

Russia, Ukraine and the EU in search for new equilibrium: “matrix effects”, “domino effects” and “no return points” (economic background of trilateral problems)

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Table of contents

- 1) **New post-2009 gas world & its material & perceived realities in Broader Energy Europe**
- 2) EU respond to new realities: diversification
- 3) Ukraine respond to new realities: diversification
 - a. Russia-Ukraine supply contract: price & payment issue
 - b. Reverse flows issue
- 4) Russia's respond to new realities: diversification
- 5) New pipelines by-passing UA vs modernization of UA GTS: comparative economics in project financing world
 - a. South Stream: how to escape repetition of OPAL story

New post-2009 gas world & its European dimension within Broader Energy Europe

1) Oversupply due to:

a) **Demand-side** => market niche for gas narrowed in EU:

- i. overall decline = (i) economic crisis + (ii) energy efficiency
- ii. gas substitution = (i) subsidized RES vs (oil-indexed) gas + (ii) cheap US imported coal (*US shale gas domino effect #2*) vs (oil-indexed) gas

b) **Supply-side** => competition within this narrowed market niche for gas in EU increases:

- i. Qatari LNG (*"garbage gas"*) to EU prior to Fukushima (*US shale gas domino effect #1*)

2) **Institutional** => 3rd EU Energy Package => concurrent with EU oversupply situation which triggered liberalization (upside-down gas reforms)

3) **Political** => RF-UA gas transit crises => consequences for EU/Ukraine/Russia & whole Broader Energy Europe

Russia-EU-Ukraine's new circumstances: 22 days vs. 40+ years => RF-UA vs RF-EU

- Ukraine as integral element of Russia-EU gas supply chain =>
- “Matrix effects” & “Domino effects” of Russia-UA Jan’06/09 gas crises for Russia-EU gas relations/supply chain:
 - 22 days of interruptions of Russian gas supplies to the EU via Ukraine = 3 days in Jan’2006 + 19 days in Jan’2009:
 - has overbalanced previous 40+ years (since 1968) of stable & non-interruptible supplies =>
 - has changed *perceptions* within **all three parties** on stability & non-interruptible character of future gas supply through this chain => each party has its own vision & answers & lines of actions
- New perceptions as starting points for objective “domino effects”:
 - political statements & decisions => legal documents => investment decisions aimed at new *perceived* equilibrium to be reached
 - when investments are made, ‘no return’ points are passed through
- **“No return” points for each party** => What are they? Whether they are reached/ passed through already by each party?

EU-Ukraine-Russia: in search for new post-2009 equilibrium with different aims & responds & lines of actions

- **EU:** *to diminish dominant role of Russia as major gas supplier*
- **Ukraine:** *to escape monopoly of Russia as one single gas supplier*
- **Russia:** *to escape monopoly of Ukraine as one dominant gas transit route*
- The aims seems to be totally different (are they?) => to find new equilibrium within multidirectional individually enforced changes
- Narrowing corridor for new equilibrium – but it is still there => a long & winding road to new compromise... (if a goodwill is there)

Table of contents

- 1) New post-2009 gas world & its material & perceived realities in Broader Energy Europe
- 2) EU respond to new realities: diversification**
- 3) Ukraine respond to new realities: diversification
 - a. Russia-Ukraine supply contract: price & payment issue
 - b. Reverse flows issue
- 4) Russia's respond to new realities: diversification
- 5) New pipelines by-passing UA vs modernization of UA GTS: comparative economics in project financing world
 - a. South Stream: how to escape repetition of OPAL story

New risks, new challenges, new responds, “no return” points: the EU (1)

- Perception: *as if* non-reliable future supplies from Russia via Ukraine to EU =>
- Responds: organization of new internal EU gas market architecture with **multiple supplies** & (high) **flexibility**
- **Multiple supplies** by:
 - **Alternatives to Russian gas (supply side)**: SOS Directive (3+ gas supply sources/MS, ‘N-1’ rule, etc.), LNG, shale gas, UGS
 - **Alternatives to (Russian) gas (demand side)**: climate change => decarbonization => RES, energy efficiency => shrinking gas share in fuel mix => the loser would be a less competitive gas supplier
 - perception: most distant & costly in production & oil-indexed-priced Russian gas ?
 - => **to diminish dominant role of Russia as major supplier**

New risks, new challenges, new responds, “no return” points: the EU (2)

- (High) *flexibility* by:
 - Diminishing barriers for gas flows: CMP rules (UIOLI, SoP), interconnectors, reverse flows, spot trade, demand for softening LTGEC provisions (TOP, hub-based pricing, etc.), ..., new market organization => Third EU Energy Package
- Third EU Energy Package (03.09.2009 => 03.03.2011):
 - Set of legal instruments providing *multiple supplies* & *flexibility* within EU (28) & Energy Community Treaty (28+9) area based on new principles of internal market organization
 - from a chain of 3 consecutive LTCs (1968-2009) – to Entry-Exit zones with Virtual Trading Points (hubs) (2009-onwards)
 - New architecture of EU gas market under development => Gas Target Model + 12 Framework Guidelines + 12 Network Codes + ...
- => **“No return” point has been passed by EU as a whole
!!!**

Table of contents

- 1) New post-2009 gas world & its material & perceived realities in Broader Energy Europe
- 2) EU respond to new realities: diversification
- 3) Ukraine respond to new realities: diversification**
 - a. Russia-Ukraine supply contract: price & payment issue
 - b. Reverse flows issue
- 4) Russia's respond to new realities: diversification
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 - a. South Stream: how to escape repetition of OPAL story

New risks, new challenges, new responds, “no return” points: Ukraine (1)

- **UA: Euro-integration** vs. **CIS-integration** => this “no return” point was passed in 2004 => Euro-integration choice de facto in place *in energy sector* since then =>
- Since Spring’2004 => UA demand to unbundle supply & transit contracts & to move to “European formulas” in RUS-UA gas trade:
 - UA expectations: to receive higher transit rates
 - UA reality: has received higher import prices
- Since 2006/2009: UA disagreement on import pricing formula & price level resulted from the move to “European formulas” => transit crises Jan’2006 & Jan’2009 resulted, inter alia, from disagreements with “European formulas” in supply contracts
- UA perception of further RUS supply risks => search for multiple supplies => ***to escape monopoly of Russia as one single supplier*** =>

