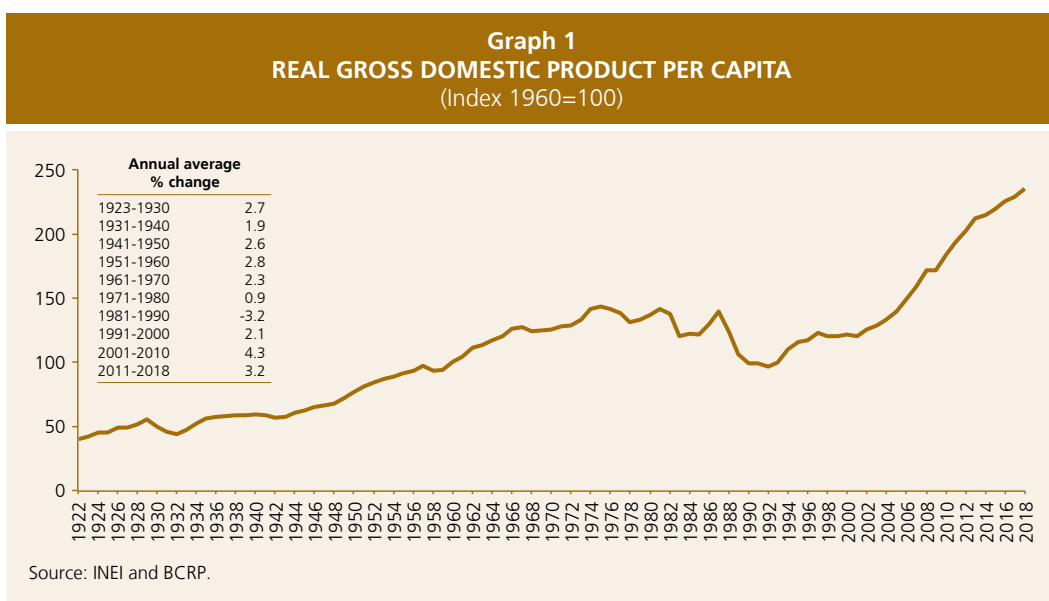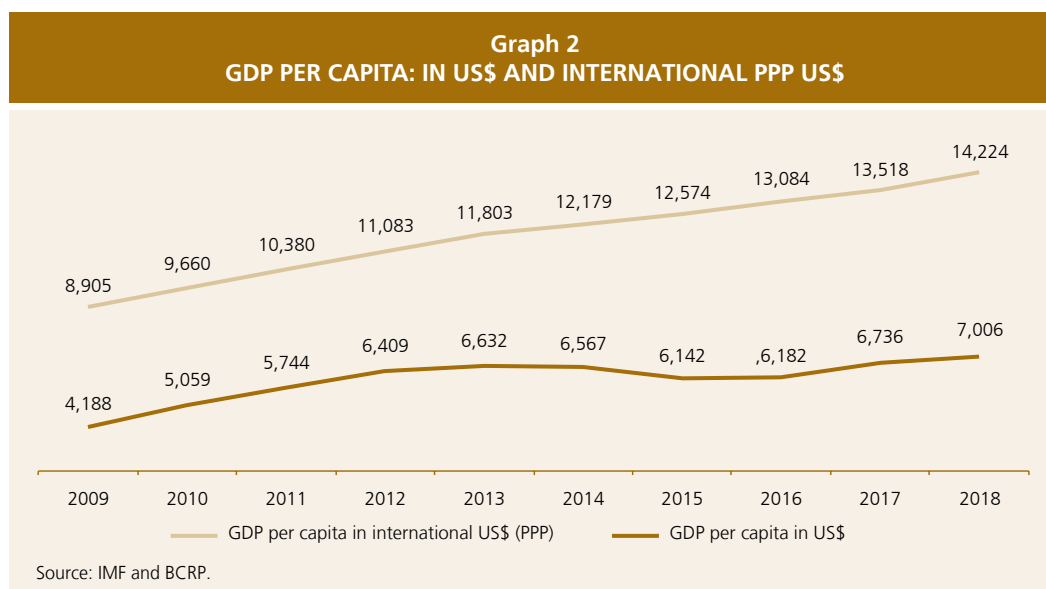# PRODUCTION AND EMPLOYMENT

Peru's GDP grew 4.0 percent in 2018 after having grown at a rate of 2.5 percent in 2017 due to the negative impact caused by El Niño Costero effects in the northern areas of the country and by the confidence crisis and the disruption of projects generated by the Lava Jato case. With the growth rate achieved in 2018, the Peruvian economy accumulates 20 years of continuous expansion with an average growth rate of 4.7 percent.

Economic activity was mostly boosted by the recovery of domestic demand, which showed a growth rate of 4.3 percent after having grown 1.4 percent in the previous year. The evolution of private consumption stands out, reflecting the recovery of employment and the faster pace of growth of credit. On the other hand, private investment was driven by the implementation of mining projects, particularly copper and iron mining projects, while public investment resumed its growth trend due to the implementation of road and sanitation infrastructure works, as well as due to the implementation of works for the Pan American Games and for the reconstruction of the north of the country.

As a result of this, the GDP per capita increased 2.9 percent in 2018, a slightly lower rate than the average rate observed over the last eight years (3.2 percent).

Graph 1
REAL GROSS DOMESTIC PRODUCT PER CAPITA
(Index 1960=100)

Annual average % change	
1923-1930	2.7
1931-1940	1.9
1941-1950	2.6
1951-1960	2.8
1961-1970	2.3
1971-1980	0.9
1981-1990	-3.2
1991-2000	2.1
2001-2010	4.3
2011-2018	3.2

Source: INEI and BCRP.

In 2018, the GDP per capita in dollars was US$ 7,006, which represented an increase of 4.0 percent. Moreover, in terms of its purchasing power parity (PPP) –indicator based on the same basket of goods that is used to make international comparisons–, the GDP increased by 5.2 percent to 14,224 PPP dollars.

Graph 2
GDP PER CAPITA: IN US$ AND INTERNATIONAL PPP US$

Year	GDP per capita in international US$ (PPP)	GDP per capita in US$
2009	8,905	4,188
2010	9,660	5,059
2011	10,380	5,744
2012	11,083	6,409
2013	11,803	6,632
2014	12,179	6,567
2015	12,574	6,142
2016	13,084	,6,182
2017	13,518	6,736
2018	14,224	7,006

Source: IMF and BCRP.

In the group of countries with high GDP per capita increases, including China, the United States, the European Union, and the five largest countries in the Latin American region, Peru ranks second showing the highest average increase in GDP per capita in PPP values since 2001 (5.8 percent) after China (10.6 percent).

Graph 3
GDP PER CAPITA IN PPP VALUES
(Average annual percentage change 2001-2018)

Country	Value
Mexico	2.8
United States	3.1
Brazil	3.2
European Union	3.2
Latin America	3.2
Colombia	4.7
Chile	4.7
Peru	5.8
China	10.6

Source: IMF.
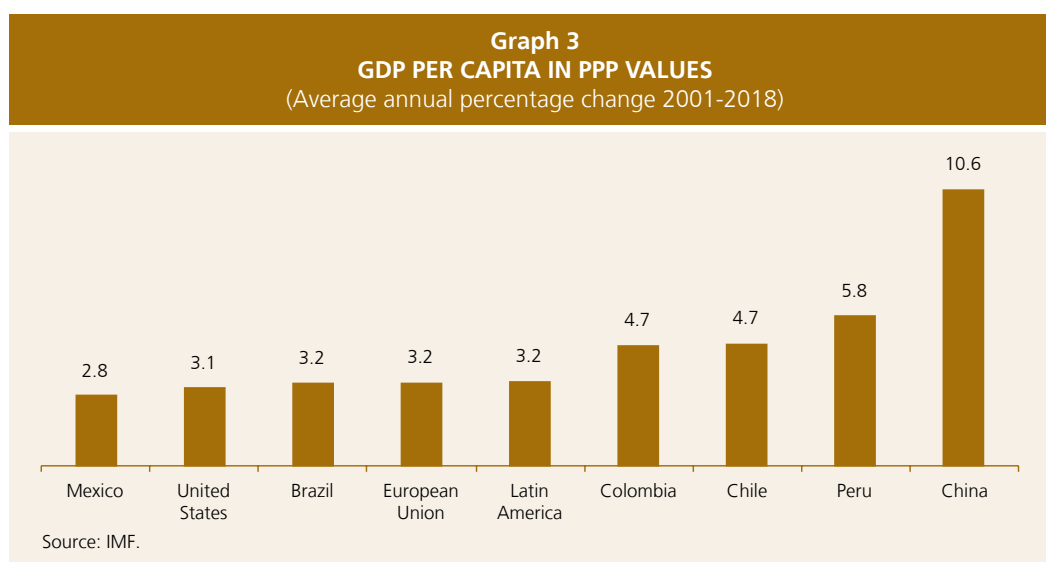
1. Domestic Demand

The negative impact of El Niño Costero and the paralyzation of infrastructure works associated with the Lava Jato case affected domestic demand in 2017, its growth rate decreasing to 1.4 percent in

that year. In 2018, on the other hand, with normal weather conditions and with the recovery of confidence in the private sector, domestic demand grew 4.3 percent, driven by the recovery observed in private expenditure since the end of 2017 and by an increase in public expenditure during most part of 2018.

Table 1 **GROSS DOMESTIC PRODUCT BY TYPE OF EXPENDITURE** (Real % change)				
	2016	**2017**	**2018**	**Average 2009-2018**
Domestic Demand	**1.1**	**1.4**	**4.3**	**4.4**
a. Private consumption	3.7	2.6	3.8	5.0
b. Public consumption	0.3	0.5	2.0	5.6
c. Gross fixed investment	-4.3	-0.2	4.9	4.2
- Private	-5.4	0.2	4.4	3.9
- Public	0.3	-1.8	6.8	5.6
Change in inventories (% nominal GDP)	-0.2	-0.3	0.3	-0.3
Exports	9.1	7.6	2.5	3.5
Minus: Imports	-2.3	4.0	3.4	3.7
GDP	**4.0**	**2.5**	**4.0**	**4.4**
Memo: Total public expenditure	0.3	-0.1	3.4	5.6

Source: INEI and BCRP.

Graph 4
GDP AND DOMESTIC DEMAND
(Real % change)

Source: INEI and BCRP.
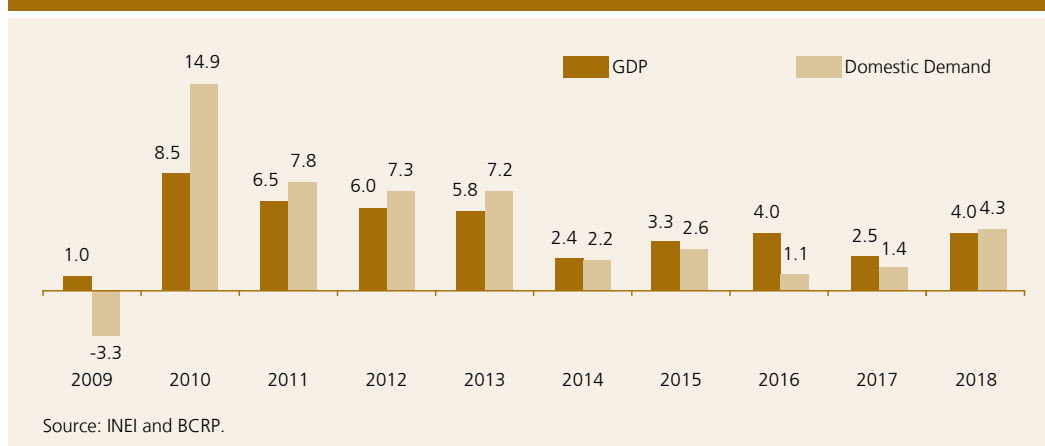
1.1 Private Consumption

After the normalization of the weather conditions that affected the economy in 2017, most consumption indicators began to show a favorable evolution. The growth of consumer loans accelerated from 7.3 to 10.1 percent in real terms; the rate of formal employment in the private

sector –measured by the electronic payroll system– grew by 4.4 percent, 1.9 percentage points more than in 2017, while the wage bill increased by 6.2 percent (versus only 1.0 percent in the previous year). As a result of these factors, private consumption reached a growth rate of 3.8 percent in 2018 (2.6 percent in the previous year).

Table 2 INDICATORS OF PRIVATE CONSUMPTION (% change)			
	2016	**2017**	**2018**
Urban unemployment rate	5.2	5.0	4.8
National employment (private sector)	1.4	2.5	4.4
Real payroll (private sector)	0.2	1.0	6.2
Real consumer loans	5.3	7.3	10.1
Sale of poultry (tons, daily average)	-2.1	1.1	8.8
Retail sales	2.1	0.6	2.7
Volume of imports of consumer goods	-3.3	5.0	1.0
Non-durable goods, excluding food	-4.2	4.5	4.5
Durable goods	-3.1	2.3	0.0

Source: BCRP, INEI, and Sunat.

Graph 5
PRIVATE CONSUMPTION
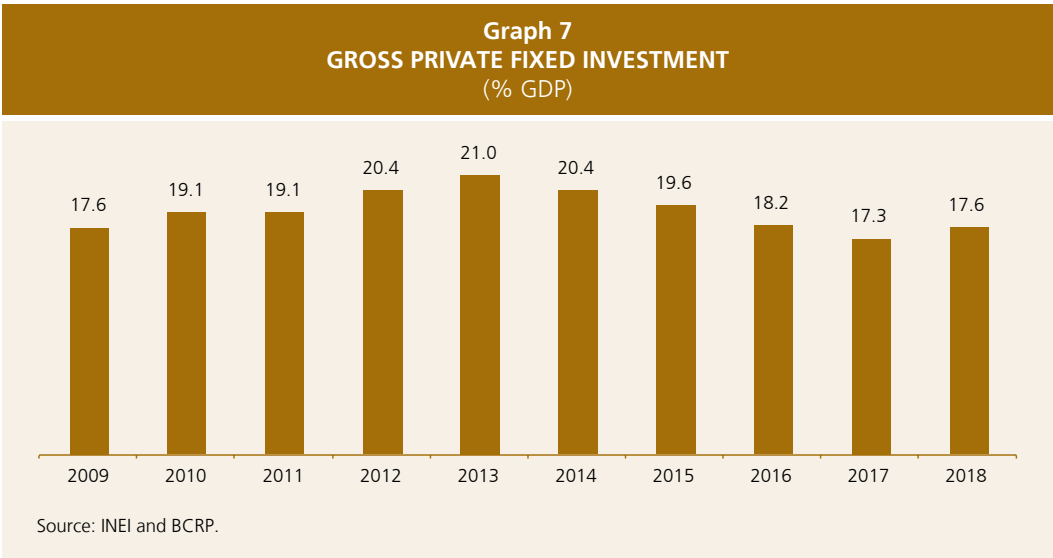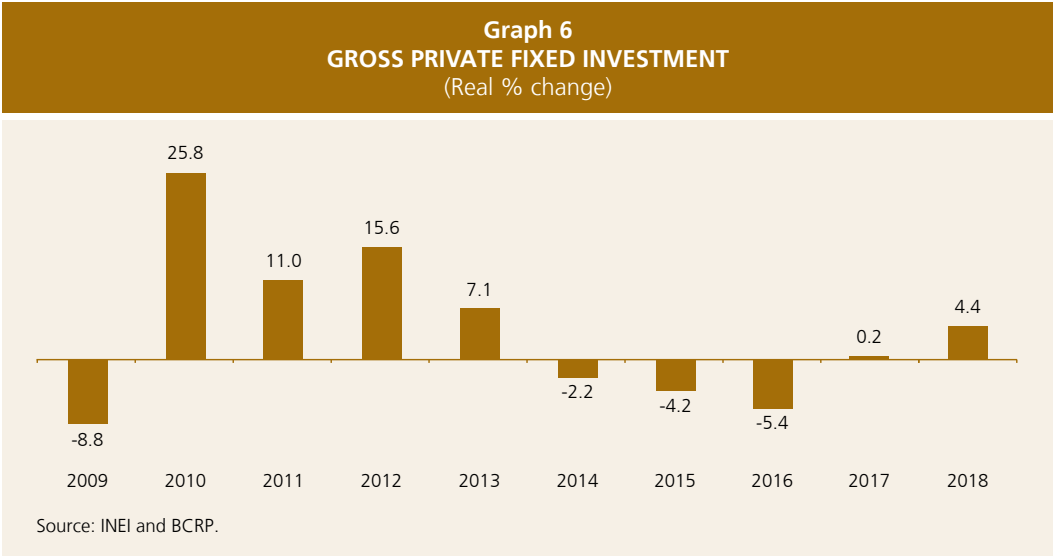(Real % change)
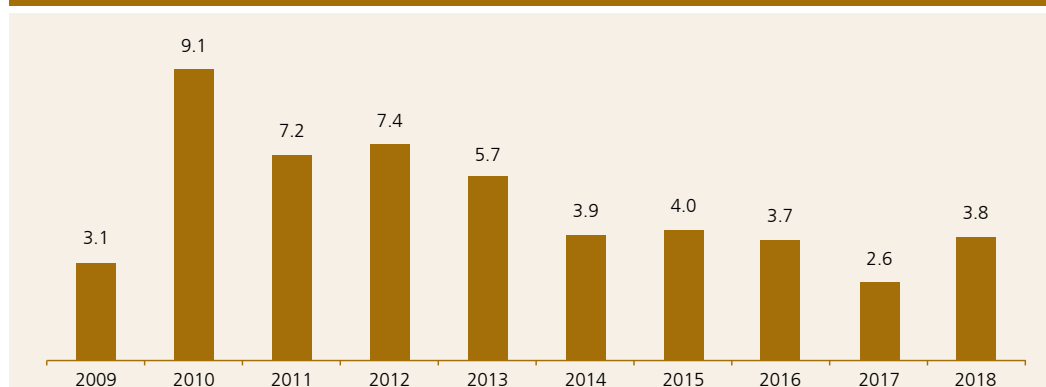
Source: INEI and BCRP.

