

Huancayo

City profile

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Introduction

After several decades of focusing on the Andean primate cities' urban growth, research on intermediate cities is continuously gaining importance. Due to their rapidly increasing economic and demographic weight, the Peruvian cities of Arequipa, Chiclayo, Huancayo and Trujillo are already called *tigres desbocados*—"tigers out of control"—in Limeño newspapers and magazines (Hidalgo, 2011).

Whereas Arequipa and Trujillo are of great importance since colonial times, the rise of Chiclayo (northern coast) and Huancayo (central highlands) is a relatively young phenomenon (Roberts, 1976) that emerged especially during the last decades of globalization. Further, Huancayo is the only "tiger" situated near the *tierra fría* altitudinal zone's upper limit of approximately 3.500 m above sea level. Unlike the others, it also stands out for its strong indigenous element—the *wanka* identity (Romero, 2004). In contrast to most Peruvian mountain cities, the recent growth of Huancayo cannot be traced back to mining—e.g. Cajamarca (Yanacocha), Huaraz (Antamina)—or tourism (e.g. Cusco), but is

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more related to, frequently community based, manufacturing and commerce of agricultural and animal products such as wheat (*Triticum* spp.) and potatoes (*Solanum tuberosum*), milk, textiles and leather. Hence, to a certain degree, Huancayo's rise is driven by endogenous economic growth.

Against the background of the spatial peculiarities mentioned, the present article aims at offering a problem-oriented idiographic analysis of Huancayo's urban development, giving emphasis to the condominiumization of peri-urban landscapes. After introducing to the city's geographic location and topography, a review on its urban genesis enables the understanding of the agglomeration's current social, economic and environmental conditions. Basing on a synthesis of the regional geographic setting, the final part focuses on a deeper understanding of ongoing fragmented residential developments—represented through signs and symbols—and identifies challenges to planners and policy makers in Huancayo. Thereby, the last urban development plan 2006–2011 (Gerencia de Desarrollo Urbano y Ambiental, 2006) considers the central districts of Huancayo, El Tambo and Chilca to be the planning area. However, it also acknowledges that future urban policy affairs will have to include the peripheral districts of Huancán, Sapallanga, San Agustín de Cajas and Pilcomayo, as they are already part of the continuous settlement area. Hence, the present article adopts this broader definition.

Geographic location and character

Huancayo, the capital of a homonym province (Fig. 1) and the Junín region, is considered central Peru's economic and social center—apart from Lima and Callao—and lies in the inter-Andean Mantaro Valley between the Western and Eastern Cordillera. The city's Plaza Constitución is situated at 12° 4' 5" southern latitude and 75° 12' 36" western longitude, just 200 km east of Lima and approximately 3,260 m above sea level in the *tierra fría* altitudinal zone. Following Pulgar Vidal's (1946) division, the agglomeration belongs to the *quechua* natural region. With respect to temperature, a typical diurnal climate can be attested—with other words, the diurnal temperature variation is higher than the seasonal one. Measurements at the Santa Ana meteorological station in El Tambo (3,302 m above sea level) between January and December 2010 show a daily maximum of 25.2°C (September 28) and a daily minimum of -4.6°C on August 7 (Servicio Nacional de Meteorología y Hidrología, 2011). Hence, the highest variations are registered during the dry season. The multiannual average of annual precipitation around Huancayo reached approximately 750 mm (Instituto

Geofísico del Perú, 2005) during the 1960–2000 period. Albeit, Silva et al. (2008) emphasize the alternating appearance of dry and wet rainy seasons—an important factor concerning the discharge of the Mantaro River.

[Insert Figure 1 around here]

Fig. 1: Map of Huancayo's geographic location based on 2008 Landsat 5 (composite of TM bands 7, 4 and 2) and ASTER GDEM data.

The city center has been built on the alluvial fan of the Shullcas River (from Quechua *sullk'a* for “minor”), a tributary of the Mantaro River. The affluent has its source at the near Cordillera Huaytapallana (from Quechua *huayta* for “flower” and *pallar* “to harvest”), 20 km north east of Huancayo, and represents the main resource of potable water for the entire agglomeration. Against the background of ongoing glacial melting and augmenting population numbers, the latter dependency increases Huancayo's vulnerability to climate change (Martínez et al., 2008).