New risks, new challenges, new responds, “no return” points: Ukraine (2)

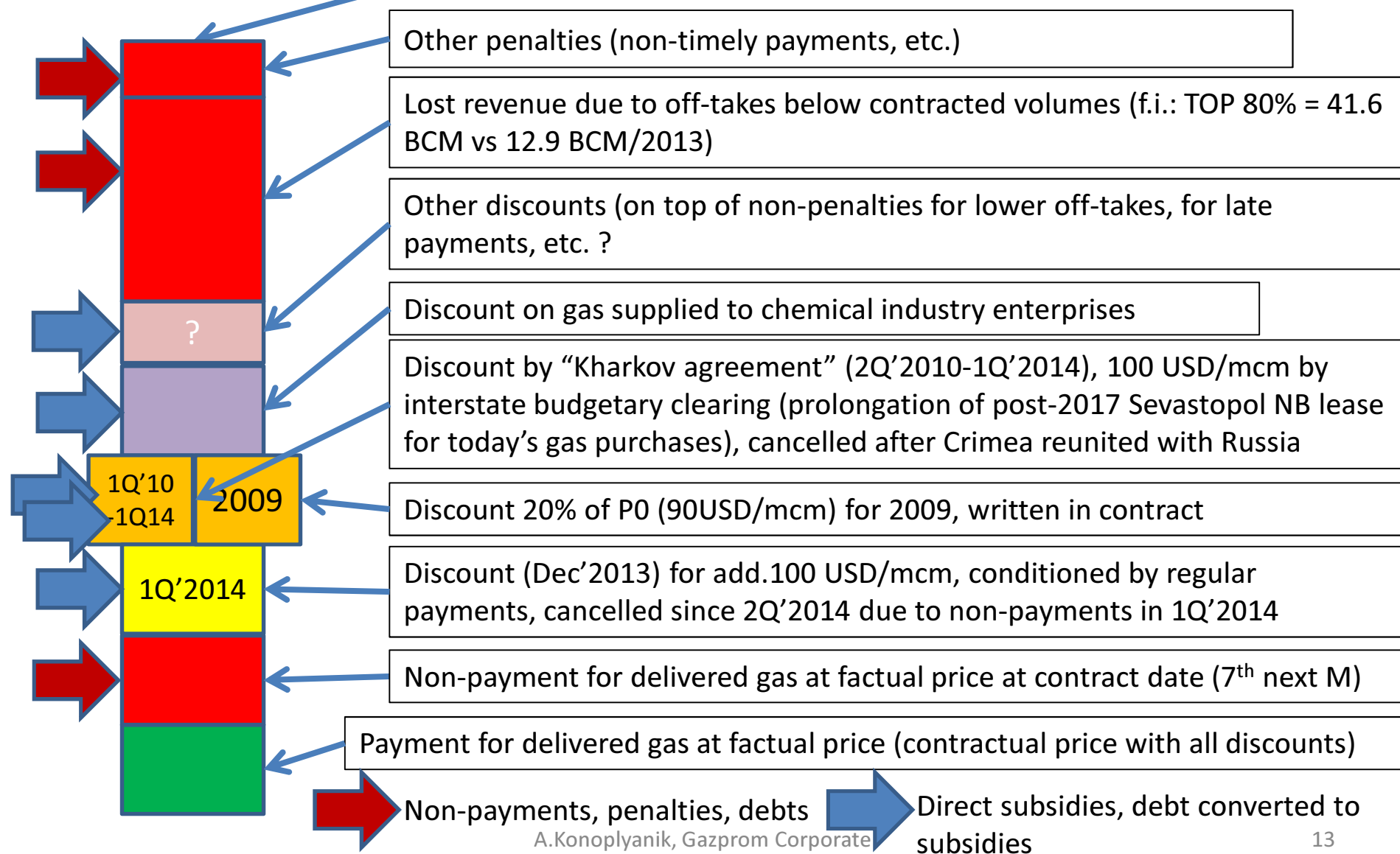
- UA economic & legal motivation to diminish dependence on RUS gas supplies:
 - **Economic:** High import price & RUS/Gazprom unwillingness to soften pricing policy (no price review results achieved yet – though price concessions) stipulated UA search for:
 - **alternatives to RUS gas (supply side):** domestic production – onshore & offshore, shale gas, LNG import, reverse flows & UGS, and
 - **to deviate from (RUS) gas (demand side):** switch gas to coal, nuclear, energy saving & improving efficiency
 - **Legal:** Euro-integration policy, membership in Energy Community Treaty => implementation of EU energy acquis (Second => Third EU Energy Package) in UA => **legal obligations** for alternative supplies, interconnectors, reverse flows, unbundling Naftogas Ukraine, MTPA => **BUT: new & incremental risks for transit via Ukraine (both for RF & EU)**
- **“No return” point is reached? “Yes” – in policy, “No” – in results, but** – is it just a matter of time since trend “away from Russian gas” is not to be changed in UA?

Table of contents

- 1) New post-2009 gas world & its material & perceived realities in Broader Energy Europe
- 2) EU respond to new realities: diversification
- 3) Ukraine respond to new realities: diversification
 - a. **Russia-Ukraine supply contract: price & payment issue**
 - b. Reverse flows issue
- 4) Russia's respond to new realities: diversification
- 5) New pipelines by-passing UA vs modernization of UA GTS: comparative economics in project financing world
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Russia-Ukraine gas supply contract: contractual & factual payments vs. non-payments & subsidies

“European formula”-based market price (net-back replacement value, petroleum-product indexation)



