



## Chapter 3

# Costly for households, costly for firms

African households face higher costs relative to their per capita GDP than households in other regions. According to a new study of price level indices at the urban level, based on data collected by the International Comparison Program, urban households in 39 Sub-Saharan African countries pay 20–31 percent more overall than urban households in other countries at similar income levels (Nakamura and others 2016). A similar comparison of urban prices — based on data from 125 cities, including nine in Sub-Saharan Africa (the Economist Intelligence Unit’s Worldwide Cost of Living Survey) — finds African cities to be about 31 percent more costly for households than cities in low- and middle-income countries elsewhere (Nakamura and others 2016).



Housing and transport are especially costly in urban Africa. Relative to their income levels, urban residents pay 55 percent more for housing in Africa than they do in other regions.

Urban transport, which includes prices of vehicles and transport services, is about 42 percent more expensive in African cities than in cities elsewhere. Urban workers in Sub-Saharan Africa incur high commuting costs — or they simply cannot afford to commute by vehicle, leaving them no option but to walk (or possibly bike). The informal, often colorful minibuses that dominate collective motorized transport in most African cities are far from cost-efficient: the buses' small size and low load factors (passenger capacity) prevent them from realizing scale economies. For the poorest urban residents especially, the cost of vehicle transport in some cities is prohibitive. The need to walk to work limits these residents' access to jobs. The price premium for food is also large (about 35 percent).

In deciding where to live, households choose the best home they can afford, with the amenities they value most, and make tradeoffs in allocating their budgets over time. Some choose to live in the center of a city, where rents are higher, sacrificing size for access to amenities. When public amenities are limited, basic services lacking, and connective infrastructure deficient, households may underconsume housing and make suboptimal decisions on housing quality in order to access these services. For example, when transport systems are unavailable, households may choose to live in close-in slums so that they can access jobs, schools, or health care. Recent work suggests that low investments in formal housing may be pushing households into searching for informal solutions.

The high costs and lack of amenities faced by households also matter for firms. Workers need to be compensated for the high costs of living that they face, which translates into higher wage costs for firms. Wages are generally at least 15 percent higher than wages in comparable countries.

## High prices, low incomes

Price levels are generally higher in high-income countries, and they are higher in urban areas than rural ones (Nakamura and others 2016). Goods and services in lower-income African countries are generally less expensive than in higher-income countries. For example, the price level of food and nonalcoholic beverages in Ethiopia is almost half that in the United States. Within countries, urban areas generally have higher prices than rural, partly because the costs of commuting, land, rent, and some goods are also high.

These relationships hold quite widely, but the data reveal that African cities have particularly high prices relative to their level of development. Figure 3.1 plots a measure of the cost of living in cities in various countries relative to their GDP per capita (adjusted for purchasing power parity). It confirms that richer countries generally have higher price levels, but it also shows that African countries face price levels that are higher than expected given their low income levels (Nakamura and others 2016).

The figure is based on data from the 2011 round of the International Comparison Program. It covers 62 countries (including 39 in Sub-Saharan Africa), with price level index data collected mainly in urban areas. Where the price information is not entirely urban based, adjustment was made using within-country data for urban-rural differentials.<sup>20</sup> Price level indices are calculated by dividing the purchasing power parities by the nominal exchange rate for each country.

