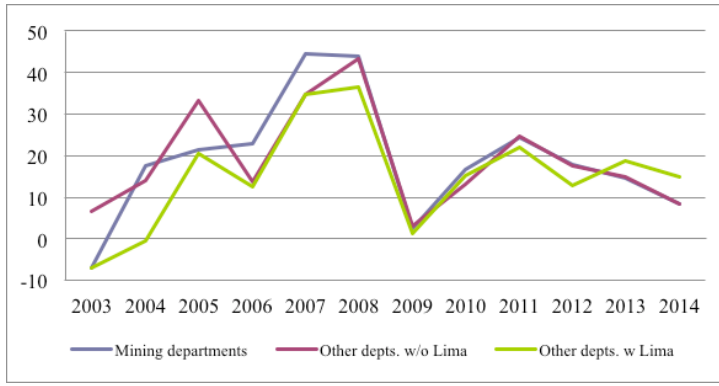
2. **The sheer magnitude of the average overall growth rates of the 9 top mining centers (6.1 percent) supported an important resource reallocation, as measured by financial and real sector variables (Table 4 and Charts 6 and 7)**. On the one hand, during 2002-2008, the annual growth rates of bank deposits and private sector credit in the mining centers were in the high double-digits and were generally higher than the growth rate registered in the rest of the Peruvian economy. Growth rates of financial variables in mining and non-mining geographical departments decelerated sharply in 2009, but have since then recovered significantly. On the other hand, according to the latest Poverty Map published by the INEI, the poverty incidence is currently less concentrated in the traditional rural areas of Ayacucho, Huancavelica and Apurimac (the so-called ***Trapecio Andino***), although poverty persists in the northern

highlands, including numerous districts in two mining centers, such as Cajamarca and La Libertad.[3] According to experts, the gold extracting mining project of Conga in Cajamarca could propel an economic surge of the region, but labor/social tensions persist between the local communities and the interested investor to date.

3. **The magnitude of the mining sector´s Input-Output table multipliers should have benefitted a number of economic activities supplying and/or demanding mining sector products and related goods & services, same as in other mineral-rich countries.** Indeed, an IPE study found that mining has relatively important forward multipliers into the rest of the economy (i.e., mining supplies inputs to other economic sectors), as well as backward multipliers (i.e., mining consumes services from other sectors, particularly manufacturing products, transport, storage, chemicals, water and electricity). The study also noted that in 2007, the mining sector's value added (i.e., gross output (VBP) minus intermediate consumption) was the largest in the economy, equivalent to 13.2 percent of GDP, INEI (2012).

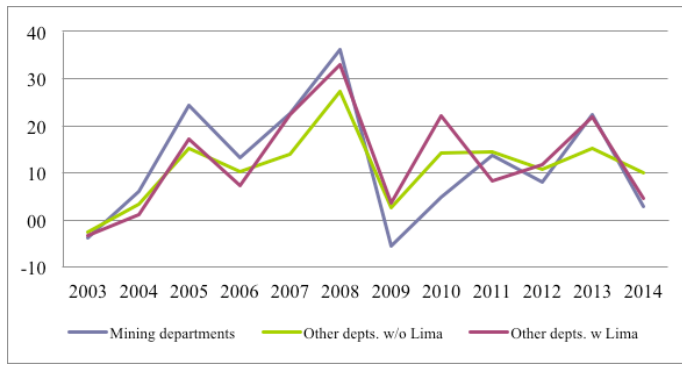
3 See INEI (2015).

Figure 6. Peru: Bank Credit Growth by Department, 2003-2014
(In percent)



Source: BCRP, INEI, and authors' estimates.

Figure 7. Peru: Bank Deposit Growth by Department, 2003-2014
(In percent)



Source: BCRP, INEI, and authors' estimates.

The initial conditions as Peru enters the downswing

Going forward, despite Peru's recent economic deceleration (in aggregate and in GDP per capita), there are elements that seem likely to underpin its good performance. These elements refer to: (i) resilient—albeit much lower than in the past—growth rates of the economy supported by resilient growth of private consumption; (ii) relatively sound economic and financial indicators; and (iii) policy flexibility, particularly monetary and exchange rate policy, that has helped the economy transit through the business cycle.

Table 4

Peru: Cumulative Mining Investment & Departments' Economic Growth, 2005 - 2014

Departments	Mining Investment 2005-2014		Real GDP Avg. growth rates (In %)	
	(In millions of US$)	(In % of total)	2001-08	2009-14
Arequipa	7,197	15.4	7.8	3.3
Amazonas	59	0.1	6.3	6.9
Ancash	3,830	8.2	6.1	-0.4
Apurimac	5,442	11.7	5.5	6.6
Ayacucho	476	1.0	7.1	7.1
Cajamarca	5,294	11.3	3.8	3.2
Callao	0	0.0	0.0	0.0
Cusco	5,721	12.3	8.0	9.1
Huancavelica	757	1.6	2.2	4.3
Huanuco	109	0.2	5.3	5.9
Ica	591	1.3	10.1	6.3
Junin	4,966	10.6	5.3	4.0
La Libertad	3,056	6.5	7.9	4.0

Lambayeque	2	0.0	5.2	5.8
Lima	1,981	4.2	7.1	6.0
Madre de Dios	44	0.1	7.4	1.0
Moquegua	2,095	4.5	5.8	0.1
Pasco	2,490	5.3	4.9	-0.8
Piura	819	1.8	6.6	5.3
Puno	519	1.1	4.8	5.2
San Martin	0	0.0	6.9	6.0
Tacna	1,216	2.6	4.9	3.7
Tumbes	0	0.0	5.8	5.8
Ucayali	0	0.0	5.8	3.7
Loreto	0	0.0	4.2	3.0
Total investment	46,664	100.0		
Memo items (avg. growth rates; In %):				
Top 9 mining departments			6.1	3.2
All other departments			6.0	5.0
All other departments, excluding Lima			5.9	5.0

Source: INEI, BCRP, and authors' estimates.

- **First, the economic conditions remain consistent with an expansion of the Peruvian economy that is better than elsewhere-in Latin America, but arguably currently below the economy's potential (Table 5)**. [4] Private consumption growth has declined, but remains positive hovering around 3 percent per annum and recovering according to the BCRP's Inflation Report September 2015 macroeconomic projections (Chart 8).

4 See, for example, BCRP, Inflation Report (September 2015).

- **Second, a number of economic and financial indicators remain broadly robust and should support the transition to a ¨new normal¨:**

  (a) The unemployment rate in Lima, which is the country's main economic center, has remained low and broadly stable during the last 4 years, at around 6 percent (Chart 9). Noted, however, with a sizeable (i.e., 35 percent) share of underemployment in total employment.

  (b) Business expectations have deteriorated since early 2015, but remain generally above their mid-2012 to mid-2013 bottommost (Chart 10).

  (c) Household indebtedness is low by international standards (some 48 percent of household disposable income) and should provide space for financial deepening, even after correcting for households' income concentration (Table 6).

  (d) Corporate indebtedness, while possibly somewhat elevated for some business sectors (and/or type of enterprise) of the economy, it is still relatively low as a percentage of GDP, while the companies' fundamentals remain strong (Tables 6 & 7).

