

# Equity country risk and new institutional economics

Perm Winter School. 14-Feb-2015

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# Lowest multiples in the world

| Country        | PE   | Country    | EV/<br>EBITDA | Country    | PBV  | Country    | EV/<br>Sales |
|----------------|------|------------|---------------|------------|------|------------|--------------|
| Russia         | 3.79 | Gabon      | 2.57          | Azerbaijan | 0.11 | Mozambique | 0.41         |
| Serbia         | 5.04 | Azerbaijan | 3.22          | Mozambique | 0.17 | Bulgaria   | 0.54         |
| Gabon          | 5.31 | Russia     | 3.44          | Sudan      | 0.21 | Hungary    | 0.61         |
| Samoa          | 5.38 | Latvia     | 4.78          | Belize     | 0.32 | Gabon      | 0.63         |
| Jamaica        | 5.76 | Sudan      | 4.81          | Russia     | 0.35 | Jordan     | 0.63         |
| Malawi         | 7.41 | Romania    | 4.97          | Cyprus     | 0.50 | Russia     | 0.73         |
| Ghana          | 9.57 | Senegal    | 4.98          | Kazakhstan | 0.52 | Azerbaijan | 0.75         |
| Zambia         | 9.72 | Hungary    | 4.99          | Mongolia   | 0.60 | Slovenia   | 0.78         |
| Czech Republic | 9.90 | Serbia     | 5.08          | Hungary    | 0.64 | Ukraine    | 0.81         |

- Russian stock market has been one of the cheapest in the world for years
- That's not related to Ukrainian standoff

# Asset (equity) pricing models

|                    | Theory first                                | Data first  |
|--------------------|---|---|
| Main question      | How does rational investor ought to behave? | Is there patterns (predictability) in the data                                |
| Instrument         | Utility maximization                        | Data mining   |
| Examples           | CAPM, intertemporal models                  | Fama-French (1992) 3-factor model, momentum, other ( <i>circa</i> 70 factors) |
| Empirical evidence | Weak, if any                                | Good, but often nonsensical   |
| Main problem       | Why theory doesn't fit the data?            | Why we see what we see? (lack of theory)                                      |

## EM country specific risk

|             |             |                 |
|-------------|-------------|-----------------|
| Limitations | Weak theory | Too little data |
|-------------|-------------|-----------------|