Influenced by the hydrogeographic setting, the settlement area is mainly built on alluvial, fluvial and glacial Quaternary deposits. However, some peripheral areas are characterized by Triassic and partly metamorphosed Paleozoic sediments (Instituto de Geología y Minería, 1975). With respect to the land-use capability, the agglomeration districts' area has been classified as suitable for the production of annual and biennial crops. However, as mentioned before, the possibilities for urban and peri-urban agriculture are especially limited by local climate conditions (Oficina Nacional de Evaluación de Recursos Naturales, 1981).

In sum, the area's geographic location and character served as a basis for the genesis of prospering city: owing to fertile soils, adequate temperatures and sufficient water resources, a productive agriculture provided food as well as non-food products and thus boosted commerce in Huancayo. Further, the extensive Mantaro Valley offers abundant land for colonization and does not limit the settlement expansion until now. However, against the background of climate change in the Central Andes, the non-availability of water resources could restrict urban growth noticeably in future.

Genesis of the city

Pre-Columbian presence at Huancayo's location is closely connected with the *qhapaq ñan*, the imperial Inca road that linked Quito and Cusco. Thereby, a lodge for Inca officials—the so

called tambo—was situated beside the route. Moreover, the agglomeration's Quechua name *wankayuy* (“site with the stone”) indicates the existence of a place sacred to the ancient indigenous *wanka* culture. However, a village or town did not exist before the Spaniards' conquest of the region (Arguedas 1984).

Huancayo's genesis began during Viceroy Francisco de Toledo's era, when a catholic missionary settlement for indigenous people (*reducción indígena*)—consisting of several communities (*ayllu*)—was founded in 1570 (Varallanos, 1944). With the exception of clerics, almost no Spaniards inhabited those villages. Hence, it can be attested that Huancayo's early genesis did not follow the Spanish-American cities' scheme of a Hippodamic grid, but was greatly influenced by the Imperial road's linear structure. Till nowadays, no single central plaza is the location of both, political administrative and clerical institutions: two distant places along the ancient route—the actual plazas Constitución and Huamánmarca—separately host the cathedral and governmental buildings.

During the colonial and early republican era Huancayo was not of special importance: at a larger scale, the Spanish-founded Jauja functioned as the Mantaro Valley's center; at a smaller supraregional scale, Huancayo belonged to the Intendancy of Tarma as well as to the subsequent Department of Junín and its capital Cerro de Pasco. At the end of the 19th century, Nemesio A. Ráez mentioned Huancayo as a town of approximately 6,000 inhabitants (reprinted in Ráez, 1978).

The city's rise began in the early 20th century, mainly driven by the construction of the central railway Callao–La Oroya and its extension to Huancayo in 1908. Further, the central highway from Lima to Huancayo was completed in the early 1930s. The latter events boosted the movement of goods and people (Whyte and Whyte, 1984) and a little urban elite associated with commerce came up (Pinilla, 2004). As a result, the growing city was declared the capital of Junín in 1931. A comparison between two photographs of the Plaza Constitución illustrates the changes between the 1950s and 2011 (Fig. 2 and 3). In the middle of the 20th century, the dominating linear settlement structure is still clearly visible. Neoclassical style, mainly tin-roofed buildings with no more than two stories border the main street as well as the queñual-planted plaza (*Polylepis* spp.). In the background, extensive copses (*Eucalyptus* spp.) indicate the proximity of agricultural land as well as the limited size of Huancayo's settlement area. The actual photo taken in 2011, however, already demonstrates the Andean city's vertical and horizontal expansion. The newer, often flat-roofed constructions with three or more stories have substituted the neoclassical houses; instead of Eucalyptus trees, antennas rise up to the sky.

[Insert Figure 2 around here]

[Insert Figure 3 around here]

Fig. 2: The Plaza Constitución approximately 1950 (Source: Biblioteca Municipal de Huancayo).

Fig. 3: View on the Plaza Constitución in 2011.

Summarized, Huancayo's genesis has been characterized by limited growth and a low surplus of importance during colonial and early republic times—owing to its indigenous, non-Spanish roots. However, due to its geographic location, it has been connected to important transport infrastructure that subsequently boosted the city's economic and population growth. The today's city's face—apart from its linear structure—has predominantly been shaped during the last 60 years, especially since the 1980s as the following remarks show.

Socio-economic and environmental conditions

Population growth and structure

The calculation of Huancayo's population bases on national censuses' data (Instituto Nacional de Estadística e Informática, 1981, 1993 and 2007) from the agglomeration's municipalities. A more detailed differentiation between the districts' rural and urban population would be unrewarding, as the rural part is very low. Moreover, planners and policy makers always refer to the entire administrative unit.