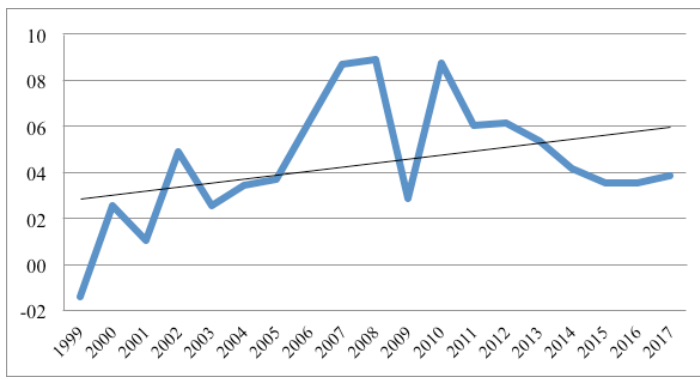
Table 5

Peru & Latin American Partners: Real GDP Growth Rates, 2013-2017
(In percent)

	2013	2014	2015	2016	2017
Peru (BCRP)	**5.8**	**2.4**	**3.1**	**4.2**	**5.0**
Brazil	2.7	0.1	-1.5	0.5	2.3
Mexico	1.4	2.1	2.4	3.0	3.5
Venezuela	0.5	-3.0	-4.2	0.0	0.0
Chile	4.3	1.9	2.5	3.1	3.6
Colombia	4.9	4.6	2.9	2.8	3.7
Ecuador	4.5	-3.0	1.0	3.3	3.3
Bolivia	3.0	2.5	2.5	2.5	2.5
Memo item:					
Avg. growth rate, excluding Peru	3.0	0.7	0.8	2.2	2.7

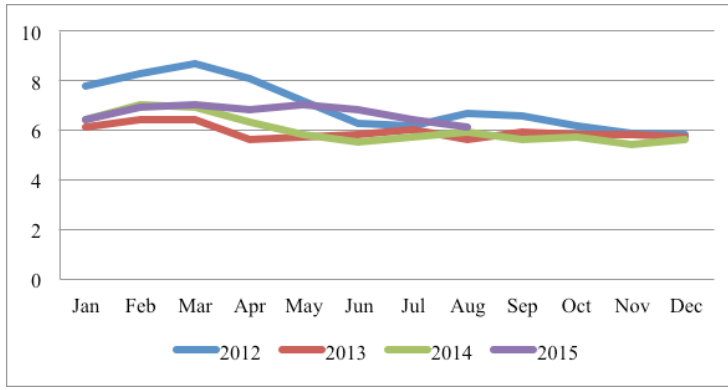
Source: IMF, BCRP, and The Economist magazine.

Figure 8. Peru: Private Consumption Growth Rate, 1999-2017
(In percent)



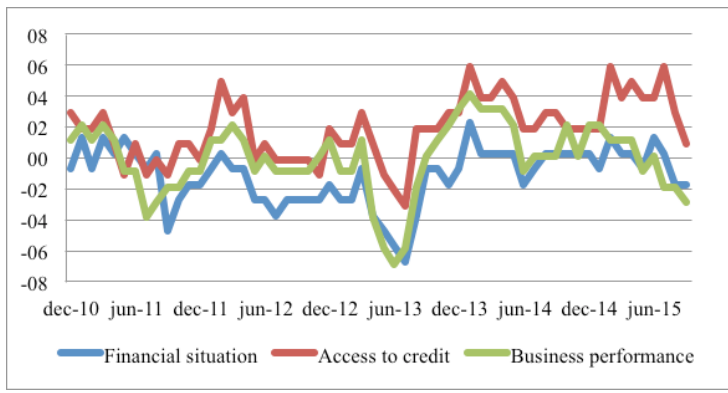
Source: BCRP Inflation Report estimates & projections (Sept. 2015).

Figure 9. Metropolitan Lima: Unemployment Rate, 2012-2015 (In percent)



Source: INEI.

Figure 10. Peru: Business Expectations Survey, Dec. 2010-Aug. 2015



Source: BCRP & authors' estimates.
(Deviation from Avg. since Jan. 2007)

Table 6

Peru: Households and Corporate Debt, 2013-2015

	Dec. 2013	Jun. 2014	Dec.2014	Jun. 2015
	(In percent of GDP)			
Total debt	**42.33**	**43.84**	**45.56**	**46.19**
Households (HH) debt	**13.23**	**13.56**	**14.03**	**14.49**
Consumption loans	7.59	7.74	8.02	8.41
Mortgage loans	5.64	5.82	6.02	6.09
Corporates' debt	**29.10**	**30.28**	**31.53**	**31.70**
Debt to local Fin. System	24.08	24.80	25.12	25.29
External debt 1/	4.16	4.62	5.70	5.70
Other domestic debt	0.86	0.86	0.71	0.71
Memo item:				
Household debt (% HH disposable income)	44.10	45.20	46.78	48.31
HH disposable income 2/	163,666	169,135	172,535	177,212

Source: BCRP, Inflation Report, various issues, BCRP data, and author's estimates.
1/ Valued at current exchange rates. Refers to non-financial corporations, only.
2/ Assumes that households' disposable income is 30% of nominal GDP. The difference being profits, taxes and depreciation of cpital (i.e., GDP from income side).

Table 7

Peru: Fundamentals of Corporations in Various Economic Sectors
(As of 2014)

	Return on Equity	Leverage 1/	Interest cost coverage 2/
Mining sector	3%	80%	600%
Industrial sector	6%	100%	500%
Public services	16%	70%	1200%

Source: BCRP (2015), Financial Stability Report.
1/ Debt to equity ratio.
2/ Operational profits as percent of total financial costs.

- **Third, during the last decade, there has been monetary and exchange rate policy flexibility that has helped the economy adjust through the business cycle (Charts 11 and 12).** Indeed, the exchange rate has been broadly flexible: appreciating during the resources boom and now depreciating, as the external sector conditions weakened. Also, an accommodative monetary policy has been supportive of economic growth in a context of a weak external environment during the last 8 years, or so. [5]

5 Monetary easing has bee implemented while guarding excessive foreign exchange volatility and ensuring banks' liquidity on their dollar-denominated deposits. The central bank has reduced bank reserve requirements on soles-denominated bank deposits and sharply cut its reference rate in an effort to provide liquidity to the interbank money market, as needed. These measures were complemented by increases in reserve requirement ratios applicable on banks' dollar deposits that improved banks' dollar liquidity ratios (defined as the ratio of dollar liquid assets to liquid liabilities).

Analysis of equilibrium real exchange rates conducted by the Central Bank of Peru suggests that, in general, since the mid-1990s, there have not been major misalignments between the actual and the equilibrium real effective exchange rate for the Peruvian sol. [6] According to the monetary authorities, Peru´s actual real effective exchange rate has been broadly in line with fundamentals. The latter being mainly Peru´s aggregate relative productivity levels vis-à-vis trading partners, the terms of trade, the economy´s degree of openness, the net international investment position, and the relative size of the government. The broad alignment between actual and equilibrium exchange rate levels has been the result of foreign exchange intervention to reduce excessive short term volatility of the nominal exchange rate, while taking into account the role of fundamentals, according to the central bank staff.