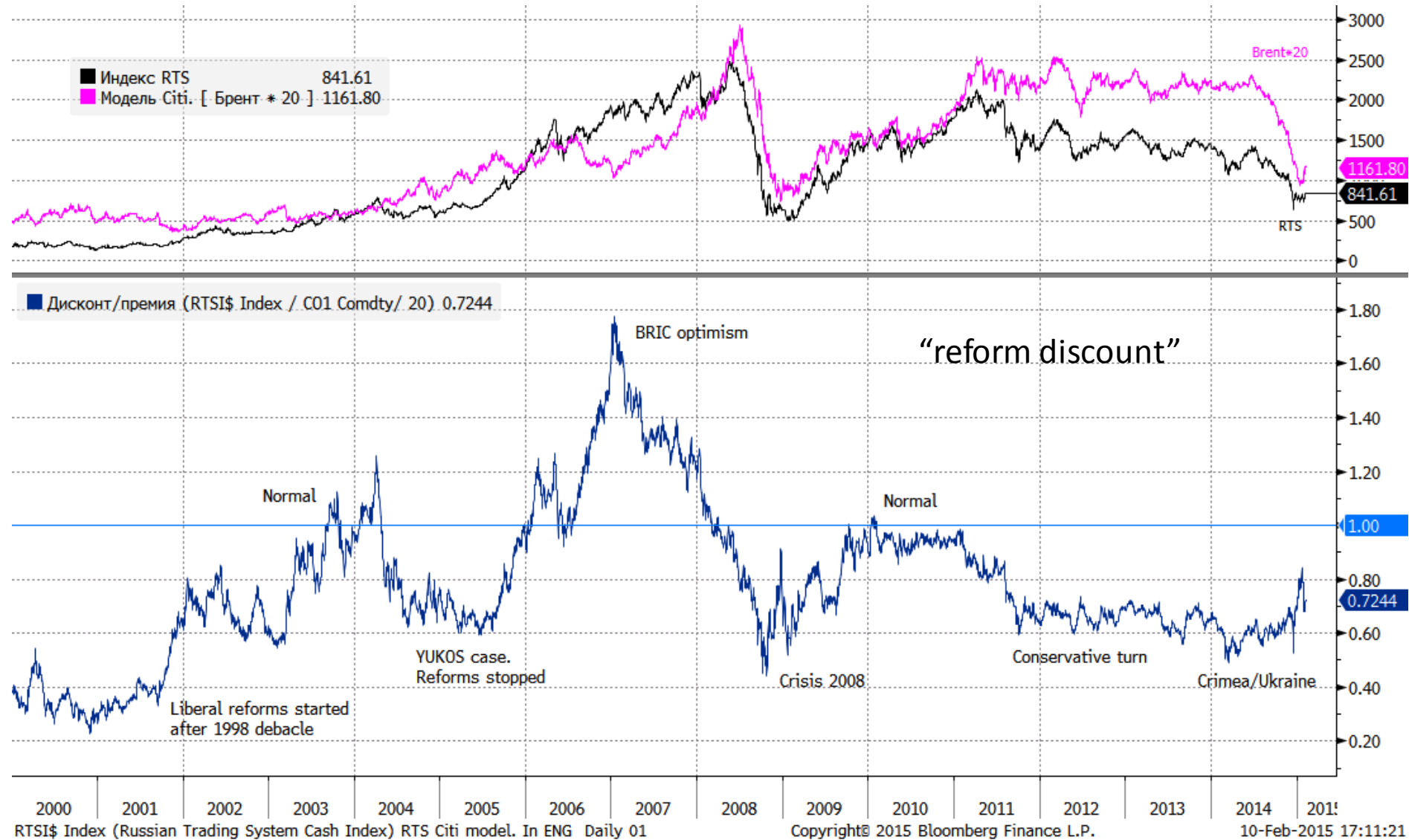
# DCF valuation in Emerging markets

- “Valuation is more difficult because of various risks and possible obstacles to businesses”
  - Macroeconomic uncertainty, illiquidity, capital controls, accounting and disclosure, **political risk**.
- It is impossible to generalize about these risks, as they differ by country
- Academics, bankers, practitioners have yet to agree on how to address
- Practitioners often make arbitrary adjustments based on intuition and limited empirical evidence

# Very hot Russian agenda

- Why Russian stock market is so cheap?
- Is it related to our political regime?
  - What is the way from autocracy to democracy?
  - What are implications for the economic growth and risks to investors?
- Bashneft, Yukos **expropriation**. Capital flight, too many “oligarchs” in exile