1.2 Private Investment

The improvement of confidence indices, together with the normalization of the activities that had been affected by El Niño Costero, and a price scenario that remained above the average level of the previous year –despite the price correction observed during the year– led private investment to expand 4.4 percent during 2018. Although growth was mostly driven by mining activity, which registered a growth rate of 22.9 percent due to the investments made by Southern, Anglo American, and Shougang Peru, non-mining investment also showed a positive result with a growth rate of 2.2 percent after having fallen -1.1 percent in 2017.

Table 3 MINING AND NON-MINING INVESTMENT (Real % change)			
	2016	**2017**	**2018**
Total private investment	-5.4	0.2	4.4
Mining investment	-50.8	12.4	22.9
Non-mining investment	4.7	-1.1	2.2
Source: MINEM and BCRP.			

Graph 6
GROSS PRIVATE FIXED INVESTMENT
(Real % change)

Source: INEI and BCRP.

Graph 7
GROSS PRIVATE FIXED INVESTMENT
(% GDP)

Source: INEI and BCRP.

Increased investment was observed in 2018 in sectors such as mining, hydrocarbons, manufacturing, and energy. Some investment projects are mentioned below.

15

Investment in the **mining sector** in 2018 amounted to US$ 4.9 billion, which in dollar terms represented an increase of 26 percent compared to 2017. Southern Peru's investment of US$ 615 million stands out at the company level. Southern's investment was earmarked for the completion of expansion works of its Toquepala copper mine in Tacna –resources were allocated to implement a new concentrator and high-pressure crusher roller systems– and for additional projects in Moquegua, such as the replacement of tailing thickeners in the Cuajone concentrator plant and for the disposal of tailings in Quebrada Honda. The second largest investment was that made by Anglo American, which invested US$ 510 million in 2018 in its Quellaveco project in Moquegua. Finally, Shougang Hierro Peru invested US$ 509 million, most of which was allocated to the expansion of its Marcona project (US$ 343 million) and also to purchase equipment, mine development, the optimization of production processes, and infrastructure improvement projects.

In the **hydrocarbons sector**, Repsol invested US$ 154 million, of which US$ 104 million was allocated to the project "Adaptation to the New Fuel Specifications of La Pampilla Refinery" (RLP-21).

In the **energy sector**, Luz del Sur executed projects for US$ 126 million, mainly with the purpose of expanding the capacity and improving the electric power network. On the other hand, Enel invested US$ 68 million in energy distribution networks, with US$ 24 million being allocated to the expansion and reinforcement of the energy grids to meet the requirements of residential, commercial, and industrial users. Enel also invested US$ 47 million in enhancing sub-transmission (expansion and security of substations and transmission lines), US$ 2.6 million in electrification services in human settlements, and US$ 2.6 million in the expansion of the public lighting system.

In the **manufacturing sector**, Union de Cervecerías Peruanas Backus y Johnston allocated close to US$ 62 million to expand the capacity of its breweries, distribution centers, its plants of plastic box and glass containers, as well as its transport units. Aceros Arequipa invested US$ 42 million in the acquisition of land, in its pipe plant and in improving its Pisco plant, while Corporación Lindley made investments in cold equipment to guarantee the supply of its products and to comply with the quality standards required by the regulatory entities. It also started operations at its mega warehouse in Villa El Salvador, which implied an investment of about US$ 20 million. Finally, Unión Andina de Cementos invested US$ 18 million in various projects, but mainly in the Atocongo Thermal Plant and in the de-oiling system of coolers for kilns 2 and 3 of its Condorcocha Plant.

1.3 Public Expenditure

Government spending rose 3.4 percent in 2018, this figure reflecting a clear recovery from the result recorded in 2017 (-0.1 percent).

Moreover, showing a much higher result than in 2017 (-1.8 percent), public investment increased 6.8 percent due to higher spending in road infrastructure, in the improvement and expansion works of both potable water and sewerage systems, and in penitentiary facilities, as well as in the works developed within the framework of the Integral Plan of Reconstruction with Changes and in the sports complexes for the Pan-American Games.

On the other hand, public consumption increased by 2.0 percent, mainly as a result of increased employment in the public sectors of interior, health, and defense at the level of the

national government as well as of increased spending in goods and services at the level of local governments.

2. Exports and Imports

Exports of goods and services grew 2.5 percent in 2018, less than in the previous year (7.6 percent). This result is explained by a decrease in exports of mining products, especially gold and zinc, due to the lower production of Barrick and Buenaventura. Another factor that contributed to this decline was the reduction registered in exports of oil and natural gas derivatives due to the rupture of the pipeline of Transportadora de Gas del Peru and to the maintenance of the Las Malvinas separation plant in Camisea. In contrast, on the other hand, exports of non-traditional products grew at a higher rate than in 2017 (11.0 percent versus 5.8 percent) due to greater shipments of agricultural products (fresh grapes and avocados, blueberries, and asparagus), fish products (frozen and canned squid), textiles, and chemical products.

Imports of goods and services increased by 3.4 percent, showing a lower rate than in 2017 (4.0 percent) due to the reduction of imported volumes of oil and derivatives, food products, and durable and non-durable consumer goods. However, import of services increased, with the computer services hired by mining companies and the trips of Peruvians to other countries standing out.

3. Production Sectors

The recovery of the GDP in 2018 is explained by the non-primary sectors, which grew by 4.2 percent (versus 2.3 percent in 2017), this result being associated mainly with the recovery of domestic demand. On the other hand, output in the primary sectors grew at a slightly higher rate than in the previous year (3.3 percent versus 3.1 percent in 2017). The strong momentum of fishing stands out in this result as it offset the fall of mining production. It is worth mentioning that all of the production sectors grew in 2018, except mining whose production decreased by 1.5 percent.

|	2016	2017	2018	Average 2009-2018	% contribution to growth in 2018
Table 4 **GROSS DOMESTIC PRODUCT BY ECONOMIC SECTORS** (Real % change)					
Primary GDP	**10.0**	**3.1**	**3.3**	**3.1**	**0.7**
Agriculture and livestock 2/	2.7	2.6	7.5	3.6	0.4
Fishing	-10.1	4.7	39.7	1.0	0.1
Metallic mining	21.2	4.5	-1.5	3.5	-0.1
Hydrocarbons	-5.1	-2.4	0.0	2.7	0.0
Manufacturing based on raw materials	-0.6	1.9	13.2	0.7	0.4
Non-primary GDP	**2.5**	**2.3**	**4.2**	**4.8**	**3.3**
Non-primary manufacturing	-1.6	-0.9	3.7	2.0	0.4
Electricity and water	7.3	1.1	4.4	5.1	0.1
Construction	-3.2	2.1	5.4	5.1	0.3
Commerce	1.8	1.0	2.6	4.7	0.3
Services	4.0	3.3	4.4	3.4	2.2
GDP	**4.0**	**2.5**	**4.0**	**4.4**	**4.0**

Source: INEI and BCRP.

The growth of the **non-primary sectors** is explained by the reversal of the effects of El Niño Costero, in line with the recovery of domestic demand. After four consecutive years of contraction, non-primary manufacturing grew 3.7 percent, buoyed by the production of goods associated with private investment. The higher growth of private investment in 2018 also had a positive influence on the sectors of construction and services.

The growth rate of the agricultural sector stands out in the **primary sectors** since this sector recorded its highest growth rate in the last decade due to a greater production oriented to agro-exports. Another sector standing out is the fishing sector, due to an increased catch of anchovy thanks to the recovery of the biomass of this species. On the other hand, output in the mining sector dropped due to a lower extraction of copper and gold.

The sectors that contributed most to this increase of 1.5 percentage points between the GDP growth rates of 2017 (2.5 percent) and 2018 (4.0 percent) include the sectors of services (0.6 percentage points), non-primary manufacturing (0.5 percentage points), fishing and associated primary manufacturing (which together contributed with 0.4 percentage points), and agriculture (0.3 percentage points).

3.1 Agriculture Sector

In 2018, the agricultural sector grew 7.5 percent, showing the highest growth rate over the last ten years as well as historical production levels in goods oriented to both the domestic market (potatoes, rice, bananas, cassava, tangerines, lemons, pineapples, corn, and garlic) and external markets (coffee, olives, cocoa, avocados, and blueberries), as well as in the livestock subsector (poultry and eggs). With this rate, the sector accumulates fourteen years of continued growth.

Graph 8
AGRICULTURE AND LIVESTOCK SECTOR
(% change)

Average 2009-2018: 3.6

Source: INEI and BCRP.
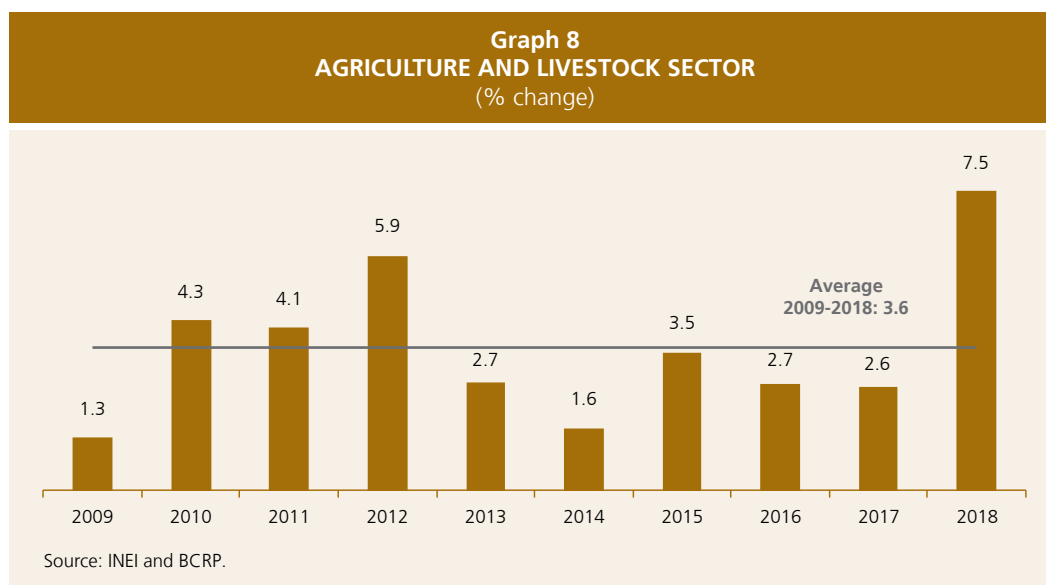
This prolonged growth of the sector is based on the sustained dynamism of agro-exports as a result of a diversified supply of agricultural goods, as well as of activity in the poultry subsector where
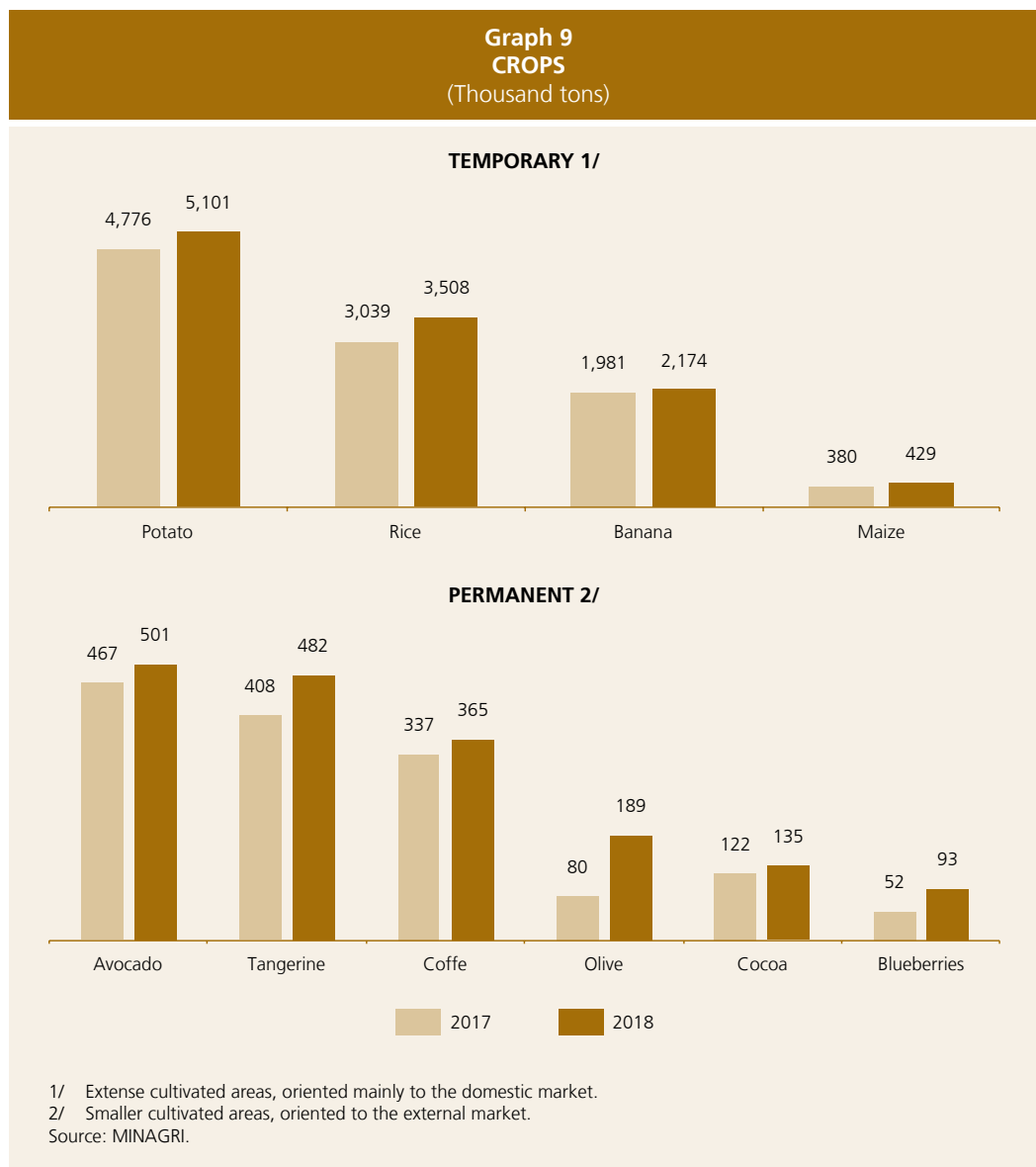
permanent improvement in terms of its productive processes led Peru to be the nineteenth largest chicken meat producer in the world in 2017[1].

