



Federation of International Surveyors



National Technical University of Athens



National Society Professional Surveyors

# Methodology for Quantifying the Economic Impact of Land Policy

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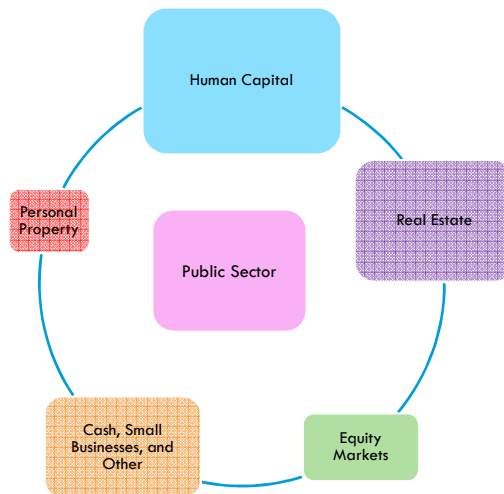
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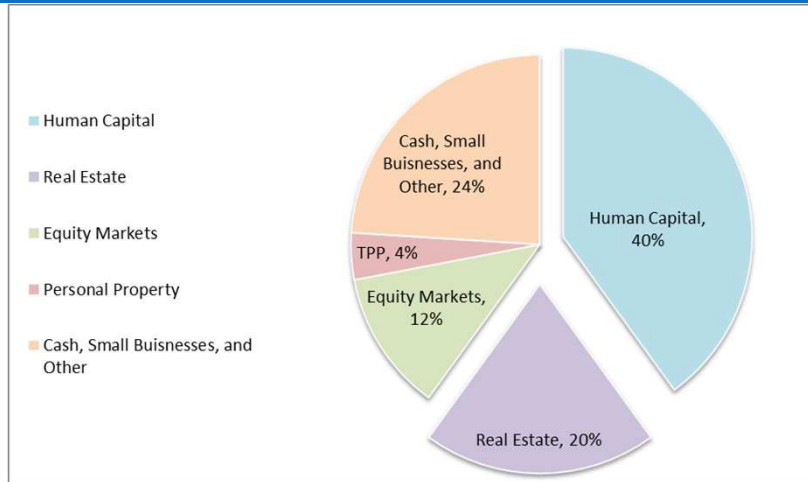
## National Economic Value Components

External Factors:

- Broad Market Influences
- National Antagonists
- National Protagonists
- Core Trade Markets



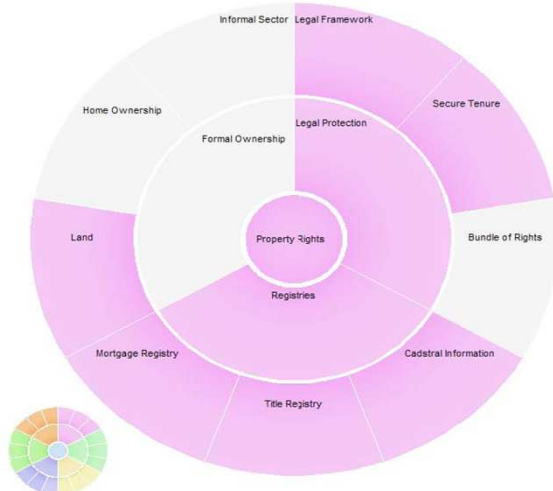
## Gross National Private Sectorial Values



## Property Market Foundation



## Property Rights



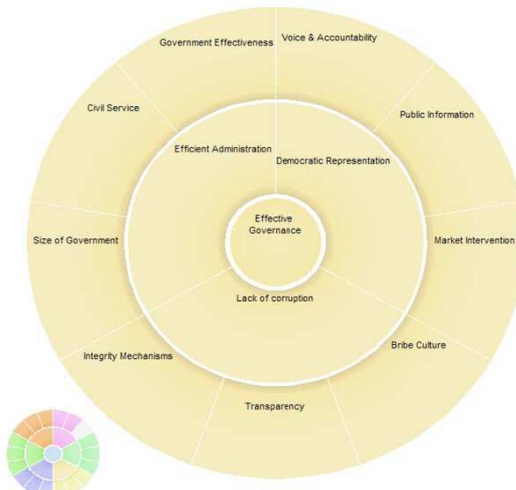
- **Goal – Property rights that are legally protected, secure, recorded in a single, accurate, electronically assessable registry and that lead to high levels of formal ownership for all citizens**