Structure of Russian gas price to Ukraine 2014

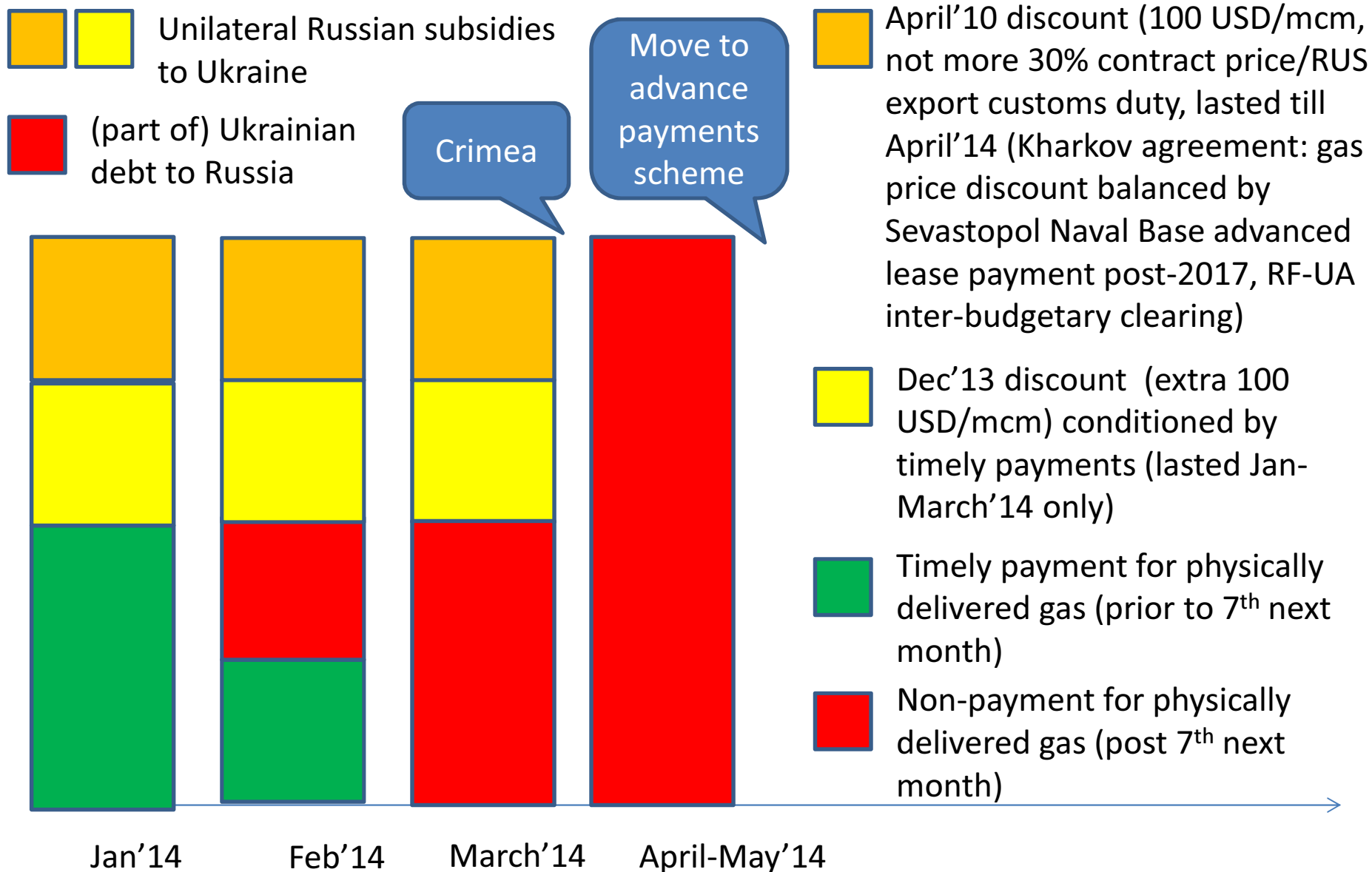


Table of contents

- 1) New post-2009 gas world & its material & perceived realities in Broader Energy Europe
- 2) EU respond to new realities: diversification
- 3) Ukraine respond to new realities: diversification
 - a. Russia-Ukraine supply contract: price & payment issue
 - b. Reverse flows issue**
- 4) Russia's respond to new realities: diversification
- 5) New pipelines by-passing UA vs modernization of UA GTS: comparative economics in project financing world
 - a. South Stream: how to escape repetition of OPAL story

UA reverse gas flows: conflict of public & contractual law, not a technical issue

- RF-UA Contractual law obligations (since Jan'1, 2009):
 - TOP mutual obligations (52BCM => 41.6 BCM TOP)
- UA Public law obligations (since Dec'3, 2013):
 - UA joined Energy Community treaty since Feb'1, 2011 => obligation to apply EU energy acquis within UA, incl. Regulation 994/2010 (inter alia, Art. 6.5 on reverse flows – “03.12.2013 at latest”)
- Conflict between two legal obligations for UA with different enforcement dates = direct economic losses for producer/gas resource owner (RF):
 - Reverse flows (from West) to substitute contract flows (from East); while both flows are de facto of the same (Russian) origin
 - Lower UA off-takes (12.9 BCM in 2013) prevent pay-back of earlier Gazprom CAPEX in advanced upstream developments aimed at guaranteeing fulfillment of its contractual supply obligations to UA
- The earlier obligation prevails (Pacta sunt servanda)

Table of contents

- 1) New post-2009 gas world & its material & perceived realities in Broader Energy Europe
- 2) EU respond to new realities: diversification
 - a. EU wholesale trade (hubs) liquidity
 - b. Diversity of gas infrastructure: NWE vs CEE
- 3) Ukraine respond to new realities: diversification
 - a. Russia-Ukraine supply contract: payment issue
 - b. Reverse flows issue
- 4) Russia's respond to new realities: diversification**
- 5) New pipelines by-passing UA vs modernization of UA
GTS: comparative economics in project financing world
 - a. South Stream: how to escape repetition of OPAL story

New risks, new challenges, new responds, “no return” points: Russia (1)