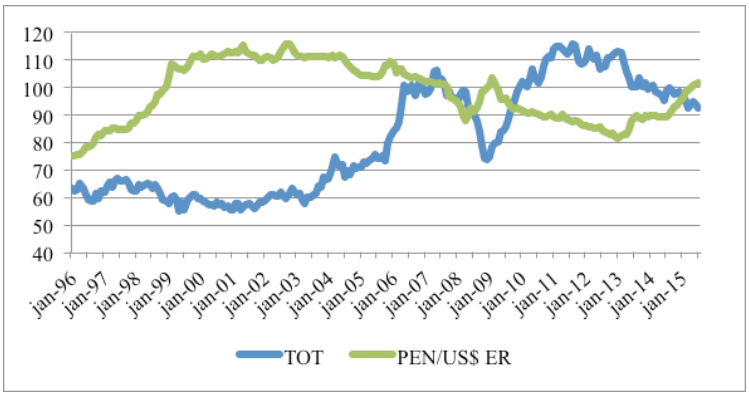
While the central bank´s analysis is most comforting, further expert analytical work should consolidate the overall exchange rate assessment and provide robust evidence that the are indeed no major exchange rate misalignments. For example, in assessing equilibrium exchange rates, it may be important to differentiate the impact on the real exchange rate from productivity gains in the tradable and the non-tradable goods sectors, rather than using an aggregate relative productivity index in explaining movements of the real exchange rate. Productivity gains in the domestic tradable goods sector (vis-a-vis productivity gains in trading partners) should appreciate the real exchange rate, as the Balassa-Samuelson effect plays on.7 By contrast, relative productivity gains in the domestic

6 See, BCRP (2015), pages 109-110, and Rodriguez and Winkelried (2011).

7 The Balassa-Samuelson effect suggests that an increase in wages in the tradable goods sector of an economy will also lead to higher wages in the non-tradable (service) sector of the economy. The accompanying increase in inflation makes

non-tradable goods sector (e.g., faster and better barbers, for example) should reduce non-tradable prices and thus depreciate the real exchange rate. [8] [9]

Figure 11. Peru: Terms of Trade and Nominal ER (PEN/US$), 1996-2015 (Indices, 2007=100)



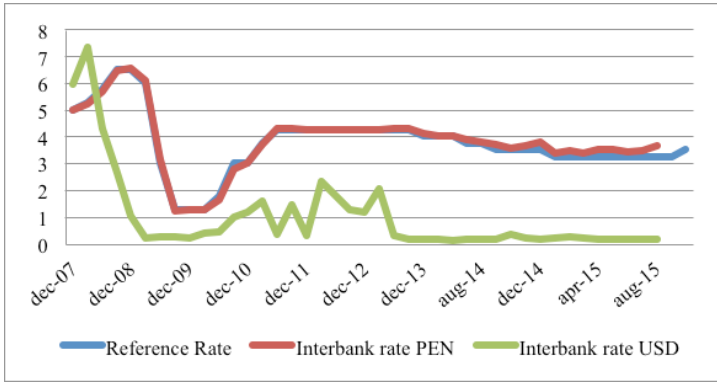
Source: BCRP and authors' estimates.

inflation rates higher in faster growing economies than it is in slow growing economies.

8 Krugman et al (2012), pages 407-408, provides a detailed explanation on how an increase in a country's relative non-tradable productivity is associated with real exchange depreciation, whereas an increase in relative tradable productivity exerts appreciation pressure (í.e.: Balassa-Samuelson effect).

9 To our knowledge, no other analysts have tried before the distinction between tradable and non-tradable sectors in equilibrium exchange rate analysis in Peru. To be sure, bundling both tradable and non-tradable productivities into a single variable, without considering their opposite effects on the real exchange rate, can lead to omitted variable bias in a regression framework.

Figure 12. Peru: Short Term Interest Rates, 2007-2015 (In percent)



Source: BCRP.

Table 8, first column, shows the results from our empirical analysis, which importantly distinguishes between productivity gains in the tradable and the non-tradable sectors. Both variables are found to be determinants of the long-run bilateral PEN/US dollar real exchange rate. Tellingly, all right hand side variables are statistically significant and their coefficients show the correct signs. As expected, a relative increase in Peru's tradable industries' productivity (such as mining) seems strongly associated with a real exchange rate appreciation, whereas the opposite holds for productivity increases in the non-tradable sectors (such as services). The statistical analysis uses the PEN/USD real bilateral exchange rate as the dependent variable so as to better compare productivity variables in Peru and the US, whose productivity data, on a disaggregated basis, are published on a regular basis by the Bureau of Labor and Statistics. For a practical matter, we were unable to construct productivity variables for each of Peru's trading partners due to constraints on data availability.

Table 8.

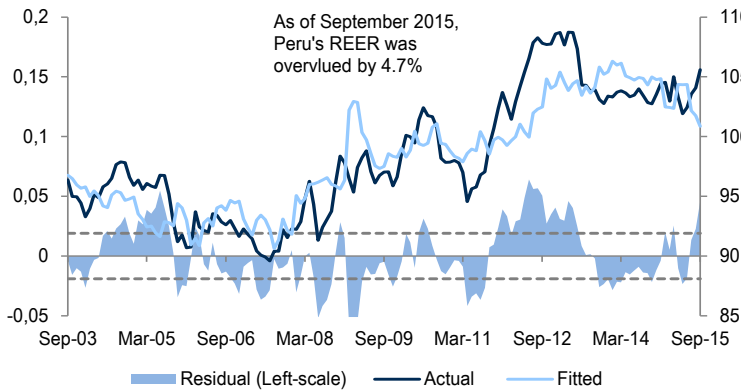
Real Exchange Rate Models- Regression Analysis Output

Dependent variable	Bilateral real exchange rate (Peru - USA; - appreciation, + depreciation)	Real effective exchange rate (BIS, rebased, + appreciation, - depreciation)
Sample (months)	Sept. 2003-Sept. 2015 (145 observations)	Sept. 2003-Sept. 2015 (145 observations)
Estimation method	OLS logarithims	OLS logarithims
Explanatory variables 1/		
Relative productivity in tradable sectors	-0.1873 *	0.2802 ***
(Peru relative to United States)	(0.1102)	(0.0871)
Relative productivity in non-tradable sectors	0.2570 *	0.3368 ***
(Peru relative to United States)	(0.1432)	(0.1110)
Terms of trade	-0.1514 ***	0.0150
(seasonally adjusted)	(0.0497)	(0.0418)
Monetary policy rate differential	0.0319 ***	-0.0143 ***
(Fed funds rate minus BCRP reference rate)	(0.0022)	(0.0019)
Net international investment position (as % GDP)	-0.0069 ***	0.0004
	(0.0013)	(0.0016)
Trade openness (exports plus imports, as % GDP)	0.5101 ***	-0.1131
	(0.1145)	(0.1409)
Peru's EMBI spread (country risk)	0.0840 ***	-0.0346 **
	(0.0167)	(0.0137)
Public spending (as % GDP)		0.3001 ***
		(0.0606)
Intercept (constant)	-0.3022	3.7687
	(0.6620)	(0.9048)
R-squared	0.8951	0.7495
Ajusted R-squared	0.8597	0.7348
Prob (F-statistic)	0.00 ***	0.00 ***

Data source: BIS, Bloomberg, BCRP, INEI, Haver Analytics and authrors' estimates.
1/Standard errors are given in parenthesis under coefficients; individual coefficients are statistically significant at * 90%; ** 95%; and *** 99% confidence levels.