# Citigroup “reform discount” model

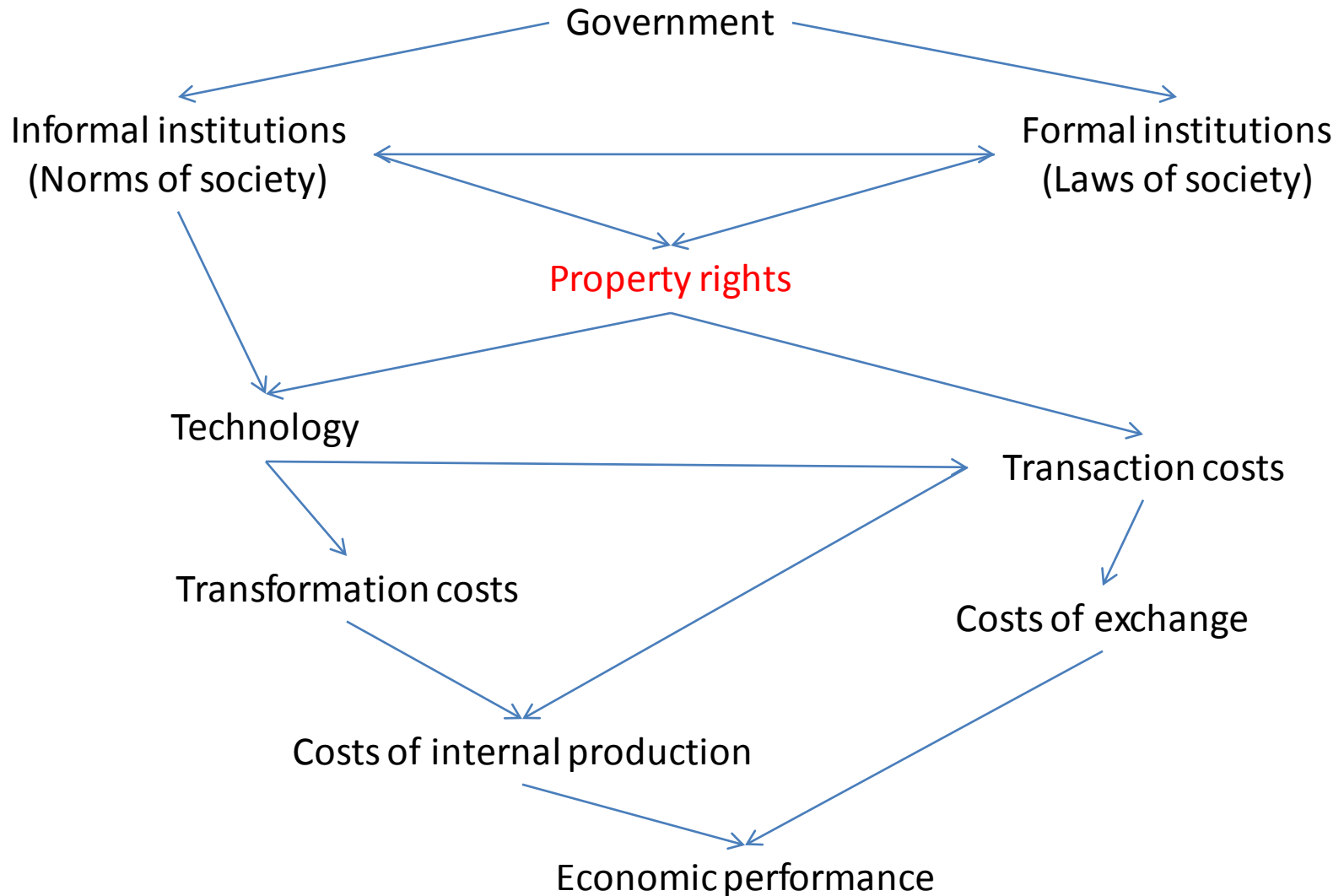


Citi Research, “The Russian Hunter”, 30 August 2012,

# Literature

- “Government theft”: what explains sovereign bond defaults and firm nationalizations
  - First Law of Petropolitics: The price of oil and the pace of freedom always move in opposite directions in oil-rich petrolist states.
- Rational nationalization models (real options): government faces tradeoff between expropriated income and costs (access to western market, technology, etc.)
- Investor-government contract design (PSA, service contracts, etc.). Problem: enforcement

# New institutional economics



Alston L.J. new institutional economics // The New Palgrave Dictionary of Economics / ed. S.N. Durlauf, L.E. Blume. Basingstoke: Nature Publishing Group, 2008. # 2. C. 32–39.



# Institutions and growth

|                       |            | Political institutions   |  |
|-----------------------|------------|--|--|
|                       |            | Extractive   | Inclusive  |
| Economic institutions | Extractive | Totalitarian states<br>(N.Korea)   | Monopolized economies<br>(Mexico?)   |
|                       | Inclusive  | Authoritarian modernization is possible (China).<br><br>But only up to «middle income trap» (Russia) | High income, developed countries.<br><br>In the last decades only S.Korea and Israel were able to get here |