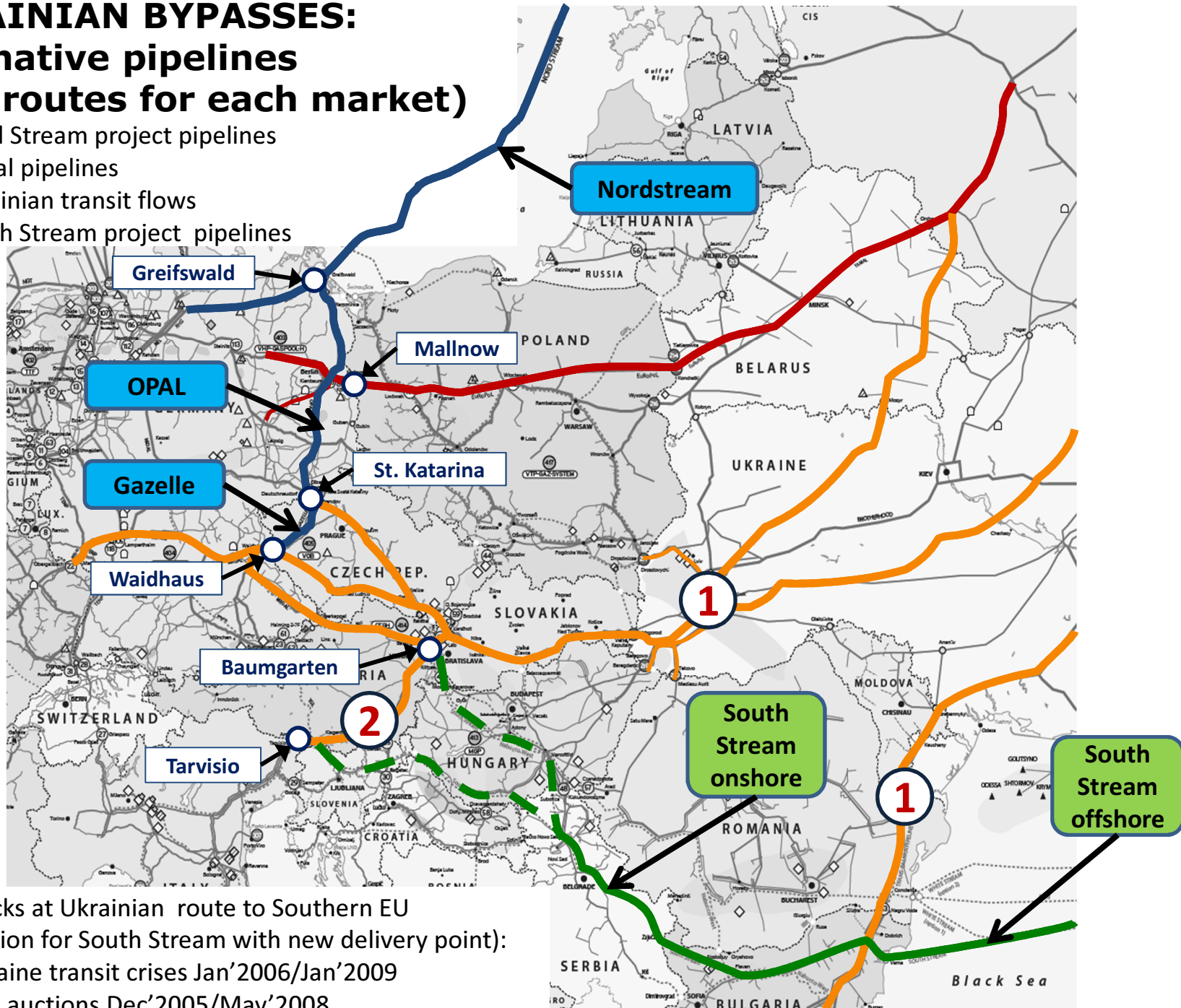
- Supply risks:
 - non-fulfillment of contractual obligations by UA (lower offtakes) = inter alia, negative upstream investment consequences for Russia
- Transit risks (within UA territory, post-2006/2009) – both materialized & perceived risks,
 - **Materialized:** not sanctioned off-take of gas in transit (at least 2 episodes – Jan’2006 & Jan’2009) => but:
 - it is RUS supplier who is fully responsible for gas delivery to EU delivery point (non-dependent e.g. transit problems) =>
 - risk of legal claims of EU customer against RUS supplier in case of non-delivery (supply contract) even if violation of transit contract =>
 - EU customers have not raised such claims in Jan’2006 / Jan’2009 cases, but what about the future if repeated?
 - **Perceived:** to materialize in near future – result of UA accession to Energy Community Treaty (see above):
 - MTPA vs transit flows (risk of contractual mismatch)
 - Forthcoming unbundling of Naftogas UA => risk of factual unilateral change (disappearance) of one Contracting Party to 10Y-long transit contract
 - Etc.

New risks, new challenges, new responds, “no return” points: Russia (2)

- Change of the whole transit economics for supplier if precedent-based “risk” element included => responds:
 - **to escape monopoly of Ukraine as one dominant transit route** => to create *alternative & non-transit* routes => their economics compared to existing *transit* routes improved by increasing value of transit risks (see next chapter) =>
- Dilemma:
 - **Two routes (incl. transit) to each major markets (“least radical” scenario):**
 - (a) UA GTS + [Nord Stream/OPAL/Gazelle] => to North-West Europe,
 - (b) UA GTS + [South Stream (offshore + onshore)] => to Southern Europe,
 - Supply volumes to be distributed within each pair of routes, or
 - **One direct new (non transit) route to each major market (“most radical” scenario):**
 - (a) Nord Stream/OPAL/Gazelle => to North-West Europe,
 - (b) South Stream (offshore + onshore) => to Southern Europe
 - All transit volumes switched to new routes? => UA GTS dried up?
- **Different “no return” points under different scenarios: some are passed, other – not yet => no clear final picture yet...**

UKRAINIAN BYPASSES: alternative pipelines (two routes for each market)

- Nord Stream project pipelines
- Yamal pipelines
- Ukrainian transit flows
- South Stream project pipelines