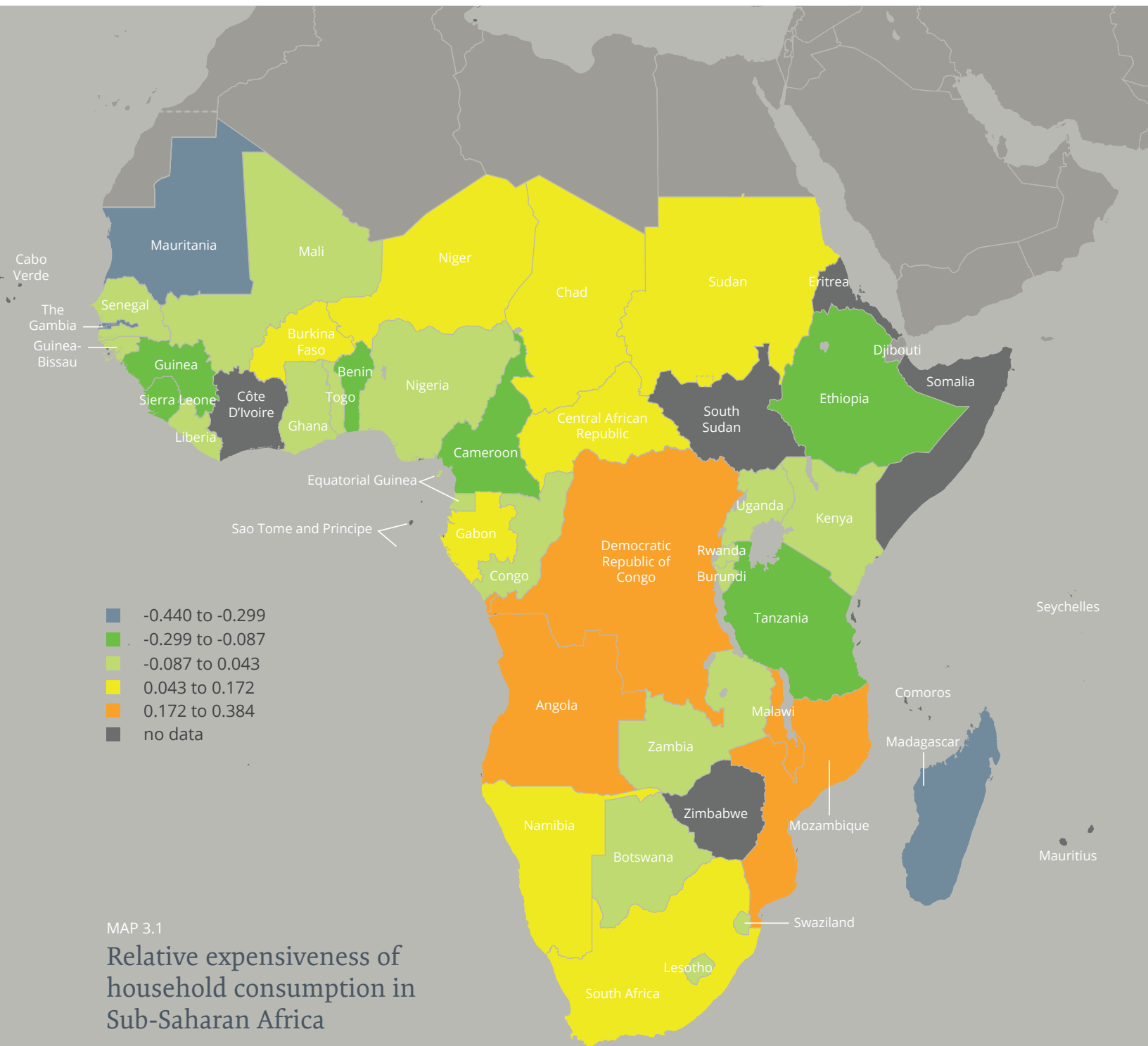
Econometric analysis of these data show that, controlling for income levels, price levels for household expenditures (excluding housing rent) are on average 31 percent higher in Sub-Saharan African countries than in other countries. A group of relatively expensive countries includes Angola, Mozambique, Malawi, Niger, Chad, and the Central African Republic. By contrast, The Gambia, Mauritania, Madagascar, and Tanzania have relatively low price levels. Map 3.1 (overleaf) illustrates the spatial pattern in Sub-Saharan Africa by showing the residuals from the regression.



FIGURE 3.1  
 African cities face high prices for their income levels



Source: Nakamura and others (2016), based on 2011 International Comparison Program data.



Source: Nakamura and others 2016.