## Access to Credit



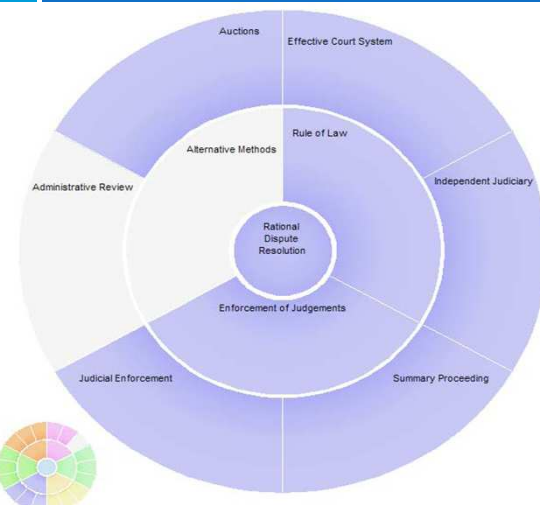
- **Goal – An efficient financial sector that allocates the resources saved by a nation's citizens as well as those entering the economy from abroad to their most productive uses. It includes a sound, trustworthy and transparent banking sector, well-regulated securities exchanges, venture capital, and accessible credit information.**

## Effective Governance



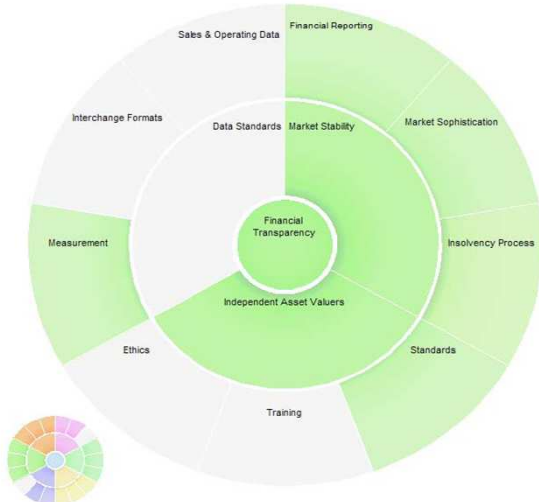
- **Goal: A system of government in which citizens freely make political decisions by majority rule combined with guarantees of individual human rights and the rights of minorities.**
- **A government free of corruption and functioning efficiently enough to meet the needs of the people.**

## Rational Dispute Resolution



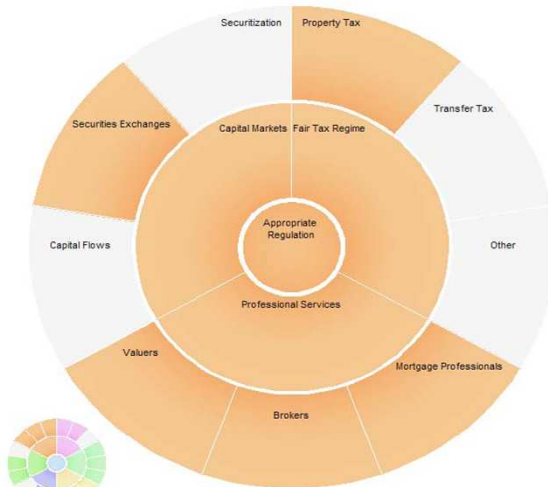
- **Goal: An efficient institutional framework that balances the rights of the public, owners, lenders and borrowers in the event of a dispute or loan default**

## Financial Transparency



- **Goal: A highly developed and transparent financial system including policies, institutions and trained and ethical professionals that contribute to effective financial intermediation and deep and broad access to capital and financial services**