		2016	2017	2018	Average 2009-2018
Table 5 **AGRICULTURE AND LIVESTOCK PRODUCTION** (Real % change)					
A.	**Agricultural production**	**1.8**	**2.5**	**9.0**	**3.2**
	For the domestic market	-1.9	-0.4	7.1	2.6
	Potato	-4.3	5.8	6.8	3.6
	Rice	0.5	-4.0	15.4	2.3
	Tangerine	12.8	1.0	18.0	9.9
	Tomato	-1.4	-5.3	14.3	1.8
	Banana	0.9	-4.5	9.7	1.9
	Cassava	-4.0	1.3	3.3	0.5
	Amilaceous maize	-9.9	-1.3	10.9	2.0
	Garlic	-12.9	21.3	9.9	4.4
	Lemon	0.9	-37.9	58.7	1.8
	Maize	0.6	-4.7	13.0	1.4
	Other	2.4	7.2	11.1	8.5
	For industry	-10.6	-2.1	7.6	-0.2
	Yellow hard maize	-14.3	1.4	1.0	0.2
	Cotton	-35.3	-48.6	82.5	-12.8
	Oil palm	7.6	14.5	6.3	13.8
	Sugar cane	-3.7	-4.4	10.0	1.0
	For export	15.4	9.8	12.8	5.7
	Coffee	11.5	20.1	8.1	2.9
	Asparagus	2.0	1.3	-5.9	0.9
	Grapes	15.4	-6.5	-0.9	11.1
	Avocado	20.9	2.5	7.3	13.9
	Mango	8.0	3.6	-2.3	1.6
	Cocoa	16.6	12.9	11.0	14.8
	Blueberry	164.4	84.4	78.2	n.a.
	Olive	46.1	43.1	135.7	5.2
B.	**Livestock production**	**3.7**	**2.8**	**5.4**	**4.7**
	Poultry	5.6	4.3	7.5	6.8
	Eggs	3.8	3.6	8.9	5.4
	Pork	4.5	5.6	1.5	3.3
	Milk	2.7	3.0	2.6	2.8
C.	**Total 2/**	**2.7**	**2.6**	**7.5**	**3.6**

Source: INEI and MINAGRI.

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1   According to FAO, http://www.fao.org/faostat/es/#data/QL

Graph 9
CROPS
(Thousand tons)

TEMPORARY 1/

	Potato	Rice	Banana	Maize
2017	4,776	3,039	1,981	380
2018	5,101	3,508	2,174	429

PERMANENT 2/

	Avocado	Tangerine	Coffe	Olive	Cocoa	Blueberries
2017	467	408	337	80	122	52
2018	501	482	365	189	135	93

■ 2017   ■ 2018

1/ Extense cultivated areas, oriented mainly to the domestic market.
2/ Smaller cultivated areas, oriented to the external market.
Source: MINAGRI.
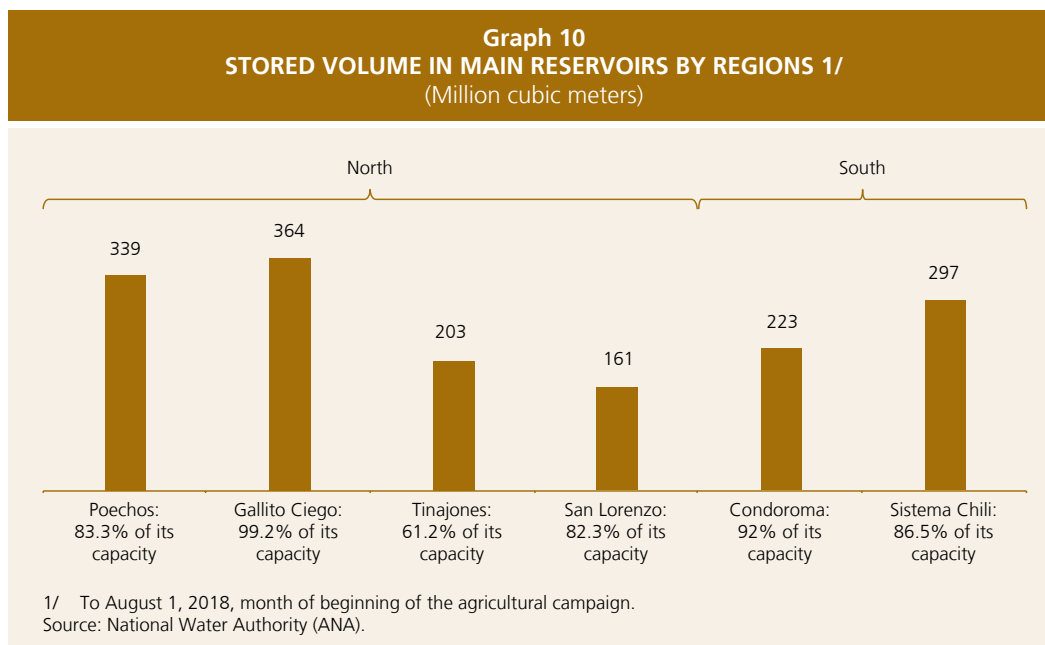
Agricultural production oriented to the domestic market grew due to the recovery of the crops grown in the North Coast (rice, bananas, tomatoes, and lemons) after the impact of El Niño Costero 2017, to greater harvests in the Sierra (potatoes, starch corn, and corn) and Selva regions (pineapples), and on the coast of Lima and Ica (tangerines).

Farming activity was favored by a high availability of water resources after the 2017 El Niño Costero and by the normalization of weather conditions, these factors enabling an increased cultivation and an adequate development of short-growing crops (up 2.7 percent compared to the previous same period) and fruit crops[2]. As a result, crops showed a generalized contribution to the growth of the sector, with the exception of asparagus and onions (due to the life cycle of the crop, in the case of the former, and due to lower cultivation following the fall in farm prices (- 8.0 percent), in the case of the latter).

2   Over the last four years, areas cultivated with blueberries have grown 142.7 percent on average, while areas cultivated with avocados, grapes, and olives have grown by 12.5 percent, 8.0 percent, and 6.5 percent, respectively.

Graph 10
STORED VOLUME IN MAIN RESERVOIRS BY REGIONS 1/
(Million cubic meters)

North   South

| 339 | 364 | 203 | 161 | 223 | 297 |

| Poechos: 83.3% of its capacity | Gallito Ciego: 99.2% of its capacity | Tinajones: 61.2% of its capacity | San Lorenzo: 82.3% of its capacity | Condoroma: 92% of its capacity | Sistema Chili: 86.5% of its capacity |

1/ To August 1, 2018, month of beginning of the agricultural campaign.
Source: National Water Authority (ANA).

At the regional level, the departments that showed the highest growth rates were Tacna (37.8 percent), which led olive production; La Libertad (14.8 percent), because of its production of cranberries and rice, as well as an outstanding production of avocados; Ayacucho (13.4 percent), which became the largest producer of potatoes and quinoa of the year; Ica (12.2 percent), which led the production of avocados, tangerines, and grapes; and Lambayeque (11.6 percent), which also recorded a considerable contribution to the production of blueberries, avocados, rice, and grapes.

The cultivation of sugarcane in the sugar mills of Agro Olmos and Caña Brava, in Lambayeque and Piura, which began operations in May 2017 and 2018, respectively, stand out in terms of agro-industrial production.

Moreover, fruit production not only registered historical records in exports of grapes, avocados, and blueberries, but also held important positions in the world ranking of exports of these crops. The cultivation of **grapes** in Peru is oriented both to exports and to the domestic market, and for both direct and industrial consumption (production of pisco and wines) in the latter. In 2018, the volume exported grew 26.8 percent to 341 thousand tons, reflecting the outstanding growth of these crops in Ica (11 percent), offset by lower activity (-0.9 percent) in other areas (Piura and Lima) due to lower yields.
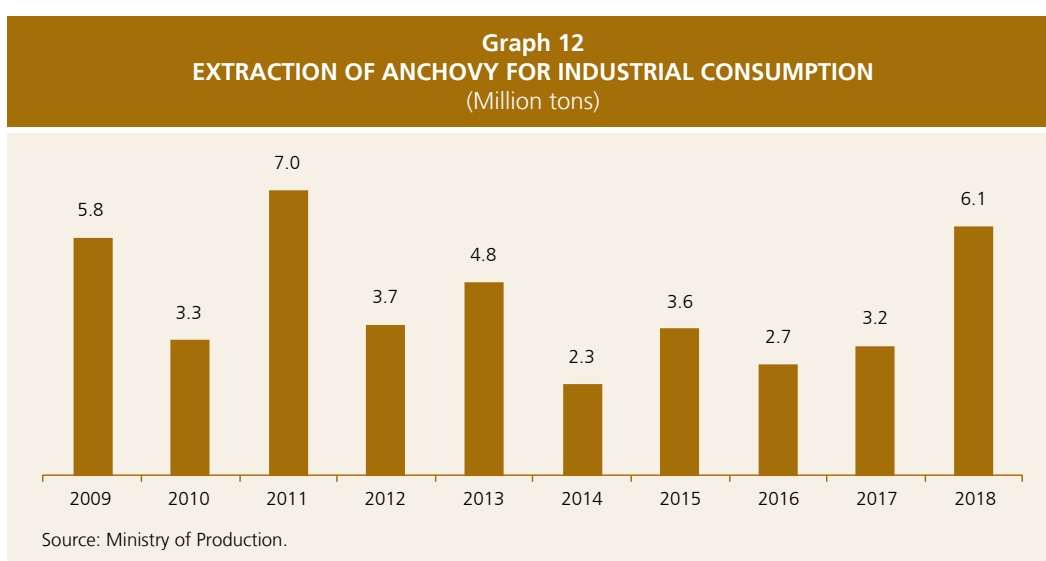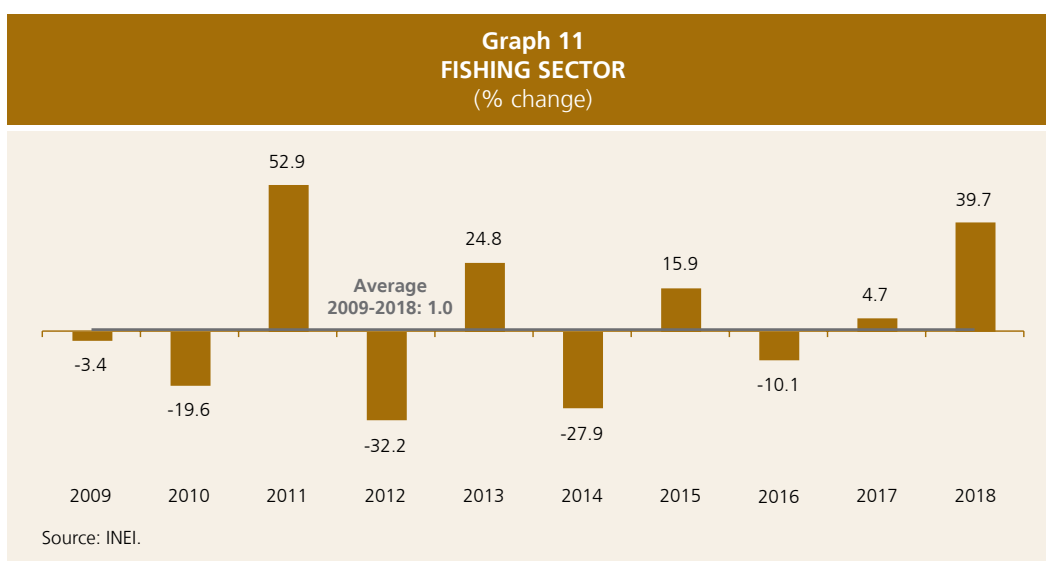
The production of **avocados** grew 7.3 percent and 71 percent of this amount was exported. As a result of this, the volume exported grew 44.5 percent. Most of the volume exported comes from the coast and a lesser proportion comes from the Sierra, which allows extending the period of sales to external markets. The leading production area is La Libertad (which accounts for 40.8 percent of the total production). Along with the production of other coastal areas such as Lima and Ica, it represents 78 percent of total production. On the other hand, the Sierra region (departments such as Arequipa, Ayacucho, and Cusco) accounts for 10 percent.

Cranberry crops grew 78.2 percent in 2018 and 80 percent of the production was sold abroad, leading the volume of exports to increase by 71.4 percent. La Libertad is the leading producing area of this crop (78.8 percent of the national total production), followed by the valleys of Lambayeque, Ica, Lima, and Ancash.

The departments with the greatest contribution to exports in terms of value were Piura, Ica, La Libertad, Lambayeque, Ancash, Tacna, and San Martin. This growth of agricultural exports has allowed the country to become one of the main agro-exporters of grapes, avocados, blueberries, asparagus, mangoes, onions, cocoa, olives, and organic bananas, in the region.

3.2 Fishing Sector

In 2018 the fishing sector grew 39.7 percent, its highest growth rate since 2011. This result is mainly explained by two good anchovy fishing seasons (April-June and November-January) with high rates of anchovy catch due to the absence of weather anomalies, which favored an adequate level of biomass of this species. Thus, 6.1 million metric tons of anchovy were caught in the year, this result being the second best result observed since the fishing ordinance established maximum catch limits per vessel.

Graph 11
FISHING SECTOR
(% change)

Year	Value
2009	-3.4
2010	-19.6
2011	52.9
2012	-32.2
2013	24.8
2014	-27.9
2015	15.9
2016	-10.1
2017	4.7
2018	39.7

Average 2009-2018: 1.0

Source: INEI.

Graph 12
EXTRACTION OF ANCHOVY FOR INDUSTRIAL CONSUMPTION
(Million tons)

Year	Value
2009	5.8
2010	3.3
2011	7.0
2012	3.7
2013	4.8
2014	2.3
2015	3.6
2016	2.7
2017	3.2
2018	6.1

Source: Ministry of Production.

Another factor that influenced the high level of catch recorded is that part of the second fishing season of 2017 was postponed to January and February of 2018 due to the dispersion of the anchovy

biomass observed in the second half of 2017. Both the fishing quotas and the catch percentages assigned were higher than in the two fishing seasons of 2017. In percentage terms, the performance of the sector in 2018 was 91 percent higher than in the previous year. It is worth mentioning that this recovery of the fishing sector after El Niño Costero was also observed in the years following El Niño events of 1983 and 1998, when the sector grew 46.4 and 32.7 percent, respectively.

Table 6 MAXIMUM LIMIT OF TOTAL CATCH ALLOWED AND ANCHOVY EXTRACTION (North-Central zone)					
Year	Season	Biomass (Million tons)	Maximum limit of the total allowable catch (Million tons)	Extraction (%)	Catch (Million tons)
2013	First	10.8	2.1	98	2.0
	Second	10.3	2.3	99	2.3
2014	First	6.1	2.5	68	1.7
	Second	4.4	0.0	0	0.0
2015	First	9.5	2.6	97	2.5
	Second	5.6	1.1	97	1.1
2016	First	7.3	1.8	51	0.9
	Second	6.9	2.0	100	2.0
2017	First	7.8	2.8	85	2.4
	Second	6.1	1.5	46	0.7
2018	First	10.9	3.3	98	3.2
	Second	7.2	2.1	99	2.1

Source: IMARPE and PRODUCE.