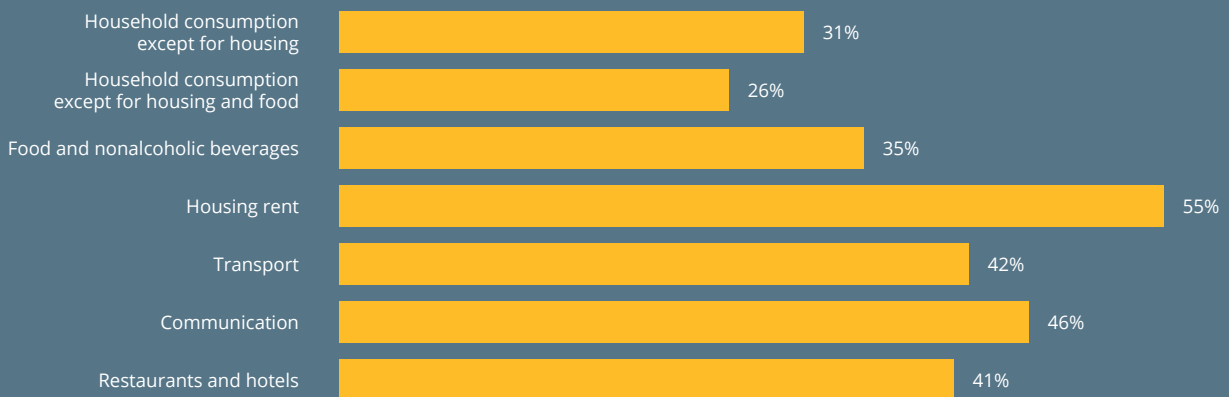


Similar findings are obtained using data collected by the Economist Intelligence Unit. These data are compiled for quite different purposes — the cost of living of expatriates traveling from developed countries for business. Its price survey therefore collects data on items typically consumed by expatriates. Using these data, Nakamura and others (2016) find a highly significant positive Africa effect, indicating that (controlling for income levels), African cities are about 30 percent more expensive than comparable cities elsewhere.

What goods and services are most important in driving this price premium? The Africa price premium varies depending on the groups of goods and services. It is particularly large on essentially urban commodities, such as housing (55 percent), followed by communication (46 percent), and urban transport (42 percent). But food and nonalcoholic beverages are also relatively expensive in African cities (35 percent premium); particularly expensive among food items are fresh or chilled vegetables, eggs and egg-based products, and fresh milk (figure 3.2).

FIGURE 3.2

### Consumers in Africa face high price premiums



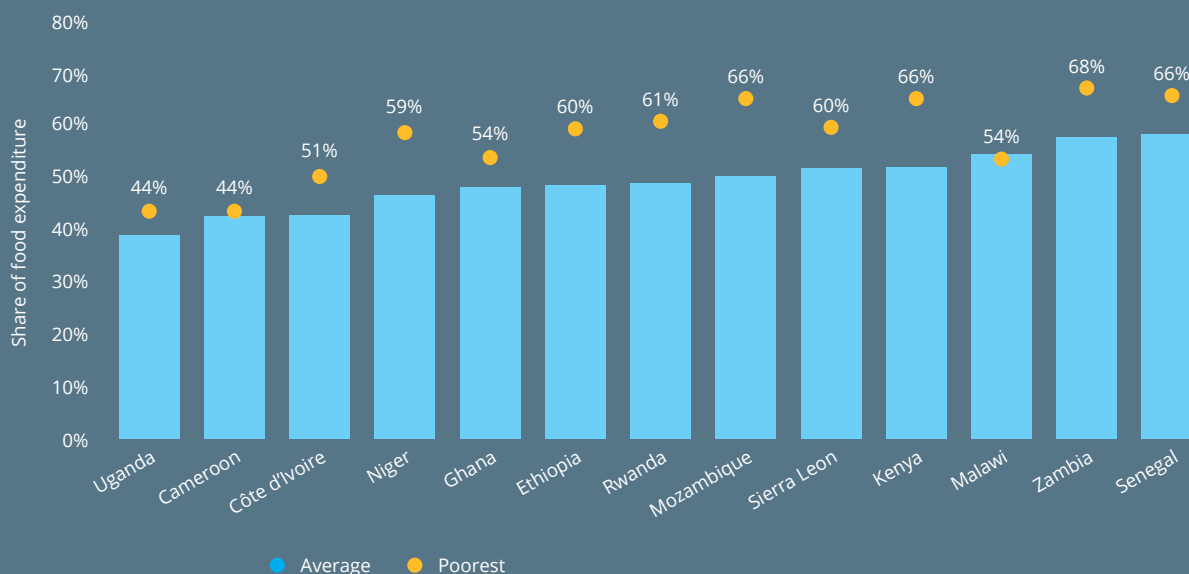
Source: Nakamura and others 2016.

