Price Modeling for Residential Markets – A Simple Technique

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Factors affecting the prices of residences in any particular market or sectors thereof are many. These would include the overall economy, government policies, social stability, population, demographics, personal income, taxation levels, and so on, which in turn may lead to and influence, wholly or partly, other factors e.g. enthusiasm for home ownership.

Obviously, any detail and accurate study / projection of residential prices would involve much effort and time given the range of factors and the amount of data which need to be dealt with, thus only institutions with very sufficient resources such as universities or large corporations may afford such exercises. Nonetheless, a simple technique as described below, though which may be limited to providing at best an "Order of Magnitude" estimate, could be useful as a complimentary tool in calculating how much the (average) home price of a market or a sector thereof at any one point in time "could have been" (versus what it is actually at the time) : (for simple illustration, we have limited the factors to say two ; personal income level and personal tax rate)

1) Find a "Base" Market e.g. Toronto, with average home price at say HK$1,200,000, personal income (of the home buying population) at HK$170,000 per annum, and tax rate (of the same group) at 45%.
2) Decide on a "Target" Market e.g. Hong Kong, with personal income of the home buying group at HK$250,000 per annum, and tax rate of 15%.
3) The (average) home price of the "Target" Market in this example would thus be:

Target Price = Base Price x (Target Personal Income/Base Personal Income) x ((1-Target Tax Rate) / (1 – Base Tax Rate) = HK$1,200,000 x (250,000 / 170,000) x ((1-0.15)/(1-0.45)) = approximately HK$2,727,000

4) Compared the result with the actual price in the Target Market, then one would know how much higher or lower the actual average home price is compared to what it "could have been". This may also help in assessing the risks / returns of the market.

The following should be noted when using this technique:

a) For new / immature markets, this could be used to estimate the approximately home price level which the market or sectors thereof could afford.
b) Generally, the more factors the better the comprehensiveness and accuracy.
c) Certain factors could be subjective e.g. enthusiasm to own a home and weighting of such could be biased as well.
d) This could also be used to compare residential sub-sectors in any one market.
e) Several Base Markets could be used to calculate the home price of the Target Market.
f) Make sure the time frame of the Base Market(s) and the Target Market are the same.