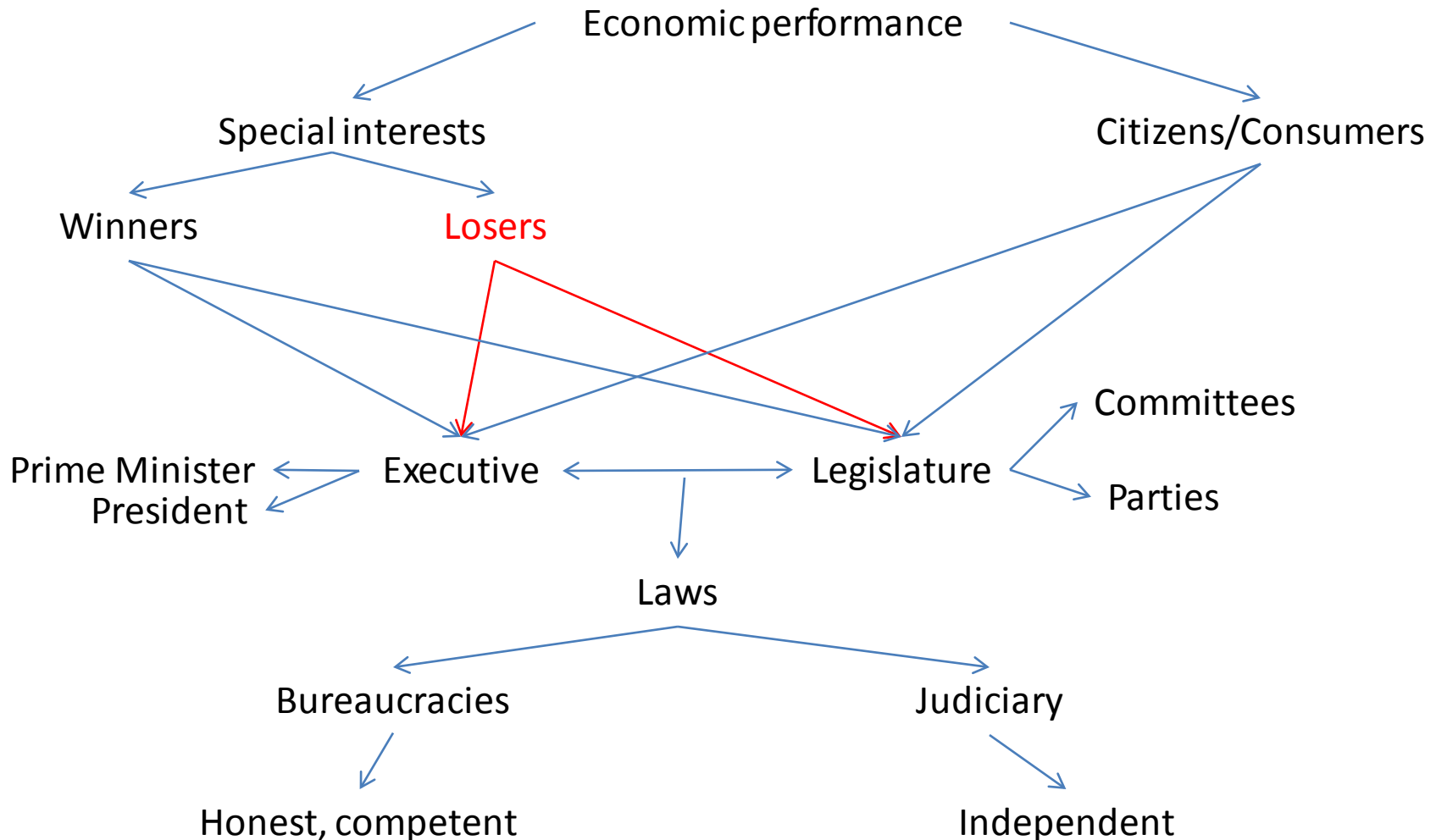
Democracy is needed  
But how is to get there?

# Why does extractive politics hinder growth?

«*Politics is economy in essence*» - Vladimir Lenin

1. Modern innovative economy has unpredictable growth (trial-and-error). Some old businesses are bound to fail. That is “***creative destruction***”.
2. Elite struggle. Arising new economic power demands greater say in politics (remember M. Khodorkovsky?).
3. Incumbent elite uses political machine to put brakes on newcomers (expropriate). That ruins property rights institution and creates adverse stimuli

# The determinants of formal institutions



Alston L.J. new institutional economics // The New Palgrave Dictionary of Economics / под ред. S.N. Durlauf, L.E. Blume. Basingstoke: Nature Publishing Group, 2008. Вып. 2. С. 32–39.

