

Best places in the world to buy your second home

A new method to evaluate global residential real estate prices

Mohammed El-Kuwaiz

mohammed.el-kuwaiz@derayah.com

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Summary

A new metric, 'Area Afforded by Average Income of Inhabitants' (AAI), is introduced to compare residential real estate for different cities of the world.

Real Estate is undoubtedly a highly desired investment asset for investors in GCC countries and the broader Middle East. This is for both financial as well as emotional reasons (e.g. tangible nature of real estate, the potential of usage of residential properties during the holding period etc.). However, despite the desirable nature of real estate, there have been few analytical frameworks for evaluating the fair value of real estate, especially when looking at a local scale. The main criteria: Rental yield (the annual net rent received on a property divided by its market price), while being widely used is also quite flawed, in that many markets (such as Dubai) witnessed steep climbs in *both* real estate prices *and* rental rates simultaneously, which meant that looking at the rental yield metric would not have warned of the looming price bubble.

In this report, we propose a new metric to compare global properties: **Area Afforded by Average Income of Inhabitants (AAI)**, which compares the average price per square meter in each city to the average income of the population of that city, after adjusting for tourist inflows. We back-tested this metric using historical data and found it to be quite robust in identifying good investment opportunities, as someone following its signals would have performed better than the overall market

We believe that this metric, which is based fundamentally on affordability, is a good indicator of value especially for residential real estate, and leads to some interesting results, when applied to a global sample of large cities.

Based on this metric, Mumbai, Moscow and Hong Kong have the lowest AAI and are therefore the least affordable, while Zurich, Cairo and Dammam have the highest AAI and are therefore the most affordable.

While other factors should be taken into account when evaluating real estate values (such as economic growth, population density, and of course rental yields), we believe this metric can provide an interesting perspective in the continuing search for value in real estate investments.

Recent trends in global residential real estate markets

Residential prices have stabilized for most of the countries in 2009, but there seem to be strong divergences in the pattern of recovery.

After a tumultuous 2008, residential real estate prices stabilized in most parts of the world during 2009 (with the notable exceptions of cities like Dubai). However, there seem to strong divergences in the pattern of recovery in different parts of the world.

For the year ended Q1 2010, some small European markets like Finland saw a Y-o-Y increase of 11% while larger markets like France and Germany saw modest gains to the tune of 0.50%. Foreclosures in the US continue to grow, resulting in Y-o-Y drop in residential RE prices. In Asia, Hong Kong, Singapore and Taiwan saw massive increases, fuelling doubts that a bubble is under way in these markets and also in larger markets, esp. China. The Middle East saw similar divergences, with residential apartment prices in Riyadh, Saudi Arabia witnessing a 6% y-o-y increase, compared to still falling prices in places like Dubai.

From a rental yield perspective, Latin American countries like Peru and Brazil seem attractive when compared to global peers. Regionally, Egypt and Jordan offer the highest rental yields between 7 & 8%.

AAI measures the amount of residential living space afforded by an average wage earner in the city with his annual income.

Methodology

In order to compare the residential prices of various cities on a common ground, we tried to normalize the effects of different currency rates and influx of tourists.

We use a parameter – ‘**Area Afforded by Average Income of Inhabitants**’ or (**AAI**), which measures the amount of residential living space (measured in number of square meters) that an average wage earner living in the city can purchase with his net annual income. Since tourists also add to the demand of residential units and cause the prices to increase, their effect has also been accounted for towards calculating effective per capita earnings in the city.

Results

Mumbai is the costliest city on AAI, whereas Saudi cities are some of the most affordable.

In terms of effective per capita net earnings (incorporating the effect of tourists), Zurich tops this list, followed by Abu Dhabi, New York, Copenhagen and Dublin. Saudi cities rank in the lowest ten per capita net earning cities among sample that we covered¹.

Mumbai, India is the most expensive city when measured on AAI. An average earner in Mumbai city can only buy 0.38 square meter of land with his annual net income. Moscow, Hong Kong, London and Singapore follow suit as the next most costly cities. All three major cities in Saudi Arabia feature in the bottom fifteen of the normalized list, i.e. they are the 'least expensive' and hence most affordable. This leaves room for more people to own residential real estate in Saudi Arabia, and shows potential for future capital appreciation.

