

GCRO DATA BRIEF: NO. 3

Prices and Earnings in the Gauteng City-Region (GCR)
Johannesburg in comparison to major world cities

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Contents

1. Introduction	3
2. Overview	4
a. Price level	4
b. Wage and salary levels	5
c. Domestic purchasing power	6
d. Working time required to buy various products	7
3. Prices	10
a. Prices of goods and services	10
b. Transport and automobiles	11
c. Accommodation and leisure	13
4. Earnings	14
a. Earnings by occupation	16
b. Comparison of earnings across 72 cities	18
5. Conclusion	21

1. Introduction

Johannesburg has the potential to attract and retain investment, professional staff as well as international holiday makers due to a relatively low price level, a mid-level wage index and high domestic purchasing power. This conclusion is based on the outcome of an international comparison of prices and earnings conducted by UBS¹, a Swiss bank and global financial services company. Using a purchasing power parity (PPP)² based comparison, UBS shows that Johannesburg stands out as a fairly competitive city among 72 renowned cities across the world.

International comparisons of the prices of a standard basket of goods and services and average earnings in a set of employment categories are a reliable means of assessing the cost of living and doing business in different locations. Prices and earnings constitute key determinants of city competitiveness. The availability of such data on an international scale, based on a dollar purchasing power parity (PPP) calculation, and spanning different time periods, enables us to benchmark the GCR against other major cities and city-regions.

This Data Brief draws on data published by UBS in September 2012 for 72 cities in different parts of the world. UBS has been collecting city data on the prevailing earnings (wages) for different professions as well as prices for major categories of goods and services since 1970. Cities are surveyed every third year, and in the intervening years an estimate of changing prices is modelled. While the UBS data is stated as for 'Johannesburg', the data can safely be used as a proxy for the GCR on an international comparative scale. Johannesburg is the largest city in South Africa in terms of population and has the most robust and diverse economy of any of the metropolitan regions in Sub-Saharan Africa.

¹ http://www.ubs.com/global/en/about_ubs/about_us/ourprofile.html

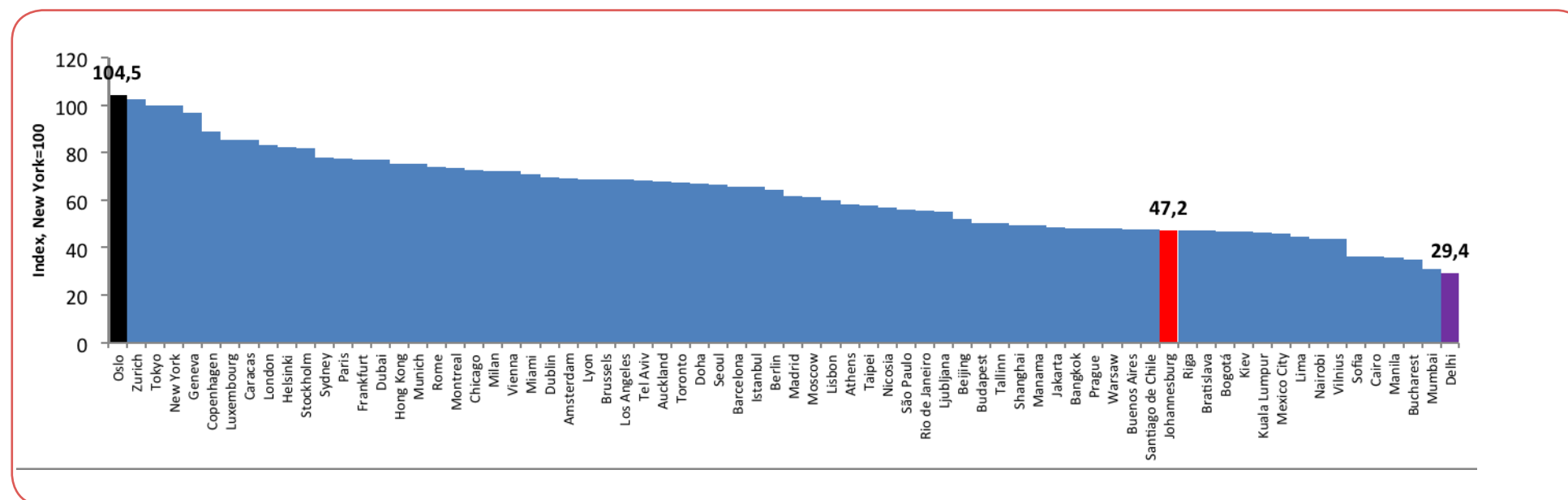
² PPP is defined as the number of units of a foreign country's currency required to purchase an identical quantity of goods and services in another country as \$1 would buy in the United States. On this basis, it is possible to make interesting comparisons amongst cities in the sample, such as the levels of income or lifestyle opportunities offered by such cities.

2. Overview

a. Price level³

Across the 72 cities surveyed in the 2012 assessment, Johannesburg is among the 16 **least** expensive, with an index of 47.2 compared to 100 for New York and 116 for Oslo (See Figure 1 below)⁴. In 2012, Oslo, Zurich, Tokyo and Geneva were the most expensive cities in the world while Manila, Bucharest, Mumbai and New Delhi were the least expensive. Despite having a low price level in relative terms, the general price level for Johannesburg has been on the increase since 2009. While Johannesburg residents and businesses may feel the impact of the general increase in the price level, they are much better off than their counterparts elsewhere in the world, contrary to the popular perception that the cost of living and doing business in Johannesburg is unaffordable.