# Collective action problem

- Big (latent) groups are less able to achieve common goals. Small group is more efficient and often trumps majority.
- Neither one person nor all people cannot rule. Elites take over this function (theory of elite)
- The elite is not homogeneous and it consists from different struggling parts (special interest groups)
- Democracy means institutions (rules of the game) which don't allow for particular elite domination and usurping it the power

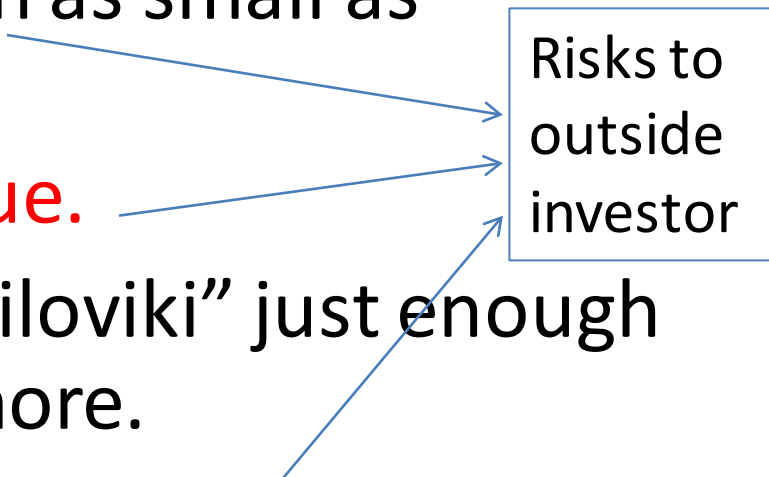
Olson, M. The Logic of Collective Action: Public Goods and the Theory of Groups. 1965

Olson, M. Power And Prosperity: Outgrowing Communist And Capitalist Dictatorships. 2000

# Russia is a natural state

- “**Open access orders**” (OAO) emerged only after 19<sup>th</sup> century: impersonal, rule of law.
  - “Over the long-term, open access politics cannot be sustained without open access economics, and vice versa”.
- But “**natural state order**” (NSO) – is most common in history. Dominant coalition has special privileges, limits access, **uses economic rents to secure political order**.
- **NSO is not dysfunctional as it limits violence**. But that very mechanism **slows economic performance** («dilemma of development»).
- Privileges in NSO make it look corrupt, immoral and disgusting to liberals and OAO world.  
But **NSO is normal** until transition to OAO

# Dictators handbook

1. Keep the winning coalition as small as possible
  2. **Control the flow of revenue.**
  3. Pay key supporters and “siloviki” just enough to keep them loyal. Not more.
  4. Never take your supporter’s money to make the people’s lives better.
  5. For the masses: a little but no too much freedom, costs to protest, ideology, outside enemy
- 
- A diagram consisting of a rectangular box on the right side of the slide with the text "Risks to outside investor" inside. Three blue arrows originate from the text of the list items: one from "Keep the winning coalition as small as possible", one from "Control the flow of revenue.", and one from "Pay key supporters and 'siloviki' just enough to keep them loyal. Not more." All three arrows point towards the box.

# Transition theories are hard to quantify

*Acemoglu and Robinson 2012:*

1) Down-to-top process. Small steps.  
Inequality → Threat of revolution → Elite concessions → Democracy

*North, Wallis, Weingast 2009:*

2) Elites require personal rights → which are then spread to whole society → Democracy  
It takes long: ~50 years

3) Top-down way requires strong elite democracy commitment (Baltic states?)

# Typical *ad hoc* adjustment in DCF

$$\text{Value} = \sum_{i=1}^{\infty} \frac{E(\text{FCFF}_i)}{(1 + \text{WACC})^i}$$

