

Original Town Site

Lima was founded by Spanish conquistadors as the City of Kings (*Ciudad de Reyes*) in January of 1535. As evidenced by the name, the city was created as a government center and was the capital of Spain's South American colonies, known as the Viceroyalty of Peru. As such, it gained significant wealth and power and was one of the continent's leading cities. After Peruvian independence from Spain in 1821, Lima became the new nation's capital. Peru is a very centralized country in nature so wealth and power are concentrated in Lima, which grants the city disproportionate size and influence. It dominates the country politically, economically, socially, and in nearly every other area.

The city was contained within defensive walls for much of its early history, but went through a modernization initiative in the early 20th century that pushed its boundaries outwards into what are now some of the core areas of the modern city. These developments were carried out according to what were at the time the latest ideas in urbanism, including wide boulevards, modern housing and public transit in a manner inspired by Los Angeles.

Starting in the 1950s and 1960s, economic decline and unrest in the country's outlying provinces triggered a massive wave of migration into the city of Lima which continues to this day, though somewhat diminished. Before this time, Lima was a relatively small but well-planned and prosperous city. This reality was drastically changed in the coming decades. A large influx of people and poor planning led to the creation of vast "informal settlements" outside the city center that grew with little oversight, infrastructure or resources. As a result, the city is now surrounded by marginal neighborhoods (though these have improved over time as the population has become more prosperous) which have fostered a sense of chaos when it comes to infrastructure, transportation and urbanism.

Transportation, Shopping, Community Image

Transportation in Lima is very disorganized due to a lack of planning and infrastructure investment over several decades, combined with rapid population growth. It mostly consists of private automobile use and informal public transit in the form of vans and small buses which operate in a largely unregulated fashion and are inexpensive but rather unsafe - to riders and pedestrians alike. Gridlock is extreme, considerably worse than Los Angeles. In addition to issues with infrastructure, a major contributor to gridlock is the generally lawless attitude many drivers take while on the road.

More recently, the city and national governments have begun to address Lima's transportation woes through heavy infrastructure investment. A major bus-rapid-transit (BRT) line was completed along one of the city's main arteries. An elevated rail line was built as the first part of a wider mass-transit system that will contain up to 7 subway lines and will require investment in the dozens of billions of dollars. Additionally, several new freeway projects and expansions have been completed, with a few major ones on the drawing board including a full beltway around the city. Commuter train lines, a major reorganization of the bus system (to an organized city-run system and away from the unregulated private system currently in place) and

other transformative projects are currently underway. Finally, the nearby port of Callao has seen significant investment and expansion in recent years, and Lima's Jorge Chavez International Airport is in the midst of a multi-billion dollar overhaul which will include a new ground-up state-of-the-art terminal with double the capacity of the current facility, plus a new second runway. There are also countless smaller initiatives which won't be covered here.

Shopping in Lima, like much of the broader economy, has a significant informal or black market commerce component, especially among lower income levels. It consists of abundant street vendors, informal stalls and other structures selling a broad range of goods. Also numerous are traditional neighborhood corner stores and food establishments. This is beginning to change, however, with a rapidly developing corporate retail scene. Dozens of large shopping malls have been built in the last decade, and several are under construction as we speak. This has caused the retail scene to formalize to an extent, and is bringing a more modern experience to the masses. Additionally, large convenience store and restaurant chains have grown exponentially which compete directly with informal commerce.

Shopping choice is good in Lima. It is easy to find most items that one would find in a typical first world city, albeit often at higher prices. From supermarkets to department stores, there is no shortage of luxury imported goods and high quality local products due to increased access to global markets.

People don't have a very positive image of their city. They cite transportation, crime, pollution as major issues. Citizens recognize and bemoan its generally chaotic nature. Also, the city is located in a desert so vegetation is scarce in most parts, and the lack of rain makes it appear dirty and grimy. Despite its location in the tropics, Lima's weather is far from tropical. Summers are hot but cool relative to the latitude, and winters are cold, overcast and foggy, which can be quite depressing for most people. There is nothing to be done about the weather, but better infrastructure and education can go a long way to alleviate most other issues.

Employment

I was unable to find employment information for specific firms. As mentioned above a large portion of the city's population is employed by informal or black market means (55.8% nationwide). Public information is available by industry and by company size, however. The service industry dominates with relatively little knowledge-economy employment available. Unemployment is relatively low but underemployment is common. Most recent unemployment figures indicate a rate of 8.2% of 'economically active people', the highest since 2012. Additionally, underemployment based on hours worked stood at 626,800, while underemployment based on income was higher at around 1.1 million people.

