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Real Estate challenges:

A study to Estimate Property Values and Compare those to Tax Values in Greece



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The key conclusions of this presentation are the following:

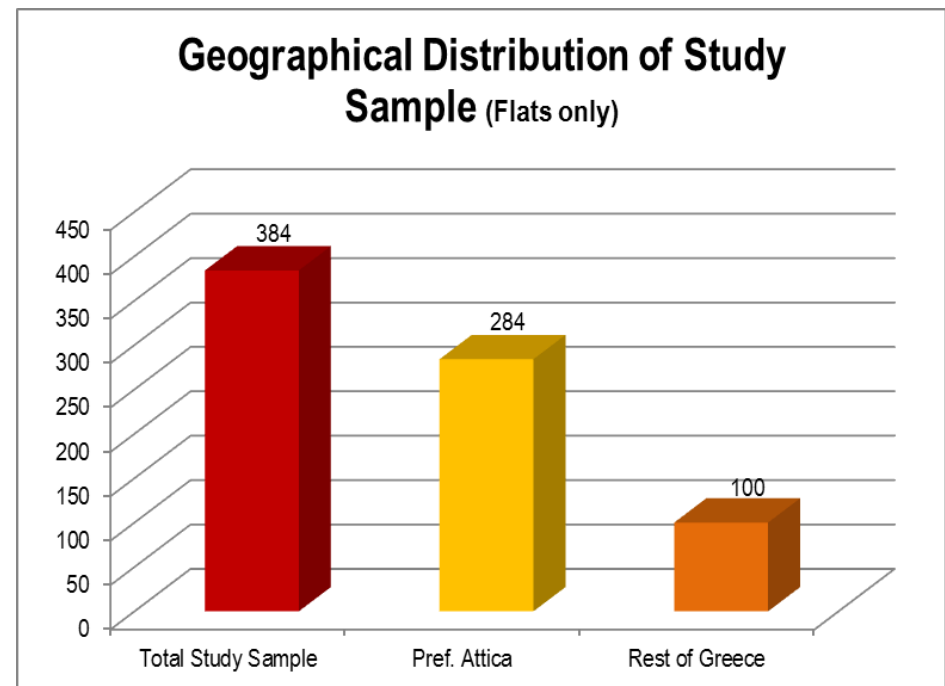
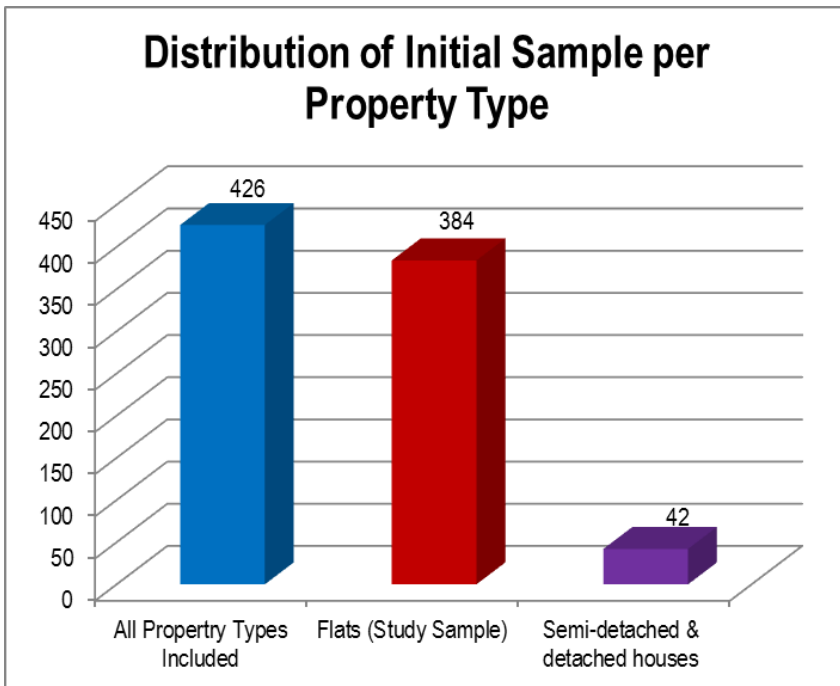
- ✓ “Fixed” value reductions are not effective and have not solved the problem of large deviations between tax and market values,
- ✓ Valuations, in a not fully active Real Estate market, are still a reliable proxy to market values. They can be used to minimize deviations between tax and market values,
- ✓ There are a series of sophisticated tools available for estimating tax values, AVM is one of them and it shows great performance,
- ✓ Arm’s length (ordinary) to non-ordinary transactions ratio is 70%-30%.