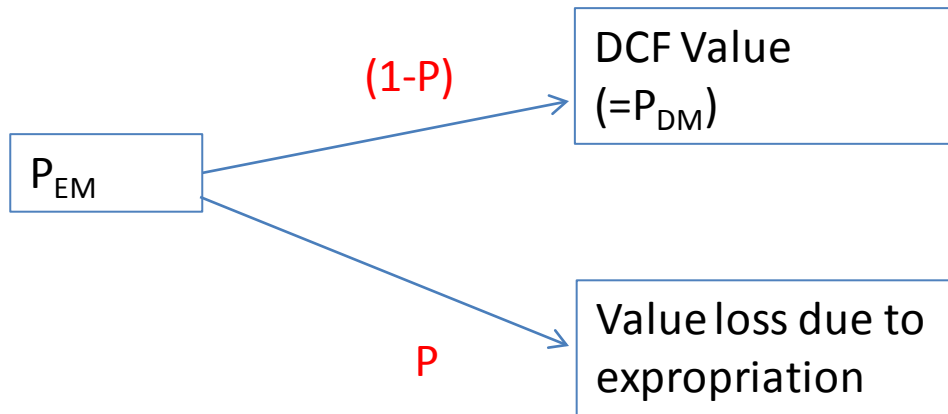
Low value:  
lower expectations or  
bigger discount rate?

$$\text{WACC} = w_E * \text{COE} + w_D * \text{COD}'$$
$$\text{COE}_{\text{emerging market}} = \text{COE}_{\text{developed market}} + \text{Country risk premium}$$

- “Country risk premium” (CRP) concept has no sound theory and has no good way of calibration. Pure arbitrary
- CRP assumes country risk forever, punishes growth stocks more than value stocks.
- If expropriation is the main risk in EM then we have a confusion between “***expected cash flows***” and “***promised cash flows***”