Employment in the Lima metropolitan area, by industry, is as follows:

Manufacturing	676,500
Construction	346,300
Commerce	1,007,600
Services	2,768,300
Other	47,300

Employment by company size is as follows:

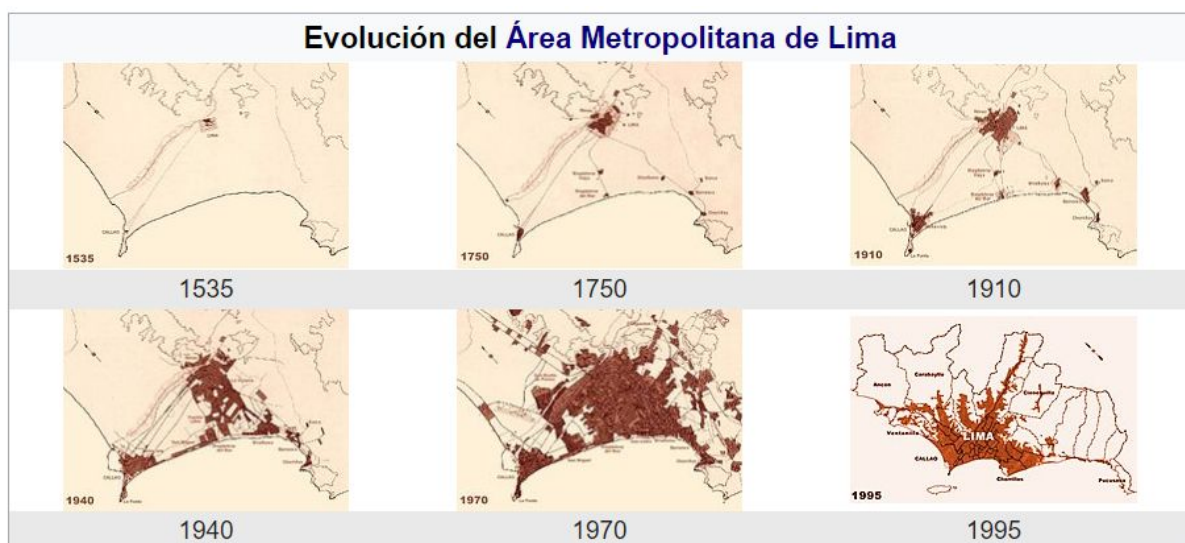
1-10 employees	2,925,400
11-50 employees	480,700
51+ employees	1,439,900

Demographics

Lima has a very diverse population in terms of ethnicity, culture and socioeconomic status. In addition to native Peruvians which account for a majority of the population, there exist significant European, African, Chinese and Japanese communities, with smaller concentrations from a wide range of other regions. 19.9% of the city's population is between 14 and 24 years old 54.0% is between the ages of 25 and 44, and 26.5% is over 45. 47% of the population has a secondary education, while 53.1% have access to the internet at home, and 94.1% have mobile phones.

Historically, Lima's population grew relatively slowly until major migrations waves from rural parts of the country starting in the mid-20th century. This rapid growth is made evident by looking at census data starting in 1940, before major migration patterns took hold.

1940	533,086
1961	1,578,729
1972	2,941,473
1981	4,132,781
1993	5,681,941
2007	7,595,925
2017	8,567,786



Natural Resources Past and Present

The economy of Lima is not centered around natural resource extraction or processing. However, the port of Callao, located adjacent to Lima, is a major export center for Peru's significant mineral resources. Also, due to its status as the predominant city in the country, Lima serves as the headquarters for most companies in the extractive industries. For this reason, natural resources will be discussed here for the country as a whole. The bulk of the country's resources and exports are in the form of minerals, especially metals such as gold, copper and zinc. These commodities have a major influence on the broader Peruvian and Lima economy, which are highly correlated with commodity prices, though still diversified and well-managed enough to withstand extended periods of depressed mineral prices. The most important current resources are the following: gold, copper, zinc, agriculture (avocados, asparagus, grapes, potatoes), natural gas, and petroleum. Formerly – between the mid-19th and early-20th centuries – Peru (and Lima by extension) experienced an economic boom due to the discovery of *guano*, which essentially comes from the excrement of a certain kind of bird off the coast of Lima. *Guano* was the most effective fertilizer known at the time, and so it was tremendously valuable. The country experienced a similar period of prosperity when natural rubber was harvested in the jungle region until synthetic versions were discovered in the mid-20th century. Gold has always been Peru's most significant resource, and its notorious abundance is what caused the Spanish to venture south in search of the mythical gold of Peru (the Inca Empire at the time).