## Appropriate Regulation

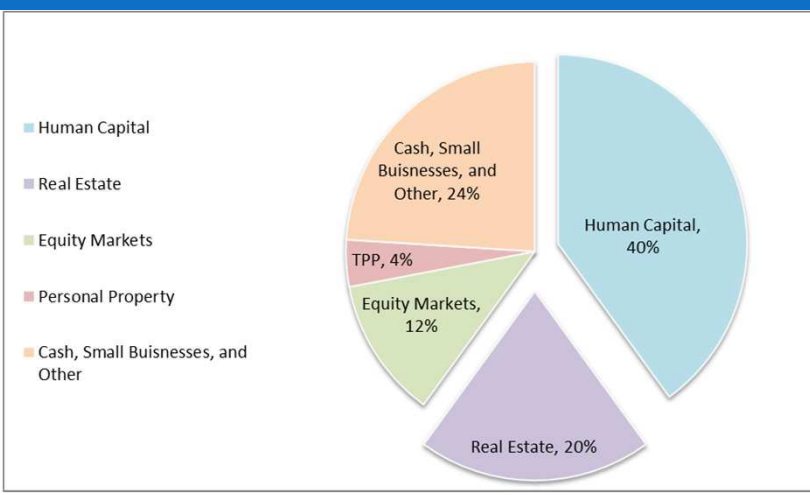


- **Goal: A comprehensive regulatory regime that is transparent, efficient, simple in its implementation and that leads to investments with the highest rate of return**

# Property Market Foundation



# Gross National Private Sectorial Values



## Appropriate Value Definitions

### Value In Use

- *“The value a specific property has to a specific person or specific firm as opposed to the value to persons or the market in general...”*

### Use Value

- *“In economics, the attribution of value to goods and services based upon their usefulness to those who consume them.”*

Source: The Dictionary of Real Estate Appraisal published by the Appraisal Institute

## Okun's Law

- The relationship between an economy's unemployment rate and its gross national product (GNP)...when unemployment falls by 1%, GNP rises by 3%. Other version of Okun's Law focus on a relationship between unemployment and GDP, whereby a percentage increase in unemployment causes a 2% fall in GDP.

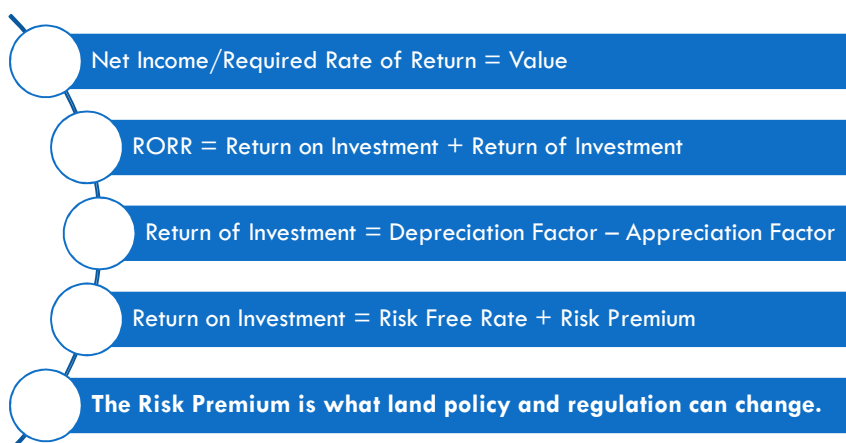
Source: <http://www.investopedia.com/terms/o/okunslaw.asp>

## Multiplier Effect in Macroeconomics

- Every time there is an injection of new demand into the circular flow there is likely to be a multiplier effect. This is because an injection of extra income leads to more spending, which creates more income, and so on. The multiplier effect refers to the increase in final income arising from any new injection of spending.