Figure 1: Index of prices including rent: New York=100, 2012



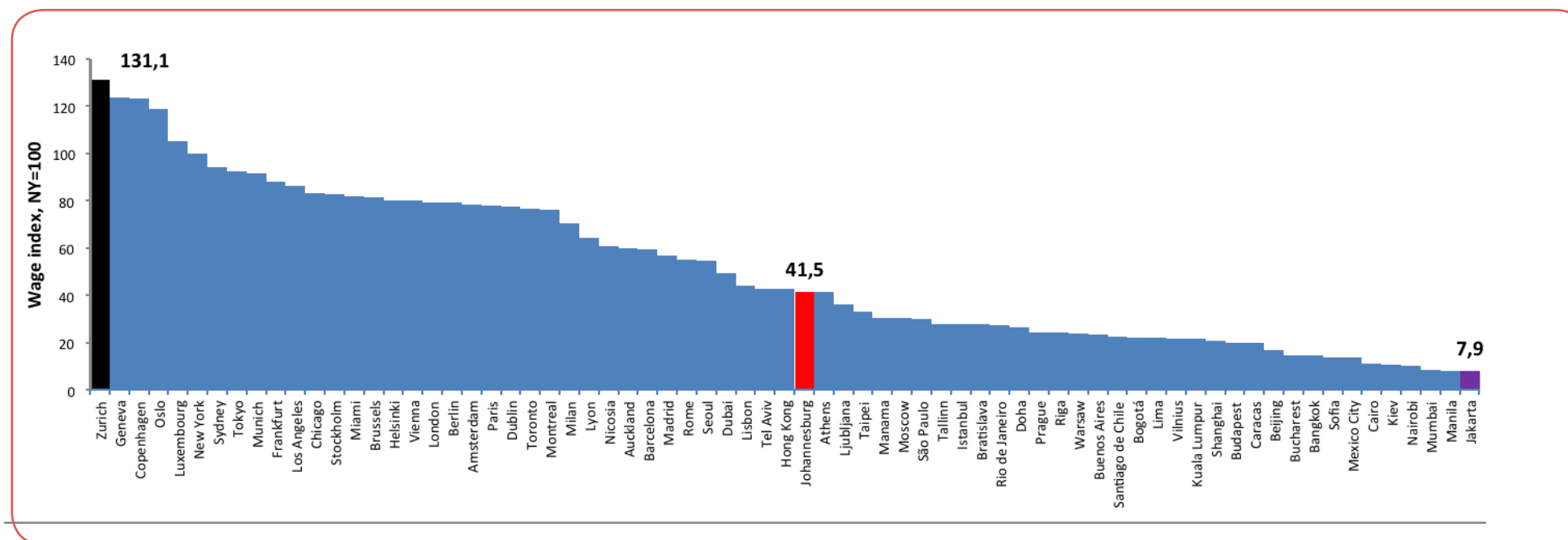
³ These price level calculations were based on the cost of a basket of 122 goods and services weighted according to European consumption habits.

⁴ This analysis is based on prices including rent, but if rent is excluded, Johannesburg will be among the **12 least** expensive cities.

b. Wage and salary levels

Wages are highest in European and North America cities. Johannesburg ranks **37th** from the top and has an index of 41.5, falling far short of Zurich in first position with an index of 131.1 and the base city, New York, with an index of 100. In general terms, workers in various professions are paid the most in Zurich, Geneva, Copenhagen and Oslo and the least in Africa and Asia, i.e. Cairo, Nairobi, Mumbai, Manila and Jakarta. Similar to the price level, the wage level index for Johannesburg was at its lowest in 2009 in terms of both gross and net wages. In spite of this dip, wage levels for Johannesburg compare favourably against many African, Asian and Latin American cities and rank alongside Hong Kong and Athens (see Figure 2 below). This mid-level position means that Johannesburg is relatively competitive, from two perspectives. On the one hand, although it falls well below the top cities, Johannesburg's general wage level is competitive enough to attract and retain professionals whose internationally mobile skills sets enable them to locate anywhere. On the other hand, business ought to see the cost of labour as attractive compared to most European and North American, as well as some Asian cities. This is especially true for employment categories and wage levels that are typically unionised.

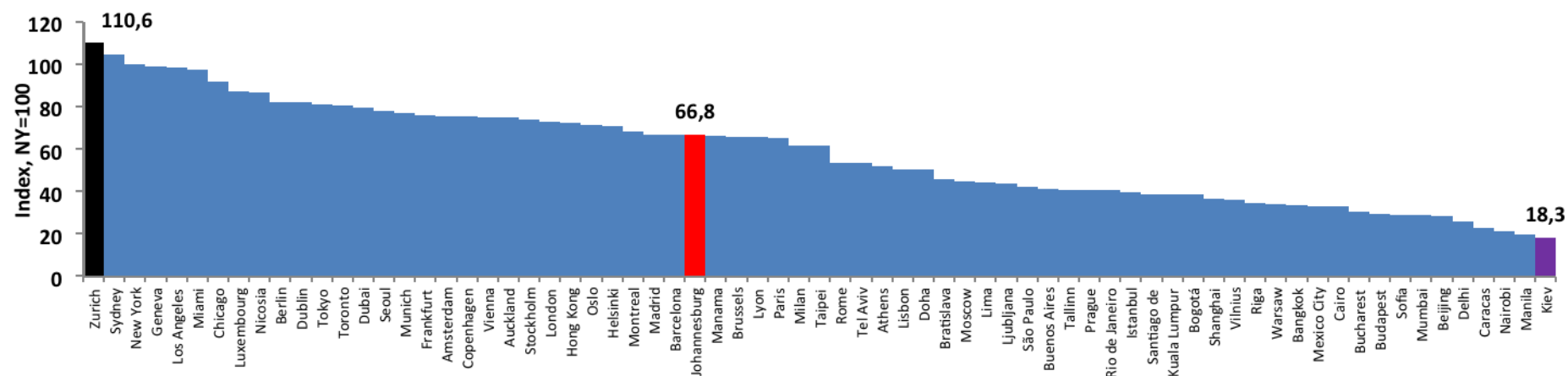
Figure 2: Index of gross wages: New York=100, 2012



c. Domestic purchasing power

In 2012, the domestic purchasing power of annual net income was highest for Zurich followed by Sydney, New York and Geneva respectively (see Figure 3 below). The purchasing power is determined by taking into account the cost of a basket of goods and services consumers typically require. Although Johannesburg's domestic purchasing power falls well below the top four i.e. Zurich, Oslo, New York and Geneva, it surpasses that of Brussels, Paris, Rome and Athens whose wage indexes are higher than Johannesburg's. Essentially, this means that Johannesburg residents can afford more goods and services with the same income than those in Brussels, Paris, Rome, and Athens as well many other cities in Africa and Asia. Two main factors contributed to the fairly high domestic purchasing power for Johannesburg: lower tax and social security contributions (which increase disposable income); and a lower cost of the basket of goods and services. Taxes and social security contributions are important determinants of annual net income. The higher purchasing power of wages for Johannesburg may be viewed as favourable for both residents and business alike.