Questions:

- To what extent the recent review of tax values has succeeded to “equate” tax and market values? Does the use of innovative tools serve better the goal of **“equalization”** of **tax** to **market** values?

Data:

- Initial Sample: 426
- Total Study Sample: 384



LIMITATIONS

1. Insufficient address data (e.g. The street name and the position on map was known but not the street number or exact coordinates)
2. Subjective evaluation of property characteristics amongst agents (e.g. condition of maintenance, view etc.),
3. Exact Transaction Date (Indexation purposes – e.g. 2nd Semester of 2015 was expressed as 15/9/2015),
4. Insufficient property characteristics (e.g. floor number, condition of maintenance etc.) for a small number of transactions.
5. Tax Values were calculated based on assumptions:

Tax Value Assumptions

Façade Coefficient: View at one road only

Listed Building: No

Building Completion: 100%

Ownership: 100%

In order to define whether a transaction would be ordinary or non-ordinary, three (3) sets of values were created:

- Desktop Valuations by Certified & Continuously Trained Valuers
- Market Reports Ranges (Cover 1000 points of interest for high, medium, low areas and groups depending on the year of construction based on Field work & Questionnaires distributed to over 400 Real Estate Professionals)
- Statistically Estimated Value (produced by AVM)

Special transactions (**non-ordinary**) **FAILED** at all three sets of values. An arm's length (**ordinary**) transaction passed at least one test.

AVM

Automated Valuation Models use one or more **mathematical techniques** to provide an **estimate of value of a specified property at a specified date**, accompanied by a measure of confidence in the accuracy of the result, **without human intervention** post-initiation [RICS' definition]