Source: [http://www.economicsonline.co.uk/Managing\\_the\\_economy/The\\_multiplier\\_effect.html](http://www.economicsonline.co.uk/Managing_the_economy/The_multiplier_effect.html)

## Overall Capitalization

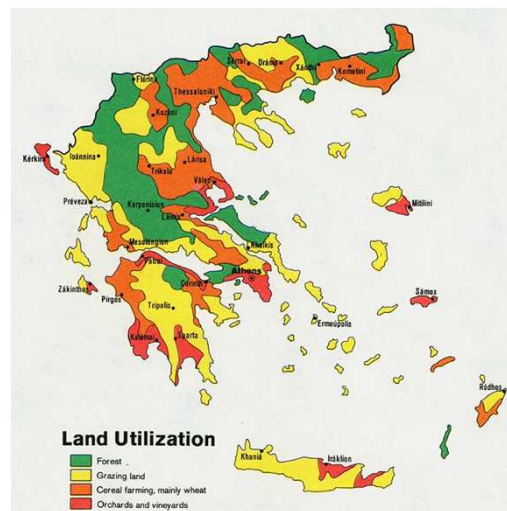




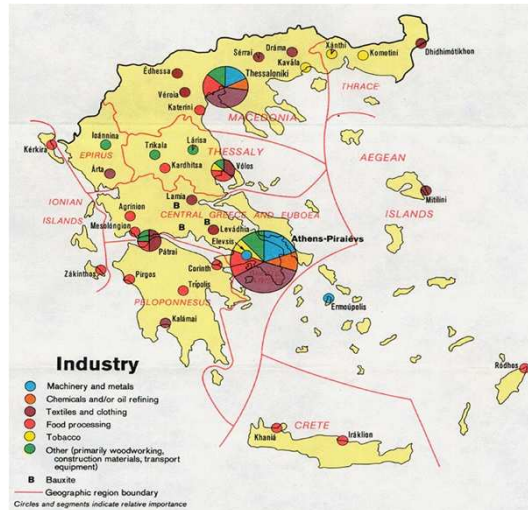
## Overall Capitalization Example

- $\$1,000,000(\text{net income})/10\%(\text{RROR}) = \$10,000,000$
- By lowering the Risk Premium (due to decreasing uncertainty, costs, etc...) value can be greatly enhanced
- $\$1,000,000(\text{net income})/9\%(\text{RROR}) = \$11,111,111$

## Case Study: Greece



## Case Study: Greece



## Economic Snapshot of Greece

GDP 2013

• \$239 Billion

Unemployment  
2014

• 30%  
• Age 15-24 57%

Population

• 11 million

## Effects of Lower Unemployment on GDP & the Deficit

- Assumptions: Pro employment and private market growth land policies, regulations, and possibly a privatization of some of the currently public held industries/markets.
- Applying an Okun's Law level multiplier effect of 2x to 3x equates to;
- **As a result of market improvements, if Greek Unemployment were to drop to 7%-10%;**
- **GDP would increase to \$334 Billion to \$382 Billion.**

## Overly Complex Zoning Regulation

26,000 pages of zoning regulations.

Overly complex & bureaucratic.

Planning studies take 15 years and cost 6,000 euro per hectare.

This unnecessarily increased uncertainty, delays, and costs.

## Overly Complex Zoning Regulation

100% of the population and 100% of the RE directly impacted.

An approximate 5% to 10% loss in productivity when applicable.

An average of 0.5% to 1% productivity loss is expected based on a once in 10 year possible change desired by the unconstrained market.

$0.5\% \times 40\% \text{ human capital share} \times 100\% \text{ of the population} = 0.4\% \text{ efficiency loss}$

$1\% \times 20\% \text{ RE capital share} \times 100\% \text{ of the market} = 0.2\% \text{ efficiency loss}$

## Dead Capital and Informal Development

- Can't sell (at more than 50% value?)
- Mortgage
- Difficulty inheriting
- Can't legally expand
- Human capital is much less mobile
- Corporate assets are much less mobile
- Can't tax
- Uncertainty increased
- Can't register with cadaster
- Formalization has a high cost (7-20% of property value)
- Formalization permits are for 30 years only
- Formalization increased uncertainty
- 1 million constructions are deemed illegal (and this excludes the 1.5 million with minor informalities); totaling about 72 billion euro in value.

## Dead Capital and Informal Development

20% of the population and 20% of the RE directly impacted.

An approximate 10% to 20% loss in productivity when applicable.