While the core district of Huancayo shows low annual growth rates of about 1 percent, most neighboring municipalities have grown 5 to 7 percent per year during the 1981–1993 period and 2 to 4 percent between 1993 and 2007. In sum, the agglomerations population number reached 387,966 inhabitants according to the 2007 census. If the average annual population growth rate for 1993–2007 is presumed for 2007–2012, an actual population of approximately 424,000 can be projected (Table 1) using the equation $P_{t+n} = P_t \cdot (1+r)^n$. The variable P_t stands for the population number at a definite time, n refers to an additional period of time, and r denominates the annual growth rate.

The agglomeration's population composition by district (Fig. 4) show clearly that its increase is mainly driven by the growth of El Tambo and—to a lesser extent—Chilca, two suburban districts along the arterial highways. However, in relative terms the highest

augmentation rates can lately (1993–2007) be found in smaller peripheral municipalities such as Huancán and Pilcomayo. Data of another peri-urban part of the city are not compiled separately: San Carlos—situated at the lower Shullcas River drainage—represents the favored settlement area of an emerging middle class searching for clean environment and security. A sign of the local Lions Club at the San Carlos and Huancas streets crossroad—*Bienvenidos a San Carlos*—conveys the unofficial beginning of an area inhabited by wealthy and charitable people. However, it is part of the Huancayo district and hence no demographic information on the latter area is available.

The city’s population pyramid (Fig. 5) based on 2007 census data, already shows the shape of a Christmas tree. It indicates a notable decrease in younger population (0–15 years)—probably a consequence of ex-president Alberto Fujimori’s sterilization campaign during the second half of the 1990s (Murthy, 2010). Hence, population growth during the mentioned period has clearly been driven by in-migration. Further, a study carried out by De la Cadena (1988) indicates that rural-urban migration has not been the result of urban labor requirements, but driven by the migrants’ intention to create one’s own job.

Concluding, the demographic dynamics have to be considered the main driver of urban growth in Huancayo. As mentioned before, a broadly favoring geographic setting—including accessibility through railway and highway connections—enabled the development of a relatively prospering economy. The latter still functions as pull factor for migrants from Junín and neighboring regions. Hence, there is one more issue to be resolved: how is Huancayo’s economy structured and distributed over the agglomeration?

Table 1: The districts’ population growth rates after census data 1981, 1993, 2007 and own projections 2012.

	Census 1981 [persons]	Ø annual growth 1981–1993 [%]	Census 1993 [persons]	Ø annual growth 1993–2007 [%]	Census 2007 [persons]	Projection 2012 [persons]
Huancayo	88,634	1.08	100,116	0.85	112,054	116,908
El Tambo	59,533	7.38	112,284	2.20	146,847	163,716
Chilca	36,918	5.32	60,466	2.00	77,392	85,445
Huancán	4,554	5.71	7,677	6.84	15,024	20,911
San Agustín	4,884	4.82	7,709	2.37	10,267	11,543
Sapallanga	12,642	0.17	12,907	0.10	13,087	13,152
Pilcomayo	5,335	4.87	8,455	4.09	13,295	16,245
Total	212,500	3.81	309,614	1.81	387,966	424,321

[Insert Figure 4 around here]

[Insert Figure 5 around here]

Fig. 4: The districts’ contribution to the total agglomeration’s population after census data 1981, 1993, 2007 and

own projections 2012.

Fig. 5: Population pyramid for the total agglomeration after census data 2007.

Economy and education

Data from the National Economic Census 2008 (Instituto Nacional de Estadística e Informática, 2008) allows answering the latter question. It is clearly shown that across districts most companies belong to the wholesale and retail sector, mainly followed by lodging and food services and information-related establishments. Nevertheless, the city counts about 1,700 manufacturing companies (Table 2). Further, it is interesting to observe the growing importance of private education firms (especially secondary and tertiary level) which are preferably located off the congested highway, mainly near new residential areas such as Pilcomayo as well as the San Carlos area of Huancayo.

In order to put this numbers into a national context, the comparison of establishment densities between Lima—including the homonym province and Callao—and the described agglomeration of Huancayo is worthwhile. Thereby, the equation is $d = E/P \cdot 1000$. The variable d stands for the establishment density per 1,000 inhabitants, E refers to the number of establishments, and P denominates the population number. On the basis of 2007 and 2008 census data mentioned before, the following results can be given: the provinces of Lima (7,605,742 inhabitants) and Callao (876,877 inhabitants) together count 368,333 establishments. Hence, the density value reaches 43.4, whereas the agglomeration of Huancayo shows 58.6. At a local level, the southern Chilca has the lowest density (38.9) of Huancayo's three central districts. In any case, this reflects the relatively high entrepreneurial spirit of its inhabitants. However, conclusions about the establishments' provision of jobs cannot be drawn—probably the mentioned spirit is driven by a general lack of job alternatives.