1st check – Desktop Valuation

Transaction lies within
+/-20% of valuations
OR

2nd check – Market Report Range

Transaction lies within
Market Report range of
+/-20% OR

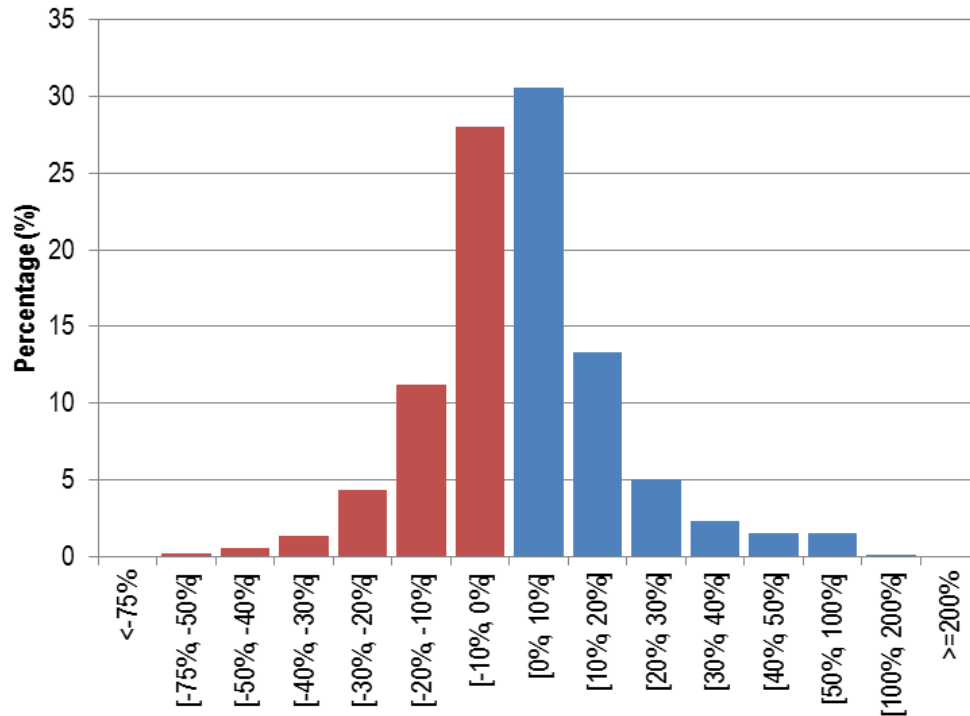
3rd check – AVM

Transaction lies within
+/-20% of AVM
valuations

**“TRANSACTION
IS ARM'S LENGTH”**

EPS AVM passed the benchmarks set by the international bibliography and exhibited great performance. The verification study was based on more than 70,000 certified valuations.

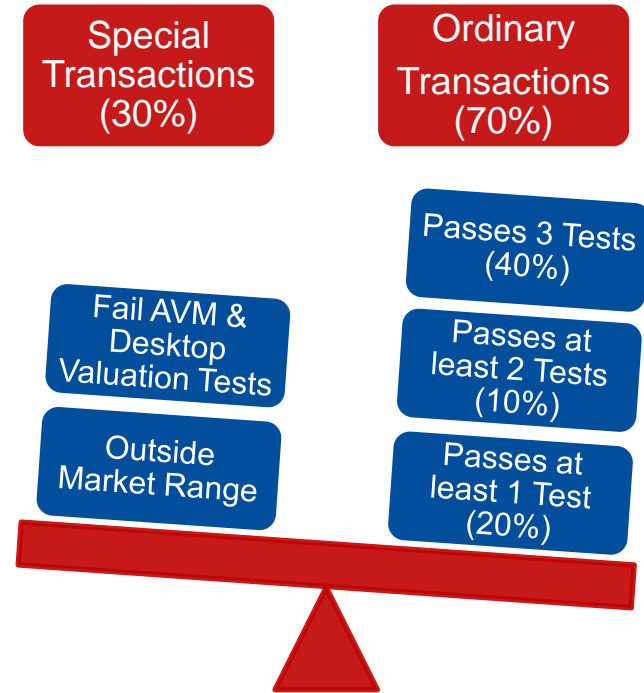
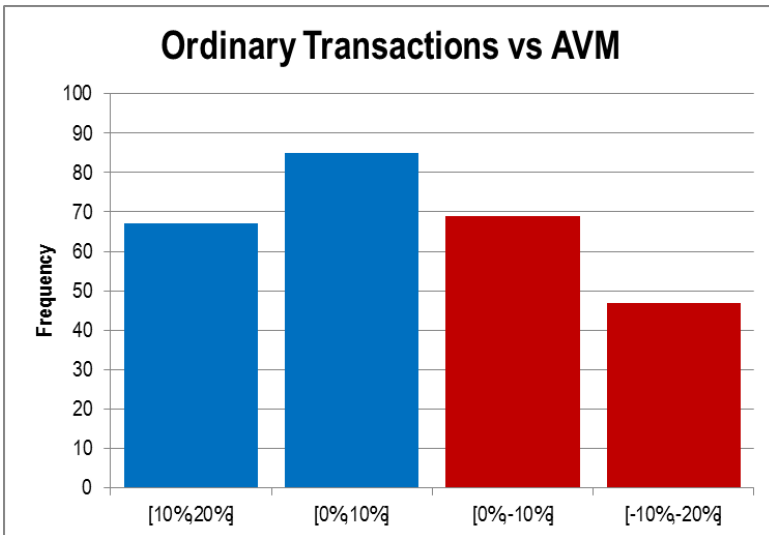
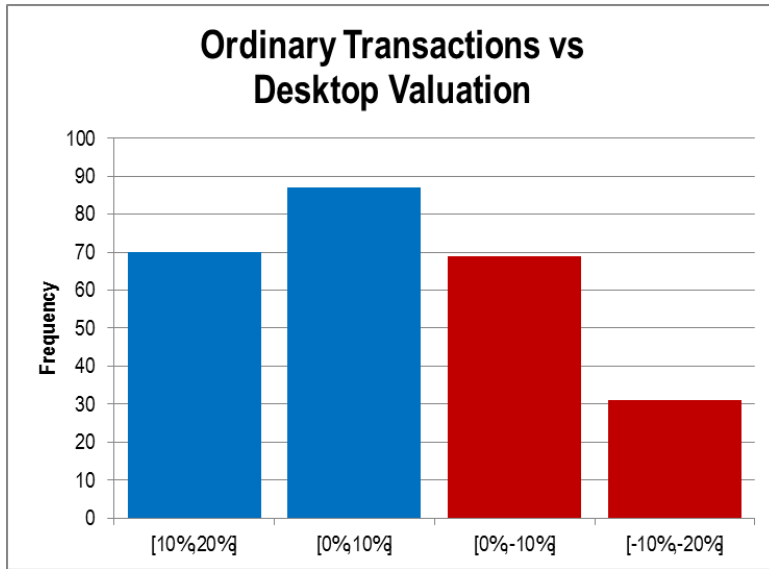
AVM Deviation Chart (Greece)