Table 8, second column, regresses Peru's multilateral trade weighted real effective exchange rate (REER) against an almost similar set of explanatory variables and confirms their explanatory power, albeit noting some marginal appreciation of the REER as of September 2015 (Chart 13). [10] Most of the variables are statistically significant and show the correct signs (note that the signs are opposite to those in the other regression because the dependent variable has been rebased). Notably, a key insight from this specification is that Peru's REER appeared overvalued by 4.7 percent as of September 2015.

Figure 13. Real Effective Exchange Rate Equation – actual, fitted, residual

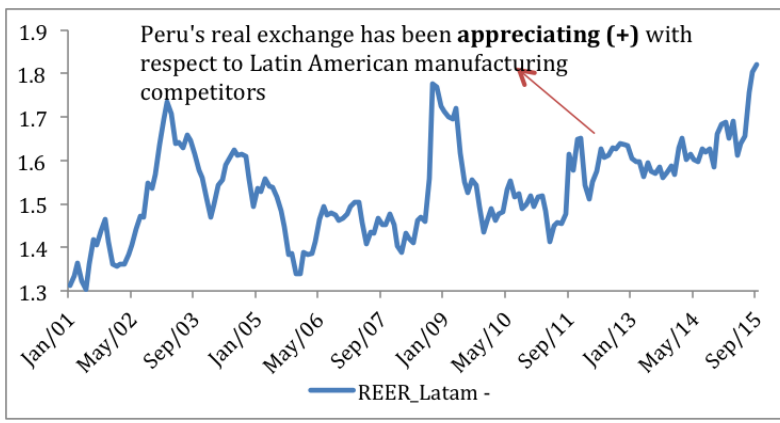


Source: BIS, Bloomberg, BCRP, INEI, Haver Analytics and authrors' estimates.

10 Download Peru's REER time series at https://www.bis.org/statistics/eer.htm?m=6%7C187

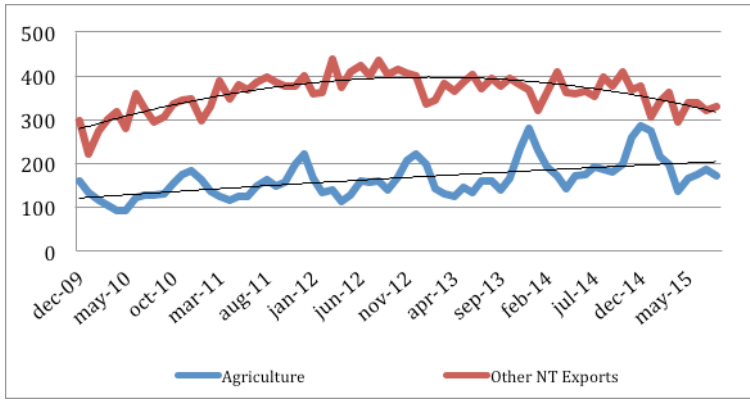
The overvaluation of the real exchange rate is arguably larger with respect to the other four Latin American inflation-targeting countries (Chile, Colombia, Mexico, and Brazil), which are also Peru's competitors in several manufacturing industries (Chart 14 and 15). Indeed, these countries' respective currencies have undergone much severe depreciations since the FED's tapering announcement shocked emerging market currencies worldwide back in May 2013. Peru's non-traditional exports (other than agriculture) have also witnessed an important deceleration in real terms since then.

Figure 14. Peru's real exchange rate with respect to Latin American inflation-targeting countries (Chile, Colombia, Mexico, and Brazil) (Rebased, + appreciation, - depreciation) (Index, August 1992=100)



Source: Source: Bloomberg, BCRP, INEI, Haver Analytics and authors' estimates

Figure 15. Non-Traditonal Exports FOB, Dec. 2009-Aug. 2015 (Thousands of 2002 US$)



Source: INEI and authors' estimates.

Confronting the new normal: The task ahead

There are some key areas of reform as Peru enters the ¨new normal¨ of lower growth abroad and at home. These include: (i) supporting new sources of growth to complement traditionally outward-oriented mining and agriculture; (ii) further opening up the economy to foreign direct investment, while supporting a strong growth of fixed capital formation in machinery and equipment that is rather expensive by regional standards; and (iii) adding flexibility to the labor market that would increase labor productivity and allow sustained wage growth notwithstanding the underlying economic deceleration.

Support new sources of growth

Tourism may be an important economic growth pillar, but its earlier expansion appears to have weakened in recent years (Chart 16). The tourist sector grew very rapidly through 2012,

but it may now be losing steam, as measured by the number of incoming tourists and available beds. Furthermore, from a national accounts perspective, the sector´s value-added growth has been flat at around 1 percent per year since mid-2011.

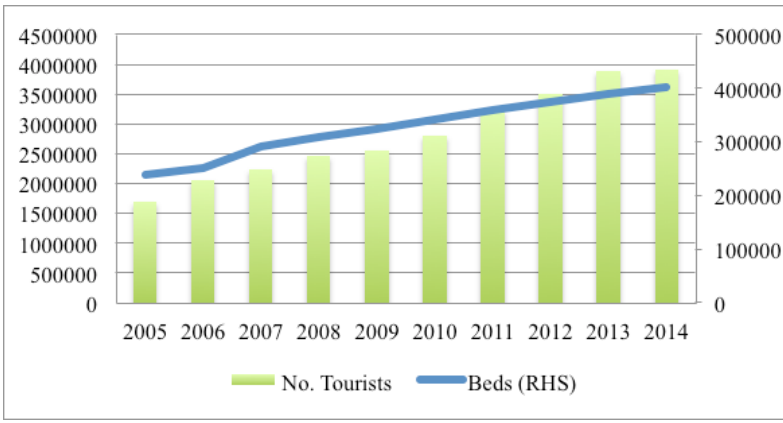
Fostering the tourist sector should have important forward and backward Input-Output multipliers. Indeed, a case could be made that the hotels and restaurants sector has important growth multipliers as a result of using the output of a number of other sectors as key inputs, but also as a result of the sector having minimal leakages, being a service sector. Given that the output of the sector is consumed locally (as it is a final consumption good), the output of tourism is not exported for further value addition. On the other hand, the sector consumes the outputs of the agricultural and fishing sectors, transport sector (transporting guests around the country as well as to the country), manufactured goods and general business services.

According to experts, tourism of pre- and post-colonial monuments (i.e., *Turismo Monumental*) is a possible niche to further develop. [11] Peru, and in particular Lima, houses numerous catholic convents and churches, as well as pre- and post-colonial sites that are highly regarded tourist attractions to date. The challenge would be the preservation and development of new sites, some of which, although near the capital or other large cities, remain under- developed due to local government's and municipalities' budget constraints and/or different policy priorities. Yet, the estimated daily expenses per visiting tourist to religious and historical sites is rather quite attractive and with potential for expansion.