Products And Services Imported And Exported

As mentioned above, Peru's main exports consist mostly of minerals. In addition to that, the country is a strong exporter of agricultural goods and even clothing. The country's biggest exports by dollar value are as follows: copper (\$12b), gold (\$7.1b), refined petroleum (\$2.5b), zinc (\$2.1b), fish meal (\$1.5b) and tropical fruit (\$900m).

As a developing nation of under 35 million inhabitants, Peru is not large enough to command its own domestic supply of many manufactured goods. This includes most machinery, automobiles and technological equipment. Also, resources that are not produced locally must be imported. As such, Peru's main imports are as follows: refined petroleum (\$2.82b), automobiles (\$1.7b), network equipment (\$1.4b), trucks (\$792m), corn (\$597m) and computers (\$586m).

Pollution

Lima suffers from significant air pollution. It has a similar topography to the Los Angeles region, with the Pacific Ocean on one side and mountain ranges on the other. This causes air pollution to be trapped in, with inland regions suffering the most. Lima is in fact the city with the second worst air quality in Latin America. This is caused by the significant industrial activity in the city as well as loose emissions standards for automobiles.

Per Capita Income and Cost Of Living Index, Taxes

Lima has a middle-income per capita GDP of \$19,492 as of 2014, in Purchasing Power Parity (PPP) terms. It has a moderate cost of living, especially compared to major cities in the

developed world, but housing costs are quite high for its income level. Below is a summary of key cost of living and property value information.

Cost of living summary

- a. Four-person family monthly costs: \$1,819.06 without rent
- b. A single person monthly costs: \$509.74 without rent
- c. Cost of living rank 244th out of 375 cities in the world
- d. Lima has a cost of living index of 41.15

Property price index summary

- e. Price to income ratio: 15.83
- f. Average monthly net salary (after tax): \$465.19
- g. Mortgage as percentage of income: 181.04%
- h. Loan affordability index: 0.55
- i. Price to rent ratio: 17.80
- j. Gross rental yield: 5.62%
- k. 1 bedroom apartment rent: \$470.15
- l. 3 bedroom apartment rent: \$810.54
- m. Purchase price per sqft for apartment: \$166.42
- n. Mortgage rate for 20-yr fixed-rate: 9.82%

Peru uses progressive taxation on personal income. There are currently two tax brackets, 15% for an annual income of up to S/. 50,000 and 30% for an income over S/. 50,000 (exchange rates typically range between S/. 3 - 3.5 for \$1). Peruvian income tax is collected by the SUNAT. If you buy real estate property you must pay a special transfer tax called an *alcabala*. This tax amounts to 3% of the value of the real estate. Property taxes, known as *impuestos prediales* are paid to the district municipality in which a property is located, they are progressive ad valorem taxes based on specific units of account used by the government. They range between 0.2% and 1% of total assessed real estate value. Additional excise taxes are collected to pay for city services such as public safety, trash pickup, parks, etc.

Real Estate Supply Demand Factors, Construction Activity

Demand for housing is very strong in Lima, as people continue to migrate from other regions, and more recently, from Venezuela due to the unprecedented migrant crisis (over 700,000 Venezuelans have arrived in the last 2 years). Additionally, housing demand is driven by the rise of growing shares of the population into the middle class, with access to credit a key factor.

Current demand for apartments stands at 58,000 units as of April 2019, with a current supply of just 27,000. Demand is oriented towards smaller units, with more amenities in attractive locations near jobs, commerce and education. There were 15,238 property sales in 2018 in the city of Lima, a 13% increase over the prior year. ASEI, an association of real estate developers, projects a 10% increase in housing supply for 2019, driven by a growing economy and historically low interest rates. They also estimate 1.2m housing unit deficit in the city with an effective demand of 600,000, which widens every year due to the low number of supply and transactions.

Despite a visible construction boom, supply is not sufficient for various reasons (discussed below) to keep up with demand, and a shortage of adequate housing has developed. It should be noted that this discussion refers to for-sale apartments, as rental apartment developments are exceedingly rare in Lima.