Figure 3: Index of domestic purchasing power on annual income: New York=100, 2012



d. Working time required to buy various products

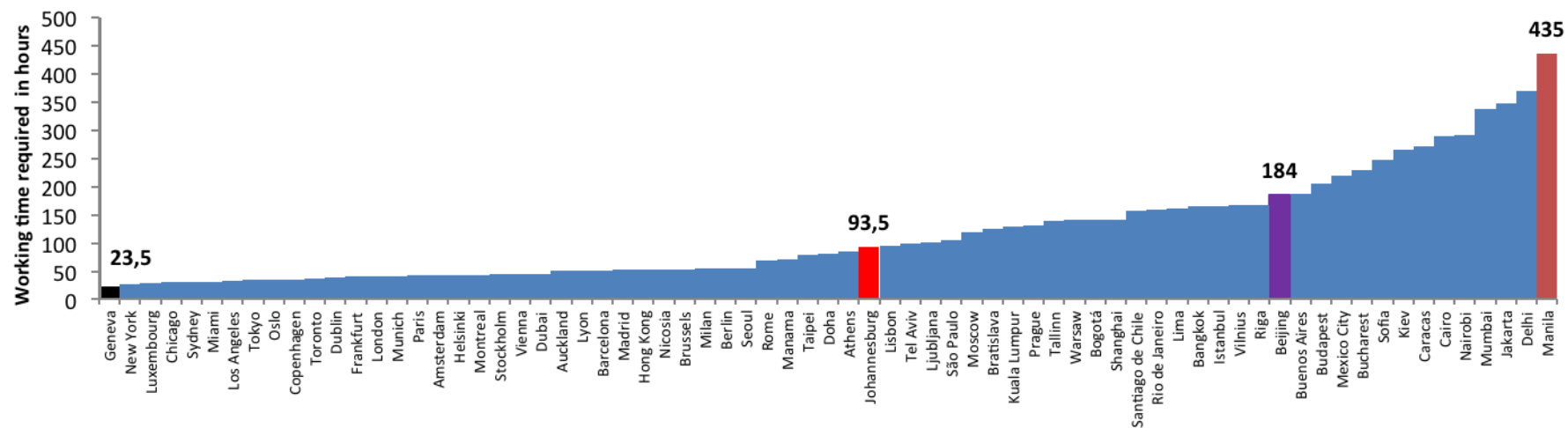
Working time is the amount of time that individuals spend on paid employment at any given period. It is a useful concept for assessing the value of wages as well as determining which goods or services are more expensive than others. If more time is required to afford a particular product, the intuitive interpretation is that either the purchasing power of wages is low or the price of the item is too high. Essentially, if the purchasing power is low or the price is too high, workers may need to work more hours in order to afford a particular item. Given the variation in prices across items, the working time required to afford a particular item is unique to it. Table 1 below shows the working time required to afford particular products across time for Johannesburg.

Table 1: Working time required to buy...: Johannesburg 2000-2012

Working time required (in minutes unless stated)	2000	2006	2009	2012
Big Mac Hamburger*from MacDonalds	19	30	26	26
1kg of bread	11	12	12	10
1kg of rice	9	11	17	11
Working time required to buy 1 x 8GB iPod	*	*	41.5 (hrs.)	*
Working time required to buy 1 x 16GB 4SiPhone	*	*	*	93.5 (hrs.)

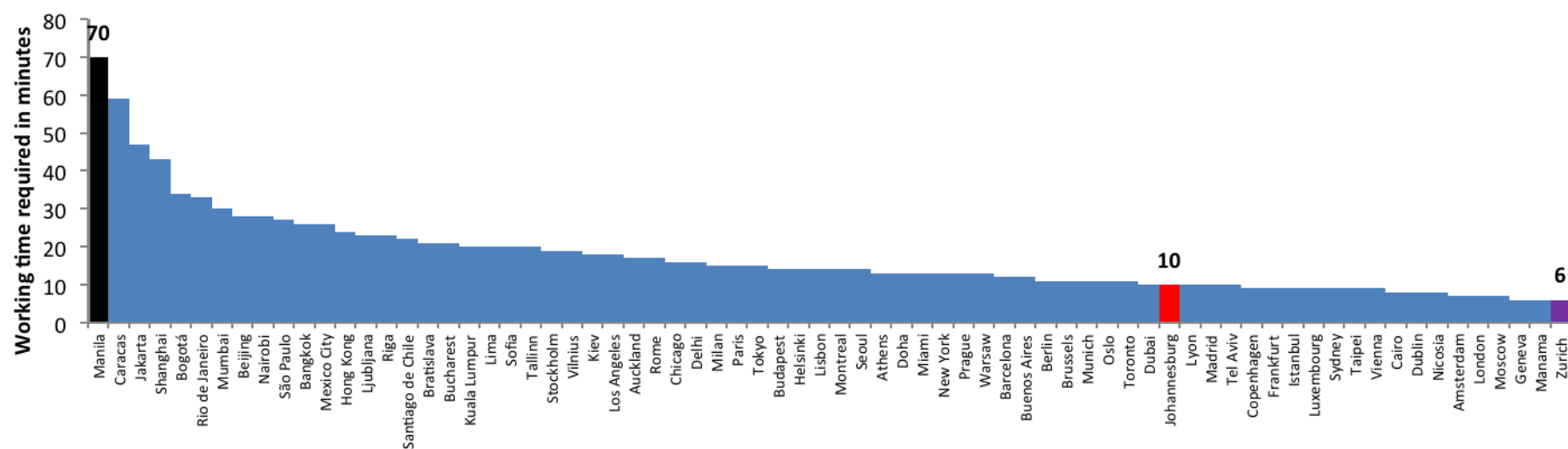
Certain specialised products such as iPods and iPhones are very expensive, and hence require more working time in order for individuals to afford them. Figure 4 below compares the working time needed to afford an iPhone 4S in 2012 across the 72 cities in the UBS survey. Workers in Johannesburg needed to work nearly four times as much as those in Geneva in order to afford an iPhone. However, this is far less than workers in Africa, Asia and South America. For example, Philipinos in Manila have to work for nearly two months (i.e. 435 hours) and those in Beijing need 23 days (i.e. 184 hours) to afford an iPhone 4S. Compared to Johannesburg, Manila and Beijing have lower domestic purchasing power and a higher price level, a scenario applying to most cities with high average working time.