11 See, Universidad del Pacifico (2015).

Also, a new engine of growth could be to widen the spectrum of non-traditional exports in the fishing, fruits and vegetables and processed food industries, which are activities within the known "product space" to local exporters. According to Hausmann and Klinger (2008), export businesses in fresh and processed fish and seafood (e.g., fish fillets, other fish meat, fish salted or dried, mollusks, aquatic invertebrates), as well as in fresh, dried and preserved vegetables and fruits, are relatively akin, albeit more "sophisticated" export baskets than existing non-traditional export businesses. With more than 30 years of experience in exports in fishing and agroindustry, local investors are very much aware as to the tasks and opportunities of extending the value chain of these labor-intensive non-traditional export pillars. Operating within a known product space would also minimize coordination failures of moving to new (possibly unknown) export activities.

Figure 16. Peru: Tourism: No. of Incoming Tourists & Beds Available, 2005-14



Source: Superintendencia Nacional de Migraciones.

Further opening the economy to FDI

By international standards, Peru is a relatively close emerging economy, as measured by standard financial ratios (Table 9 and Charts 17). The **openness** of the economy—as measured by the joined share of exports and imports of goods and services in GDP—is 46 percent, on average, compared to ratios of above 50 percent of GDP in other country comparators. Also, the country´s **international investment position** (on the liability side) shows that the stock of foreign direct investment (FDI), as a share of GDP, has been generally unchanged at about 25 percent of GDP for long, before rising to about 35 percent of GDP only in 2012-2014.

Further, while the recent increases in FDI (as a share of GDP) are outmost welcomed, they largely reflect mining companies´ reinvestment of profits, which may be under stress given recent drops in international metal prices (Chart 18). Most FDI that took place between 2004 and 2014 was financed by miners' reinvestment of profits—rather than by new and diversified funding sources—that helped fund construction activities and import of machinery and equipment for the local mines. As international prices decline, these FDI flows, including their direct and indirect macroeconomic effects, are likely to decline, unless new sectors of the economy become attractive for foreign investors.

A strong and sustainable economy-wide growth of FDI should provide a resource transfer in terms of financial and human capital. FDI could be a source of important economic multipliers in the domestic economy given its sheer financial magnitude and the working practices it establishes. The latter refers mainly to its sourcing of inputs (goods and labor) in the formal economy. Spillovers in terms of know-how transfer could also be a catalyst for a surge of domestic private investment.

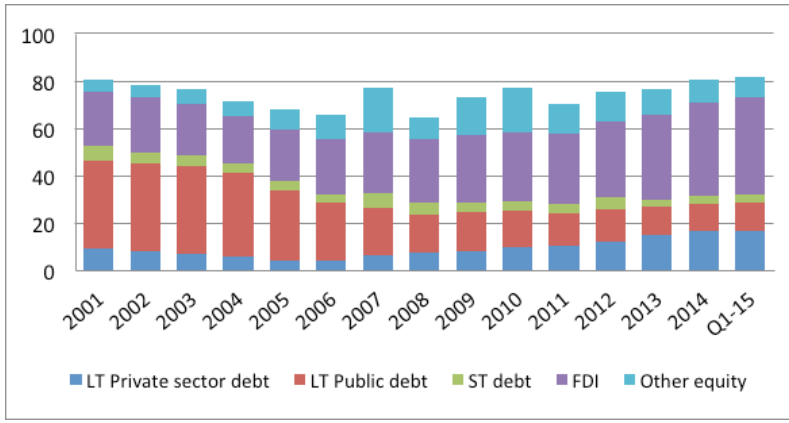
Table 9

Trade Openness, Average 2000-2014 (Commodity Exports & Imports in % GDP)

Peru	46.0
Argentina	32.8
Bolivia	67.4
Brazil	25.8
Chile	68.2
Colombia	36.0
Ecuador	57.5
Mexico	57.3
Uruguay	52.2
Venezuela	50.7
Memo items:	
Median excluding Peru	52.2
OECD members	49.1
Upper middle income	58.0
World	54.2
United States	26.5
China	50.1

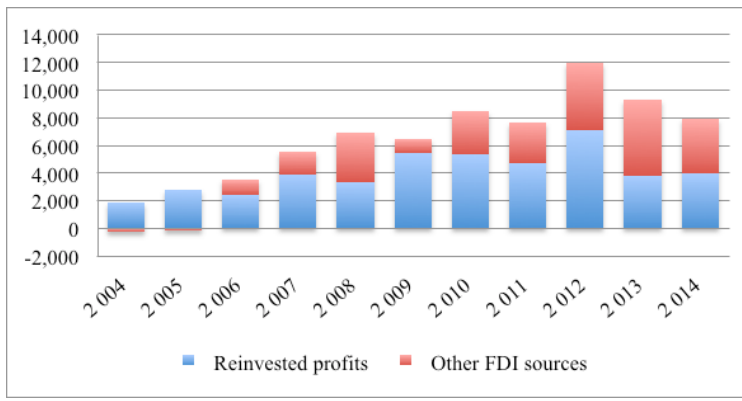
Source: The World Bank.

Figure 17. Peru: Intl. Investment Position Liabilities, 2001-March 2015 (In % GDP)



Source: BCRP.

Figure 18. Peru: FDI Funding Sources, 2004-2014 (In millions of US$)



Source: BCRP and authors' estimates.

Supporting a strong growth of machinery and equipment outlays

While opening up the economy, there is also a need to tightly focus on the relationship between economic growth and investment in machinery and equipment. Evidence from across the world and Peru shows that outlays in machinery and equipment have the strongest statistical correlation with economic growth than any other component of investment (i.e., investment in construction activity and/or change in inventories).[12] Another conclusion from the analysis is that countries profiting from relatively cheap capital goods tends to grow faster than otherwise. The latter may be an issue for Peru, as we explain below.

Price and quantity data on machinery and equipment published by the 2011 World Bank International Comparison Program (ICP) suggest that capital goods are relatively expensive in Peru and could create a drag on economic growth (Table 10).[13] [14] In particular, the ICP information on price levels shows that machinery and equipment in Peru is much more expensive than in Brazil, Chile, Colombia, Mexico and Uruguay, despite these countries' higher GDP per capita. In terms of quantities, Peru´s outlays in machinery and equipment represent a lower share of total gross fixed capital formation (GFKF) than in the rest of Latin America (i.e., construction works are rather important in Peru), although we are above the Latin American average in terms of outlays in machinery and

12 See, in particular, Barro (1990), Jones (1994), and Loayza (2005).

13 See World Bank (2015).

14 The ICP is an ongoing effort by the World Bank to compile disaggregated national accounts data on a purchasing power parity basis (PPP). Estimates on a PPP basis provide for sounder comparisons of income per capita and GDP components for countries around the world.

equipment as a share of GDP. For comparison, while GFKF in Chile is lower than in Peru (20.7 percent of GDP compared with 25.1 percent in Peru), machinery and equipment in Chile is 21 percent cheaper (i.e., 97.6/123.5 in Table 9) than in Peru, and Chile invests a relatively larger share of GFKF in machinery and equipment (42.5 percent) than Peru (37.1 percent). The latter could have important implication for the economy´s long-run growth potential and deserves the Peruvian authorities´ attention.