Measures/ Coefficients	Absolute minimum benchmark	EPS AVM Performance
MAD	13%	12.8%
% estimates within +/- 10%	50%	51%
% estimates within +/- 20%	80%	83%

Note: MAD denotes the Mean Absolute Deviation (Rossini & Kershaw 2008)

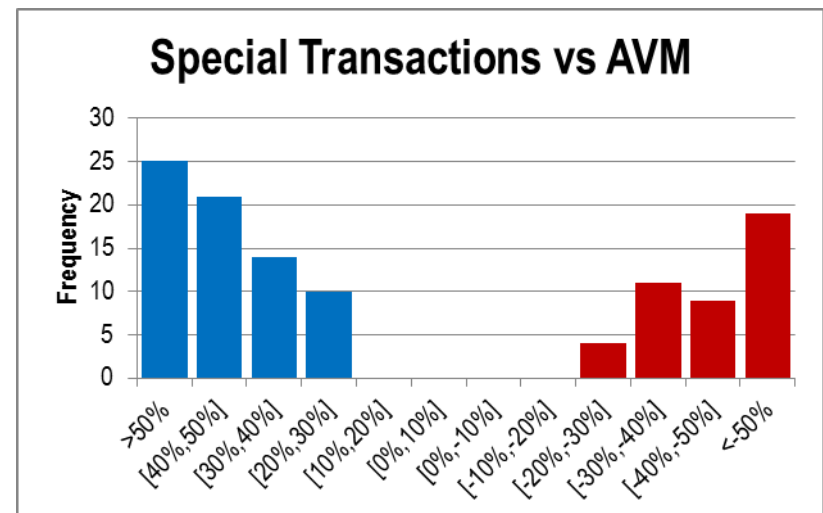
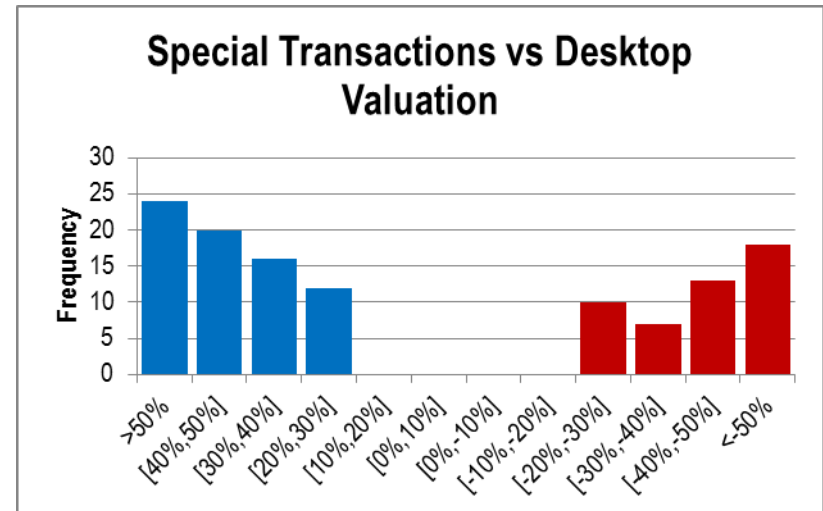
Summary Results: Ordinary Transactions (70%)