Figure 4: Working to time in hours required to buy an iPhone 4S in 2012



People in Johannesburg require less time to afford a kilogram of bread compared to many other cities. In 2012, it took a mere 10 minutes of work to afford a loaf of bread in Johannesburg, compared to New York (where it takes 13 minutes), Chicago (16 minutes), Stockholm (19 minutes) and 70 minutes in Manila. With less time required to afford foodstuffs compared to luxurious electronic items, basic food items should be affordable even to lower paid workers in Johannesburg. Figure 5 below shows that bread is quite affordable in Johannesburg compared to many cities elsewhere in the world.

Figure 5: Working time required to afford a loaf of bread in 2012



3. Prices

a. Prices of goods and services

In 2012, Oslo residents were spending the most (US\$4569 monthly) on goods and services compared to other cities in the sample. This is more than twice as much as what residents of Johannesburg spend on the same basket of goods and services. People pay more for household appliances in Johannesburg and men's clothing is consistently more expensive than women's clothing. Although women's clothing is cheaper than men's, prices for women's clothing have increased by a much higher margin (i.e. 93.8%) than men's clothing (which increased by 53.8%) between 2009 and 2012. The cost of both food and clothing fell in 2009 but prices for household appliances have risen continuously since 2000. Although, food prices are low in comparative terms, they have increased by 40% between 2009 and 2012, a change that is similar to Auckland (which also increased by 40%). Such a large increase in food prices may signal underlying problems on the production side (such as increases in production costs). Inflation has a devastating impact on business as well as the poor and low-income residents who usually bear the brunt of high food prices.

Table 2: Prices of goods and services in US\$ for Johannesburg (2000-2012)

In US Dollars	2000	2006	2009	2012	% Δ 2009-2012
Food prices	208	321	222	311	40.1
Men's clothing	390	370	260	400	53.8
Women's clothing	190	270	160	310	93.8
Household appliances	1480	2700	2840	3800	33.8
Prices of services	220	350	350	400	14.3

b. Transport and automobiles

Table 3 below shows the cost in US\$ of public transport and automobiles for Johannesburg.

Table 3: Cost of transport and automobiles in US\$ for Johannesburg (2000-2012)

In US\$	2000	2006	2009	2012	% Δ 2009-2012
Public transport: Bus/metro	0.77	1.2	0.97	1.25	28.9
Public transport: Taxi	4.35	10	2.12	4.07	92.0
Public transport: Train	*	8.5	8.13	15.59	91.8
Automobiles: Price ⁵	15200	21210	24300	35500	46.1
Automobiles: Tax	15	20	29	56	93.1

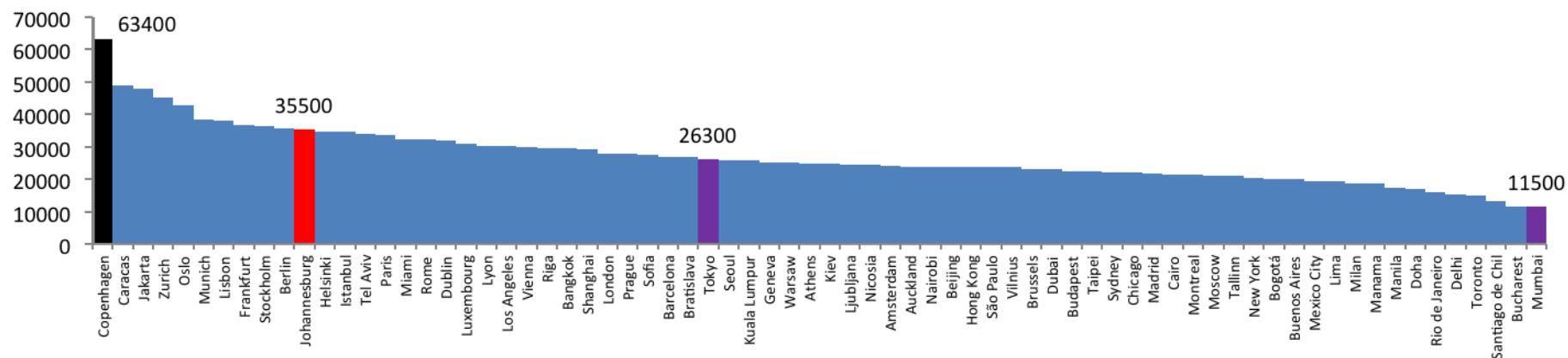
The price of transport is cheapest in Africa, South America and Asia and very expensive in Western Europe and North America. In 2012, it cost US\$1.25 to travel a distance of 10km by bus in Johannesburg compared to US\$4.80 in Oslo and Copenhagen, US\$3.70 in London and US\$2.16 in Paris. However, Johannesburg is much more expensive compared to Asian cities such as Shanghai (US\$0.58) and New Delhi (US\$0.25). In Cairo, a bus costs much less, i.e. US\$0.19. A meter taxi costs US\$28.93 in Zurich and US\$27.78 in Geneva compared to only US\$4.07 for Johannesburg for a distance of 5km within the city. Travelling by train costs more than four times in Zurich than Johannesburg and more than twice in Madrid and Paris than Johannesburg. However, the cost of travelling by train and taxi in Johannesburg has nearly doubled between 2009 and 2012, most likely due to increases in operating costs and the rising cost of fuel. Given that the majority of people in Johannesburg utilise these modes of transport, an increase in the cost of travelling may impose a further burden over and above increases in the cost of food. Although there was an increase in the cost of transport generally between 2009 and 2012, there is a wide variation in the magnitude of change across the cities. For example the cost of taxi and train increased by 92% and 49.4% respectively for Johannesburg compared to changes of 39.5% and 23.5% for Oslo and 19.6% and 22.3% for Delhi respectively. Johannesburg's public transport sector appears to have suffered excessively from fuel price increases which have drastically increased in the last few years. The price per litre

⁵ Based on the price of a VW Golf, Toyota Corolla and Subaru.

of fuel for Johannesburg was US\$0.86 in 2006 and has increased by 63% in 2012 to US\$1.45 per litre. Higher transport costs are not conducive for business and could jeopardise Johannesburg's level of competitiveness in terms of the cost of doing business.