Moreover, differences in price levels for machinery and equipment in Chile and Peru exacerbate disparities in investment to GDP ratios between Chile and Peru, that somewhat vanish once we correct for variances in price levels (Table 11). In particular, using Chile's price levels to re-compute the value of GFKF reduces Peru's GFKF value from the equivalent of 25.1 percent of GDP to 20.9 percent of GDP in 2011, which is roughly Chile's ratio of GFKF to nominal GDP. Peru's reduced investment ratios persist (@ 21.8 percent of GDP) and broadly converge to the Latin American average (excluding Bolivia, Ecuador and Paraguay)

even after assuming a volume (elasticity) effect in Peru's demand for capital goods due to lower prices of capital and a broadly constant capital/output ratio.

Table 10

Latin America: GDP per Capita & Outlays in Machinery & Equipment (2011)

	GDP per capita (US dollars)		Machinery & Equipment		
	@ current ERs.	@ PPP basis	Price level Index (world = 100)	Share of GDP	Share of GFKF 1/
Bolivia	2360	5557	89.7	10.6	59.0
Brazil	12874	14639	114.3	10.1	58.6
Chile	14546	20216	97.6	8.8	42.5
Colombia	7142	11360	117.0	8.3	36.6
Ecuador	5226	9932	124.6	8.4	53.3
Mexico	10115	16377	101.4	6.7	31.5
Paraguay	3836	7193	124.7	7.0	46.4
Peru	6066	10981	123.5	9.3	37.1
Uruguay	13722	17343	122.9	6.0	24.0
Venezuela	10731	16965	147.3	8.0	31.1
Memo item:					
Avg. excluding Peru	8950	13287	115.5	8.2	42.6

Source: The World Bank 2011 International Comparison Program (ICP) databank.
1/ Gross fixed capital formation (GFKF) includes outlays in machinery and equipment and outlays in construction activities.

Table 11

Nominal GDP & Gross Fixed Capital Formation (GFKF)

	Nominal GDP	GFKF	
	@ current ER 1/	Nominal @ current ER 1/	In % GDP
Bolivia	23.9	4.2	17.7
Brazil	2476.6	448.3	18.1
Chile	251.2	52.0	20.7
Colombia	336.3	76.7	22.8
Ecuador	79.8	12.6	15.8
Mexico	1170.1	249.2	21.3
Paraguay	25.2	3.8	15.1
Peru (original)	180.7	45.4	25.1
@ Chile GFKF prices	171.2	35.8	20.9
@ Chile GFKF prices + volume hike 2/	182.0	37.6	20.7
Uruguay	46.4	8.3	17.8
Venezuela	316.5	72.8	23.0
Memo item:			
Average excluding Peru			19.1
Average excluding Peru, Bolivia, Ecuador, Paraguay			20.6

Source: ICP databank and authors' estimates.
1/ In billions of US dollars @ current exchange rates US$/PEN.
2/ Assumes increased demand for capital goods due to lower prices of capital and marginally higher GDP growth. than in baseline due to higher investment ratio.

Add flexibility to the labor market

This section analyses what happened to unit labor costs (ULCs), measured as the ratio of compensation to employees to output per employee, in various economic sectors during 2001-2014.

The overall picture that emerges is that the growth of ULCs (or wage inflation) has been rather limited across economic sectors, except for construction and the primary sector. However, wage inflation in the construction may have unlikely diminished the sector's profit margins given the sharp rise in the price per square meter of an apartment in Lima, for example. Also, for the primary sector, the increase in international terms of trade must have sheltered profit margins despite hikes in ULCs.

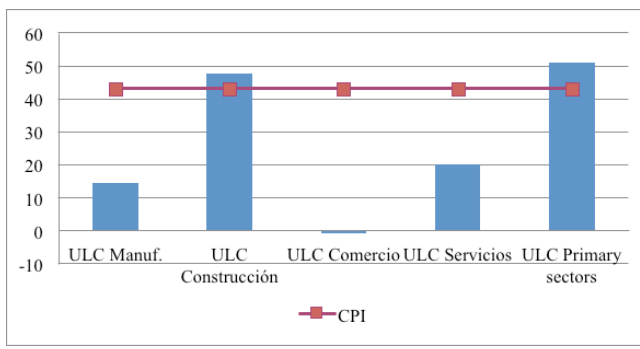
Another observation is that Peru's manufacturing sector may have lost external competitiveness during the last decade, notwithstanding a limited growth of its ULCs. The sector's performance remains challenging vis-à-vis its Latin American country competitors despite significant increases in labor productivity that paralleled important increases in wages. Going forward, barring for a significant depreciation of the real effective exchange rate, the task is to accelerate labor productivity growth, while guarding the growth of wages to support employment, as the domestic and international market performance remains weak.

Facts

1. ULCs in the construction and the primary sectors increased by more (around 50 percent) than the cumulative CPI inflation (43 percent), while in commerce, ULCs increases were nil (see Chart 19).

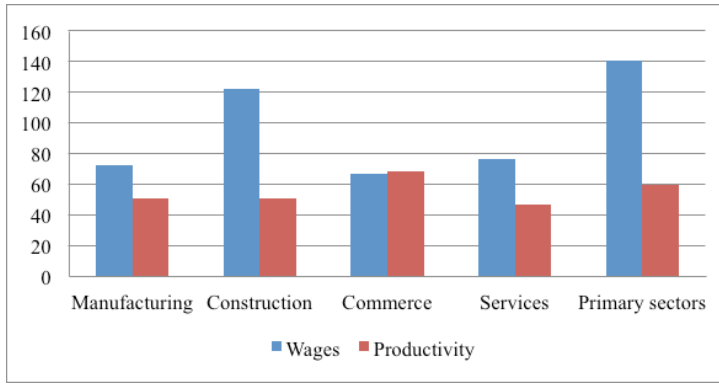
2. For all sectors in the economy, except commerce, increases in wages were larger than increases in productivity (Chart 20). Wages in the primary sector increased the most, but the sector also registered a relatively large increase in labor productivity.
3. The commerce sector showed the tightest alignment between cumulative hikes in wages and productivity, possibly reflecting sharp formal and informal sector competition in the sector.
4. By 2012, wages and ULCs growth in the primary sector already showed some deceleration along the decline in export unit prices, although profit margins in the sector may still remain high given the cumulate increase in export unit prices in recent years (Chart 21).
5. By contrast, in the construction sector, wage growth has shown no sign of abating since 2007. However, profit margins in the sector must have increased along the sharp hike in the price per square meter of an apartment in Lima, particularly since 2011 (Chart 22).

Figure 19. Peru: ULC and CPI Cumulative Increases, 2001-14 (In %)



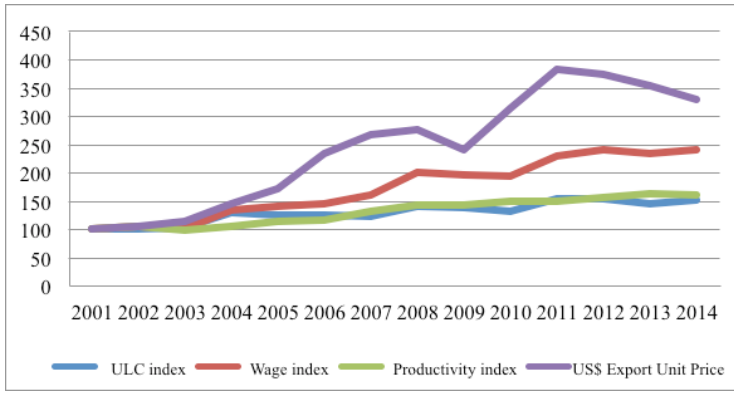
Source: INEI, BCRP, and authors' estimates.