Given the expenditure patterns of urban households in Africa, higher prices of food deepen livability challenges for households and impose a severe constraint on the choices they have on where to live or work. The budgets of the poor are spent mainly on food, reducing their opportunities to spend on health, education, and housing. According to household surveys collected in several African countries between

2003 and 2010, spending on food accounts for 39–59 percent of monthly expenditures by urban households (figure 3.3). The poorest households (households in the bottom expenditure quintile) spend an even larger share on food, ranging from 44 percent in Uganda to 68 percent in Zambia. Rising incomes allow for consumption of nonfood items, such as housing, recreation, and so forth (Dasgupta and others 2014).



FIGURE 3.3  
Households in African cities grapple with subsistence



Source: Data from the Survey-based Harmonized Indicator Program (SHIP) of the World Bank's Poverty Reduction and Economic Management Statistics Practice Group, Africa Region.

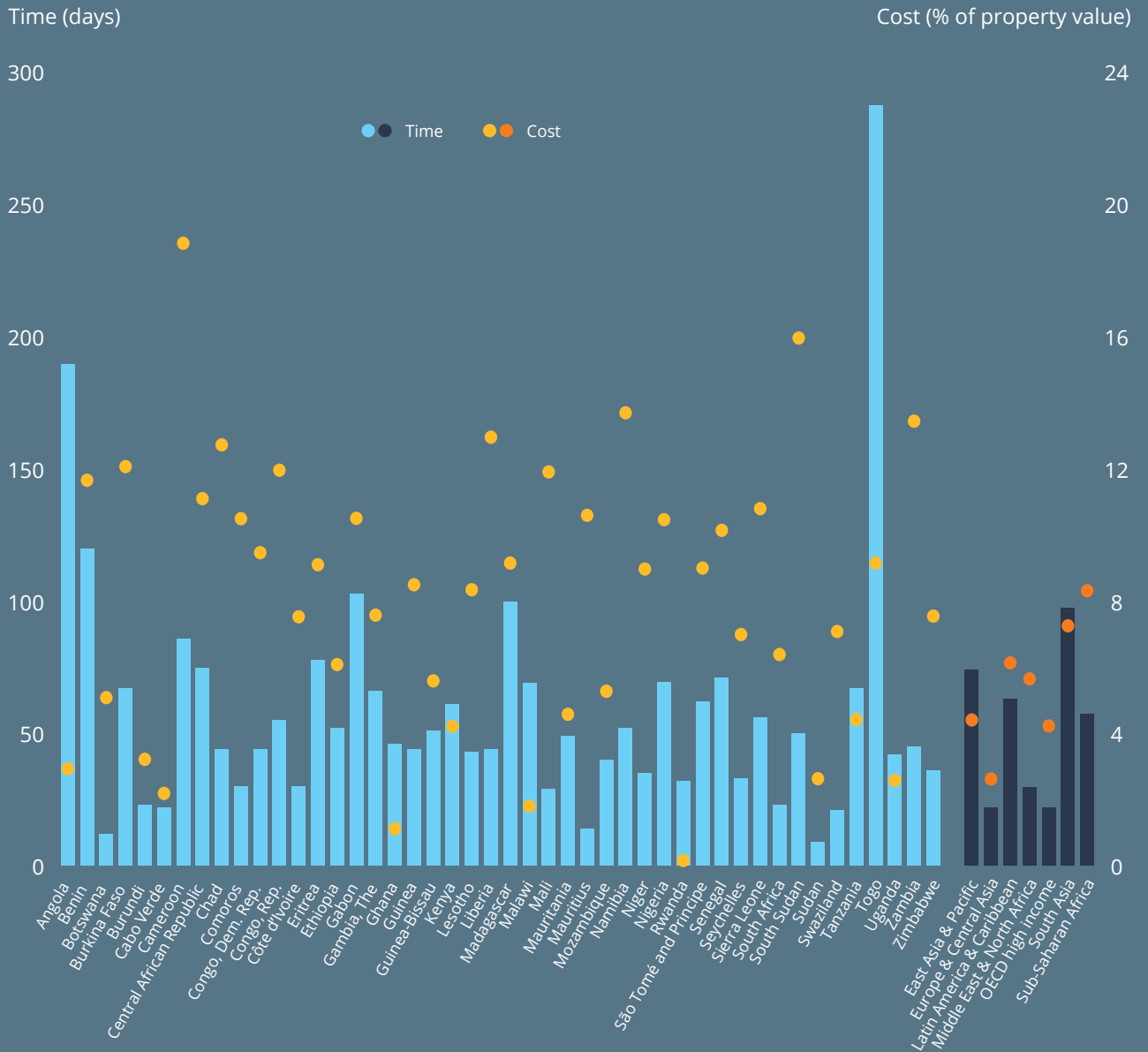
Two other observations about the cost of urban living in Africa are important. The first is that building formally is expensive. Registering property in Sub-Saharan Africa is generally more time consuming and costly (relative to property value) than in other regions of the world (figure 3.4); dealing with construction permits is fairly quick but still costly (relative to income per capita) (figure 3.5). On average in Sub-Saharan Africa, it takes 59 days and 9 percent of property value to register property — more than twice as long and three times as much as in Europe and Central Asia (26.5 days and 2.8 percent of property value) and high-income OECD countries (24 days and 4.4 percent