In terms of vehicle prices, Johannesburg was among the top 11 **most** expensive cities in 2012. Figure 6 below shows that a medium priced car costs US\$35 500 in Johannesburg while a similar vehicle costs US\$26 300 in Tokyo, US\$20 500 in New York and US\$11 500 in Mumbai. Given the rising cost of fuel, acquiring and maintaining a vehicle in Johannesburg may prove challenging, particularly if other costs such as licensing, maintenance, insurance and loan repayments are taken into account. It should be noted however that vehicles prices may not be directly comparable given that UBS used different types of vehicles in their analysis.

Figure 6: Purchase price of medium priced car in 2012



c. Accommodation and leisure

Table 4 below shows the cost of accommodation and leisure in Johannesburg over time.

Table 4: Cost of accommodation and leisure-Johannesburg (2000-2012)

In US Dollars	2000	2006	2009	2012	% Δ 2009-2012
Restaurants ⁶	18	17	18	28	55.5
Hotels 5 Star	*	280	340	320	-5.9
Hotels 3 Star	*	110	90	100	11.1
City holiday	390	500	490	490	0
Apartments ⁷	570	800	480	1300	170.8

Dining out in a restaurant is three times cheaper in Johannesburg than in Geneva, Oslo and Zurich. Both three star and five star hotels are more expensive in New York and Tokyo than anywhere else in the world, and more than twice as expensive as Johannesburg (i.e. US\$730 compared to US\$320 per night). An unfurnished 3 roomed apartment costs US\$4300 per month in New York, over three times more than a similar apartment in Johannesburg (US\$1300). Rents in Johannesburg closely match Rio de Janeiro (US\$1320) and Auckland (US\$1330) but are more expensive than Athens (US\$650) and Beijing (US\$660). However, there has been a significant increase in monthly rentals of unfurnished 3 roomed apartments between 2009 and 2012. A city break for two people (consisting of an overnight stay in a first-class hotel, an evening meal including a bottle of red wine, a taxi ride, use of public transport, car hire and the cost of a paperback book, a telephone call and postage), when counted together as a package, is modest in Johannesburg (US\$490) compared to European cities, e.g. Zurich (US\$1250), Geneva (US\$1200), Paris (US\$1100), Copenhagen (US\$1060) and London (US\$930).

⁶ Price of an evening meal (three-course menu with starter, main course and dessert, excluding drinks) including service in a good restaurant

⁷ Rental prices (monthly gross rents) are based on apartments built after 1980 (3 rooms, kitchen, bathroom, with garage) including all ancillary costs.

In comparative terms, holiday making is more affordable in Johannesburg than most major world cities. Given the variety of places and services found in and around Johannesburg, the city has the potential to attract both local and foreign holiday makers as well as provide decent accommodation for both short and long term stay. This potentially leads to a boost in both the hospitality and real estate industries (including associated industries) in terms of income generation and job creation.

4. Earnings

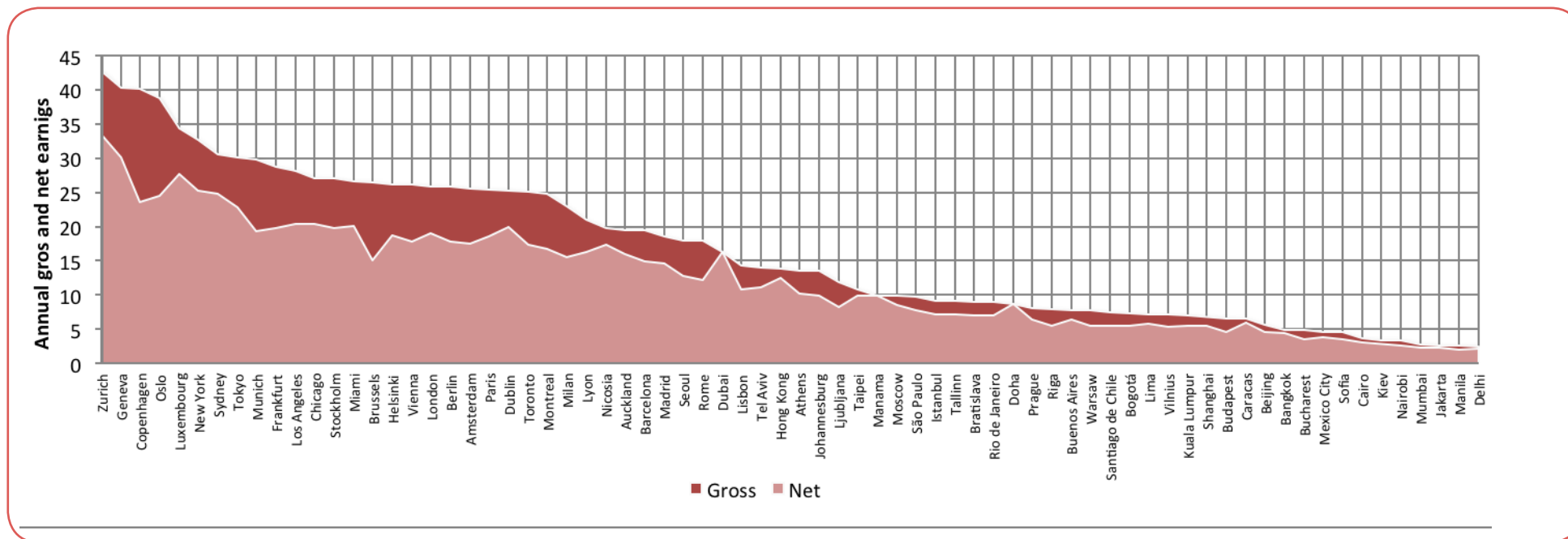
Table 5: Gross and net earnings per hour – Johannesburg (2006-2012)

In US Dollars	2006	2009	2012
Gross income per hour	8.3	6.7	13.5
Net income per hour	5.9	5.1	9.8
Tax and social security contributions	30%	19%	22%
Working hours	1902	1913	1887

Gross and net earnings per hour for workers in Johannesburg have been increasing since 2000 although they fell in 2009. This is a trend that is also reflected in other cities internationally. Most cities have reflected considerable growth in gross hourly wages since 2009. Net earnings are higher in Zurich, Geneva and Luxembourg. Although gross earnings per hour in Johannesburg are higher than many other cities they are only a third of what workers in Zurich are paid, 45% of those in Tokyo and 53% of those in Paris. Tax and social security contributions for Johannesburg workers average around 23%, compared to 41% in Copenhagen, 43% in Brussels, 25% in Tokyo, 26% in Paris and 22% in New York. This explains the disparity in the gap between gross and net earnings across the sampled cities. Workers in Johannesburg are therefore not among the most highly taxed in the world and the gap between gross and net earnings is fairly low.