Figure 20. Peru: ULCs Decomposition: Cumulative Increase, 2001-14 (In %)



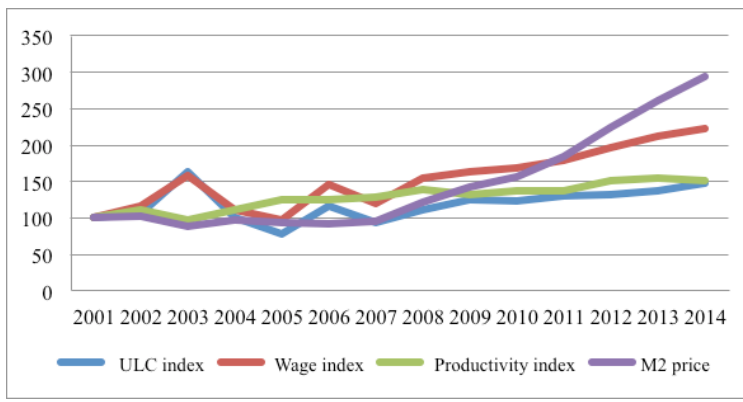
Source: INEI, BCRP, and authors' estimates.

Figure 21. Peru: Primary Sector ULC Decomposition, 2001-14 (Index, 2001=100)



Source: INEI, BCRP, and authors' estimates.

Figure 22. Peru: Construction Sector ULC Decomposition, 2001-14 (Index, 2001=100)



Source: INEI, BCRP, and authors' estimates.

Competitiveness of Peruvian manufacturing

Analysis of ULCs in manufacturing provides insights as to the sector's external competitiveness; particularly vis-à-vis main Latin American partners (LATAM) who are key destination of Peru are manufacturing products. [15]

The analysis shows that ULCs in manufacturing have been broadly stable since 2009, despite sharp increases in wages (Chart 23). Welcomed hikes in labor productivity, particularly since 2010, have helped contain increases in ULCs and are possibly related to a change in the composition on the sector's labor force. The latter refers mainly to labor shedding in terms of a reduction of low-productivity workers, which considered under-employed for labor survey purposes, while the number of those fully employed increased in recent years (Chart 24).

However, comparing the evolution of Peru's manufacturing ULCs against measures in trading partners suggests that international competitiveness has deteriorated since 2012. Chart 25 plots Peru's manufacturing ULCs and a trade-weighted nominal effective exchange rate (LATAM NEER) against the US dollar for a basket of currencies including the Brazil's real, the Chilean, Colombian and Mexican peso. Two points to note:

- The chart shows broad alignment of Peru's ULC measure (in domestic currency; PEN) relative to the LATAM NEER between 2005 and 2012. Thereafter, however, Peru's ULC measure remains broadly unchanged, while competitiveness of main trading partner increased due to

15 Manufacturing sector ULCs through 2014 use data published in the INEI 2015 *Compendio Estadístico*. ULCs data for September 2015 are the authors' estimates using information from the quarterly national accounts and the INEI quarterly reports on employment by sector in *Lima Metropolitana*. Data for Lima were used as a proxy of national employment developments.

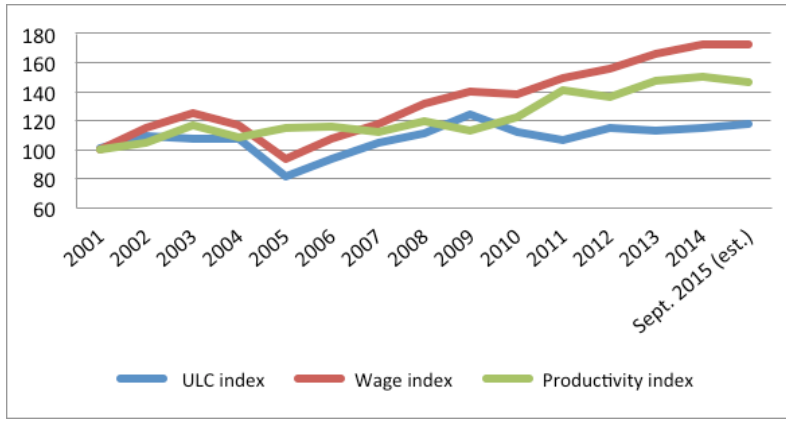
the depreciation of these countries' nominal exchange rates against the US dollar.

- Measured in US dollars, the deterioration of Peru's international competitiveness is more marked and lasting. This is due to the appreciation of the PEN against the US dollar in the mid-2000s, although the depreciation of the PEN against the US dollar since 2012 has reversed some of the ULC's increases registered early in the decade.

The findings under the (relative) ULCs analysis for manufacturing are consistent with an estimated appreciation of Peru's real effective exchange rate vis-à-vis main Latin American trading partners, as reported earlier (see Chart 14). Going forward, there is thus a need of enhanced real exchange rate flexibility accompanied by greater labor market flexibility to accelerate labor productivity growth and sustain wage and employment gains despite a weak external environment. Such combination of enhanced exchange rate flexibility and a containment of unit labor costs should invigorate the implementation of sectorial policies, as those included in Peru's current Productive Diversification Plan, for example, and support a lasting surge of private investment and an increase potential output.[16]

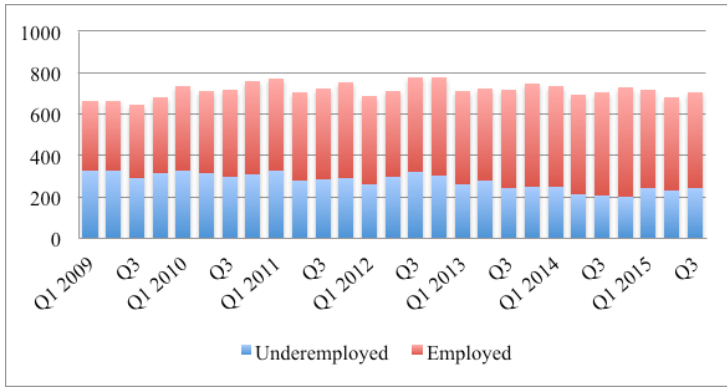
16 Main ideas on Peru's Productive Diversification Plan can be found in Ghezzi and Gallardo (2013) and recent official documents and publications.

Figure 23. Peru: Manufacturing Sector ULC Decomposition (Index, 2001=100)



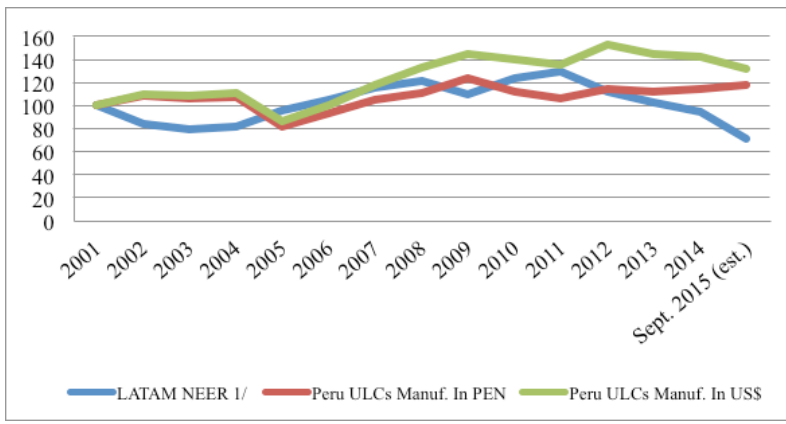
Source: INEI and authors' estimates.