Fishing for direct human consumption grew 6.4 percent due to increased fish catch for the production of canned and frozen fish products. The increase registered in the catch of tuna, anchovy, horse mackerel, and machete is worth pointing out in the case of fishing for the production of canned products, while the higher extraction of horse mackerel, anchovy, scallops, tuna, mullet, and sea urchin is worth pointing out in the case of the production of frozen products.

Table 7 FISH CATCH BY MAIN SPECIES (% change)				
Species	2016	2017	2018	Average 2009-2018
Anchovy 1/	-24.4	15.8	91.2	-0.2
Jack mackerel 2/	-28.9	-44.8	99.1	-16.2
Prawns 3/	9.3	32.5	20.0	13.8
Giant Squid 3/	-42.4	2.6	10.9	-5.3
Mackerel 4/	276.6	-59.7	-0.2	-6.9
Tuna 4/	-1.8	8.4	38.6	17.4
Scallops 3/	-32.0	-54.4	266.6	-1.1

1/ Fish catch for industrial consumption.
2/ Fresh fish.
3/ Fish catch for frozen products.
4/ Fish catch for canned products.
Source: Ministry of Production.

3.3 Mining and Hydrocarbons Sector

Output in the **mining and hydrocarbons sector** fell 1.3 percent in 2018 due to lower activity in the metal mining subsector (-1.5 percent). This result is explained by a decrease in the production of gold, copper, silver, lead, and molybdenum, and also by a decline in the generation of gas and natural gas liquids due to the maintenance of Las Malvinas separation plant.

Table 8
PRODUCTION IN THE MINING AND HYDROCARBONS SECTOR
(Real % change)

	2016	2017	2018	Average 2009-2018
Metal mining	**21.2**	**4.5**	**-1.5**	**3.5**
Gold	4.2	-0.7	-6.1	-2.3
Copper	40.1	4.5	-0.5	7.9
Zinc	-5.9	10.2	0.1	-0.8
Silver	6.7	1.0	-5.8	1.2
Lead	-0.4	-2.4	-5.7	-1.8
Tin	-3.7	-5.3	4.6	-7.1
Iron	4.7	14.9	8.3	6.3
Molybdenum	27.8	9.3	-0.4	5.3
Hydrocarbons	**-5.1**	**-2.4**	**0.0**	**2.7**
Oil	-30.1	7.8	12.1	-4.4
Natural gas liquids	3.9	-4.4	-5.8	7.0
Natural gas	12.0	-7.7	-1.7	13.9
TOTAL 1/	**16.3**	**3.4**	**-1.3**	**3.6**

1/ Includes non-metallic mining and secondary production.
Source: MINEM.

Graph 13
PRODUCTION OF THE METAL MINING SUB SECTOR
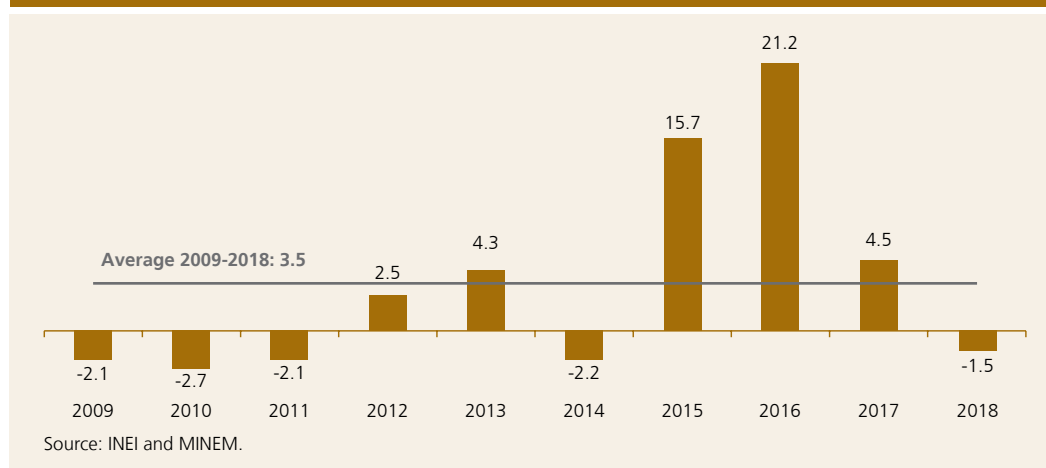(% change)

Average 2009-2018: 3.5

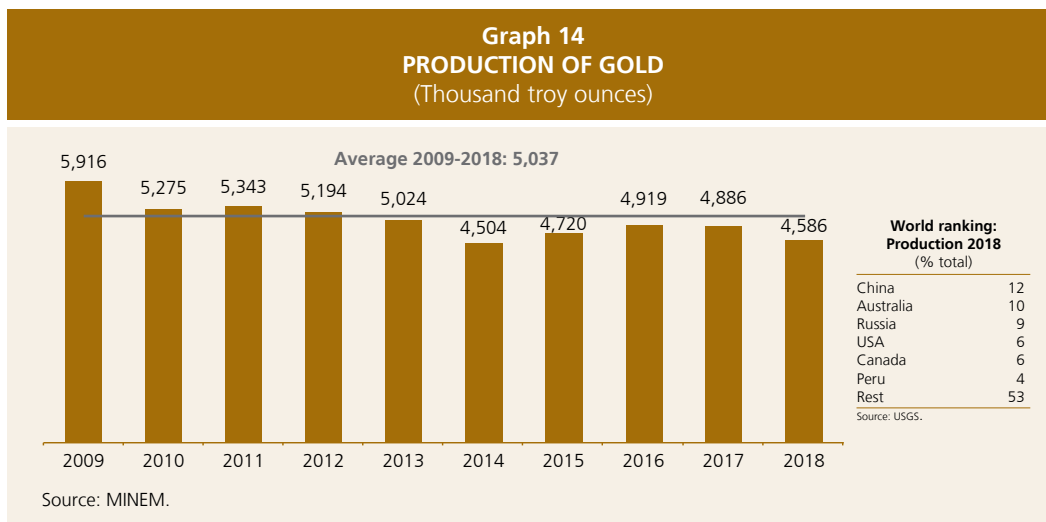| 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
-2.1	-2.7	-2.1	2.5	4.3	-2.2	15.7	21.2	4.5	-1.5

Source: INEI and MINEM.

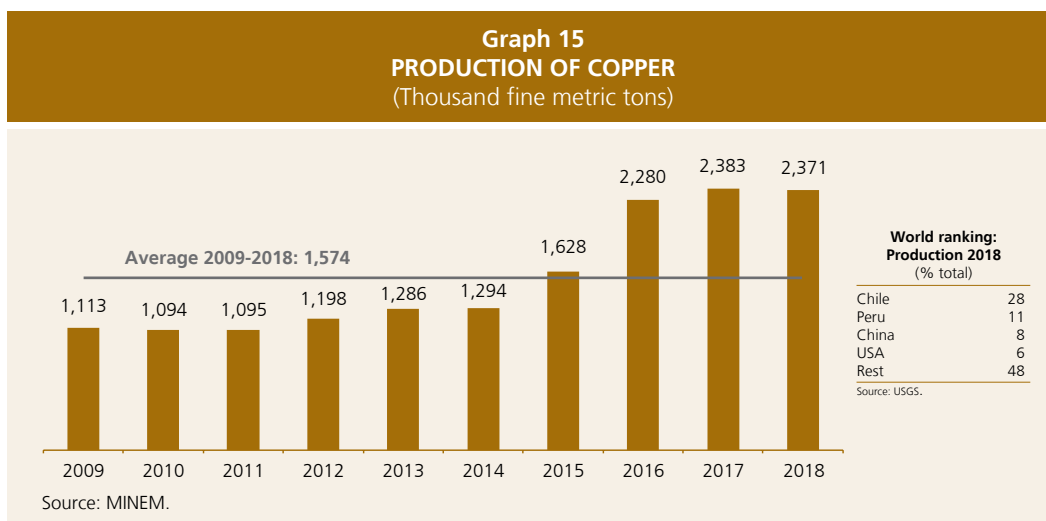| Table 9 VOLUME OF MINING PRODUCTION			
	2016	**2017**	**2018**
GOLD (Thousand troy ounces)	**4,919**	**4,886**	**4,586**
Of which:			
Minera Yanacocha	668	535	515
Minera Barrick Misquichilca	547	509	332
Tantahuatay - Buenaventura	149	152	173
La Arena - Pan American	204	189	153
Anama - Aruntani	85	91	115
Compañía de Minas Buenaventura	190	189	110
Pucamarca - Minsur	106	100	103
Inmaculada	163	165	96
Shahuindo - Pan American	48	76	90
La Zanja - Buenaventura	140	128	72
COPPER (Thousand fine metric tons)	**2,280**	**2,383**	**2,371**
Of which:			
Compañía Minera Antamina	444	439	460
Sociedad Minera Cerro Verde	473	465	455
Las Bambas - MMG	329	453	385
Southern Peru Copper Corporation	288	281	304
Toromocho - Chinalco	168	195	208
Antapaccay	221	206	205
Constancia - Hudbay	133	122	122
ZINC (Thousand fine metric tons)	**1,337**	**1,473**	**1,475**
Of which:			
Compañía Minera Antamina	261	442	476
Nexa Resources	245	211	196
Volcan Compañía Minera	169	150	151
Sociedad Minera El Brocal	59	54	48
Empresa Minera Los Quenuales	29	25	26
SILVER (Million fine troy ounces)	**141**	**142**	**134**
Of which:			
Compañía de Minas Buenaventura	22	23	21
Compañía Minera Antamina	21	21	17
Volcan Compañía Minera	11	8	8
Compañía Minera Ares	9	10	7
LEAD (Thousand fine metric tons)	**314**	**307**	**289**
Of which:			
Volcan Compañía Minera	54	50	46
Nexa Resources	37	34	33
Sociedad Minera El Brocal	16	24	24
Empresa Minera Los Quenuales	9	8	8
Antamina	13	17	7

Source: MINEM.

In 2018, the production of **gold** was 300 thousand ounces lower than in 2017, which represented a fall of 6.1 percent. This was mainly due to the lower extraction in Barrick and Buenaventura's mines and also to the greater bans imposed on artisanal producers in Madre de Dios. In the case of Barrick mines, the Pierina's unit is in its closing stage, while Lagunas Norte faces depletion of the ore in the
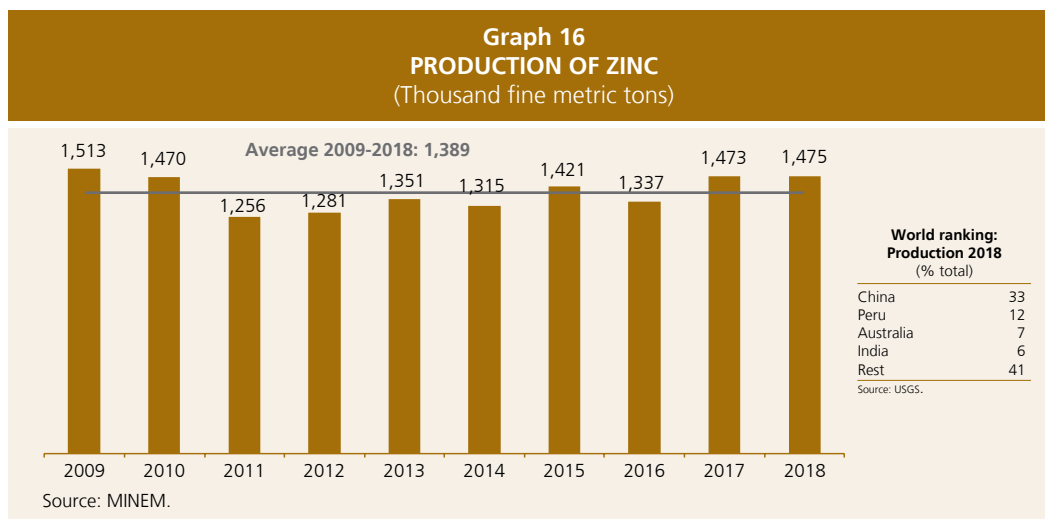
pit, so it is expected to stop being profitable by 2020. On the other hand, the fall in Buenaventura's production was due to an internal program of resource reallocation to resolve bottlenecks in internal processes in the Yanacocha, Orcopampa and La Zanja units.

Graph 14
PRODUCTION OF GOLD
(Thousand troy ounces)

Average 2009-2018: 5,037

Year	Value
2009	5,916
2010	5,275
2011	5,343
2012	5,194
2013	5,024
2014	4,504
2015	4,720
2016	4,919
2017	4,886
2018	4,586

World ranking:
Production 2018
(% total)

China	12
Australia	10
Russia	9
USA	6
Canada	6
Peru	4
Rest	53

Source: USGS.

Source: MINEM.

In 2018, **copper production** in the country totaled 2,371 thousand metric tons, 0.5 percent less than in 2017, due mostly to the lower production of Las Bambas caused by the geotechnical instability of one of the walls of the Ferrobamba pit during the third quarter of 2018. However, this drop was offset by the higher production of Antamina (4.6 percent) and Southern (8.3 percent), with higher production in the latter being explained in part by the onset of operations at the Toquepala expansion in the last quarter of the year.
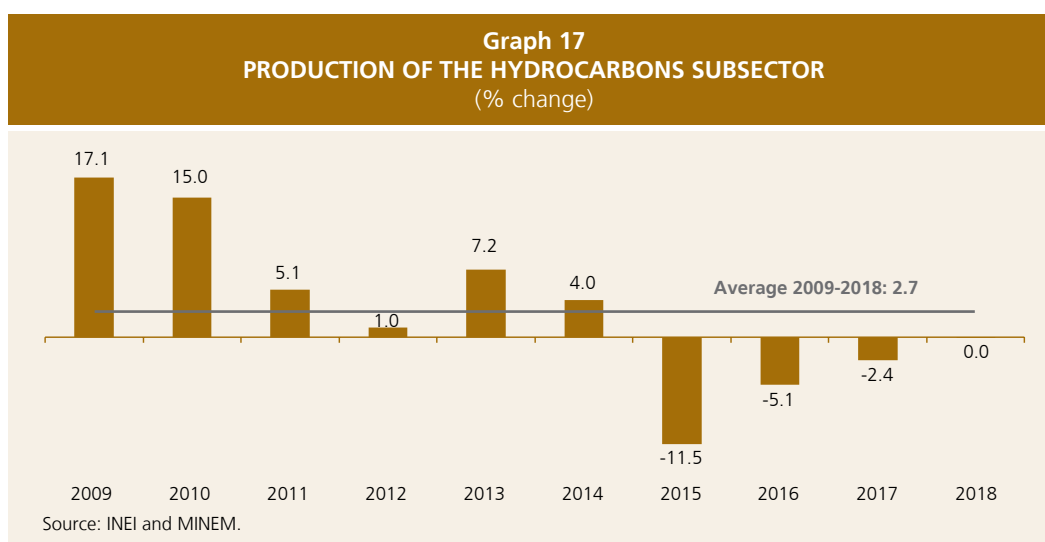
Graph 15
PRODUCTION OF COPPER
(Thousand fine metric tons)

Average 2009-2018: 1,574

Year	Value
2009	1,113
2010	1,094
2011	1,095
2012	1,198
2013	1,286
2014	1,294
2015	1,628
2016	2,280
2017	2,383
2018	2,371

World ranking:
Production 2018
(% total)

Chile	28
Peru	11
China	8
USA	6
Rest	48

Source: USGS.

Source: MINEM.

Zinc production grew 0.1 percent during 2018. This is mainly explained by the fact that the greater extraction of zinc in Antamina was offset by a lower output in several companies, among which Nexa stands out. Although Antamina produced 34,000 FMT more than in 2017 –which represents a variation of 7.5 percent–, in line with the company's projection of exploiting a section of the mine with higher grades, Nexa reduced its production by 7.1 percent due to the resource reallocation projects it undertook since the second quarter.