Figure 7 below shows that the gap between gross and net earnings is higher for cities in Europe, Australia and North America due to high taxes and social security contributions, and very low for New Delhi, Jakarta and Bangkok. The gap is zero for Dubai and Doha because the United Arab Emirates and Qatar are two countries that do not levy income tax.

Figure 7: Gross and net earnings comparison – 2012

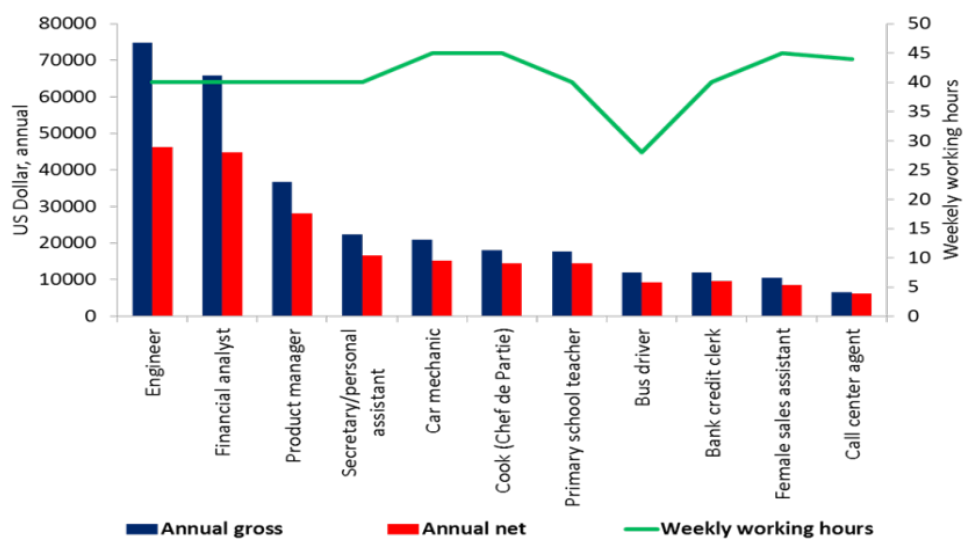


a. Earnings by occupation

Variations in earnings exist across the different occupations in Johannesburg as well as other cities in the UBS sample. For Johannesburg, earnings are fairly high in the services sector when compared to other cities in the UBS sample. However they are much lower for bus drivers, bank credit clerks, female sales assistants, construction workers and call centre agents when compared to the other cities.

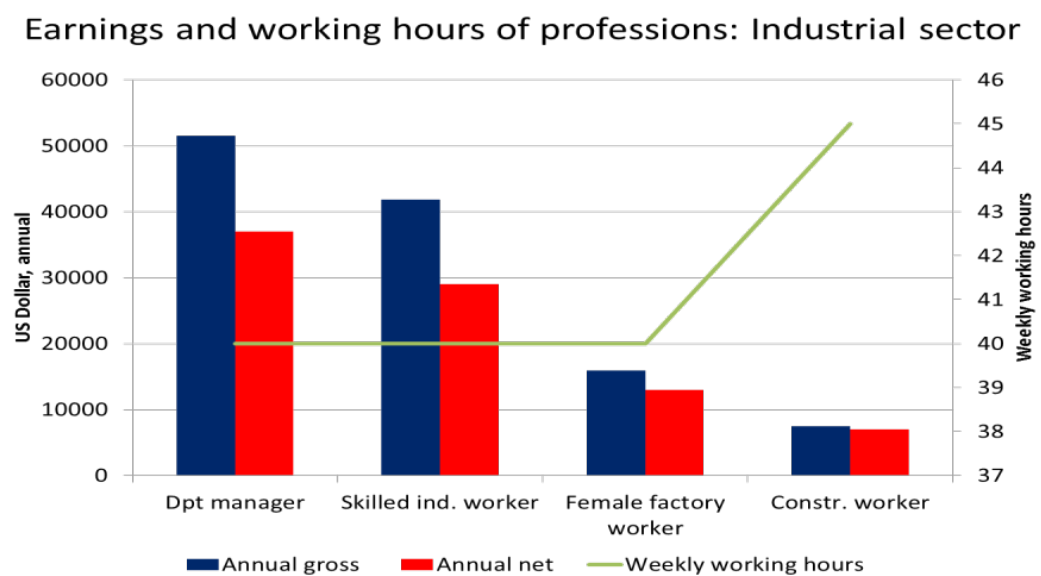
Figure 8: Gross and net earnings in the service sector – Johannesburg 2012

Earnings and working hours of professions: Services sector



In the industrial sector, annual earnings are higher for departmental managers and skilled industrial workers but very low for construction workers despite them working the highest number of hours per week, when compared with other professions.