¹ Caveat: The income nos. can present a skewed picture for some cities where a large portion of the population are not part of the representative segment for the computation

Top 15 costliest cities

City	AAI (sq. m./person/annum)
Mumbai	0.38
Moscow	0.66
Hong Kong	1.21
London	1.55
Singapore	1.58
Tokyo	2.01
Rome	2.37
Paris	2.55
Athens	2.75
New York City	2.89
Warsaw	2.91
Budapest	2.91
Shanghai	3.02
Prague	3.07
Doha	3.22

Bottom 15 costliest cities

City	AAI (sq. m./person/annum)
Toronto	7.43
Lisbon	7.90
Dubai	8.07
Riyadh	8.08
Istanbul	8.37
Abu Dhabi	8.76
Kuwait city	9.21
Montreal	9.27
Amman	9.39
Brussels	10.00
Berlin	10.45
Copenhagen	10.52
Dammam	10.77
Cairo	11.32
Zurich	14.25

Complete list

Rank	City	Average apartment unit price (USD / sq. m.)	Effective net annual income per capita in the city (tourist-adjusted) (USD)	AAI (sq. m. per person annually)
1	Mumbai	5,506	2,069	0.38
2	Moscow	14,701	9,768	0.66
3	Hong Kong	11,368	13,784	1.21
4	London	14,632	22,616	1.55
5	Singapore	6,839	10,778	1.58
6	Tokyo	12,688	25,525	2.01
7	Rome	6,462	15,339	2.37
8	Paris	8,546	21,750	2.55
9	Athens	5,540	15,261	2.75
10	New York City	10,503	30,362	2.89
11	Warsaw	2,585	7,515	2.91
12	Budapest	2,022	5,891	2.91
13	Shanghai	1,754	5,301	3.02
14	Prague	3,214	9,861	3.07
15	Doha	3,150	10,143	3.22
16	Beijing	1,419	4,593	3.24
17	Muscat	1,750	6,268	3.58
18	Manama	2,652	10,716	4.04
19	Bangkok	1,345	5,582	4.15
20	Barcelona	4,599	19,431	4.23
21	Helsinki	5,925	25,426	4.29
22	Buenos Aires	1,378	6,039	4.38
23	Dublin	6,393	28,140	4.40
24	Beirut	2,229	10,700	4.80
25	Madrid	3,999	19,550	4.89
26	Rio De Janeiro	1,467	7,413	5.05
27	Milan	3,260	18,960	5.82
28	Munich	3,705	23,759	6.41
29	Sydney	3,521	22,823	6.48
30	Bogota	843	5,592	6.64

31	Amsterdam	3,278	22,015	6.72
32	Santiago	734	5,224	7.12
33	Jeddah	900	6,463	7.18
34	Toronto	2,825	20,997	7.43
35	Lisbon	2,038	16,101	7.90
36	Dubai	2,163	17,451	8.07
37	Riyadh	800	6,463	8.08
38	Istanbul	910	7,614	8.37
39	Abu Dhabi	3,692	32,345	8.76
40	Kuwait city	2,400	22,093	9.21
41	Montreal	2,264	20,993	9.27
42	Amman ²	1138	10,700	9.39
43	Brussels	2,303	23,039	10.00
44	Berlin	2,136	22,316	10.45
45	Copenhagen	2,689	28,290	10.52
46	Dammam	600	6,463	10.77
47	Cairo	345	3,904	11.32
48	Zurich	2,441	34,799	14.25

Back-testing

In order to test whether the AAI metric is of any value, we attempted to test its value signals using historical data for the cities mentioned above starting from 2002. As such, we assumed a consistent purchase each year of the city rated as best value based on the AAI metric and the sale of the city indicated as best value based on the AAI metric for the preceding year.

Based on this exercise we found that purchasing real estate in the best value city each year would have resulted in an annualized return of 6.00% per year since 2002. This compared quite favorably given the real estate declines in many countries during 2008-2009, as an equally-weighted investor into the all the cities above would have generated an annualized loss of -0.60% over the same period.

This testing lends comfort to the signals given by the AAI metric, and while it is by no means the only metric of value, it can be an important tool for real estate investors who look at a global scale.

² Average Incomes for Amman and Beirut have been assumed to be at a similar level as that of Manama.