Figure 24. Lima Metropolitana: Manufacturing Sector Total Employment: Q3 2009-Q3 2015 (In thousands of people)



Source: INEI, Informe de Empleo, October 2015.

Figure 25. LATAM Partners & ULCs Manufacturing, 2001-Sept. 2015 (Index, 2001=100)



Source: BCRP, IMF, and authors' estimates.
1/ Decline in index reflects depreciation of LATAM trading partners' nominal effectice exchange rate (NEER).

III. Concluding Remarks

This paper has sketched some of the main external and internal macroeconomic challenges confronting Peru over the near- and medium-term.

Peru's macroeconomic challenges could be broadly summarized in three main headings. ***First***, the Peruvian economy is currently in a period of transition from the biggest resource boom since the mid-1950s to something bit more normal. Transition to a "new normal" has its own challenges, which, in the case of a small open economy like Peru, are currently being heightened by a weak external environment. ***Second***, transition to a new normal is happening under robust initial conditions, which could be summarized by the Peruvian economy's sound fundamentals, and its underlying flexibility. Such flexibility helped the economy dealing with the upswing of the mining development boom and should help us in the downswing. ***Third***, macroeconomic policy—particularly monetary and exchange rate policy—is helping in this adjustment, although a successful transition may need to be supported by: (i) further-opening of the economy and supporting hikes in sustainable foreign direct investment economy-wide; (ii) fostering a strong growth of fixed capital formation in machinery and equipment, which is, apparently, relatively expensive by regional standards; and (iii) adding flexibility in the local labor market to increase labor productivity and sustain wage and employment growth despite the hardening of international (and domestic) market conditions.

The paper's appraisal is that Peru is generally well equipped to confront the ¨new normal¨ of slower growth of global trade and real GDP given the economy´s transformation during the last 15 years. Key elements highlighting the resource

reallocation during the period include the sizeable employment gains benefitting leading mining centers and their geographical surroundings; financial deepening registered in most of those regions; the output and income effects generated by relatively large Input-Output multipliers stemming from the mining sector; and the recorded reduction in poverty indicators in most mining communities, as reported by the latest Poverty Map published by INEI.

The positive developments in resource-rich mining communities have been buttressed by macroeconomic indicators and policy flexibility that helped the economy adjust during the upswing of the business cycle and should again help in the downswing or ¨new normal¨ confronting the Peruvian economy. Key macroeconomic conditions include an all-times low unemployment rate, albeit including large under-employment; resilient business expectations levels; relatively low household indebtedness ratio that should provide ¨space¨ for financial deepening and smooth private consumption patterns; and manageable corporate debt indicators. In addition, policy flexibility has been heighten by a relatively flexible monetary and exchange rate policy, with the nominal exchange rate appreciating during the upswing of the business cycle and, more recently, depreciating given the lasting deterioration of the external environment.

On the exchange rate, according to the Central Reserve Bank, there have not been major misalignments between the actual and equilibrium levels of the real effective exchange rate, although there is still scope for debate and further analytical work. The statistical analysis included in this paper suggests that, in assessing equilibrium exchange rates, one should differentiate between the impact of growth (productivity) performance in the tradable and non-tradable good sectors

on the real exchange rate. This is something that is not being done in the authorities' standard exchange rate analysis, but it is essential in our view, given the different impacts on the real exchange rate from those events. Also, Peru's trade weighted real effective exchange rate vis-à-vis main Latin American partners has appreciated significantly in recent years, thus suggesting scope for further exchange rate flexibility. The paper's analysis on Peru's unit labor costs in manufacturing vis-à-vis those in main Latin American trading partners further confirms an apparent deterioration of Peru's international competitiveness since 2012 and should be food for thought in any future discussions about the exchange rate level.

Going forward, Peru needs to address a number of structural issues that should help the economy successfully address the "new normal" of lower growth abroad and at home.

- **By international standards, Peru is still a relatively closed small open economy**. Testimony to this regard is the somewhat low ratios of international trade flows to GDP and the relative limited magnitude of the stock of inward FDI to the size of the economy. Also, while the recent increases in FDI are outmost welcomed, they largely reflect mining companies´ reinvestment of profits, which may be under stress given recent drops in international metal prices. Against this background, there is a need to foster sustainable and economy-wide foreign direct investment to provide a hefty financial and human capital resource transfer to the local economy.
- **Price and quantity data on machinery and equipment published by the 2011 World Bank International Comparison Program (ICP) suggest that capital goods are relatively expensive in Peru, thus blurring assessments of**

potential output growth and international comparisons of investment to GDP ratios. Indeed, the ICP information on price levels shows that (comparable) machinery and equipment in Peru is much more expensive than in Brazil, Chile, Colombia, Mexico and Uruguay, despite these countries' higher GDP per capita. This is somewhat troublesome, given the international experience suggesting that countries profiting from relatively cheap capital goods tends to grow faster than otherwise. Furthermore, differences in price levels for machinery and equipment in Chile and Peru, for example, exacerbate disparities in investment to GDP ratios between the two countries that somewhat vanish once we correct for variances in price levels. As noted in the paper, using Chile's price levels to re-compute the value of gross fixed capital formation (GFKF) reduces Peru's GFKF value from the equivalent of 25.1 percent of GDP to 20.9 percent of GDP in 2011, which is roughly Chile's ratio of GFKF to nominal GDP.

- **Labor productivity growth in manufacturing needs to accelerate, so as to regain external competitiveness that has deteriorated in recent years and to sustain wage and employment growth despite a weak external environment.** Such deterioration of manufacturing cost competitiveness has been heightened by an appreciation of the real effective exchange rate vis-à-vis main trading partners in Latin America and is hardening policy initiatives, such as Peru's current Productive Diversification Plan, for example.

The recommended structural policy agenda, complemented by lasting flexible monetary and exchange rate policies, may be the credible way forward to increase Peru's potential output. Alone, a flexible monetary and exchange rate policy framework could help during the adjustment phase of lower economic

growth, but ultimately Peru will be better off if increased investment is driven by high-expected returns (e.g., hikes in labor productivity and business opportunities) rather than by the low cost of finance stemming from such policy flexibility. This is why the relevance of identifying new engines of growth in the tradable sector, further opening up the economy while supporting sustainable foreign direct investment economy-wide, and focusing on a strong growth of fixed capital formation in machinery and equipment. On external competitiveness, this paper calls for enhanced real exchange rate flexibility, as well as greater labor market flexibility to accelerate labor productivity growth and sustain wage and employment gains despite a weak external environment. Such combination of enhanced exchange rate flexibility and a containment of unit labor costs should, in turn, support a lasting surge of private investment and increase potential output.

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