of property value). Obtaining construction permits in Sub-Saharan Africa takes on average 171 days and costs 737 percent of income per capita. This average time is comparable to other regions; it is lower than in South Asia, Latin America and the Caribbean, and Europe and Central Asia. However, the average cost is second only to South Asia and, at 84 percent of per capita income, nearly nine times as expensive relative to incomes as in the high-income OECD countries (World Bank 2015). The high costs of obtaining property registration and construction permits in Sub-Saharan cities contributes to further growth of informal settlements.



FIGURE 3.4

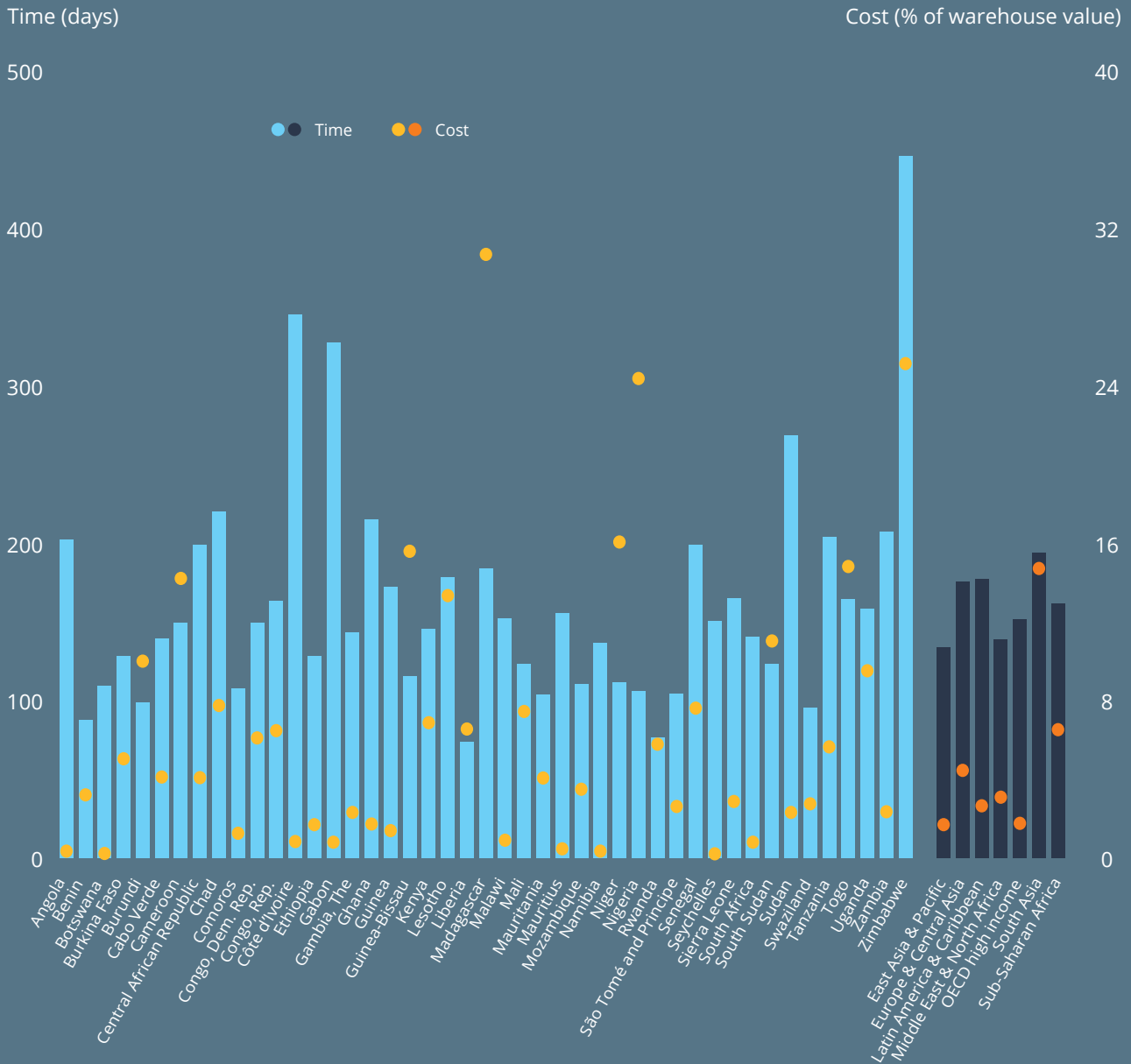
### Average time and cost to register property in Sub-Saharan countries and international benchmarks