Summary	Transaction / Desktop	Transaction / AVM	Market Reports
Mean Deviation	6.1%	4.8%	Within Range
Mean Absolute Deviation	13.9%	14.7%	Within Range

Summary Results: Non-Ordinary Transactions (30%)

Summary	Transaction/ Desktop	Transaction/ AVM
Mean Deviation	52%	51%
Mean Absolute Deviation	62%	61%

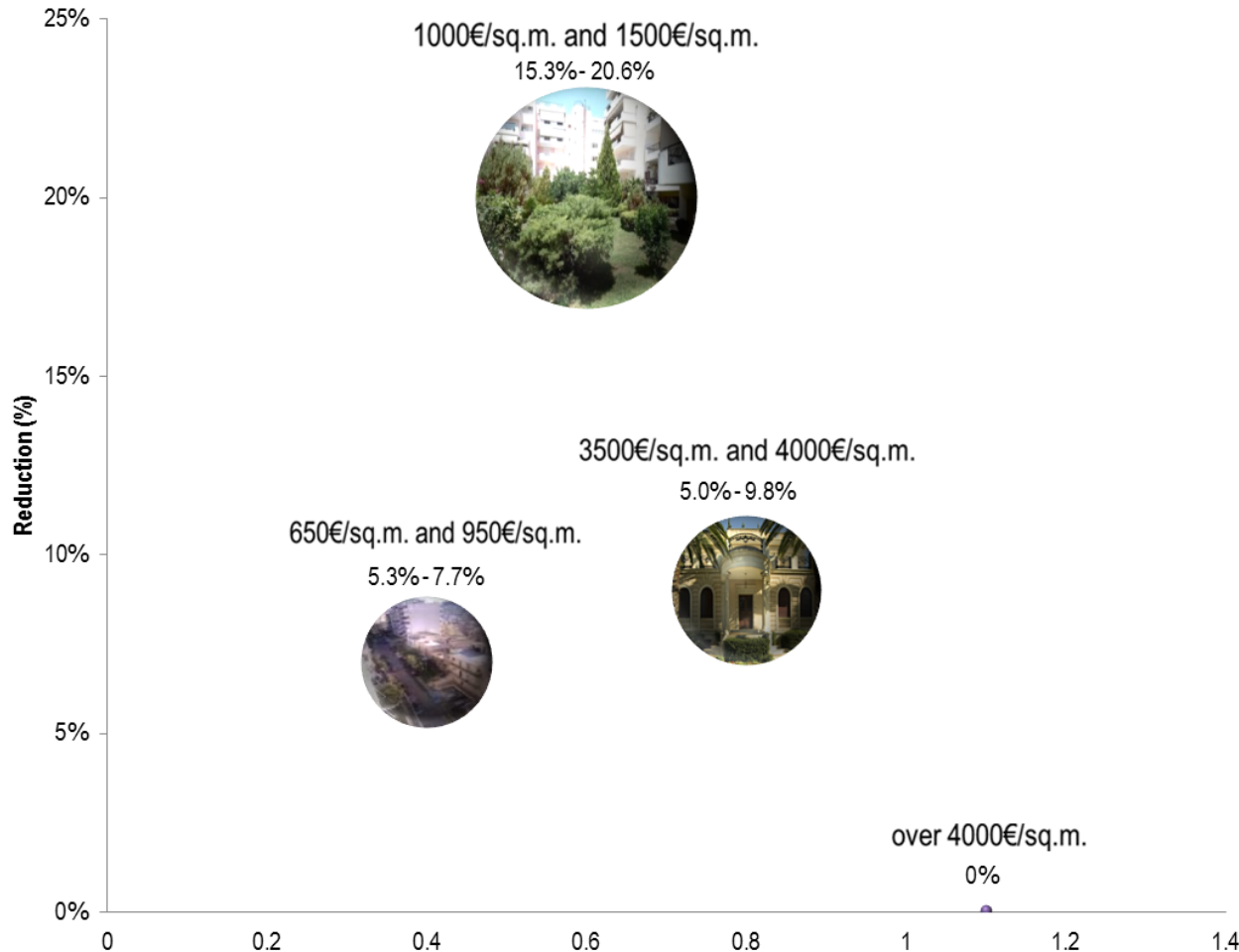


The results indicate that those transactions were *non-ordinary*.

Especially the Mean Deviation results exhibit that transactions have occurred in a different level of prices mainly due to:

- Tax Motives
- Special Circumstances (e.g. rumors for haircuts on bank accounts, capital controls etc.)