Graph 16
PRODUCTION OF ZINC
(Thousand fine metric tons)

Average 2009-2018: 1,389

Year	Value
2009	1,513
2010	1,470
2011	1,256
2012	1,281
2013	1,351
2014	1,315
2015	1,421
2016	1,337
2017	1,473
2018	1,475

World ranking:
Production 2018
(% total)

China	33
Peru	12
Australia	7
India	6
Rest	41

Source: USGS.

Source: MINEM.

Iron production grew 8.3 percent due to Shougang's higher production. Although the company slowed its extraction rate during the last quarter of 2018 after it decided to allocate more resources to the expansion of its Marcona unit, it maintained a positive growth rate compared to the same period of 2017 because in that year it faced a workers' strike that lasted from the beginning of October until the middle of November.

Finally, it is worth mentioning that in 2018 there was a lower production of silver (-5.8 percent), lead (-5.7 percent), and molybdenum (-0.4 percent), and a higher production of tin (4.6 percent).

The **hydrocarbons subsector** showed zero growth during 2018. Although oil production grew 12.1 percent, the production of gas and natural gas liquids was lower than in 2017.

Graph 17
PRODUCTION OF THE HYDROCARBONS SUBSECTOR
(% change)

Average 2009-2018: 2.7

| Year	Value
2009	17.1
2010	15.0
2011	5.1
2012	1.0
2013	7.2
2014	4.0
2015	-11.5
2016	-5.1
2017	-2.4
2018	0.0

Source: INEI and MINEM.

The growth of oil production was mainly due to higher extraction in Lot X and Lot 192. Production in the former lot increased from 11.2 to 13.2 thousand barrels per day due to the presence of larger wells in operation, while production in the latter recovered given that the Norperuano Pipeline restarted its activity in February 2017 after a year of standstill and thus, in September 2018 it came

to operate at levels unobserved since 2014 (around 12.5 thousand barrels per day). The pipeline was sabotaged again in December 2018.

Graph 18
PRODUCTION OF LIQUID HYDROCARBONS
(Thousands of barrels per day)

Oil   Natural gas liquids

Source: Perupetro.
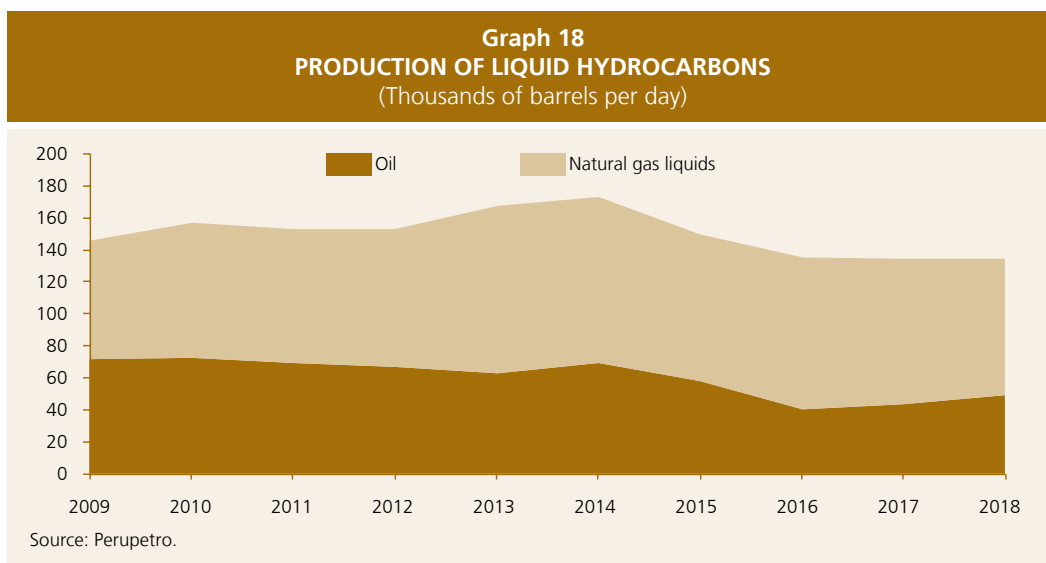
The reduction in the production of gas (1.7 percent) and natural gas liquids (5.8 percent) was due to the rupture of the pipeline of Transportadora de Gas del Peru in February and to maintenance of Las Malvinas separation plant in Camisea during the month of August, which affected the production of lots 56 and 57. However, this fall was in part offset by higher extraction at Lot 88, in response to an increase in gas demand by thermal companies in the electricity sector.

Graph 19
NATURAL GAS PRODUCTION
(Million cubic feet per day)

Lot 88   Lot 56   Other

Source: Perupetro.
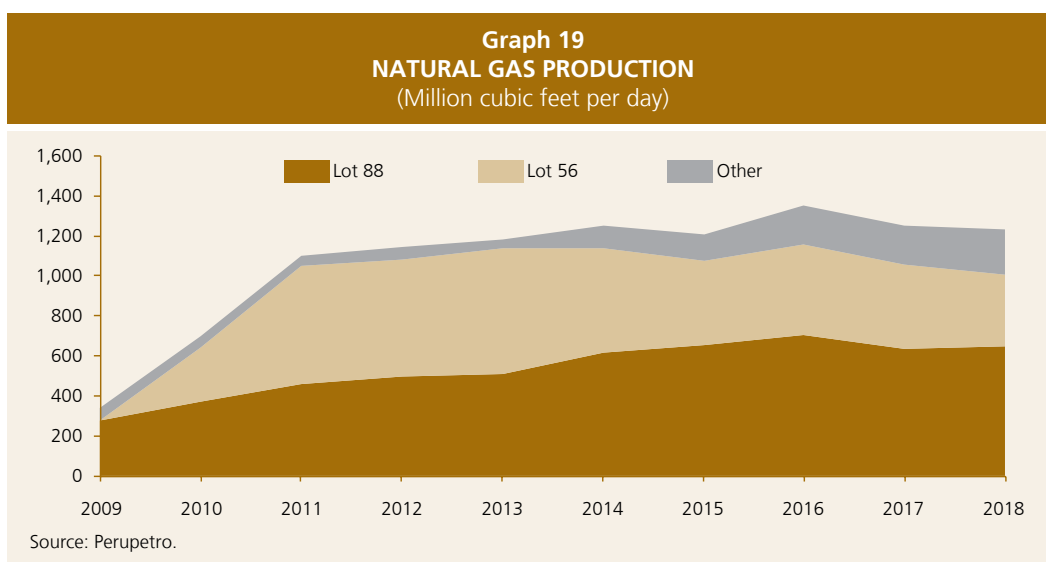
3.4 Manufacturing Sector

After four years of consecutive falls, the **manufacturing industry** grew 6.2 percent in 2018, with greater activity in both primary manufacturing (up 13.2 percent) and non-primary manufacturing (up

3.7 percent) accounting for this growth rate due mainly to the recovery of the production oriented to investment and inputs.

The greater growth observed in the subsector of **manufacturing based on raw materials** reflected the increase of activity in the fishing industry, especially in the fishmeal and fish oil industries, as a result of the high availability of anchovy. It is also worth pointing out the increase seen in the production of husked rice and sugar due to better farming conditions and to a greater availability of sugarcane after these crops recovering from the effects caused by El Niño Costero in 2017. Likewise, the refining of non-ferrous metals output increased in line with Cerro Verde's higher production of copper cathodes.

In contrast, oil refining declined. This was the case in the production of La Pampilla refinery, where the generation of industrial and diesel oil decreased, as well as in Pluspetrol where the production of diesel and natural gasoline fell.
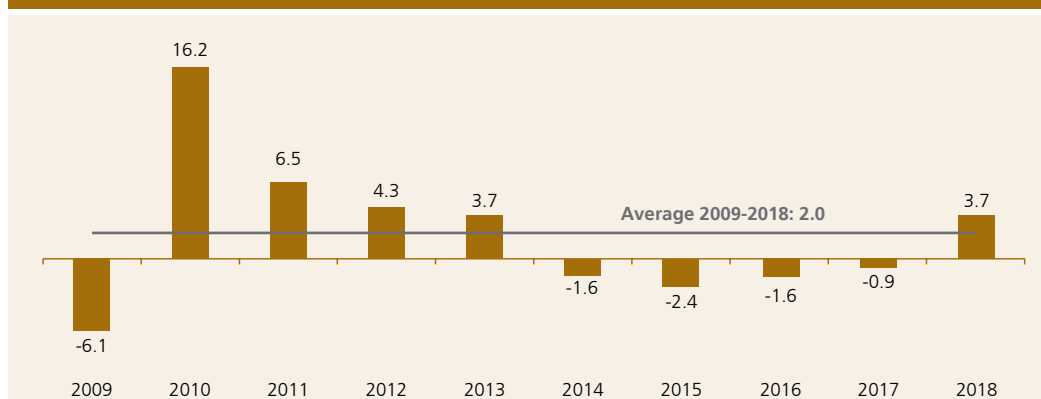
Table 10 **MANUFACTURING BASED ON RAW MATERIALS** (% change, YoY)				
	2016	**2017**	**2018**	**Average 2009-2018**
MANUFACTURING BASED ON RAW MATERIALS	**-0.6**	**1.9**	**13.2**	**0.7**
Rice	0.5	-3.7	15.4	2.3
Sugar	5.1	-5.5	9.4	1.6
Meat products	4.4	2.9	6.3	4.6
Fishmeal and fish oil	-19.3	15.7	85.8	-0.3
Canned and frozen fish products	-6.1	0.2	10.0	-0.8
Refining of non-ferrous metals	1.3	-2.7	2.4	-2.4
Refining of crude	5.3	8.3	-6.4	3.6

Source: Ministry of Production.

In 2018, **non-primary manufacturing** reversed the fall it had recorded over the last four years and grew 3.7 percent, showing the same rate as that observed in 2013 and a higher rate than the average rate of the last 10 years (2.0 percent).

Graph 20
NON-PRIMARY MANUFACTURING
(Real % change)

Average 2009-2018: 2.0

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
-6.1	16.2	6.5	4.3	3.7	-1.6	-2.4	-1.6	-0.9	3.7

Source: Ministry of Production.

This recovery of non-primary manufacturing may be associated with three factors. First, a recovery was observed in private investment, especially in mining investment, which is linked to the branches of metal structures, electrical machinery, industrial services, and explosives. Second, there was also an increase in non-traditional exports in segments that had been affected by greater competition in external markets, such as clothing, processed wood, and in the segment of miscellaneous manufactures. Third, there was an increase in domestic demand linked to consumption, which reflects in the growth of the branches of furniture, medicines, and in part of the segment of miscellaneous manufactures.

In the first half of 2018, industry showed a recovery after having been affected by El Niño Costero in the same period of the previous year. Not only did El Niño Costero cause problems in transportation and in the supply of inputs, but it also caused labor shortages due to the closing of roads and bridges as well as damage to the factory infrastructure and to machinery. In the second half of the year, the industries that showed the greatest reactivation were those oriented to investment and inputs.

Table 11 GROWTH OF NON-PRIMARY MANUFACTURING BY TYPE OF GOODS (Real % change)				
	2016	**2017**	**2018**	**Average 2009-2018**
Mass consumption goods	**1.5**	**0.2**	**1.2**	**2.3**
Dairy products	-4.6	-4.9	0.9	1.9
Bread and pastry	-4.6	3.5	-1.1	1.3
Oils and fats	2.3	6.5	2.3	5.0
Miscellaneous food products	-6.2	14.7	1.9	3.9
Beer and malt	-0.8	0.0	-0.1	1.1
Soft drinks	7.2	-3.9	-10.7	3.4
Garments	-4.2	-4.3	7.4	-1.3
Footwear	4.1	16.2	-31.2	1.9
Furniture	5.7	-5.1	8.1	5.7
Other paper and cardboard items	1.6	12.7	-4.6	3.2
Toiletries and cleaning products	9.8	-14.9	4.0	1.8
Pharmaceutical products	10.1	-8.0	4.2	-2.9
Miscellaneous items	-9.9	15.0	25.1	1.8
Inputs	**-0.7**	**-3.2**	**3.6**	**1.3**
Wheat flour	-4.4	0.6	3.4	1.4
Other textile items	-1.0	8.9	-2.9	-0.8
Processed wood	-4.4	-32.0	7.2	-7.8
Paper and cardboard	-5.5	-7.3	12.2	0.3
Paper and cardboard containers	7.4	7.9	19.3	6.5
Publishing and printing	2.5	-16.6	-5.0	-1.7
Basic chemicals	-6.4	5.3	-0.9	1.1
Explosives, chemical and natural scents	3.9	-3.7	9.7	8.1
Rubber	-10.5	6.6	-9.9	-2.7
Plastic	-0.8	1.3	4.3	4.5
Glass	9.5	2.3	3.1	6.3
Capital goods	**-5.1**	**-0.5**	**6.5**	**4.0**
Iron and steel industry	2.2	4.7	1.4	-0.1
Metal products	-10.2	-3.8	11.6	5.7
Machinery and equipment	-9.2	22.8	-4.8	1.9
Electric machinery	15.6	-5.2	23.8	1.1
Transport equipment	-16.2	3.5	14.3	5.5
Paints, varnishes, and lacquers	-9.1	5.3	3.1	3.1
Cement	1.5	-0.5	0.9	4.4
Construction materials	-5.4	-3.0	4.6	2.7
Industrial services	-2.6	-3.1	6.0	7.6
Goods for external markets	**-4.2**	**-1.6**	**0.2**	**-1.3**
Canned food	4.1	-1.6	0.7	1.2
Synthetic fibers	-4.0	0.9	7.9	-2.0
Yarns, fabrics and finished garments	-7.7	-1.6	-5.7	-2.7
Knitted garments	-10.2	4.1	-3.9	-1.8
Clothing items	-4.2	-4.3	7.4	-1.3
Total non-primary manufacturing	**-1.6**	**-0.9**	**3.7**	**2.0**

Source: Ministry of Production.

 The branches oriented to **investment** grew 6.5 percent, the higher production of metal products standing out due to the greater demand for metal structures and structured profiles for the construction of shopping centers and supermarkets. Other branches that showed noteworthy growth rates included the branches manufacturing transport material, due to the increased production of ships and the high demand for spare parts for motor vehicles observed, as well as electrical machinery, due to the recovery seen in the demand for transformers, electrical panels, and electrical wires and cables.
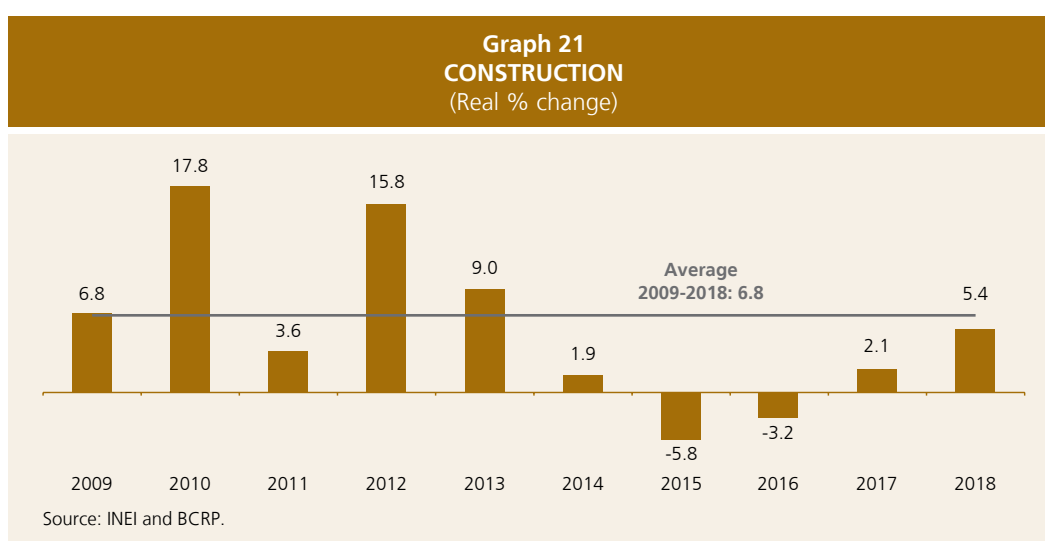
The branches producing **inputs** grew 3.6 percent due to the reactivation of activity in branches such as the wood industry, which had been affected by El Niño Costero; the production of paper and cardboard packaging, due to a higher demand for cardboard and corrugated paper boxes for agricultural exports; explosives, due to the growth of internal and external demand of explosives for mining, and plastics, due to a higher external demand for PET containers for beverages.