Source: World Bank 2015, based on data from *Doing Business*.

FIGURE 3.5

### Average time and cost to deal with construction permits in Sub-Saharan countries and international benchmarks



Source: World Bank 2015, based on data from Doing Business.





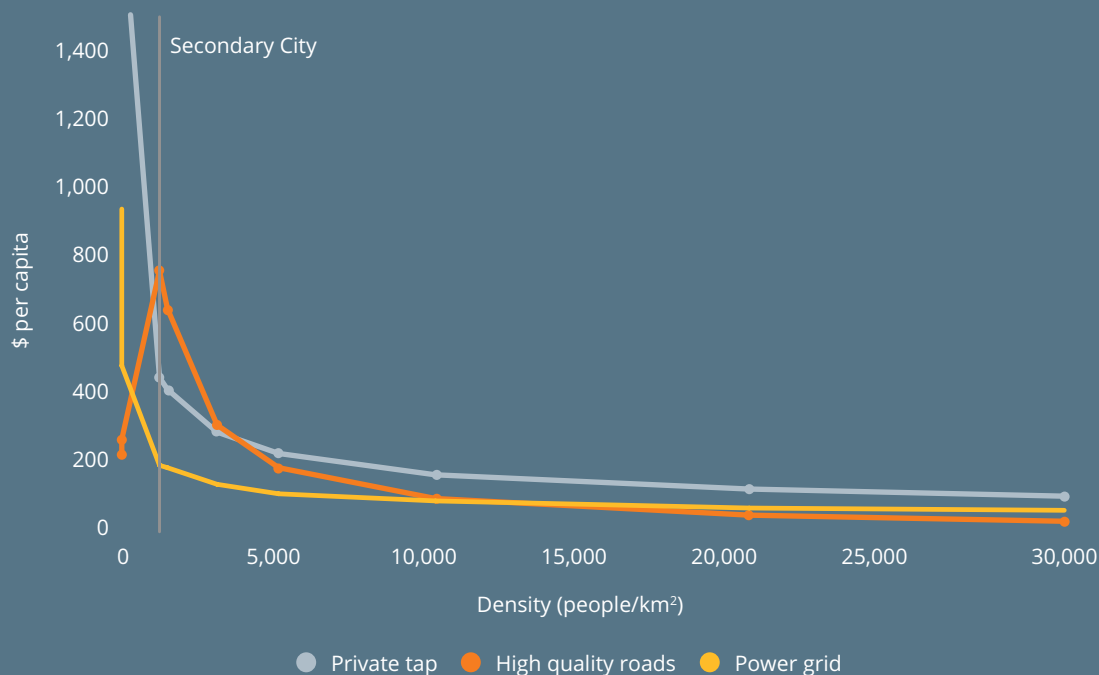
The second observation is that there appears to be a positive association between urban costs and the extent to which a city fails to provide density or is fragmented. Estimates of the cost of providing urban infrastructure indicate that doubling urban density reduces the per capita cost of a package of infrastructure improvements by about 25 percent (Foster and Briceno-Garmendia 2010). The decrease is particularly large for infrastructure associated with high capital cost per capita, as shown in figure 3.6.