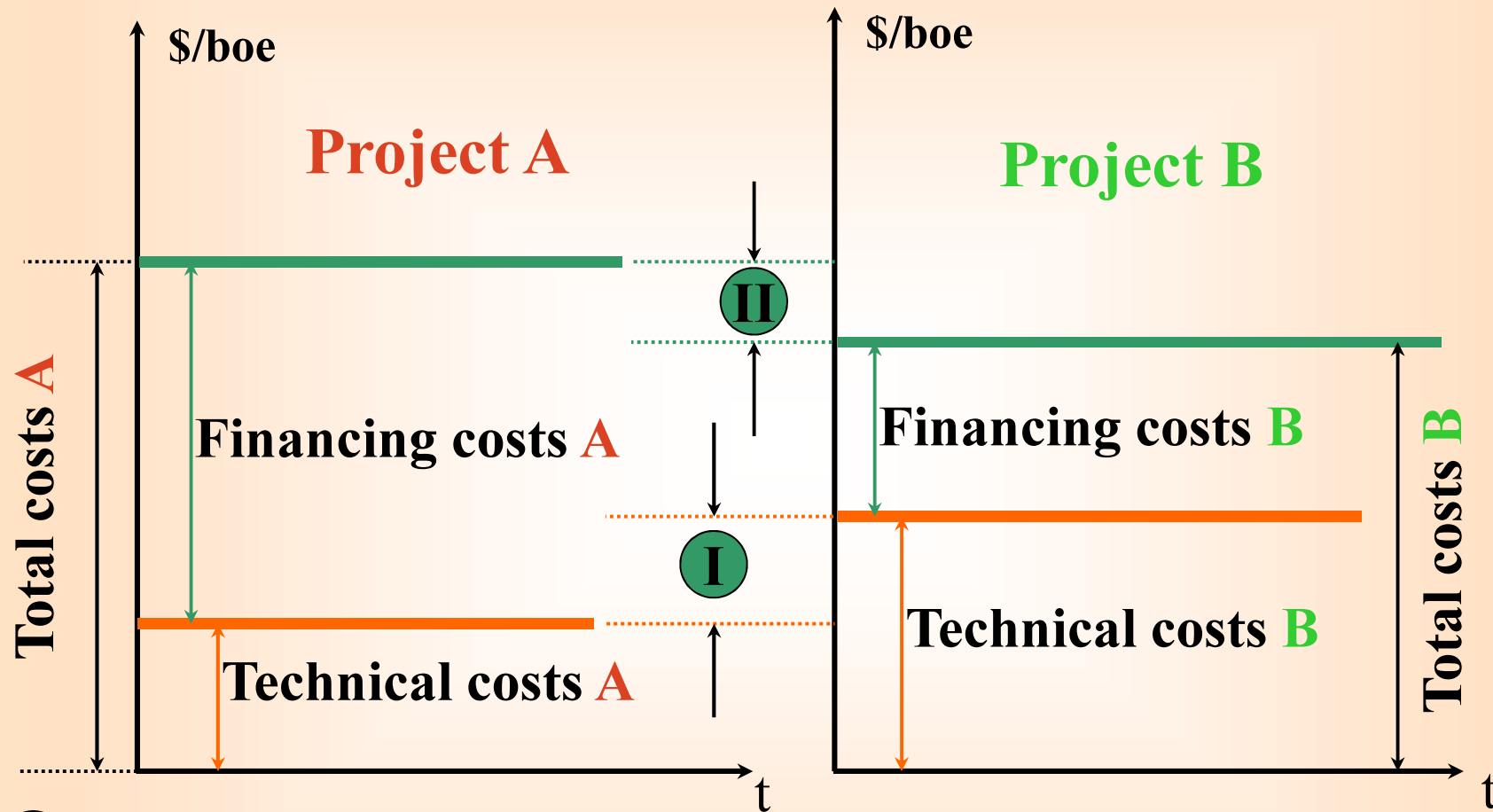
Bottlenecks at Ukrainian route to Southern EU
(justification for South Stream with new delivery point):

- ① Ukraine transit crises Jan'2006/Jan'2009
- ② TAG auctions Dec'2005/May'2008

Table of contents

- 1) New post-2009 gas world & its material & perceived realities in Broader Energy Europe
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 - a. EU wholesale trade (hubs) liquidity
 - b. Diversity of gas infrastructure: NWE vs CEE
- 3) Ukraine respond to new realities: diversification
 - a. Russia-Ukraine supply contract: payment issue
- 4) Russia's respond to new realities: diversification
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In project financing world both technical & financing costs does matter...




I "Natural advantage" of project A over project B ($A < B$)

II Final competitive *dis*advantage of project A over project B ($A > B$)