The branches linked to the production of **mass consumption goods** grew 1.2 percent. Growth was noteworthy in the category of miscellaneous manufactures, due to the introduction of new products; in jewelry, due to greater external demand; furniture (mattresses); various food products, and other paper and cardboard items. On the other hand, the production of footwear decreased, due to a lower demand for tennis shoes and sandals as a result of the greater competition of imported products. A decline was also observed in the production of soft drinks, due to a lower demand for soft drinks and table water after the excise tax on these goods was increased and also due to the weather conditions of the previous year due to the effects of El Niño Costero. Likewise, the production of other paper and cardboard items decreased due to a lower demand for diapers associated with greater competition from imported goods.

The branches oriented to **exports** grew 0.2 percent as a result of a higher manufacturing of garments due to increased external demand and also as a result of the recovery of the production of canned food products in the first half of the year. On the other hand, the manufacture of yarns, fabrics, and finishes and the manufacture of knits and knitwear registered a decrease due to a lower demand for these products.

3.5 Construction Sector

In 2018, the construction sector grew 5.4 percent as a result of the physical progress of public works (which increased by 9.6 percent) and of the development of real estate projects and commercial and business centers.

Graph 21
CONSTRUCTION
(Real % change)

Average
2009-2018: 6.8

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
6.8	17.8	3.6	15.8	9.0	1.9	-5.8	-3.2	2.1	5.4

Source: INEI and BCRP.

As regards the residential real estate market, the Survey of Construction Projects in Metropolitan Lima and Callao published by the Peruvian Chamber of Construction (CAPECO) reported that 27,5

thousand housing units (26,7 thousand apartments) were offered in 2018, 7.9 percent more than in the previous year. Moreover, 58 percent of the housing supply was concentrated in the intermediate price range (between S/ 80 and S/ 400 thousand), mainly in Modern Lima, downtown Lima and East Lima, while 40 percent of this supply was high price homes (with a cost of over S/ 400 thousand). The area called Lima Top stands out in this group, where 78 percent of the units are offered at prices of over S/ 600 thousand, followed by Modern Lima where 84 percent of the units are offered at prices ranging between S/ 400 and S/ 600 thousand.

A total of 15.2 thousand housing units were sold in 2018, of which 67.8 percent were in the process of being constructed, which reflects that housing units are being sold in advance as construction projects or during the execution of the production process. Moreover, 54 percent of the homes sold were in the intermediate price range (between S/ 80 thousand and S/ 400 thousand) and 45 percent showed a high price range (more than S/ 400 thousand).

The average price of an apartment per square meter in Lima and Callao was S/ 5,550 in 2018, 10.6 percent higher than in 2017. San Isidro is the district with the highest average price per square meter (S/ 8,475), followed by Barranco (S/ 8,166), Miraflores (S/ 8,140), and San Borja (S/ 7,593). Moreover, showing a downward trend in all of the districts of Lima and Callao, the average area of an apartment decreased from 77.9 to 77.6 square meters between 2017 and 2018.

Table 12 REAL ESTATE SECTOR: EVOLUTION OF MAIN VARIABLES				
Indicator	2016	2017	2018	Difference 2018-2017
New apartments sold - CAPECO 1/	10,643	13,354	14,851	1,497
% change	-2.3	25.5	11.2	
New apartments sold- TINSA	10,865	13,025	12,069	-956
% change	-15.8	19.9	-7.3	
New mortgage loans 2/	28,088	30,656	36,305	5,649
% change	-7.5	9.1	18.4	
Of which:				
New loans Mivivienda 3/	7,872	6,683	7,941	1,258
% change	-4.3	-15.1	18.8	
Number of loans of current mortgage 2/	212,084	219,342	227,467	8,125
% change	1.2	3.4	3.7	
Mortgage loans in million soles 2/	7,437	8,583	11,243	2,660
% change	-10.5	15.4	31.0	
Mortgage loans in million US$ 2/	460	593	361	-233
% change	43.7	29.0	-39.2	
Average interest rate on mortgage loans in S/ 2/	8.9	8.7	8.2	-0.2
Average interest rate on mortgage loans in US$ 2/	7.8	7.5	7.1	-0.3
PER Ratio 4/	17.6	17.1	17.6	0.4

1/ *El Mercado de Edificaciones Urbanas en Lima Metropolitana y el Callao*, CAPECO. A one-year period is considered (from July to June in the next year).
2/ Commercial banks.
3/ New Credit Mi Vivienda.
4/ Data as of Q4 of the year. Price to earning ratio (PER).
Source: Mivivienda, SBS, and TINSA PERU SAC.

In addition, new mortgage loans registered an increase of 18.4 percent while Mivivienda's new loans increased 18.8 percent. On the other hand, in terms of constant soles, housing sale prices per square meter in Metropolitan Lima showed a stable behavior.

As for the market of prime offices, according to information provided by Colliers International, 5 new prime buildings with 105 thousand square meters entered the Lima office market in 2018. Continuing with the declining trend observed since 2017, this new offer was lower than in 2017, when it exceeded 226 thousand square meters. On the other hand, the net absorption of offices, which reached 145 thousand square meters in 2018, exceeded the new offer, a ratio not observed since 2012. As a result of this, the vacancy rate decreased to 22.9 percent at the end of 2018 (versus 28.2 percent in 2017).

4.   Growth by Regions

In 2018 the national GDP grew to a greater extent (4.0 percent) in the departments of the north coast, Lima, Ancash and Loreto, whereas in Apurímac, Moquegua and Madre de Dios, it declined.

When dividing the country into geographical regions (center, north, south and east)[3], excluding Lima, the area that contributed most to the growth of the output was the north of the country. The **North region** grew 4.7 percent due to the good performance of fishing and to agriculture's recovery from the effects of El Niño Costero 2017. The **Central region** grew 4.6 percent, with growth rates being particularly noteworthy in Ancash and Huancavelica as a result of increased fishing and increased mining, respectively. The growth of the output in the **East region** was driven by the recovery of oil production in Loreto, which was offset by a lower extraction of gold in Madre de Dios, while the **southern region** recorded the lowest growth rates (1.7 percent), mainly as a result of lower mining activity.

Graph 22
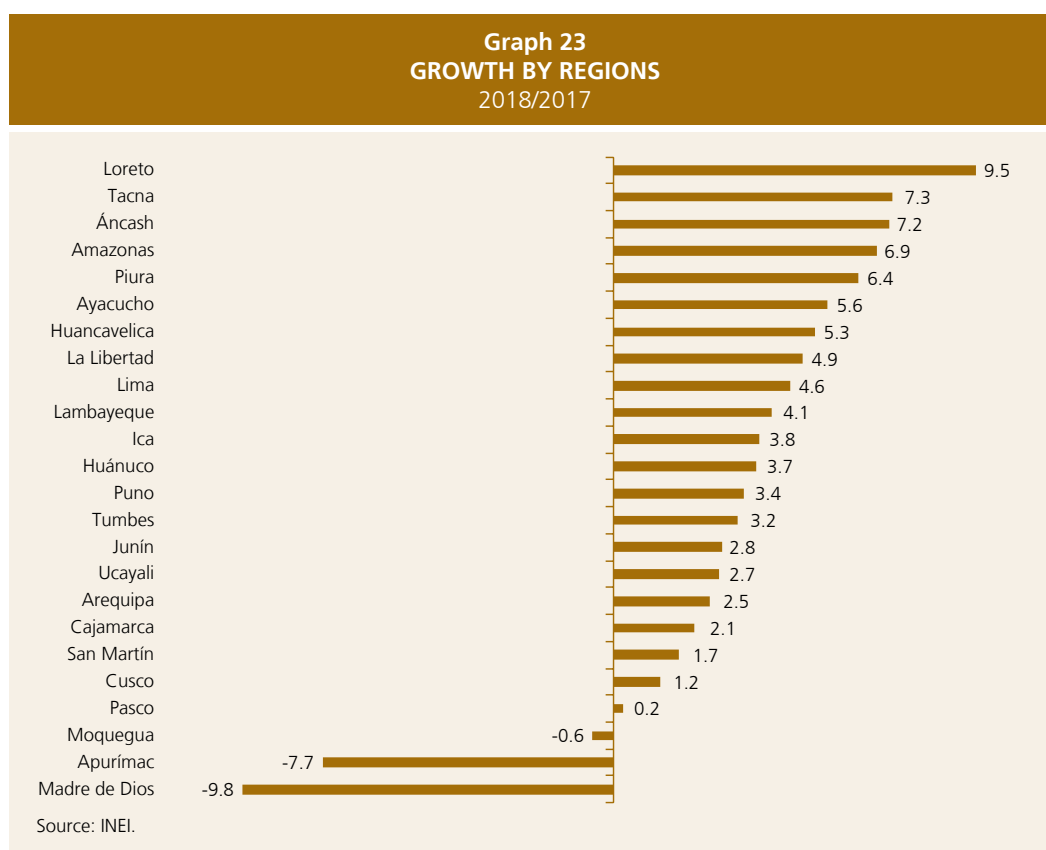**GROWTH BY GEOGRAPHICAL REGIONS**
2018/2017

Source: INEI.
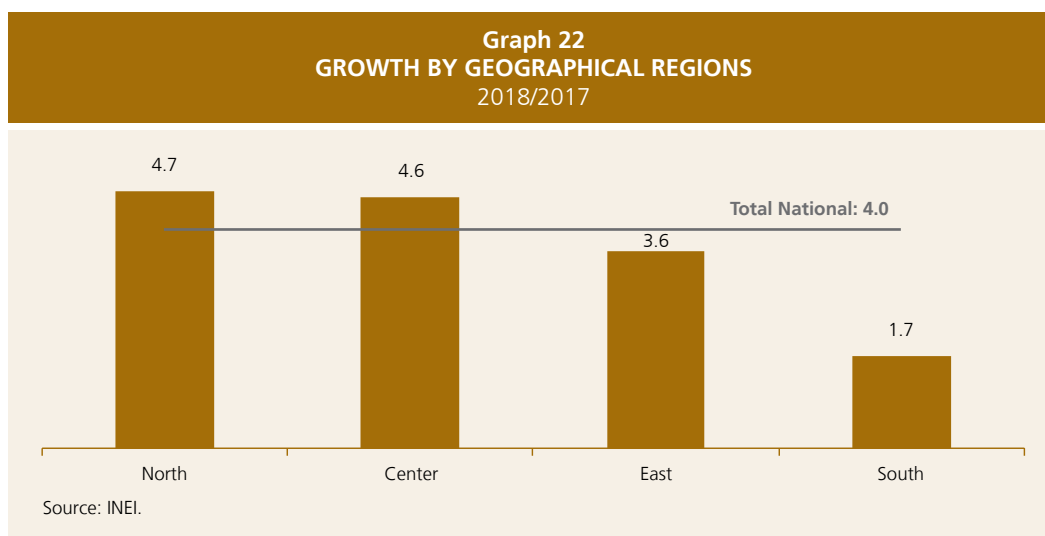
The departments with the higher contribution rates to growth included the following:

- **Lima**, where production grew 4.6 percent, contributed with 2.2 percentage points (pp) to the growth of the country's output. This contribution is explained by the growth of construction associated with the public works for the PanAmerican Games, as well as by higher outputs in the processing of poultry, the production of fishmeal and fish oil, and greater dynamism in trade and services.

- Output in **Ancash** grew 7.2 percent (contribution of 0.3 pp) due to a greater anchovy catch and an increased production of fishmeal and fish oil.

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3   North Region: Tumbes, Piura, Lambayeque, Cajamarca, La Libertad, Amazonas; Central Region: Áncash, Huánuco, Pasco, Junín, Huancavelica, Ica; South Region: Ayacucho, Arequipa, Apurímac, Cusco, Moquegua, Puno, Tacna; East Region: Loreto, San Martín, Ucayali, Madre de Dios.

- **Piura**'s production grew 6.4 percent (contribution of 0.3 pp) as a result of increased activity in the construction sector associated with the investment made by the program Reconstrucción Con Cambios, with works such as the consolidation of the Poechos reservoir, road rehabilitation and road improvement works, and water and sanitation projects standing out. The recovery of the agriculture sector and the main crops –lemons, bananas, rice–, particularly in the areas affected by El Niño Costero in 2017 was also noteworthy.

- **La Libertad**'s output grew 4.9 percent (contribution of 0.2 pp) due to greater activity in the agricultural sector, with the production of blueberries, husked rice and sugarcane standing out, and due to increased production in the fishing sector and related manufacturing industry due to a greater catch of anchovy.

- Activity in **Arequipa** grew 2.5 percent (contribution of 0.2 pp) due to the construction sector, which was driven by greater investment in road infrastructure projects such as the improvement of the road interconnection between some main avenues of the city of Arequipa and the improvement of departmental highways. Increased agricultural production was also noteworthy, especially in crops such as olives, paprika, artichokes, and garlic.

- **Loreto** was the region with the highest growth rate in the country, 9.5 percent (contribution of 0.2 pp), due to the growth of the hydrocarbons subsector as a result of the greater output of crude oil obtained by Pacific Stratus in Lot 192 after the partial regularization of operations of the Norperuano Pipeline.

Graph 23
GROWTH BY REGIONS
2018/2017

Region	Value
Loreto	9.5
Tacna	7.3
Áncash	7.2
Amazonas	6.9
Piura	6.4
Ayacucho	5.6
Huancavelica	5.3
La Libertad	4.9
Lima	4.6
Lambayeque	4.1
Ica	3.8
Huánuco	3.7
Puno	3.4
Tumbes	3.2
Junín	2.8
Ucayali	2.7
Arequipa	2.5
Cajamarca	2.1
San Martín	1.7
Cusco	1.2
Pasco	0.2
Moquegua	-0.6
Apurímac	-7.7
Madre de Dios	-9.8

Source: INEI.

On the other hand, the regions in which growth declined were the following:

- Production in **Madre de Dios** shrank 9.8 percent (contribution of -0.1 pp) due to the lower volumes of gold reported by artisanal producers as a result of interdiction operations against illegal mining in the area.

- Likewise, output in **Apurímac** dropped 7.7 percent (contribution of -0.13 pp), influenced by lower copper production at Las Bambas.

- **Moquegua**'s output decreased slightly (0.6 percent), reflecting the deterioration of mining activity observed mainly in the production of gold, molybdenum, and silver, in Aruntani and Southern, although this was offset by Southern's higher production of copper. Moreover, electricity generation decreased due to lower activity at Ilo 2 Plant and at Ilo Plant.

4.1 Production Structure

In the last 10 years, the regions with greater activity have been those related to mining activity. The average growth rate of Apurímac (15.5 percent between 2009 and 2019), the highest rate in the country, is directly linked to the onset of operations at Las Bambas mine. Its average increase in the last 5 years has been 24.9 percent. Moreover, similar trends are observed in the cases of Cusco, Huánuco, Ayacucho, and Arequipa, growth in these regions having been favored the development of mines Antapaccay, Raura, and Inmaculada, and by the expansion of Cerro Verde, respectively. On the other hand, the growth trend observed in San Martin (5.3 percent) has been associated with the development of agriculture (rice, cocoa, oil palm and coffee) and trade.