# Better way – is to use scenarios

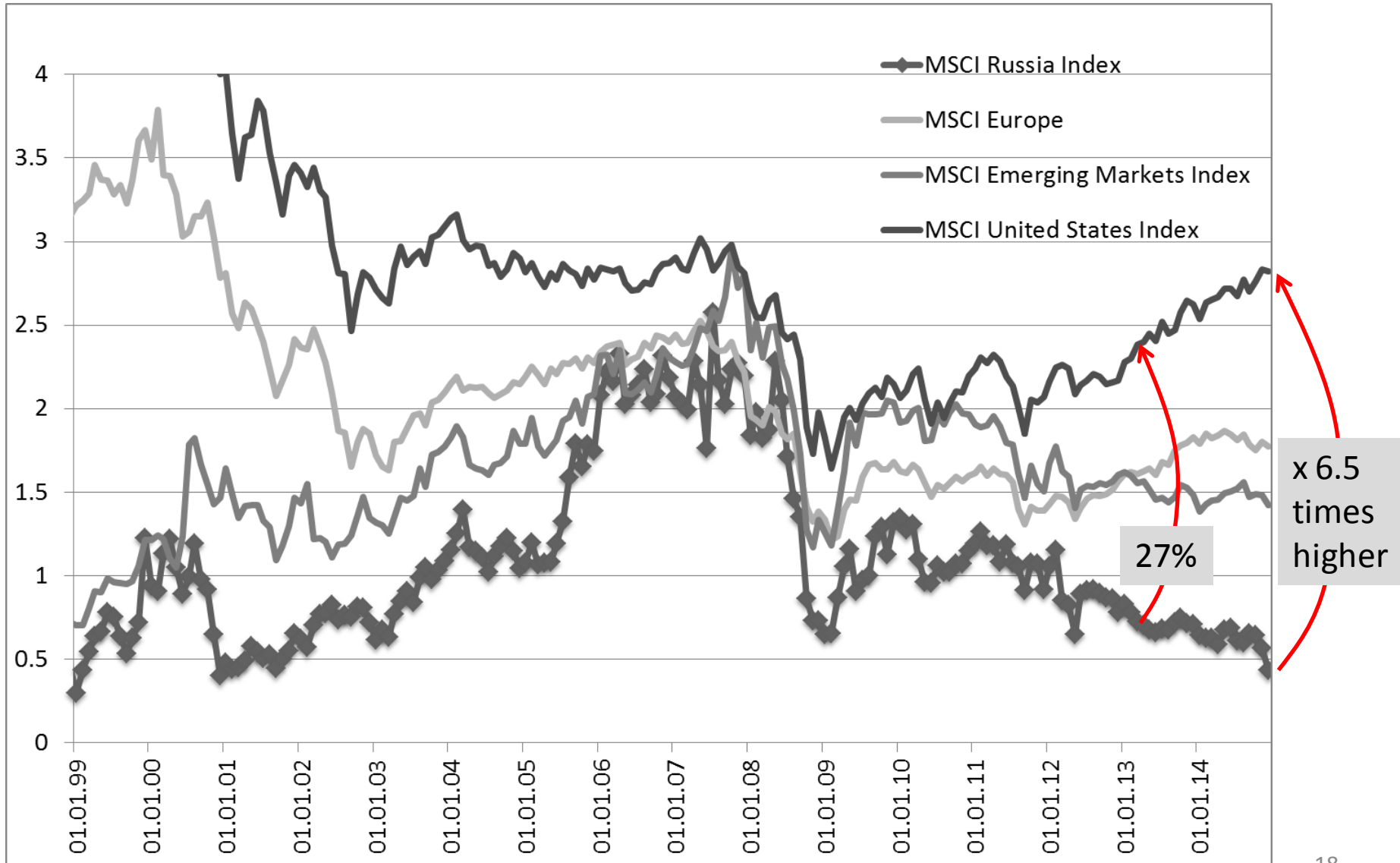


“Business as usual”.  
*Promised cash flows.*  
COE from mature  
market. No CRP.

There is a chance for  
“creeping nationalization”\*  
Zero if no compensation.

- Price discount ( $P_{EM}/P_{DM}$ ) is somewhat observable if comparing p/e or p/bv multiples
- Hence we are able to calculate probability of full confiscation
- What is  $P$ ? Subjective? Is there a way to measure it?

# p/bv multiples: normalized prices



# Full expropriation constant growth model

If full expropriation at period  $n$ , then

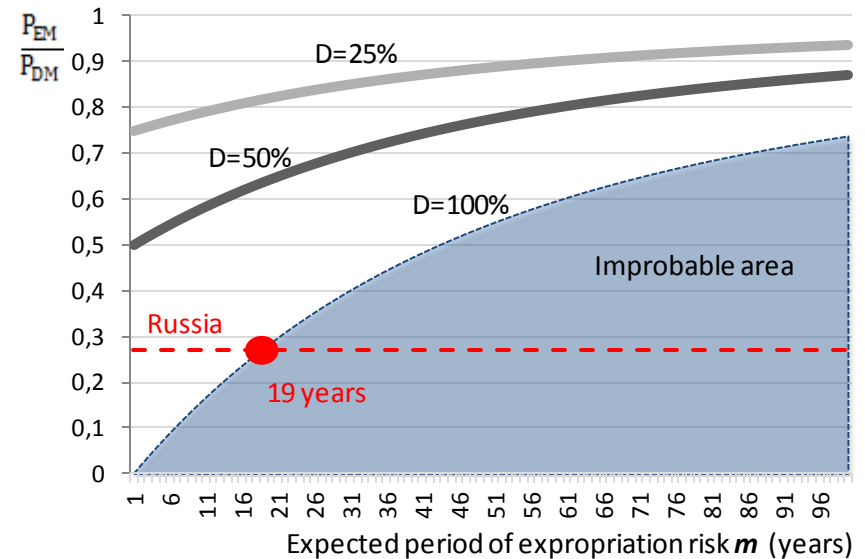
$$P_{EM} = \sum_{i=1}^n \frac{D_i}{(1+COE)^i} = \frac{D_0(1+g)}{COE-g} - \sum_{i=n}^{\infty} \frac{D_i}{(1+COE)^i} \Rightarrow \frac{P_{EM}}{P_{DM}} = 1 - \left( \frac{1+g}{1+COE} \right)^{n-1}$$

Investor receives
Government takes (extra)

If we assume cumulative risk probability  $D$  is uniformly distributed for limited period from  $0$  to  $m$  years then:

$$\frac{P_{EM}}{P_{DM}} = 1 - \frac{D}{m} \sum_{n=1}^m \left( \frac{1+g}{1+COE} \right)^{n-1}$$

Observable
May be assumed long enough (50 years)
Can be estimated



for  $COE=10\%$ ,  $g=5\%$ )