Figure 3.7 also shows that a fragmented urban form is associated with higher costs. Using the Puga measure of urban fragmentation (discussed in chapter 2),

higher “exposure” for the largest city in a country is associated with a lower urban price index. When the urban form is fragmented, economies of scale in service delivery are sacrificed, opportunities for agglomeration economies are lost, and transportation is more expensive, because people are dispersed and more kilometers of road network are needed. Ordinary least squares regressions show that a 1 percent increase in the Puga index is associated with urban costs that are lower by 12 percent, controlling for income levels and city population. Alongside high urban costs, lack of urban amenities and high congestion reduces household wellbeing in Africa's cities.

FIGURE 3.6

### Infrastructure costs per capita decrease with density



Source: Foster and Briceno-Garmendia 2010.

Source: Foster and Briceno-Garmendia 2010.

FIGURE 3.7

## A fragmented urban form is associated with higher urban costs



Source: Henderson and Nigmatulina 2016 and Nakamura and others 2016.

Note: Figure shows a residual-on-residual plot. The x-axis plots the residuals from a regression of the Puga10 Index, log scale (based on Henderson and Nigmatulina 2016), controlling for log GDP per capita, log population, a dummy for Sub-Saharan Africa, and the percent of urban population. The y-axis plots the residuals of the adjusted price index, log scale (based on Nakamura and others 2016) on the same controls. The lower the number of people within 10 kilometers of the average worker, the higher the price index.

## High wages, high costs of doing business

Chapters 1 and 2 point to many aspects of African cities that impose costs on firms. An important additional factor is that firms need to pay high nominal wages to compensate workers for their high cost of living as well as for their poor living conditions. African firms pay significantly higher nominal wages than firms in other regions at comparable levels of real income.

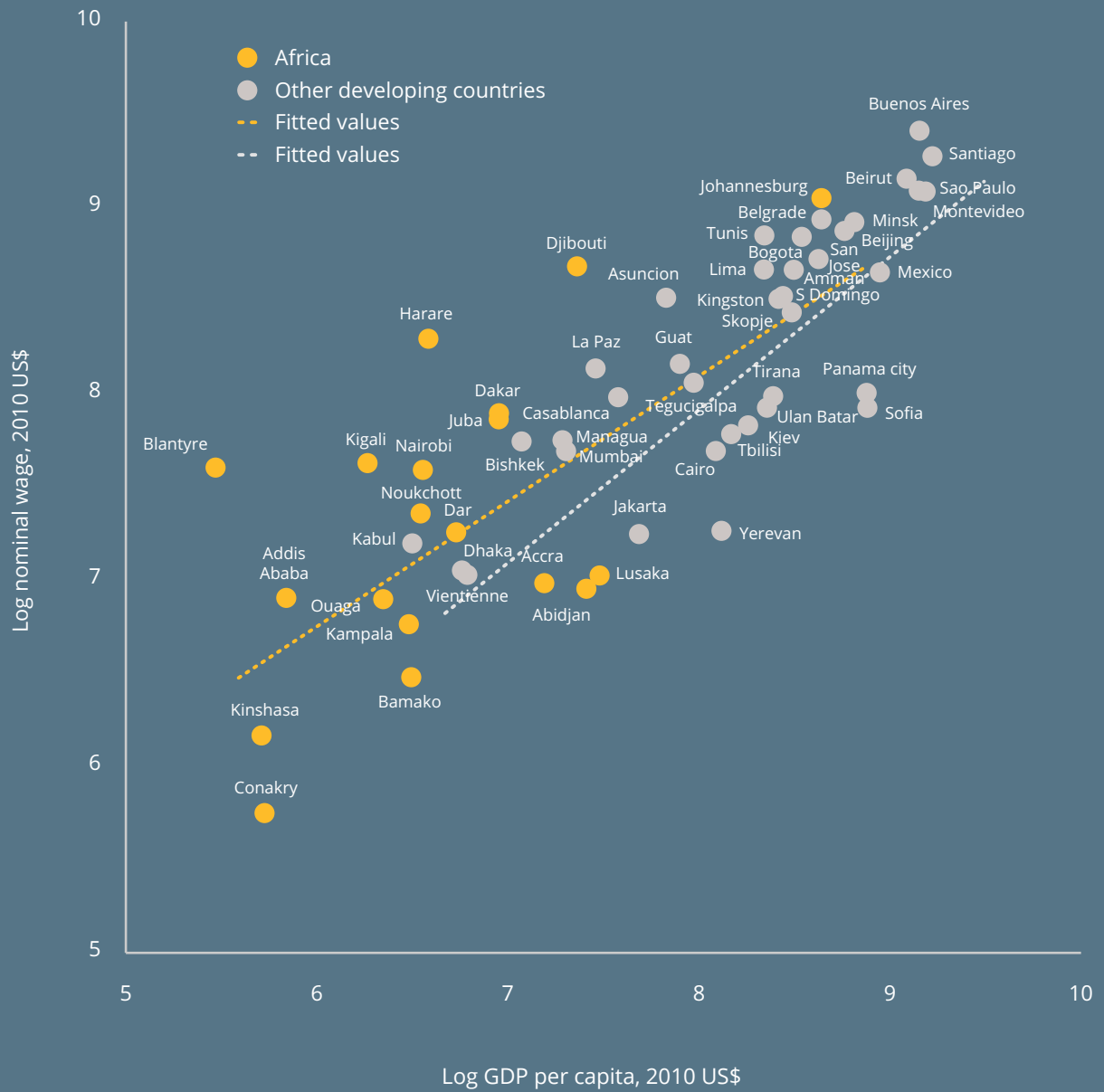
Data from World Bank Enterprise Surveys indicate that urban wages in manufacturing are higher in African cities than in other cities at comparable levels of economic development. Manufacturing firms in African cities pay a wage premium of about 15

