

Land Price Indexation in Indonesia: A pilot study in Pontianak City

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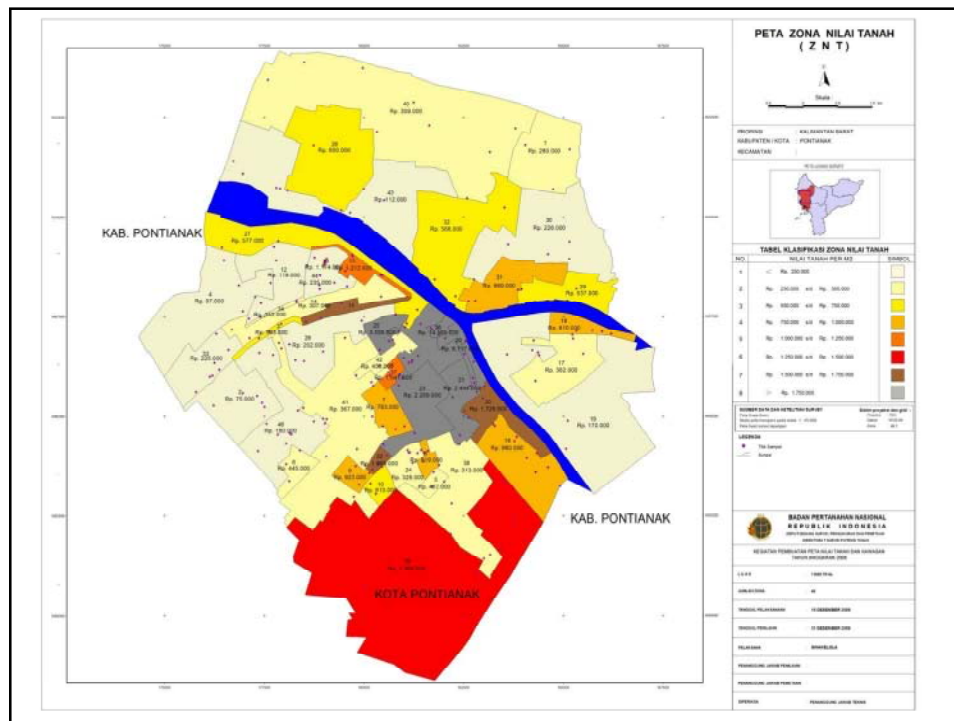
Background

- Real Property Market is not transparent
- Real Property Market Information is very limited.
- Needs to update existing land value zone map
- In Indonesia: Land supply is very static, but the demand is increasing significantly.
- Property varies in Indonesia → difficult to generalize the market.
- Land is more uniform.



Land Value Zone Map (2008)

- Land value zone Map is generated from the transaction data before December 31st 2008.
- The 46 zones within the area shows the similar land use, accessibility, physical condition and social ecomic characteristics.
- The scale of the map itself is 1:25.000.
- Base map is the combination of quickbird satellite prior to 2007 and ALOS image of 2006.
- minimum number of valid land transaction for every zone.
- The market is not perfect.
- The transaction in Indonesia is not very transparent.
- To complement the offered price are used.
- some data actually is the real property data which contains land and building.
- In this study this map will be used as an index base.



Price Index

- Price Index is a figure which is developed to compare the same activities in different periods of time.
- Price Index Method:
 - Price Weighted Index
 - Market Value-Weighted Index
 - Equal Price (unweighted Index)



Price Weighted Index

- $$\text{Index} = \frac{\sum \text{current value of each value zone}}{\sum \text{zone value in the base period}}$$
- In this method, the higher price difference will have a higher weight in calculating the price index. If this index is used, the movement of the price index will be more influenced by the movement of land price in the commercial or residential zone which has a higher transaction price than agricultural zone. It is due to every land value zone is treated equally

Market Value-Weighted Index

- Index = $\frac{\sum P_t Q_t}{\sum P_o Q_o}$
- The advantage of this method is it shows the movement of total value of land in a certain area. IT provides the information of the growth of total asset of certain area. However the higher the capitalization of one land value zone will contribute more in the movement of index. The smaller area of zone will affecting the price index less than the wider area