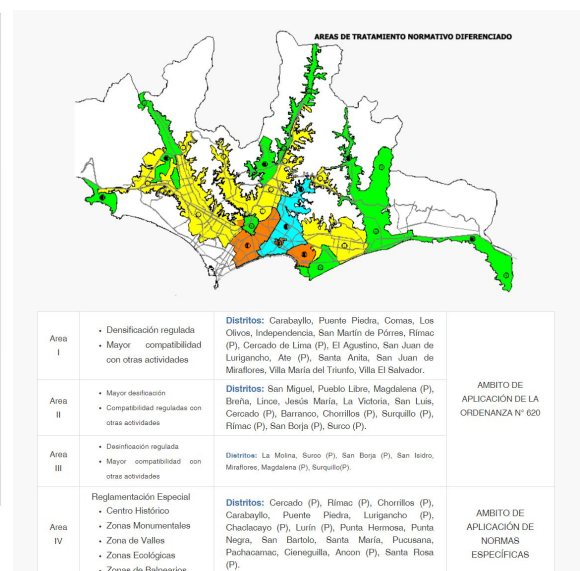
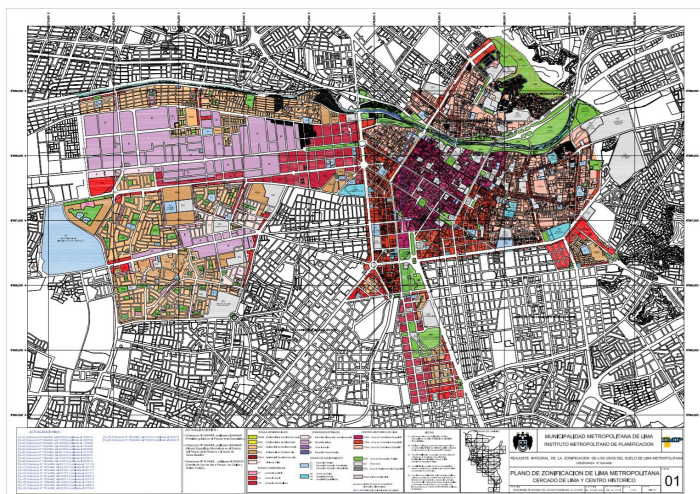
Social, Political, Economic and Physical Influences

Supply is constrained by difficulties in obtaining building permits, a dearth of developable land, a lack of access to basic utilities (in some areas), and the lack of a master urban development plan from the city. Lima's topography makes urban development difficult. It is located in a bone dry, sandy desert on the Peruvian coast (2nd largest city in a desert after Cairo), and is surrounded by the Pacific Ocean on the west and the foothills of the Andes on the east which makes easily developable land scarce. Another challenge that makes construction and homeownership more difficult is the common lack of reliable public records due in part to the illegal black market in land, which makes determinations of title a challenge and prevents millions who lack marketable title from entering the financial system and using their home as an asset or collateral. This particular issue is especially common in the recently populated areas of the periphery, discussed previously.

Land Use (Zoning Maps, General Plan Land Use Map)

Lima's land use and zoning is largely determined by the individual, semi-autonomous districts (43 in total) that make up the city, and as such varies widely for each region. Most of the city consists of single family, attached housing (there are almost no detached properties anywhere in the city), with a high population density. Multifamily is also extremely common, with many parts of the city being dominated by small, medium and large multifamily properties, with dozens more coming online every month. Most commercial properties are located along major corridors or business districts, with industrial properties being located mostly on the periphery.

Below on the left is a zoning map for the Lima District, the historic city center. On the right is a high level land use map for the Lima Metropolitan Region. Green denotes special regulation zones including historic center, ecological preserves and beaches. Yellow and orange denote regulated density limits. Cyan signifies the highest density clusters in the region.



Conclusions: What Are The Pros and Cons, and Development Recommendations

Reasons to develop include the city's rapid population and economic growth, which have created an enormous demand for housing, and by extension for offices and industrial spaces to support the jobs needed. The macroeconomic picture in Peru and Lima is quite positive, with strong GDP growth for the past 15 years, stable inflation, relatively low unemployment, and a strong commitment to free-market economics. Additionally, returns for development activity in Lima are quite high, often in the 20-30%+ IRR range. The revitalization of depressed areas such as the historic center of Lima present another great development opportunity.

Naturally, the city faces numerous challenges, both natural and man-made. These include very difficult topography, significant political and cultural roadblocks, and bureaucratic intransigence, like most cities around the world.

Despite these, the government has committed significant amounts of capital to begin alleviating the various issues that plague the city. This will cause a rise in value and an unlocking in development potential. I think Lima is a good place to develop real estate, and I plan to do so personally in the future.

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