- Properties with Special Characteristics (Exceptional View etc.)
- Forced Sales

Fixed Value Reductions

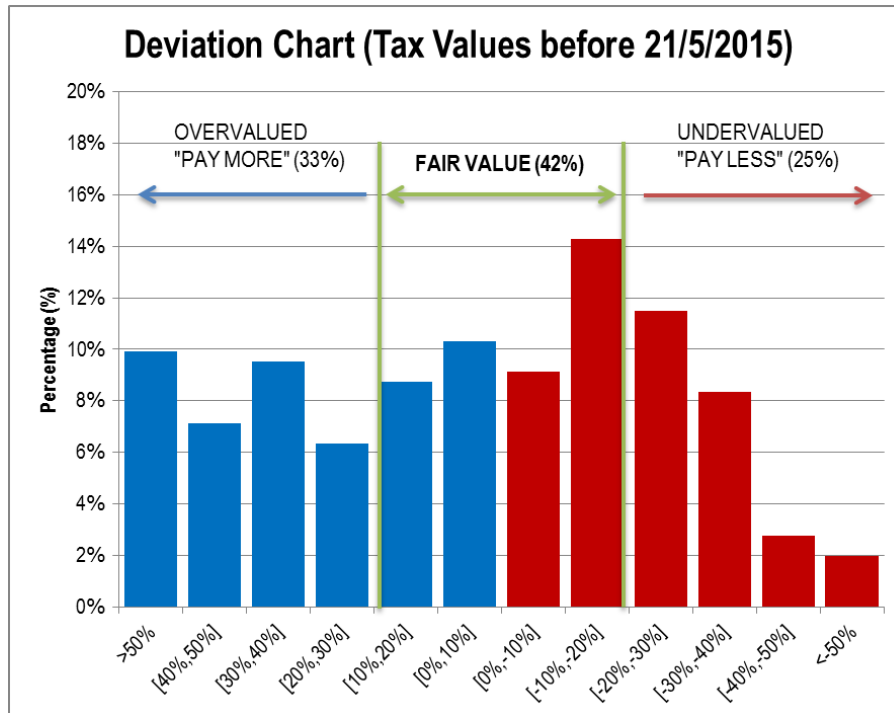


The revision of tax values, was effectively a "fixed" reduction based on respective price ranges. There are three main areas of reduction:

1. For zone values between 650€/sq.m. & 950€/sq.m. → **5.3% - 7.7% (reduction)**
2. For zone values between 1000€/sq.m & 1500€/sq.m → **15.3% - 20.6% (reduction)**
3. For zone values between 3500€/sq.m & 4000€/sq.m → **5.0% - 9.8% (reduction)**
4. For zone values over 4000€/sq.m. → **No Reduction**