# 100% probability of full expropriation of all Russian stocks within 19 years?

Market is inefficient

1. Russian stocks are undervalued
2. US stocks are overvalued

Other reasons

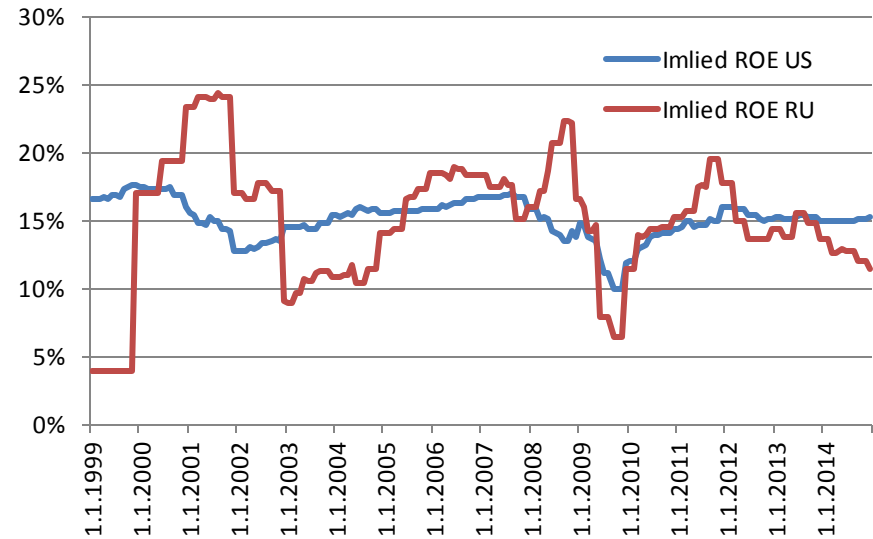
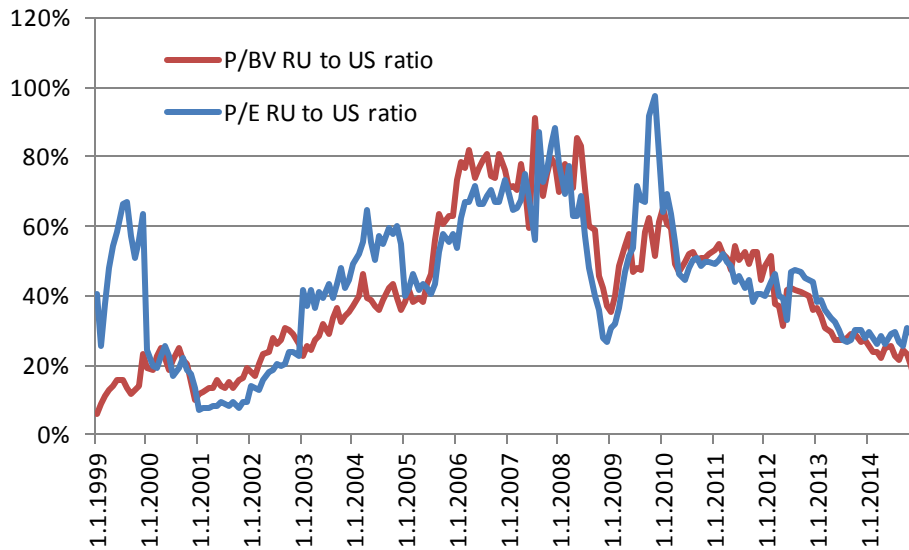
1. Model is wrong
2. Illiquidity discount
3. US stock market is not good benchmark (different industries, growth etc.)

# What's next

- Panel regression analysis of discounts and expropriation probabilities to measures of institutions\*
- Transition to democracy quantification, prediction (hoping to predict EM markets)
- PhD thesis (RU version) completion
  
- **THANK YOU!**

\* See: Geddes B., Wright J., Frantz E. Autocratic Breakdown and Regime Transitions: A New Data Set // Perspectives on Politics. 2014. T. 12. № 02. C. 313–331.

# Data supplement



- Aggregate multiple is used. (vs. average multiple )
- When dividing P by trailing E what is the suitable exchange rate for E? So, its better to analyze before 2014
- Average implied ROE for US - 15.1%, for Russia - 14.9%
- P/E sometimes is not good because of “Molodovski effect”
- P/E is more noisy (see Sheller's CAPE) so P/BV is preferable
  - It’s like in Fama-French 3 factor model, BVM(=1/(PBV)) was a preferred choice in growth-value sorting