Table 13 **AVERAGE GROWTH - REGIONAL GDP** (% change)			
	2009-2013	**2014-2018**	**2009-2018**
Apurímac	6.8	24.9	15.5
Cusco	12.2	1.1	6.5
Huánuco	6.0	5.4	5.7
Ayacucho	7.6	3.2	5.4
San Martín	6.0	4.6	5.3
Arequipa	3.7	6.8	5.2
Amazonas	6.8	3.2	5.0
Ica	6.7	3.2	4.9
Lima	6.2	3.3	4.7
Lambayeque	6.2	3.1	4.6
Puno	5.6	3.3	4.4
Junín	2.1	6.7	4.3
Piura	5.5	2.2	3.8
Tacna	2.9	4.1	3.5
Tumbes	5.5	1.3	3.4
La Libertad	4.5	2.2	3.4
Ucayali	4.2	2.1	3.1
Huancavelica	4.0	2.2	3.1
Áncash	1.9	2.3	2.1
Loreto	3.0	0.6	1.8
Cajamarca	3.5	0.0	1.8
Madre De Dios	3.3	-0.4	1.3
Moquegua	-0.1	0.0	-0.1
Pasco	-2.0	1.8	-0.2
Total	**5.8**	**3.2**	**4.4**

Source: INEI.

On the other hand, the regions in which growth fell in this period were Pasco and Moquegua (-0.2 and -0.1 percent on average, respectively), the decline in these regions being also related to mining. In Pasco, production was affected by the decrease of operations of mining company El Brocal, while in Moquegua, mining company Aruntani reduced its gold mining operations.

5. Labor

Superintendencia Nacional de Aduanas y de Administración Tributaria (SUNAT) –the National Superintendency of Customs and Tax Administration– collects monthly information on jobs and remunerations of the universe of formal companies and public and private institutions through its Electronic Payroll system, which is therefore the best source of data on formal employment.

According to information of this electronic record system, the number of formal jobs[4] in the country increased 3.9 percent in 2018. At the sector level, the largest increase was observed in the private sector (4.4 percent), while in terms of geographical area, greater growth was observed in the rest of the country (6.6 percent) than in Lima (2.2 percent).

Table 14 FORMAL JOBS - ELECTRONIC PAYROLL (Thousand jobs)					
	Levels			Change 2018/2017	
	2016	2017	2018	In thousand	In %
Total 1/	**4,831**	**4,929**	**5,123**	**194**	**3.9**
Private sector	3,424	3,509	3,663	154	4.4
Public sector	1,407	1,420	1,460	40	2.8
Lima	2,936	2,964	3,029	65	2.2
Rest of Peru	1,709	1,774	1,891	116	6.6

1/ The sum of employment by sectors is not total due to the number of workers that can not be classified by sector. (3.9% of total).
Source: SUNAT - Electronic Payroll.

The expansion of employment in the private sector (4.4 percent) was driven mainly by increased jobs in the agricultural sector (68 thousand jobs) and in the sector of services (51 thousand jobs).
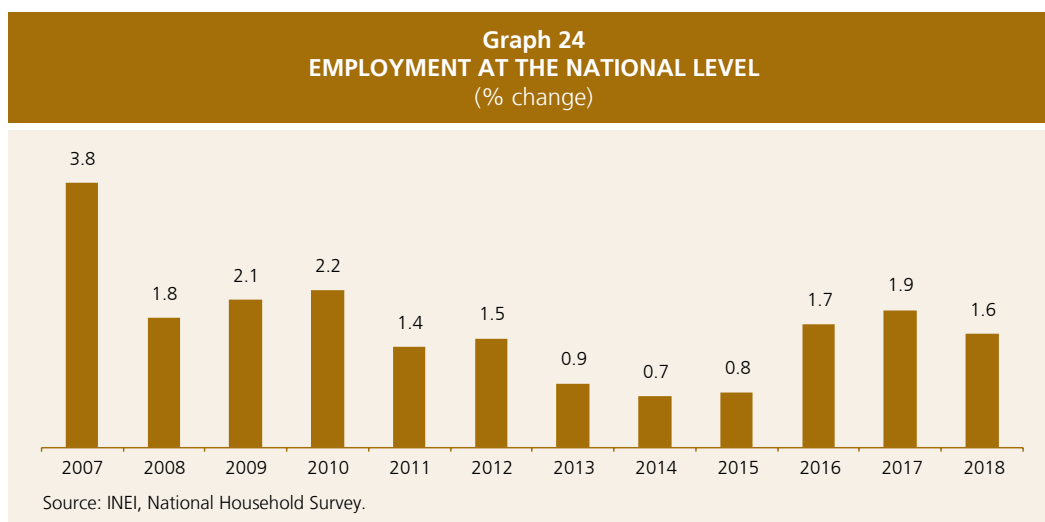
Table 15 FORMAL JOBS IN THE PRIVATE SECTOR - ELECTRONIC PAYROLL (Thousand jobs)					
	Levels			Change 2018/2017	
	2016	2017	2018	In thousand	In %
Total	**3,424**	**3,509**	**3,663**	**154**	**4.4**
Agriculture and Livestock 1/	312	350	418	68	19.3
Fishing	21	22	22	0	-1.9
Mining	95	99	102	3	3.0
Manufacture	435	434	439	5	1.2
Electricity	11	11	12	0	1.1
Construction	198	192	200	7	3.8
Commerce	530	542	557	14	2.6
Services	1,637	1,674	1,725	51	3.1
Unspecified	186	183	189	6	3.1
Memo: Total excl. the agriculture and livestock sector	3,113	3,158	3,245	86	2.7

1/ Includes processing and preservation of fruits and vegetables.
Source: SUNAT - Electronic Payroll.

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4 The number of jobs differ from the number of workers because a single person can have more than one job.

5.1 National Employment

According to data from the National Household Survey (ENAHO), employment at the national level grew 1.6 percent in 2018, slightly less than in 2017. With this growth rate, employment registered for the third consecutive year a pace of growth of more than 1.5 percent, recovering the pace observed at the beginning of the decade.

Graph 24
EMPLOYMENT AT THE NATIONAL LEVEL
(% change)

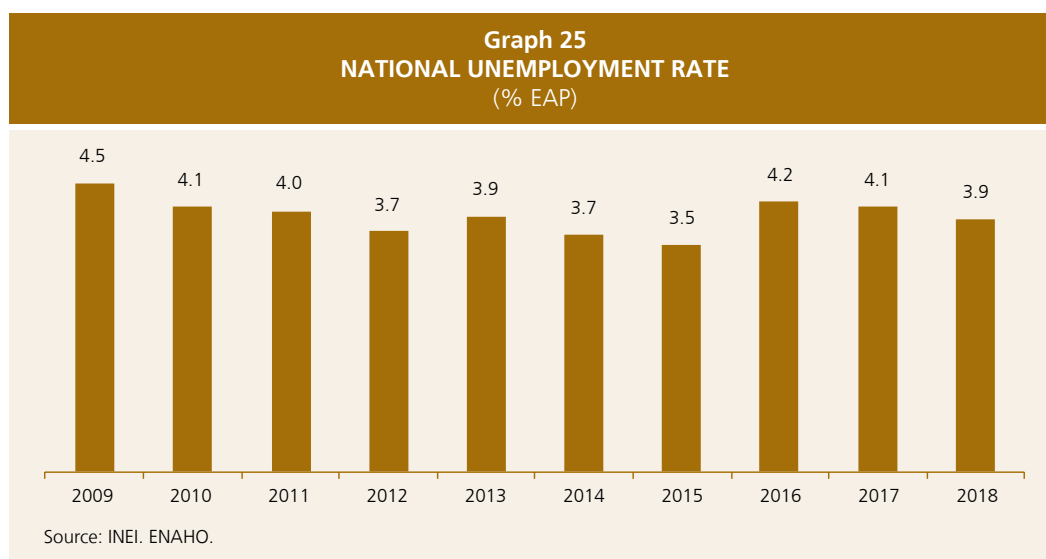| Year	Value
2007	3.8
2008	1.8
2009	2.1
2010	2.2
2011	1.4
2012	1.5
2013	0.9
2014	0.7
2015	0.8
2016	1.7
2017	1.9
2018	1.6

Source: INEI, National Household Survey.

By production sectors, construction showed the highest growth rate (4.8 percent), followed by the sector of services (2.1 percent), whereas, on the other hand, employment in the manufacturing sector declined (-3.0 percent).

Table 16
NATIONAL EMPLOYMENT
(Thousand people)

		Levels			Annual % change 2018	
		2016	2017	2018	In thousand	In %
I.	**ECONOMICALLY ACTIVE POPULATION (EAP):**	**16,904**	**17,216**	**17,463**	**247**	**1.4**
	1. EMPLOYED	**16,197**	**16,511**	**16,777**	**266**	**1.6**
	By economic activity					
	Agriculture and livestock/Fishing/ Mining	4,293	4,267	4,341	74	1.7
	Manufacture	1,542	1,552	1,505	-47	-3.0
	Construction	997	957	1,003	46	4.8
	Commerce	2,965	3,110	3,162	52	1.7
	Services	6,400	6,626	6,766	140	2.1
	By size of business					
	From 1 to 10 workers	11,575	11,916	12,149	233	2.0
	From 11 to 50 workers	1,169	1,210	1,247	37	3.1
	More than 50 workers	3,441	3,371	3,372	1	0.0
	2. UNEMPLOYED	**707**	**705**	**686**	**-19**	**-2.6**
II.	**INACTIVE POPULATION**	**6,498**	**6,556**	**6,680**	**124**	**1.9**
III.	**WORKING-AGE POPULATION (PWA)**	**23,402**	**23,772**	**24,142**	**371**	**1.6**
	RATES (%)					
	Activity rate (EAP/PWA)	72.2	72.4	72.3		
	Employment/population (Employed EAP/PWA)	69.2	69.5	69.5		
	Unemployment rate (Unemployed EAP/EAP)	4.2	4.1	3.9		

Source: INEI. ENAHO.

Moreover, unemployment registered a rate of 3.9 percent at the national level, which represents a 0.2 percentage point decrease in comparison with the previous year.

Graph 25
NATIONAL UNEMPLOYMENT RATE
(% EAP)

Year	Rate
2009	4.5
2010	4.1
2011	4.0
2012	3.7
2013	3.9
2014	3.7
2015	3.5
2016	4.2
2017	4.1
2018	3.9

Source: INEI. ENAHO.

6.   Macroeconomic Impact of Venezuelan Immigration to Peru

In 2018, Superintendencia Nacional de Migraciones (SNM) reported that the accumulated migratory flow –the difference between the number of foreigners entering or leaving the country– from January to September 2018 was 426 thousand immigrants, of which 78 percent was Venezuelan citizens (331 thousand).

The empirical literature on the economic impacts of migration focuses on short and long-term effects. A recent relevant case illustrating the former is the migration of Syrians to Turkey. By the end of 2015, about 2.5 million Syrians who fled the war turned Turkey into the nation with the largest refugee population in the world. Del Carpio & Wagner (2015) find that Syrian refugees displaced native workers in the informal market and increased formal employment for Turks. Recently, the Organization for Economic Cooperation and Development (OECD) and the International Labor Organization (ILO)[5] published a report on the impact of immigration on both employment and wages in 10 developing countries.[6] Based on data at the national level in these countries, the report finds that only in four cases does the employment/local population ratio decrease, although in no case does the unemployment rate increase.

Preliminary calculations suggest that an increase in immigration reduces, in certain groups of workers, the probability of maintaining a job and the income obtained from the main occupation in Lima and Callao. The most sensitive group to these effects of immigration is the group of workers with less than 39 years of age and with low education levels, this group representing 7 percent of the working population in Lima and Callao.

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5   OECD/ILO (2018), How Immigrants Contribute to Developing Countries' Economies, OECD Publishing, Paris.

6   A list of developing countries that received immigration flows is provided below, together with the countries from where these groups of migrants left (in parentheses in order of importance in each case): Argentina (Paraguay, Bolivia, Peru, and Chile), Costa Rica (Nicaragua), Cote d'Ivoire (Burkina Faso and Mali), Dominican Republic (Haiti), Ghana (Togo, Burkina Faso, Nigeria, and Cote d'Ivoire), Kyrgyzstan (Russia and Ukraine), Nepal (India and Bhutan), Rwanda (Democratic Republic of the Congo, Uganda, Burundi, and Tanzania), South Africa (Zimbabwe, Mozambique, Lesotho, and United Kingdom) and Thailand (Myanmar, Lao PDR, and Cambodia).

About 45 percent of this group of workers works in the service sector and, coincidentally, Venezuelan immigrants would be working mainly in the service sector. According to figures from the International Organization for Migration (IOM), 62 percent of Venezuelan immigrants would be working in the commerce and services sectors. Moreover, according to figures from the Peruvian Ministry of Labor, as of August 2018, 60 percent of the Venezuelan formal workers (17,410) worked in the service sector.
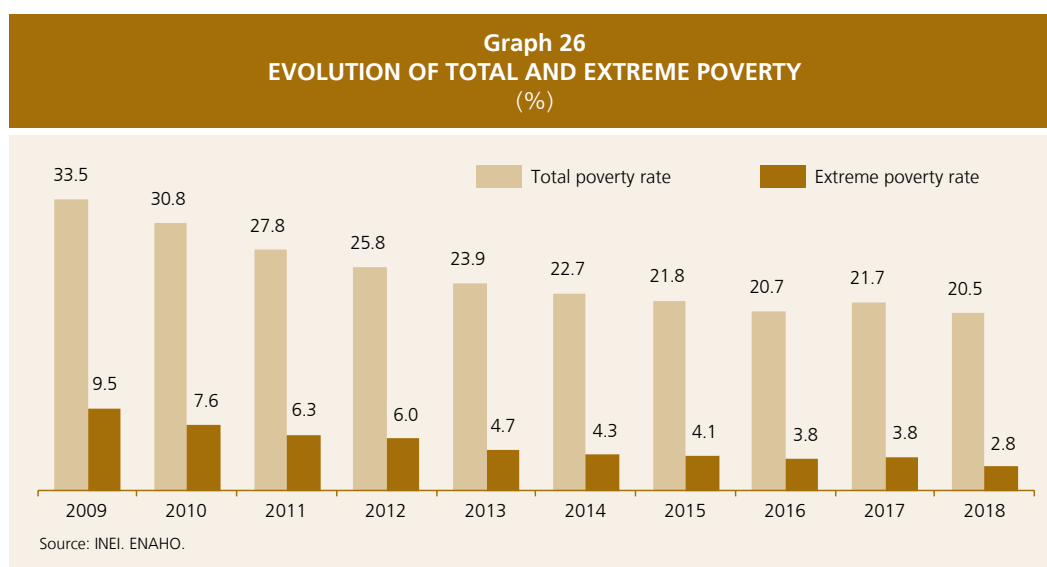
This expansion of the labor supply would reduce the wage costs and potentially the prices of activities in this sector. For example, contrasting with what happened in previous years, a lower price growth has been reported in the case of meals consumed out-of-home in the case of Lima (3.9 percent and 2.5 percent in 2017 and 2018, respectively) in comparison with the prices reported in the other regions (4.8 percent and 3.4 percent in the same years).

On the demand side, based on the IOM information about the percentage of immigrants that live in Lima, that are employed, and about their average income and other additional assumptions, it may be said that Venezuelan immigrants' spending in Lima and Callao would have contributed, through private consumption, with 0.33 percentage points to the 4 percent GDP growth rate recorded in 2018.

7. Monetary Poverty

In 2018, monetary poverty[7] fell by 1.2 percentage points, from 21.7 percent in 2017 to 20.5 percent. Resuming the declining path, although at a lower rate, this figure implies a reversal of the increase observed in 2017. At the aggregate level, the growth of the average per capita real monthly income influenced these results. As a result, the number of people living in poverty conditions dropped by approximately 313 thousand people in 2018.