Equal Price (Unwieghted) Index

$$\frac{\sum P_t / P_o}{\sum Q_t}$$

- The price index derived from this method will show the average percentage of price movement of every zone. Every transaction will contribute equally to the movement of the price index regardless the price and the area of the zone. This method is suitable for the zones which have a big variety of land use and area in one municipality without any preference

Land Price Updating Survey

- the transaction data between 1 January – 30 June 2009.
- Using same adjustment..
- Limited data, About 411 data are collected for all 46 zones all over the municipality.
- All data are distributed in each zone.

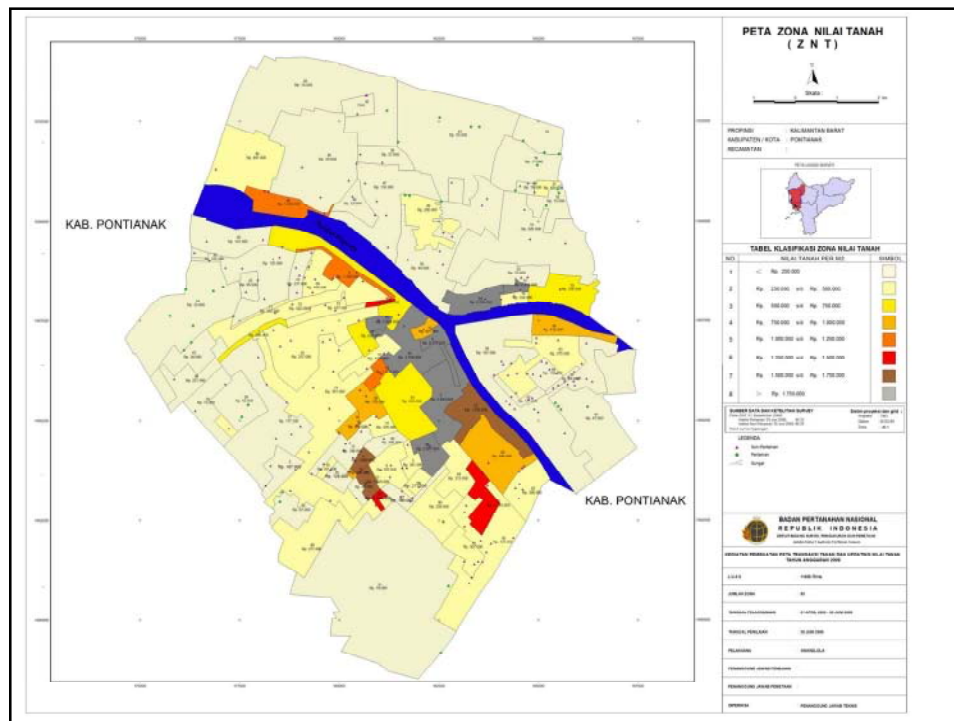


Price Index Calculation

- $Index = (P1/Poi + P2/Poi + P3/Poi + Pt/Poi) / Qt$
- Unfortunately only 99 of 411 data are within the range of 30% of index base.
- price index for non agricultural use is 0.9838
- Price index for agricultural use and 0.8465.
- 312 data can not be used, however:
 - They may be used to define another (smaller) zone within the existing zone
 - 40 additional zones have been created.

Utilization of Land Price Index

- In general to monitor the trend of Land Price for particular use in certain area.
- It is used to estimate the land value all over the city by applying the land price index to the 2008 land value map as an index base using simple formula:
 - $Pti = Poi \times Index$



Conclusion

- Number of transaction; the more transaction → the better accuracy.
- Market transparency; A lot of effort must be done to have data that can be considered valid.
- Map accuracy and availability; the larger the map, the accurate the zone.
- Recommendation:
 - acceleration of land registration in order to have spatial information of all land parcels → better land value zone
 - a land policy that encourage people to report the true price of transaction. The policy could be incentive or disincentive or another change of land tax policy

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Terima Kasih

The End

Thank You

For Your Attention