Figure 9: Gross and net earnings in the industrial sector – Johannesburg, 2012

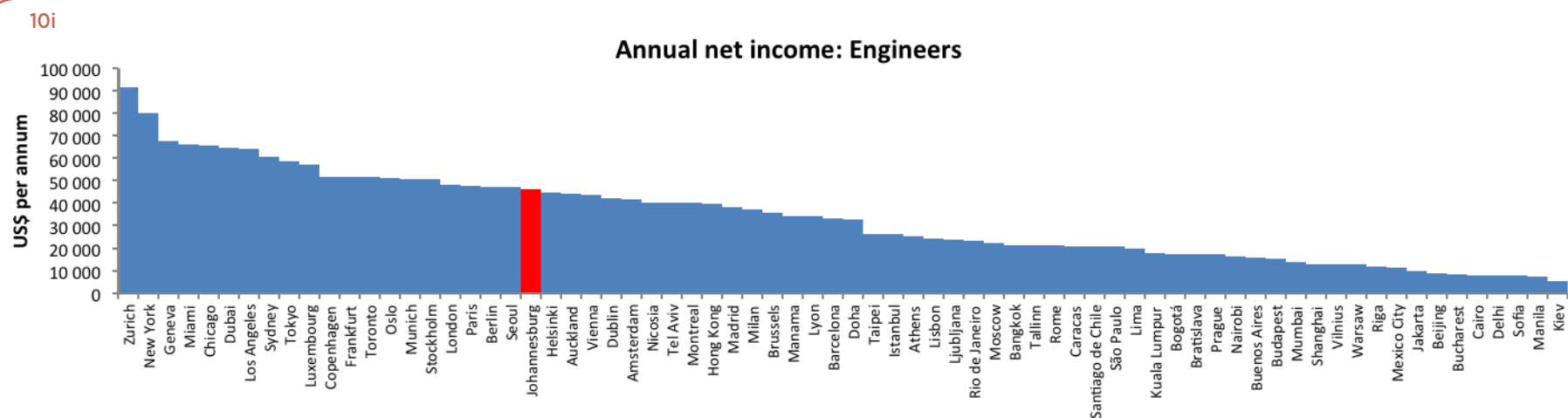


b. Comparison of earnings across 72 cities

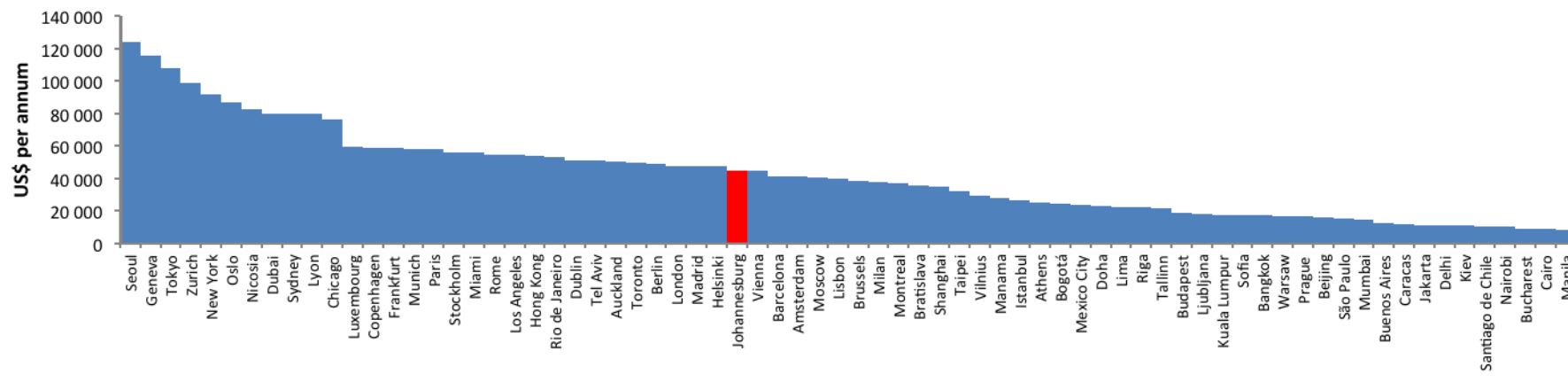
When an international comparison is done, annual earnings for most occupations in Johannesburg fall far below similar occupations in Eastern Europe or North America. For example bus drivers are highly paid in Zurich, Oslo and New York (i.e. US\$90700, US\$60000, US\$57200 annually respectively), 5 times more than what is paid to bus drivers in Johannesburg. Female sales assistants are paid US\$10500 annually in Johannesburg compared to US\$61400 in Zurich, US\$49500 in Oslo and US\$49200 in Geneva. Other occupations also follow a similar pattern as depicted in the figures below.

Figure 10 (i-v) shows earnings levels for selected professions across the 72 cities survey in 2012. Earnings for the different occupations for Johannesburg are not among the worst in the world. In fact, Johannesburg compares quite favourably in engineering and financial sectors. Of the 72 cities compared, Johannesburg ranks 21st and 31st in terms of net earnings for engineers and financial analysts respectively. Although not the least, net earnings for production managers and construction workers rank within the lower half. Johannesburg is the centre of industrial and financial activity in South Africa and has also been the centre for major construction and engineering works prior to the FIFA World Cup 2010 soccer tournament. This means that there is a high demand for expertise in these areas. With competitive net earnings for engineers, Johannesburg should be able to attract and retain this type of expertise quite easily. However the wage levels are way below cities such as Zurich, Copenhagen, Oslo, Sydney, New York and Geneva and this could potentially lead to brain drain of these much needed professions. A crucial factor to note is that wages for non-unionised labour are much lower than is usually purported by industry. In fact these wages are among the lowest when compared to other world cities.

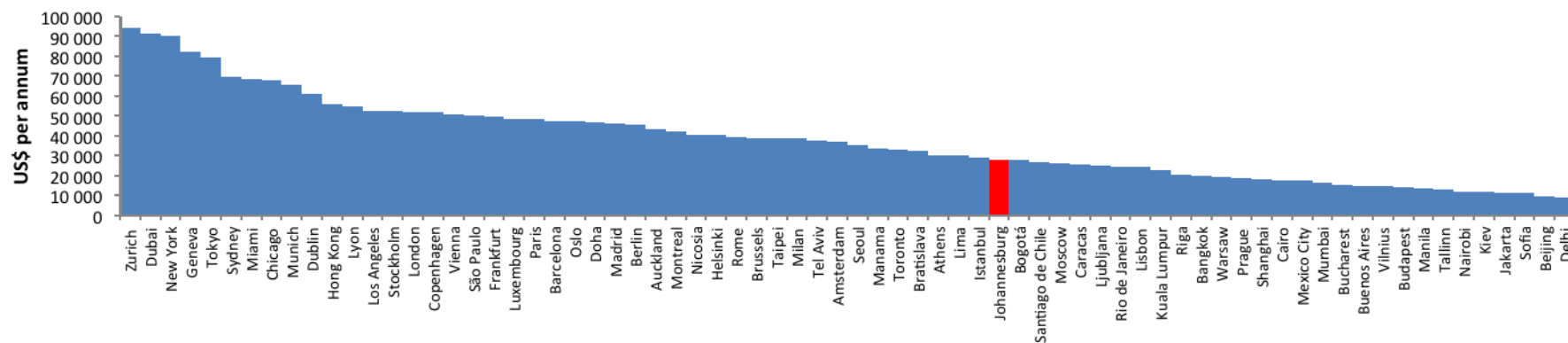
Figure 10: Comparison of net earnings for selected professions across 72 world cities - 2012