A weighted average of 1% to 2% productivity loss is expected based on a once in 10 year possible change desired by the unconstrained market.

$1\% \times 40\% \text{ human capital share} \times 20\% \text{ of the population} = 0.1\% \text{ efficiency loss}$

$2\% \times 20\% \text{ RE capital share} \times 20\% \text{ of the market} = 0.1\% \text{ efficiency loss}$

## Forest Land Policy Inefficiencies

- 48% of all land registered in the cadaster is informal since it has recently been claimed to be in new or historic forest lands.
- State claims ownership rights.
- No construction can commence.
- There are no completed forest or coastal zone maps
- owners must prove chain of title back to 1884.
- There has been a history of significant corruption in this process.

## Forest Land Policy Inefficiencies

- Title chain research is a long costly process tending to rule out small and medium investors from the market.
- The state has often claimed land in suburbs, even land registered with services available, taxes being paid, and a resident in place for over 20 years.
- The presence of a forest (25% canopy) at any time in the past based on ortho photos from as far back as 1945 allow the government to make these claims to ownership.

## Forest Land Policy Inefficiencies

- Rural land that is not cultivated may also “become” forest land and then the state can make claim. In informal & unplanned areas it can take 2-3 years for "possible" approvals for any construction, and denial is very possible.
- Constructions are commonly built informally because of this.
- To build in unplanned areas requires up to 25 agencies, may take several years, often court decisions ruling our small players.
- The process is slow and the lack of spatial data (forest maps & coastal zone maps) makes it even longer when there is existing formal & informal development already in place.

## Forest Land Policy Inefficiencies

12% of the population and 12% of the RE directly impacted (we used 1/4 of the land area as our guide assuming lower values and population in these areas).

An approximate 10% loss in productivity when applicable.

A weighted average of 2% productivity loss is expected based on a once in 20 year possible change desired by the unconstrained market.

$2\% \times 40\% \text{ human capital share} \times 12\% \text{ of the population} = 0.1\% \text{ efficiency loss}$

$2\% \times 20\% \text{ RE capital share} \times 12\% \text{ of the market} = 0.05\% \text{ efficiency loss}$

## Human Capital and Cost Inefficiencies

- Real estate values are inflated due to mortgages only available in the planned areas, pushing the populations into the urban areas where they might not go were their mortgage options expanded.
- Engineering inspections for informalities are required for each transfer (increasing costs).

## Human Capital and Cost Inefficiencies

100% of the population and 100% of the RE directly impacted.

An approximate 1% loss in productivity.

A weighted average of 1% productivity loss is expected relative to an unconstrained market.

$1\% \times 40\% \text{ human capital share} \times 100\% \text{ of the population} = 0.4\% \text{ efficiency loss}$

$1\% \times 20\% \text{ RE capital share} \times 100\% \text{ of the market} = 0.2\% \text{ efficiency loss}$

## Tax on New Construction

There is a 23% tax due on all new constructions forcing up real estate values by raising the feasibility level for new constructions well above what is efficiently demanded by the market.



## Tax on New Construction

100% of the population and 100% of the RE directly impacted.

An approximate 4% loss in productivity.

A weighted average of 5% productivity loss is expected based on higher rent and ownership costs of building improvements (+1.3% housing costs, +1.3% higher feasibility level & 30% housing share of personal gross income).

$4\% \times 40\% \text{ human capital share} \times 100\% \text{ of the population} = 1.6\% \text{ efficiency loss}$

$4\% \times 20\% \text{ RE capital share} \times 100\% \text{ of the market} = 0.8\% \text{ efficiency loss}$

## Multiplicative Inefficiency Factors

- The effects of lost efficiency on GDP is multiplicative.
- We will multiply all of these factors and arrive at a composite factor.
- We have also applied an efficiency factor to account for other inefficiencies in the market that were not explicitly factored in here. These are typically Public Sector factors.
- These other factors would apply downward pressure on the effect of the items noted here and a range of 0% to 50% for other inefficiencies (corruption other weak institutions, tax revenues needed to be gathered if taken away from new construction, etc.).