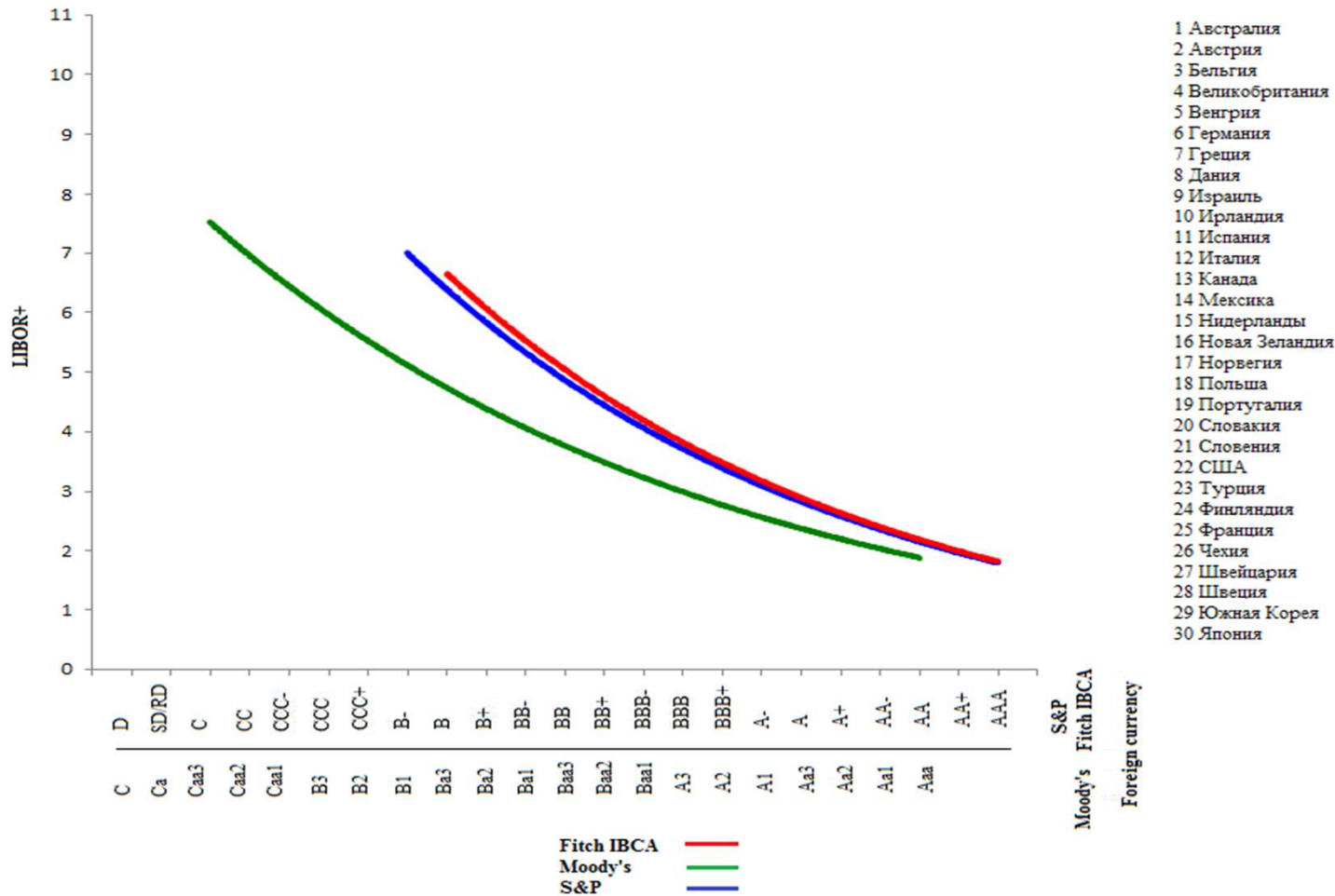
$$\text{Financing costs (LIBOR+)} = f [R(\text{country}) \times R(\text{company}) \times R(\text{project})]$$

Russia & Ukraine at the scale of major international rating agencies (long-term investment credit ratings in foreign currency)

	Moody's	Standard & Poor's	Fitch IBCA	Short description	LIBOR+ 	
Investment grades	Aaa	AAA	AAA	Maximum safety level	Up to 4,25%	
	Aa1	AA+	AA+	High level of reliability		
	Aa2	AA	AA			
	Aa3	AA-	AA-			
	A1	A+	A+	Reliability above medium		
	A2	A	A			
	A3	A-	A-			
	Baa1 (RF: since 08.10.08)	BBB+	BBB+	Reliability below medium		Up to 6%
	Baa2	BBB (RF: since 08.12.08)	BBB (RF: since 04.02.09; negative outlook 21.03.14)			
Baa3	BBB-	BBB-				
Speculative grades	Ba1	BB+	BB+	Non-investment, speculative grade	Up to 14%	
	Ba2	BB	BB			
	Ba3	BB-	BB-			
	B1	B+	B+	Highly speculative grade		
	B2	B	B			
	B3	B-	B-			
	Caa1	CCC+	--	High risk, emitter is in difficult situation		Up to 19%
	Caa2 (UA: 31.01.14)	CCC (UA, 21.02.14)	CCC (UA, 07/28.02.14)			
	Caa3	CCC-	--			
Ca	CC	--	Highest speculative rating, default possible	Up to 2304%		
C	C	--				
--	--	DDD				
--	SD	DD				
--	D	D	Default			

LIBOR 1Y
19.03.2014:
USD=0.56,
GBP=0.90
14.03.2014:
EUR=0.52

LIBOR+ для стран ОЭСР на 23.05.14



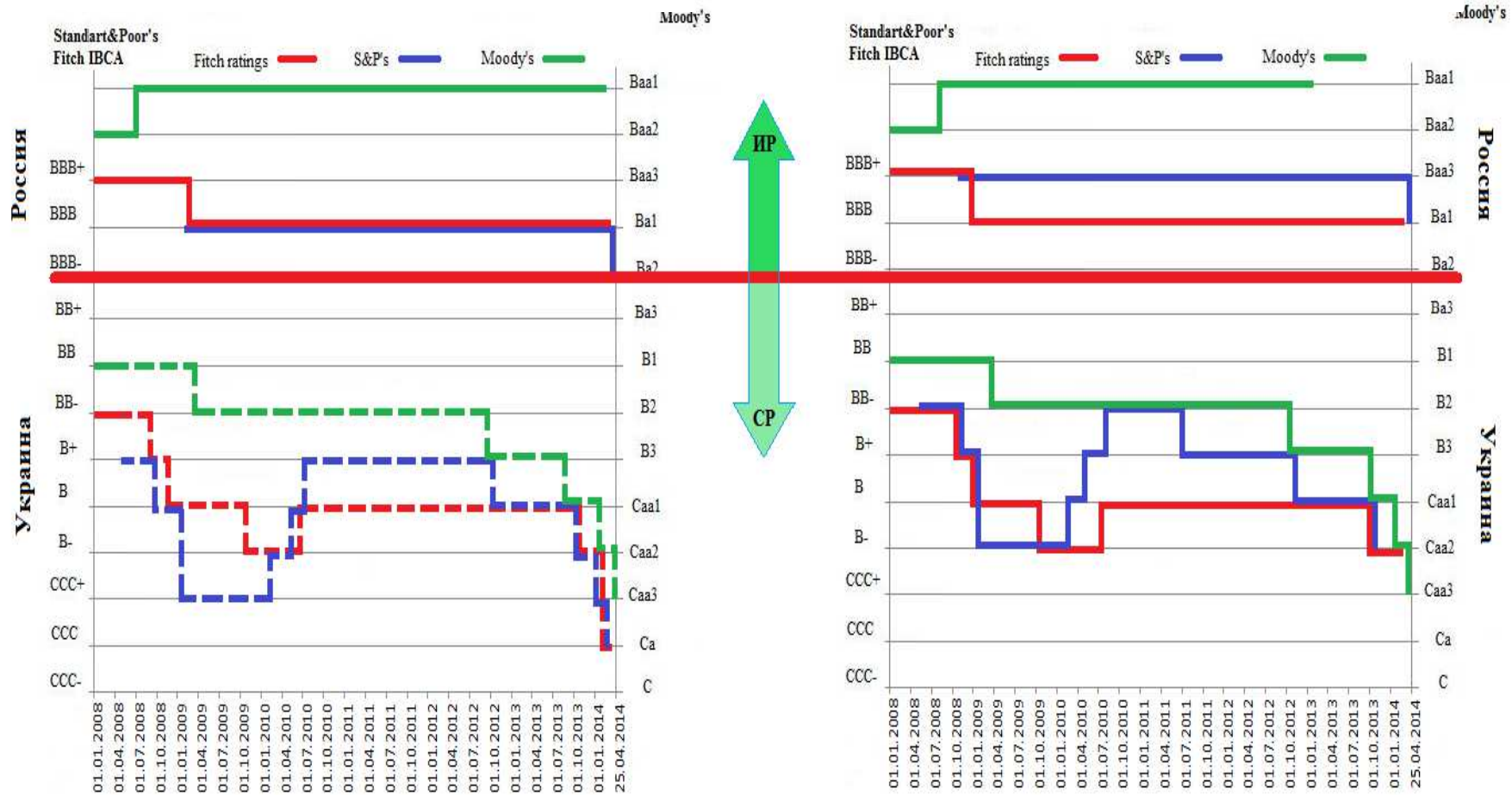
Calculations made by M.Larionova, Russian Gubkin State Oil & Gas University, Chair “International Oil & Gas Business”, Masters programme 2013-2015, based on credit rating agency’s data.