Appendix

Steps involved in calculating AAI

Step 1: Average price (per sq. m.) for prime residential real estate

We began by finding out the average unit price for a 120 square meter apartment³ in each of these major cities. This was available through GlobalPropertyGuide (apartments in the prime city center). Since prime residential real estate commands a premium over average RE prices, we tried to scale this down to an average apartment price.

Step 2: Computing price of average real estate from prime real estate

We thus divided the cities in the sample into two classes – Developed and Emerging. We identified five cities in each class (as a representative for the entire population), and researched for ‘average apartment unit price’ through various sources including GlobalPropertyGuide and CBRE. We then calculated the scale-down factor for each of these cities by comparing their average prices to prime-location prices. We then averaged this scale down factor for all five cities to reach to a common scale-down factor for the class (Developed and Emerging).

- Developed markets’ scaling factor: **70.5%**
- Emerging markets’ scaling factor: **60.1%**.

We then applied this scaling down process to the initial list of prime area residential rates to reach to average residential unit prices. For some cities which were not included in the initial prime-rates report, we found out the average unit prices through other available resources.

Step 3: Computing per capita income for city residents

We also needed to find out average net per capita earnings for city residents. We referred to a UBS report titled ‘Prices and Earnings’ (details provided in Appendix), which indexed the net per capita earnings after taxes and social security for various cities in the world against that of New York. In order to find the dollar value for the average net per capita earning for a resident of New York, we referred to US census (2008E).

³ Average apartment sizes vary depending upon the selected city, we used a standard adopted in the GlobalPropertyGuide report

For some of the GCC cities that were not part of the UBS survey, we computed their country's Gross National Incomes for year 2008 (source: UN data), removed earning through exports of oil & gas (with the rationale that this money does not go the public directly), and then divided by country population (source: IMF) to reach per capita income net of natural resources. This was taken to be same for the city as for the country.

Since we have three Saudi cities in the list, the per capita net incomes for all three were taken to be the same. We then used the per capita net of natural resources of Manama (Bahrain), which was part of the UBS Survey, to reach to proportionate numbers of net per capita income for these other cities.

Step 4: Adjusting for tourist inflows

To account for tourist inflow into the city, following assumptions were made:

- International tourists are being considered for all cities (except for Saudi where we assumed that all tourists are domestic)
- All international tourists are flying from OECD countries
- On an average, two tourists would live in a city for one month, and then leave the place – so the effective annual demand of residential units was 1 per '24' international tourists

Data for number of tourists by cities (2007) was available from EuroMonitor, which was extrapolated to reach to 2009 figures.

In order to incorporate the tourist-effect, the revised effective per capita net income of city was calculated by:

- Calculating the total net earnings for city by multiplying per capita numbers by city population
- Calculating effective number of local person-equivalents from number of tourists by dividing by 24
- Calculating the total net income brought in by these local person-equivalent tourist numbers (by multiplying the number with average OECD per capita net disposable income – exception was Saudi where all tourists were considered domestic, and thus multiplying factor was Saudi net per capita income)
- Adding the two total incomes to reach gross income for city



- Adding the local person-equivalent tourist numbers to city population to reach to total people creating demand annually
- Dividing the total incomes by total effective demand creating population for the city – the tourist-adjusted effective per capita net income for the city

Step 5: Final Computation

Finally, the **'average residential apartment's unit price per square meter'** was divided by the **'effective per capita net income'** to reach to our defined ratio **'Area Afforded by Average Income of Inhabitants (AAI)'**.

Our process thus normalizes for difference in earnings for various cities, their taxes and social security payments, and demand created by incoming tourists.

Sources

UBS - Prices and Earnings, 2009 Edition

Globalpropertyguide.com-Mid Year 2010 Recommendations

CBRE – Living Residential Warsaw, spring 2009

Prudential Douglas Elliman Real Estate – Manhattan, 2000-2009 market report

CBRE – Market View Residential France, 2009

Factfinder.census.gov (US census on New York, 2008)

Euromonitor.com

IMF.com

OECD.org

Data.un.org



Empowering the investor

Second Floor, Olaya Center, Olaya Main Street

P.O. Box 286546, Riyadh 11323, Saudi Arabia

Tel: +966 1 299 8000

Fax: +966 1 419 6498

Website: www.derayah.com

Email: questions@derayah.com

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