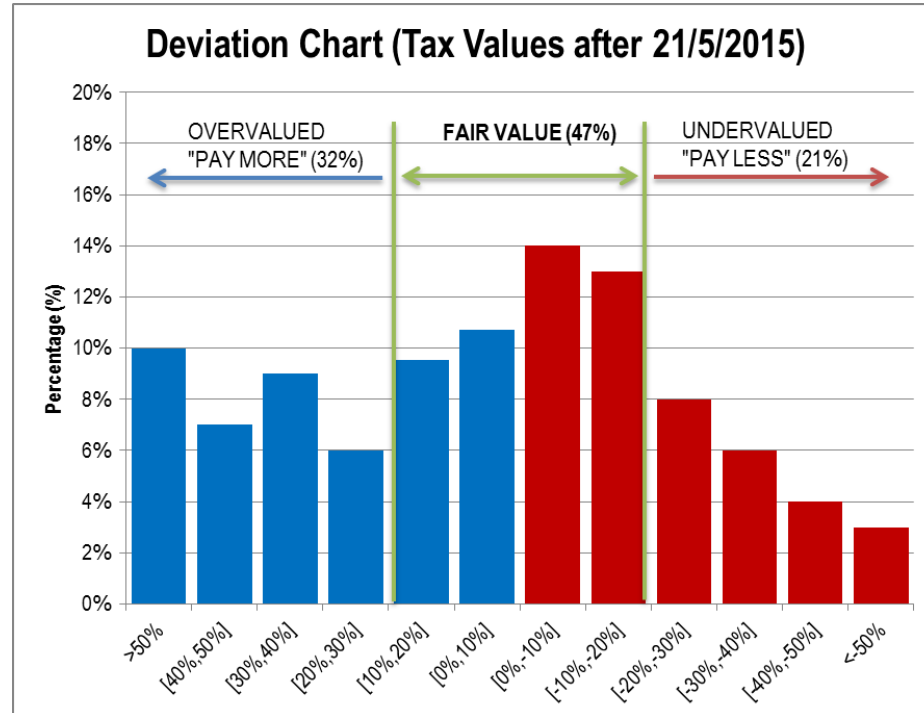
We define "fixed" reductions as decreases of the same amount across areas of a group, without taking into account specific property characteristics.

Tax Value Analysis: Tax Values vs Ordinary Transactions



MD: 14.1% & MAD: 36.0%

There are areas of large deviation between tax values and transactions. The **Mean Deviation** shows that there is a consistent 14% overvaluation, on average terms, compared to transactions.



MD: -2.0% & MAD: 33.0%

The "fixed" reduction has not affected the **Mean Absolute Deviation**, which shows that "equalization" of tax to market values has not still been achieved.

Observations:

- New tax values failed to converge to market values.
- “Fixed” reduction of values has not achieved the desired outcome. It is essential to find the optimum tax distribution among tax payers.
- Mean absolute deviation is still high which denotes that large deviations between tax values and transactions still exist.
- It is showed that, if other things being equal (e.g. tax coefficients), 21% of property owners on average pay less & 32% of them pay more tax, than they should.

Category	AVM vs Transactions	New Tax Values vs Transactions	Old Tax Values vs Transactions
Normal - Special (%)	70%-30%		
[-20%,+20%]	70%	47%	42%
Mean Deviation	4.8%	-2.0%	14.1%
Mean Absolute Deviation	14.7%	33.0%	36.0%
Comment	Better Distribution of Tax. AVM values closer to transactions	“fixed” reductions have not achieved equality of tax to market values	

Fixed Value Reductions (Current Tax Estimation Process)

- Failed to eliminate large deviations (between tax & market values).
- Failed to distribute tax burden fairly.
- Showed that the *Tax Estimation Process* needs to become **more dynamic**.

On the other hand, **EPS Analytics** offer a comprehensive framework for reliable value estimations and hence a step closer to equalization of tax and market values.

Main AVM features:

- Dynamic approach that involves analysis of property characteristics
- Ability for mass value estimations (portfolio level).
- Track effectively property market trends and changes.
- Real Time Monitoring Mechanism.

THANK YOU!!!

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