A.Konoplyanik, Gazprom Corporate Institute, lecture for GDF Suez, 15.09.2014

Russia & Ukraine: evolution of long-term credit ratings

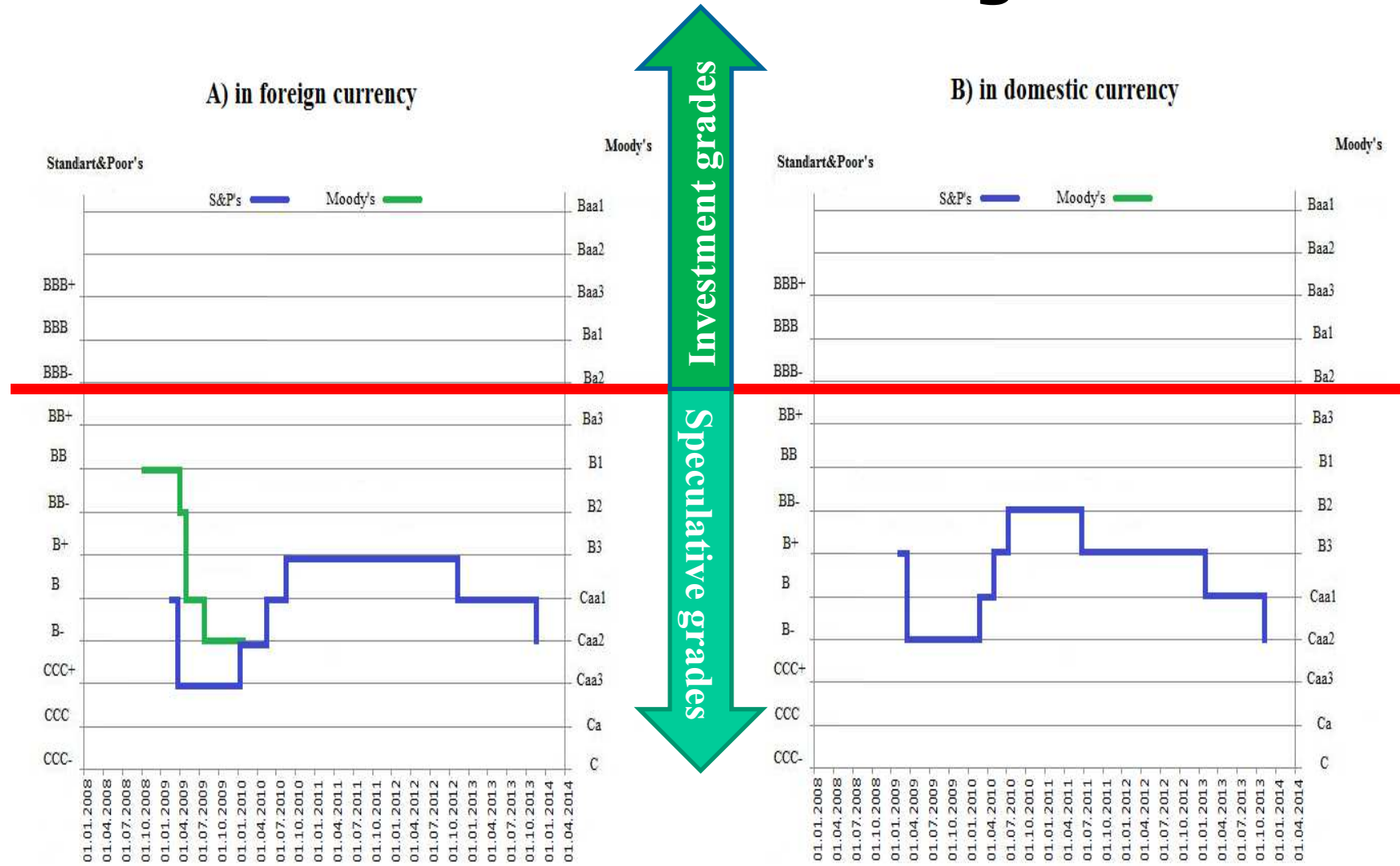
(A) In foreign currency

(B) In local currency



Calculations made by M.Larionova, Russian Gubkin State Oil & Gas University, Chair “International Oil & Gas Business”, Masters programme 2013-2015, based on credit rating agency’s data. 25

NJSC Naftogaz of Ukraine: evolution of long-term credit rating



Calculations made by M.Larionova, Russian Gubkin State Oil & Gas University, Chair “International Oil & Gas Business”, Masters programme 2013-2015, based on credit rating agency’s data.