## Multiplicative Inefficiency Factors

- In this instance we have estimated a 35% loss of efficiency factor before determining the expected effect of these policies and practices on GDP.
- Lastly, we have not accounted for the effect these items have on personal property, cash & small business sector or the equity markets.
- These markets are also be affected by these same factors, but likely to a lesser extent.

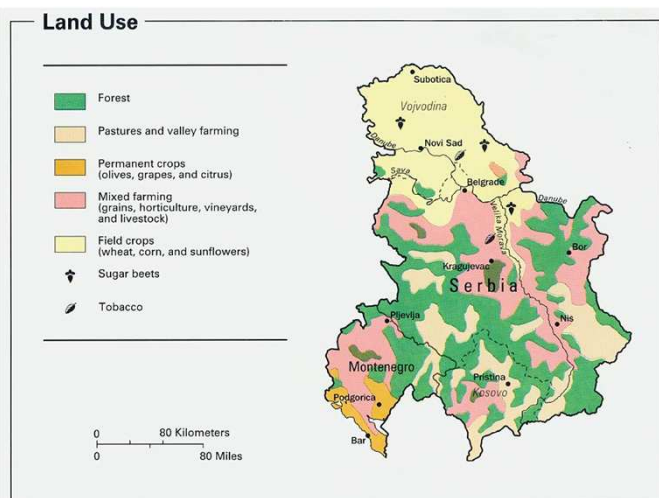
## Multiplicative Inefficiency Factors

- Composite of the above factors is 1.1% loss of efficiency.
- Applying the 65% efficiency factor (or loss of efficiency for other factors) shows 0.74% (1.55% for construction alone).
- Applying an Okun's Law level multiplier effect (2x to 3x) gives us a 1.5% to 2.2% GDP effect for these factors (3.1% to 4.6% for construction alone).
- **The annual GDP effect is 3.6 to 5.3 Billion.**
- **As GDP effect, given time, with Construction VAT lowered from 23% to about 3% is an additional 7.4 to 11 Billion**

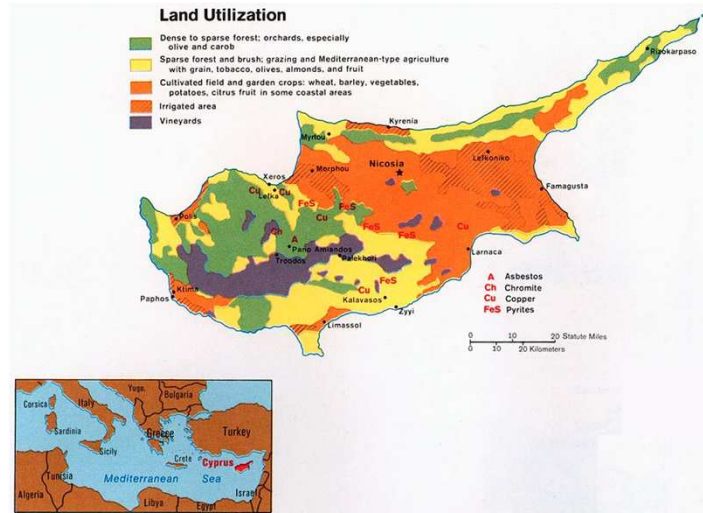
## Case Studies

- Montenegro
- Cyprus
- Albania

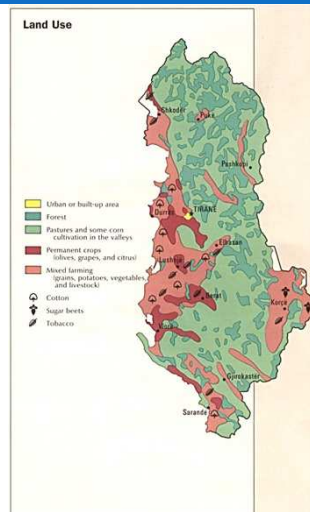
## Montenegro



# Cyprus



# Albania



# Thank you!

“A good legal property system is a medium that allows us to understand each other, make connections, and synthesize knowledge about our assets to enhance our productivity”

- Hernando de Soto