On the other hand, the rate of extreme poverty was 2.8 percent, one percentage point below the rate registered in 2017 (3.8 percent) which in absolute terms, is equal to 900 thousand people in this situation. In comparison to 2007, total poverty and extreme poverty rates fell by 21.9 and 8.4 percentage points, respectively.

Graph 26
EVOLUTION OF TOTAL AND EXTREME POVERTY
(%)

Year	Total poverty rate	Extreme poverty rate
2009	33.5	9.5
2010	30.8	7.6
2011	27.8	6.3
2012	25.8	6.0
2013	23.9	4.7
2014	22.7	4.3
2015	21.8	4.1
2016	20.7	3.8
2017	21.7	3.8
2018	20.5	2.8

Source: INEI. ENAHO.

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7   The poor are defined as those living in households whose per capita expenditure is insufficient to acquire a basic basket of food and non-food goods (total poverty line in 2018 = S/ 344). The extremely poor are those whose per capita spending is below the cost of the basic food basket (extreme poverty line in 2018 = S/ 183) (INEI, 2019).

7.1 Poverty by Geographic Areas

In comparison to 2017, statistically significant declines[8] in poverty levels were observed in 2018 in rural areas (-2.3 percentage points), in the urban coast areas (-2.3 points), in the rural highlands (-2.6 points), and in the rural jungle areas (-3.1 points).

											Differences 1/	
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2018-2017**	**2018-2009**
National	**33.5**	**30.8**	**27.8**	**25.8**	**23.9**	**22.7**	**21.8**	**20.7**	**21.7**	**20.5**	**-1.2**	**-13.0**
Urban	21.3	20.0	18.0	16.6	16.1	15.3	14.5	13.9	15.1	14.4	-0.7	-6.9
Rural	66.7	61.0	56.1	53.0	48.0	46.0	45.2	43.8	44.4	42.1	-2.3	-24.6
Territory												
Urban coast	23.7	23.0	18.2	17.5	18.4	16.3	16.1	13.7	15.0	12.7	-2.3	-11.0
Rural coast	46.5	38.3	37.1	31.6	29.0	29.2	30.6	28.9	24.6	25.1	0.5	-21.4
Urban highlands	23.2	21.0	18.7	17.0	16.2	17.5	16.6	16.9	16.3	16.7	0.4	-6.5
Rural highlands	71.0	66.7	62.3	58.8	52.9	50.4	49.0	47.8	48.7	46.1	-2.6	-24.9
Urban jungle	32.7	27.2	26.0	22.4	22.9	22.6	20.7	19.6	20.5	19.3	-1.2	-13.4
Rural jungle	64.4	55.5	47.0	46.1	42.6	41.5	41.1	39.3	41.4	38.3	-3.1	-26.1
Metropolitan Lima	16.1	15.8	15.6	14.5	12.8	11.8	11.0	11.0	13.3	13.1	-0.2	-3.0

Table 17
INCIDENCE OF POVERTY ACCORDING TO GEOGRAPHIC AND TERRITORY AREAS
(in %)

1/ Percentage points.
Source: INEI. ENAHO.

In 2018, the incidence of extreme poverty in urban areas was 0.8 percent and 10 percent in rural areas, with statistically significant reductions of 0.4 and 2.8 points, respectively, being observed in comparison to 2017. In 2009-2018, extreme poverty declined by 1.2 points in urban areas and 19.8 points in rural areas.

Graph 27
INCIDENCE OF EXTREME POVERTY BY GEOGRAPHIC AREAS
(%)

Source: INEI. ENAHO.

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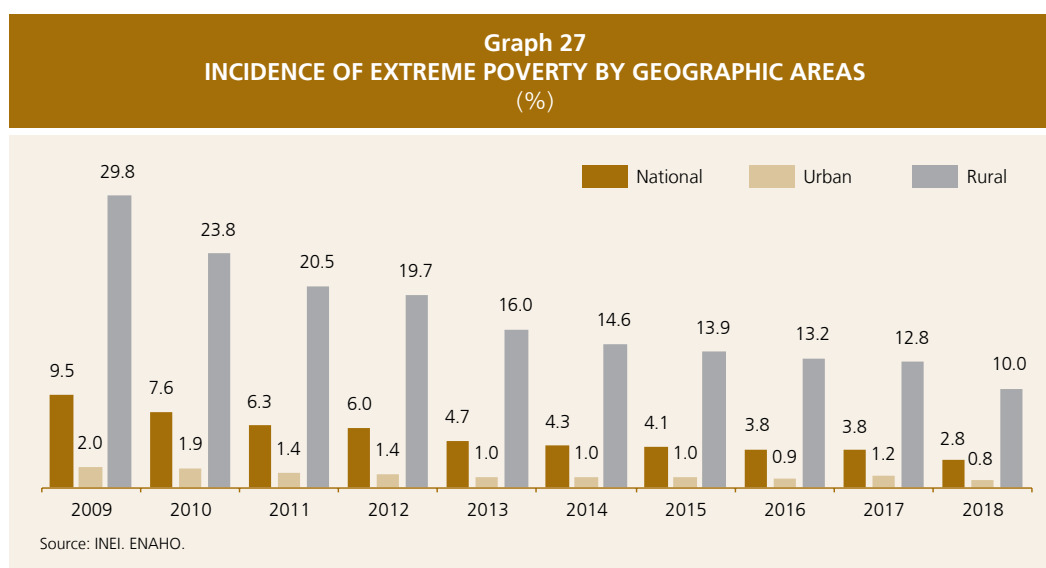
8   The estimated results from the ENAHO survey should be interpreted considering the associated sampling errors, which allow to see the robustness of the estimations.

7.2 Poverty by Regions

Since greater statistical accuracy is required due to the size of the sample and the diverse characteristics of each region, the INEI organizes the data of different departments by ranges of poverty levels. The poorest regions are in Group 1, while the ones with the lower levels of poverty are found in Group 5. In 2018 Group 1 was integrated by Cajamarca, the poorest region of the country (like in 2017), while Ica and Madre de Dios were in Group 5 as the least poor regions (like in the previous year). All the groups have reduced their poverty ranges since 2009: the upper interval of 77.7 percent and the lower interval of 3.5 percent observed in 2009 have decreased to 46.3 and 1.8 percent, respectively, in 2018.

			95 % confidence intervals	
Year	Group	Regions	Lower	Upper
2009	Group 1	Apurímac, Huancavelica	70.0	77.7
	Group 2	Amazonas, Ayacucho, Cajamarca, Huánuco, Loreto, Pasco, Puno, San Martín	53.0	57.4
	Group 3	Cusco, Piura	37.3	45.9
	Group 4	Áncash, Junín, La Libertad, Lambayeque, Ucayali	30.7	36.3
	Group 5	Arequipa, Ica, Lima 1/, Moquegua, Tacna, Tumbes	15.2	18.6
	Group 6	Madre de Dios	3.5	8.8
2017	Group 1	Cajamarca	43.1	52.0
	Group 2	Amazonas, Apurímac, Ayacucho, Huancavelica, Huánuco, Loreto, Pasco, Puno	33.3	36.8
	Group 3	Áncash, Cusco, Junín, La Libertad, Piura, San Martín	23.0	26.2
	Group 4	Arequipa, Lambayeque, Moquegua, Provincia Callao, Provincia Lima, Región Lima, Tacna, Tumbes, Ucayali	12.1	14.6
	Group 5	Ica, Madre de Dios	2.1	4.8
2018	Group 1	Cajamarca	37.4	46.3
	Group 2	Amazonas, Apurímac, Ayacucho, Huancavelica, Huánuco, Loreto, Pasco, Puno	32.9	36.2
	Group 3	Áncash, Cusco, Junín, La Libertad, Piura, San Martín	21.6	24.6
	Group 4	Arequipa, Lambayeque, Moquegua, Provincia Callao, Provincia Lima, Región Lima, Tacna, Tumbes, Ucayali	11.3	13.8
	Group 5	Ica, Madre de Dios	1.8	4.4

**Table 18
PERU: REGIONS WITH POVERTY
STATISTICALLY SIMILAR**

1/ Includes Callao.
Memo: The interval values correspond to the lower and upper limits of each group.
Source: INEI, ENAHO.

The only regions that show a statistically significant decrease in poverty incidence between 2017 and 2018 are La Libertad (-2.7 points), Ucayali (-3.3 points), Apurímac (-4.1 points), Cajamarca (-5.6 points), and Lambayeque (-6.5 points). In contrast, Puno showed an increase in poverty of 4.3 points. This region also registers levels in some living conditions indicators below the country's average: it has the highest incidence in child anemia (67.7 percent) and the lowest proportion of children under 12 months of age in the country that are protected with vaccines against pneumococcus and rotavirus[9] (71.1 and 69.5 percent, respectively).

7.3 Total Poverty Gap and Poverty Severity

The poverty gap is an indicator that helps explain how close or how far away the poor are from reaching the total basket of goods or the food basket. This indicator measures the difference

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9 Bacteria causing diarrhea and pneumonia.

(expressed as a proportion of the poverty line) between the per capita expenditure of the poor and the extreme poverty or total poverty lines.

In 2018, the poverty gap was 4.6 percent, 9.6 points lower than in 2007 and 0.6 points lower than in 2017 (statistically significant). In the urban and rural areas, the reduction –statistically significant– was 0.3 and 1.7 points between 2017 and 2018, respectively.

On the other hand, poverty severity[10] measures the dispersion of spending among the poor according to its distribution, in per capita terms, in relation to the poverty threshold. It is considered a useful indicator to measure inequality among the poor. The higher the severity of poverty, the greater the dispersion in the spending of the poor, which increases the risk of remaining under the poverty line. On the contrary, a lower index indicates a lower intensity of poverty.

Showing a significant decline compared to 2017 (-0.4 points), poverty severity reached 1.5 percent of the population in 2018. The decrease in poverty severity was greater in rural areas (-0.9 points) than in urban areas (-0.1 points).

Between 2009 and 2018, the poverty gap and poverty severity decreased by 5.8 and 3.1 points, respectively.

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Change 1/ 2018-2017	Change 1/ 2018-2009
Table 19 — TOTAL POVERTY GAP AND POVERTY SEVERITY (In %)												
Poverty gap												
National	10.4	9.0	7.8	7.1	6.2	5.8	5.4	5.0	5.2	4.6	-0.6	-5.8
Urban	5.1	4.5	4.0	3.7	3.3	3.3	3.1	2.8	3.1	2.8	-0.3	-2.3
Rural	24.9	21.3	18.7	17.3	14.8	13.7	13.1	12.3	12.5	10.8	-1.7	-14.1
Poverty severity												
National	4.6	3.8	3.2	2.8	2.4	2.2	2.0	1.8	1.9	1.5	-0.4	-3.1
Urban	1.8	1.6	1.4	1.2	1.1	1.1	1.0	0.9	1.0	0.9	-0.1	-0.9
Rural	12.1	9.8	8.4	7.6	6.4	5.7	5.2	4.8	4.9	4.0	-0.9	-8.1

1/ In % points.
Source: INEI. ENAHO.

7.4 Evolution of Real Spending and Real Income

In 2018, the average real per capita monthly expenditure was S/ 758, 1.7 percent higher than in 2017. The real per capita monthly expenditure increased in all of the population strata, the first decile showing the higher increase (6.1 percent), followed by the second decile (with an increase of 2.8 percent).

The average monthly real income per person was S/ 999 in 2018, 2.2 percent higher than in 2017. The real per capita monthly income increased in all of the income deciles (except in decile 10 of the higher income groups, which practically showed no variation), the first and the second decile recording the higher increases (9.8 and 6.5 percent, respectively).

10 Calculated on the basis of the sum of the squares of the poverty gap. The quadratic factor tries to show that inequality among the poorest individuals (those who are far below the poverty line) is not the same as that experienced by those with higher incomes (even though they are still poor).

Table 20
AVERAGE REAL PER CAPITA MONTHLY EXPENDITURE AND INCOME BY DECILES
(Soles base = 2018, at prices in Metropolitan Lima)

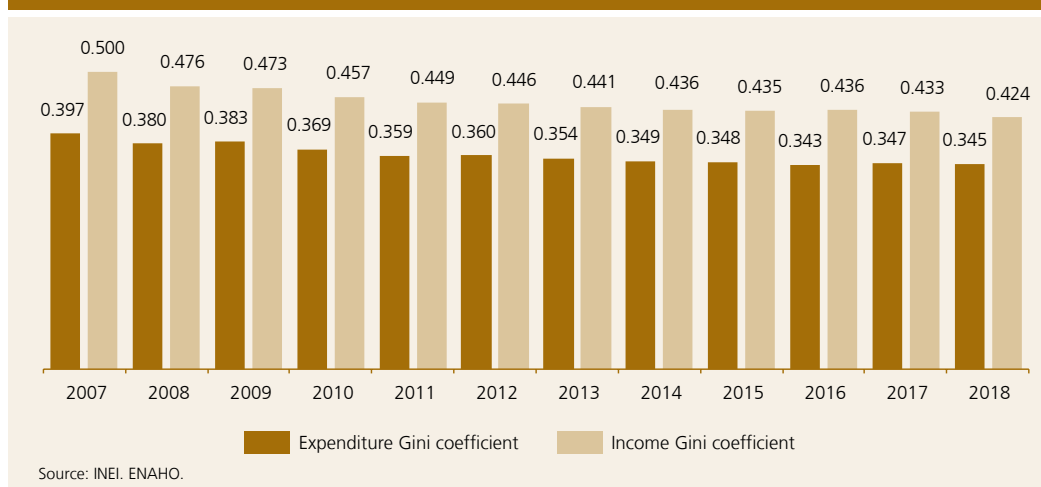|	Expenditure		% change	Income		% change
	2017	**2018**		**2017**	**2018**	
National	**746**	**758**	**1.7**	**978**	**999**	**2.2**
Decile 1	213	226	6.1	174	191	9.8
Decile 2	323	332	2.8	308	328	6.5
Decile 3	405	412	1.7	420	441	5.0
Decile 4	481	490	1.7	529	551	4.2
Decile 5	562	569	1.2	650	666	2.5
Decile 6	652	661	1.3	787	803	2.0
Decile 7	760	770	1.2	957	982	2.6
Decile 8	909	923	1.6	1,189	1,225	3.0
Decile 9	1,144	1,169	2.2	1,580	1,627	3.0
Decile 10	2,008	2,034	1.3	3,182	3,181	0.0
Gini 1/	0.347	0.345		0.433	0.424	

1/ Ratio Gini between 0 and 1. Value 1 means perfect equality and value 0, perfect inequality.
Source: INEI.

7.5 Evolution of Inequality

The favorable evolution of expenditure and income allows us to assess whether monetary inequality decreased in the period of analysis. The following graph shows the evolution of the Gini inequality coefficient[11], both for the level of income and per capita expenditure. The following findings are worth pointing out:

- In 2018, the Gini coefficient of expenditure was 0.345 at the national level, which indicates a slight reduction (to the third decimal place) with respect to 2017. In the case of income, the degree of inequality showed a clearer reduction, as it fell from 0.433 in 2017 to 0.424 in 2018.
- The degree of income inequality is systematically greater than that observed in per capita expenditure.

Graph 28
EVOLUTION OF THE GINI COEFFICIENTS OF INCOME AND EXPENDITURE

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Expenditure Gini coefficient	0.397	0.380	0.383	0.369	0.359	0.360	0.354	0.349	0.348	0.343	0.347	0.345
Income Gini coefficient	0.500	0.476	0.473	0.457	0.449	0.446	0.441	0.436	0.435	0.436	0.433	0.424

Source: INEI. ENAHO.

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11 The Gini coefficient value is between 0 and 1. When it has the value of 1, it means that there is perfect inequality and when it has the value of 0, it means that there is perfect equality.

Pancho Fierro (1809-1879)
La lechera. S. XIX
Watercolor, 0.31 x 0.24 m.