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Ukraine: “transit interruption probability” index



Calculations made by M.Larionova, Russian Gubkin State Oil & Gas University, Chair “International Oil & Gas Business”, Master’s programme 2013-2015, based on the methodology jointly developed with the author

A.Konoplyanik, Gazprom Corporate Institute, lecture for GDF Suez, 15.09.2014

'South Stream' construction vs UA GTS modernization: illustrative example of 'project financing' cost comparison, if incl. comparative risks & credit ratings within time frame

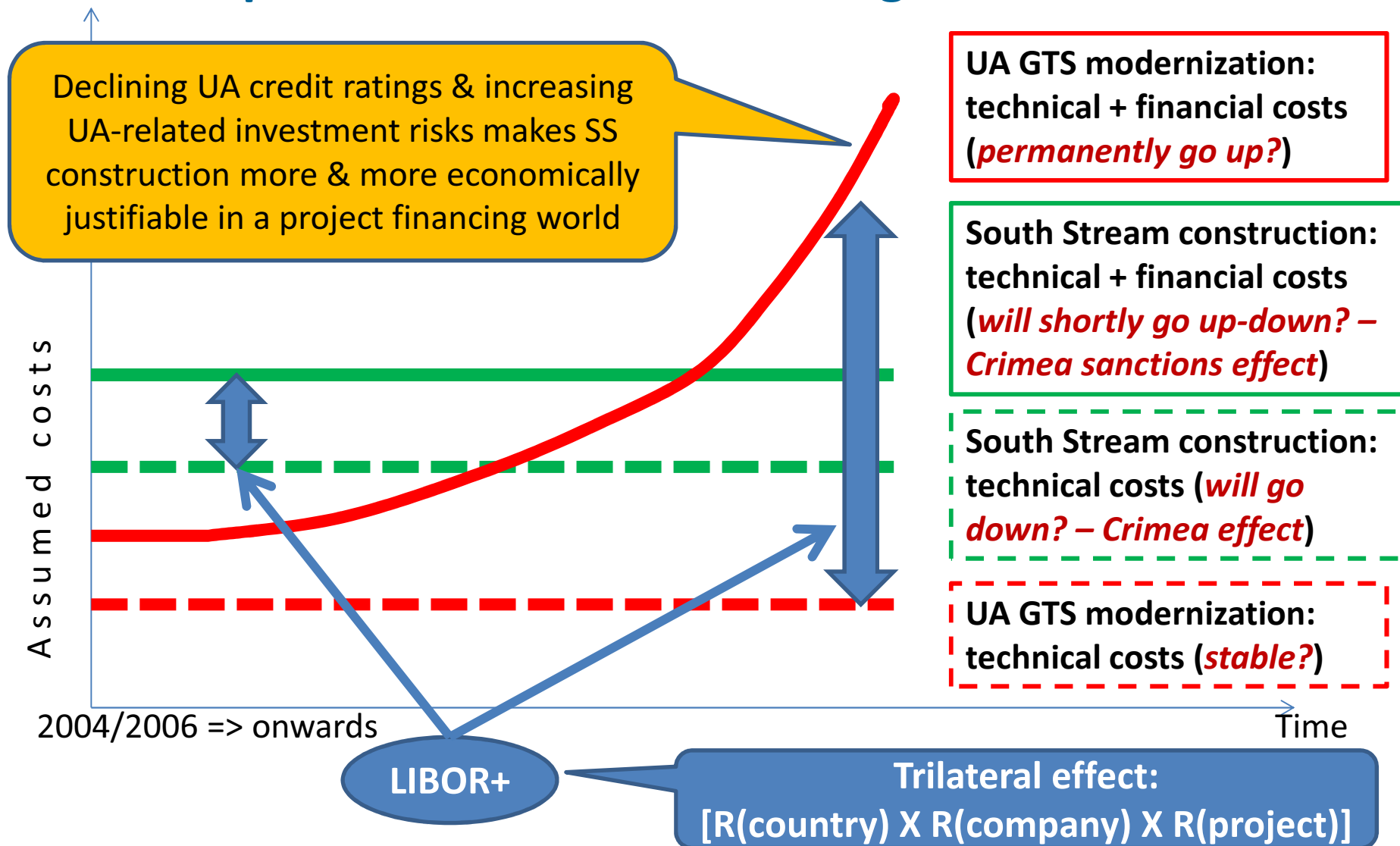


Table of contents

- 1) New post-2009 gas world & its material & perceived realities in Broader Energy Europe
- 2) EU respond to new realities: diversification
 - a. EU wholesale trade (hubs) liquidity
 - b. Diversity of gas infrastructure: NWE vs CEE
- 3) Ukraine respond to new realities: diversification
 - a. Russia-Ukraine supply contract: payment issue
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Options for gaining EU regulatory approval for major complicated infrastructure projects (like South Stream, Nordstream, OPAL, Nabucco, TAP & similar projects)

- **EXISTING (?)/PAST:** Bilateral IGAs with individual EU MSs => EU: “no go” under Third Package
- **EXISTING:** Exemption under Third Gas Directive Art. 36 (Second gas Dir. Art.22) = a mainstream in EU (27 big EU projects since 2003: 13 pipelines, 13 LNG terminals, 1 UGS) => “a long & winding road”
- **PROPOSED NEW-1:** RF-EU Bilateral Agreement on PMI (Feb’2011) => EU: “export of acquis” as factual policy => “a long & winding road”
- **PROPOSED NEW-2:** Regulated new capacity development under rules of procedure based on TGD Art.13.2 (being developed with active participation of Russia/Gazprom Group experts) => to be in full compliance with TEP rules, no derogations needed => challenges:
 - (draft) amended EU Network Code on Capacity Allocation Mechanisms/Regulation 984/2013 (regarding incremental and new gas transmission capacities) => Coordinated Open Season procedure for cross-border Mega-projects: the OS idea is incorporated, but not effectively yet for project financing => work continued => RF/GG proposed Art.20(h) to be discussed on Sept’22 WS2 GAC meeting

Thank you for your attention!

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