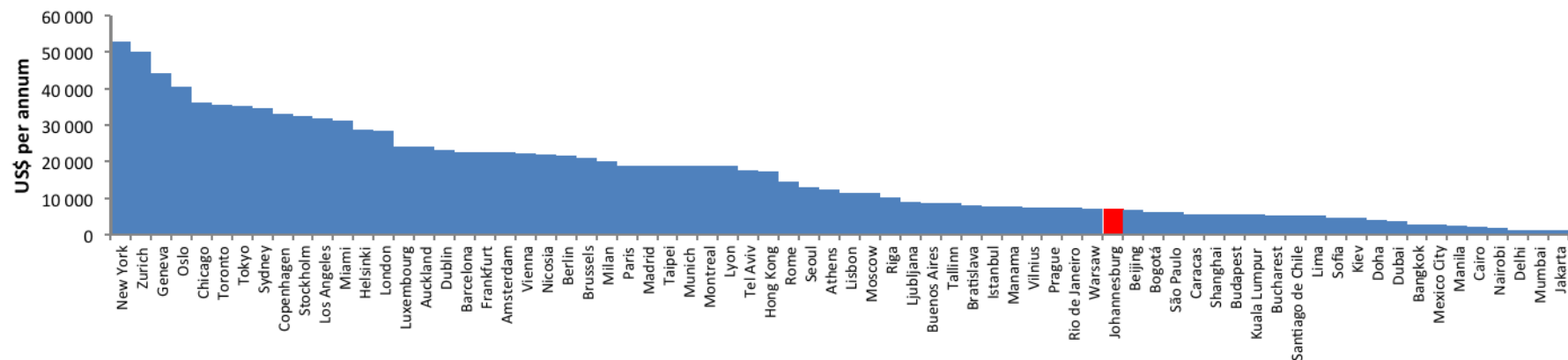
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Annual net income: Financial analysts

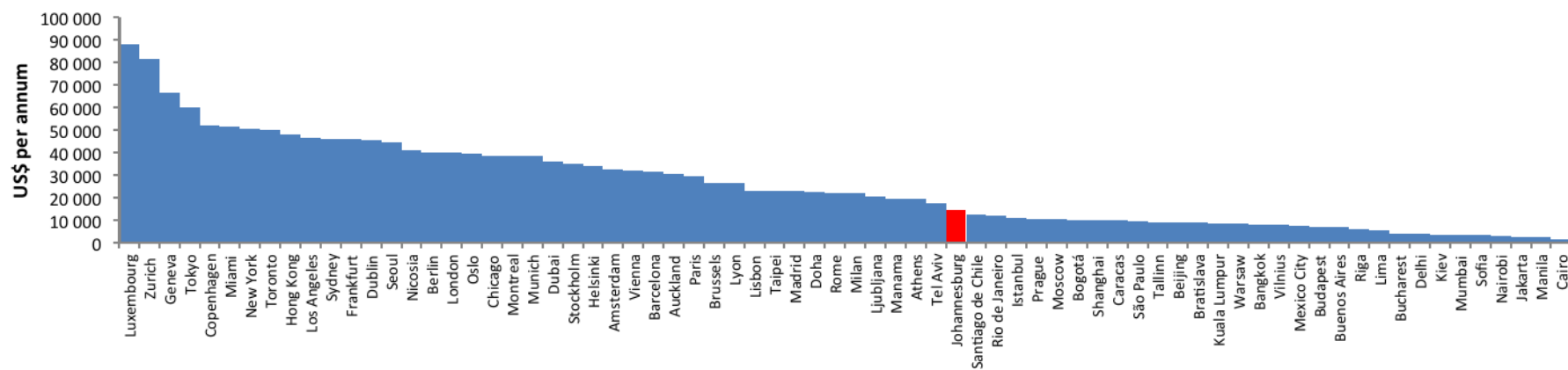
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Annual net income: Production managers

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Annual net income: Construction workers

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Annual net income: Primary school teachers

5. Conclusion

This Data Brief compares prices and earnings in Johannesburg against that in other major world cities. Generally, both prices and earnings are very high in European cities particularly in Switzerland, Norway, Luxembourg and Denmark. Of the 72 cities analysed by UBS in 2012, Johannesburg is among the 16 **least** expensive. The wage index is certainly not among the worst and given a fairly high domestic purchasing power index, and with comparatively low tax levels Johannesburg can be seen as one of the most affordable cities in the world. Johannesburg also offers very low working time required to purchase basic foodstuffs such as bread. Lower cost of food has positive implications in terms of access to food especially among the poor.

Wages for specialised professions such as engineers and financial analysts are also competitive for Johannesburg when compared to many cities in Africa and Asia and even Europe. This means that there is potential for Johannesburg to retain professional staff and arrest the problem of scarce skills. Further, the data shows that wages for unionised labour are quite low contrary to claims by industry that government needs to ensure wage controls in this area. Wages for Johannesburg primary school teachers are also comparatively low. Government needs to reconsider the issue of wages for school teachers if value is to be placed on education at this level.

Although Johannesburg offers its residents a lower cost lifestyle relative to other the cities in the UBS survey, there are disparities in earnings across the different occupational categories. This ensures that gross inequality continues to be perpetuated in Johannesburg. The magnitude of the increase in food and transport costs is worrying and could affect mobility and poverty patterns in particular among the poor and low-income residents. Large-scale changes in prices are also indicative of underlying failings on the supply side of the economy which may lead to increasing inflationary pressures. If Johannesburg is to maintain or improve on its current level of competitiveness, there is a need to monitor the supply side of the economy and keep prices of both goods and services under control.