percent (in nominal terms) over equivalent firms in other developing country cities (figure 3.8). Slightly larger estimates can be found when comparing industrial labor costs across countries with the same data: African firms paid 50 percent more in labor costs than equivalent firms elsewhere (Gelb, Meyer, and Ramachandran 2013). Higher wages may be one reason why Africa's manufacturing sector is so small and has been declining (as a share of global output) since the 1980s (UNIDO 2009). Today, the average firm in Africa hires about 20 percent fewer employees than equivalent firms elsewhere (Iacovone, Ramachandran, and Schmidt 2014).



FIGURE 3.8

Nominal manufacturing wages in African cities are higher than in other developing country cities

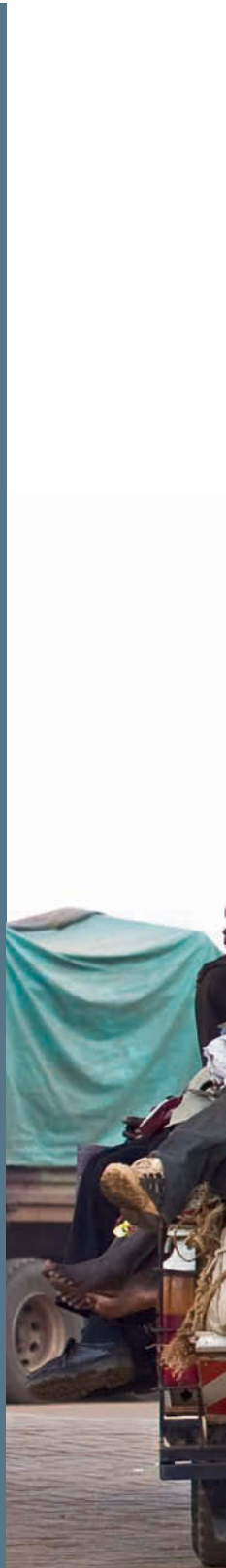


Source: Data from World Bank Enterprise Surveys.

FIGURE 3.9  
Sales revenue per worker in African and other developing-country cities



Source: Data from World Bank Enterprise Surveys.





African firms could afford to pay high wages only if revenue per worker is high. This turns out to be the case, by about 25 percent (figure 3.9). It is therefore important to ask: “Do these higher revenues reflect higher productivity (output per worker) or do they simply reflect higher prices?”

The implications of high costs is that urban wages in manufacturing are higher in African cities than in other cities at comparable levels of economic development. When a city's urban wage is higher than the international wage (for tradables), it makes it harder for the city to break into global markets. In contrast, in the nontradable sector, higher nominal wages may exist in the absence of productivity gains, because, absent competition, firms can pass labor costs on to local consumers (Venables 2016). As labor costs continue to rise in China and other Asian countries, international firms will be searching for new cities in which to invest and set up industrial plants.



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