Table 2: The districts' number of establishments per economic sector after census data 2008.

	Manufacturing industries [establishments]	Wholesale and retail [establishments]	Lodging and food service [establishments]	Information and communication [establishments]	Others [establishments]	Total [establishments]
Huancayo	886	5,701	1,091	645	2,176	10,499
El Tambo	499	3,839	860	658	1,777	7,633
Chilca	252	1,748	319	237	457	3,013
Huancán	25	287	28	28	29	397
San Agustín	12	222	30	31	36	331
Sapallanga	23	229	25	12	40	329
Pilcomayo	31	345	58	41	64	539
Total	1,728	12,371	2,411	1,652	4,579	22,741

With respect to education, the urban literacy rate offers insights on social realities. Whereas the latter rate among native Spanish speakers—about 89 percent of the city’s population—is about 92 percent, the native Quechua speakers’ group reaches 78 percent. Further, the differentiation between central (Huancayo, El Tambo Chilca) and peripheral districts show an interesting result: while peri-urban municipalities along the arterial highway (e.g. Sapallanga) have a lower literacy rate among Quechua speakers (64–68 percent), peripheral municipalities beside the main road do not differ appreciably from the center. Regarding native Spanish speakers, there is no noticeable divide within the agglomeration (Instituto Nacional de Estadística e Informática, 2007).

Apart from the general lack of attention to native Quechua speakers in past: the higher percentage of illiteracy in the southern Sapallanga district—the one with the highest rate of native Quechua speakers (18 percent)—together with the lowest, almost inexistent population growth shown in Table 1, indicates a closed, static community on the urban outskirts. If Chilca’s lower establishment density is also taken into account, the city’s more stagnant southern part can be distinguished from a highly dynamic north, which clearly benefits from its location along sound transport routes to Lima and other prospering regions. On the other hand, the southern urban area is situated along a deficient road leading to Huancavelica and Ayacucho—Peru’s poorer departments.

Environment and infrastructure

Water is—without doubt—the most limiting environmental factor to the sustainable urban development of Huancayo. Scarcity primarily causes problems regarding the supply of potable water and the generation of hydroelectric power (Lagos, 2007). Further, it threatens the city’s economy (e.g. agricultural irrigation during the dry season, water usage in the textile industry), as reported by local media in 2010 (Cóndor, 2010). On the other hand, intense rain and floods often damage peri-urban agricultural land as well as the built environment during the rainy season.

According to own calculations based on the 2007 census (Instituto Nacional de Estadística e Informática, 2007), the percentage of households without access to piped water supply through house connections reaches 19, 17 and 27 percent in Huancayo, El Tambo and Chilca, respectively. Pilcomayo—as a preferred location of planned residential projects—and the stagnating Sappallanga, due to absent urban growth, present a rate of 20

percent. In San Agustín and Huancán, by contrast, 50 percent of households are not directly connected to piped water supply.

A main challenge to urban planners and policymakers will be the provision of related hard infrastructure such as intact water connections and—against the background of environmental contamination through domestic and industrial waste—treatment plants for the supply of clean water to the population. Thereby, the potential conflicts between stakeholders have to be taken into account: Huancayo's government authorities even put pressure on neighboring provinces and rural communities in order to get access to water sources located in the latter's territories (Guevara Gil, 2010) and caused civil commotions. Results of an analysis carried out by Martínez (2007) indicate that the city's urban development plan 2006–2011 (Gerencia de Desarrollo Urbano y Ambiental, 2006) focused mainly on the development of water-related hard infrastructure—without pushing a more sustainable usage of the scarce resources. Further, the plan does not count with an integral management framework for hydrological risks—a tool decisive to the adaptation to climate change. In view of the environmental and planning challenges mentioned, the development of an emerging middle class' residential area along the peri-urban Shullcas drainage (San Carlos) can also be seen as the economically more potential groups' adaptation strategy to water scarcity, as San Carlos is the area closest to the agglomeration's main water source, the Cordillera Huaytapallana—a locational advantage?

Urban structures and processes