

SISTEMSKI RIZIK - IGRA SOČIVA I SATOVA

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Rezime

Dokora se debata o sistemskom riziku svodila na razmatranje iznenadnih egzogenih poremećaja. Danas literatura ističe da sistemski poremećaji mogu imati svoj izvor u domaćem ili međunarodnom okruženju, kao posledica procikličnosti u ponašanju finansijskih institucija ili njihove međusobne povezanosti. U skladu sa tim, mogu se pratiti strukturna i vremenska dimenzija sistemskog rizika. Oblikovanje makroprudencijalne politike koja reguliše i nadzire sistemski rizik je u toku, i neophodno je kontinuirano poboljšavati kvalitet analiza i dostupnost podataka, naročito indikatora koji upozoravaju na pojavu i narastanje sistemskih rizika. Proces oblikovanja nove finansijske arhitekture započet 2009. godine još nije završen, ali su konture već prilično jasne.

Ključne reči: Sistemski rizik, finansijska stabilnost, finansijski sistem, makroprudencijalna politika, sistemski važne finansijske institucije, finansijski šokovi, centralna banka

JEL: E44, G21, G28

UDC 336.131
005.334:005.74

*original
scientific
paper*

SYSTEMIC RISK - A GAME OF LENSES AND CLOCKS

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Summary

Until recently the debate on systemic risk was reduced to examining sudden exogenous shocks. Today the reference literature emphasizes that systemic shocks may have a source in domestic or international environment, as a consequence of procyclicality in the behavior of financial institutions or their mutual correlation. In line with that, one may examine the cross-sectional and time dimension of the systemic risk. The modeling of macroprudential policy regulating and supervising systemic risks has been underway, and it is necessary to continuously improve the quality of analyses and availability of data, especially the indicators warning against the occurrence and accumulation of systemic risks. The process of shaping the new financial architecture, commenced in 2009, has still not been completed, but its contours are already pretty clear.

Keywords: Systemic risk, financial stability, financial system, macroprudential policy, systemically important financial institutions (SIFIs), financial shocks, central bank

JEL: E44, G21, G28

Zašto se tema sistemskog rizika otvara tek nakon izbijanja krize? Ukoliko sistemski rizik definišemo slično bilo kom drugom riziku, kao verovatnoću izbijanja negativnih događaja ali u opsegu u kojem posledice pogađaju celokupan finansijski i privredni sistem, deluje logično da je pravo vreme da se zapitamo o verovatnoći izbijanja tako opasnih događaja pre nego što nam se oni definitivno obruše na glavu.

Ono što se obično dešava je da analitičari i finansijske institucije otvore debatu o sistemskom riziku i finansijskim šokovima tek nakon što posledice i uticaji takvih događaja uveliko počnu da se osećaju. A i onda je u pitanju samo diskusija o tome kada će kriza proći i koliko duboka i bolna može da bude. Zašto je to tako? Na to pitanje se odmahuje glavom i odgovara da su stvari vrlo složene.

Koncept stabilnosti finansijskog sistema blisko je povezan i sa pojmom sistemskog rizika. Već je rečeno, sistemski rizik se odnosi na verovatnoću nastanka određenih negativnih događaja na nivou čitavog finansijskog sistema. Ovo je bitna odlika, jer pravi jasno razgraničenje u odnosu na mnoštvo (mikro) rizika koji mogu pogoditi određenu finansijsku instituciju koja je deo finansijskog sistema, a koji ne moraju imati sistemski karakter. Na primer, stečaj neke finansijske institucije ne mora imati sistemski karakter, s obzirom da je to redovan, zakonski propisan način prestanka rada određenog pravnog lica u slučaju ispunjenosti određenih pravnih pretpostavki. Sistemski rizik se može odrediti jediono u slučaju da je reč o sistemski bitnoj instituciji. Suprotno tome, sistemski rizici su nužno i mikro rizici jer svaki sistemski rizik pogađa i individualne komponente finansijskog sistema, drugim rečima veliki broj finansijskih institucija i tržišta pojedinačno.

Sistemski rizik se može definisati kao: (i) rizik od poremećaja u pružanju finansijskih usluga u celom finansijskom sistemu ili njegovoj komponenti; (ii) koji ima potencijal da ostavi ozbiljne negativne posledice na realni sektor (FSB, IMF, BIS, 2009). Prvi deo ove definicije podrazumeva da je određeni deo finansijskih usluga trenutno nedostupan ili da je trošak korišćenja tih usluga naglo porastao. Drugi element podrazumeva negativne efekte na realni sektor koji se manifestuju u smanjenju

privredne aktivnosti. Da bi se moglo reći da rizik ima sistemski karakter, potrebno je da budu prisutna oba ova elementa. Navedena definicija je vrlo slična i definiciji koju je dala Evropska unija a koja kaže da je „Sistemski rizik - rizik od poremećaja u finansijskom sistemu sa mogućnošću da ima ozbiljne negativne posledice na interno tržište i realnu ekonomiju. Sve vrste finansijskih posrednika, tržišta i finansijske infrastrukture mogu biti potencijalno sistemski važne do određenog stepena“ (EU No 1092/2010).

Dokora se debata o sistemskom riziku svodila na razmatranje iznenadnih egzogenih poremećaja, nešto slično pojavi komete koja u nekom trenutku stiže odnekud van normalnog funkcionisanja finansijskog sistema, nepredvidivo prateći neki svoj put i nestajući iza horizonta. U suštini, komete su na taj način bile nepredvidive samo deci i narodima koji još uvek nisu imali kompletno znanje o solarnom sistemu. Nedostajala im je šira slika.

Literatura o sistemskom riziku danas ističe da poremećaj može imati svoj izvor u domaćem i međunarodnom okruženju. Ovo je posebno značajno za male otvorene privrede u kojima međusobna povezanost institucija u domaćoj privredi i njihove veze sa međunarodnom ekonomijom mogu biti izvor širenja zaraze. Poremećaj može nastati u samom finansijskom sektoru, kao rezultat: (i) procikličnosti u ponašanju finansijskih institucija i (ii) njihove međusobne povezanosti. Poremećaj koji je nastao u finansijskom sektoru, preneće se na realni sektor ekonomije zbog međusobne povezanosti dva sektora i povratne sprege između njih. Sistemski rizik se može materijalizovati i kao posledica akumuliranja neravnoteža ne samo u finansijskom sistemu već i realnom sektoru privrede postepeno tokom vremena, ili kao posledica iznenadnog šoka (npr. u slučaju kolapsa neke sistemski važne institucije ili iznenadnog presušivanja likvidnosti celokupnog tržišta, kao što se to desilo u nekim zemljama u toku trajanja svetske finansijske krize). Aktivnosti institucija zaduženih za održavanje finansijske stabilnosti moraju stoga biti usmerene ka ograničavanju procikličnosti koja je karakteristična za bankarski sistem. Za razliku od poslovnog ciklusa, ekstremna volatilnost finansijskog

Why is it that the topic of systemic risk started to be discussed only after the crisis broke out?! If we define systemic risk similarly to any other risk, as a probability of occurrence of negative events, in such a scope that their consequences affect the entire financial and economic system, it seems logical that that right time for us to wonder about the probability of such dangerous events occurring is before they actually swoop down on us.

What usually happens is that the analysts and financial institutions launch a debate on systemic risk and financial shocks only after the consequences and impacts of such events are long felt. And even then, the discussion only concerns issues like when the crisis will pass and how deep and painful it might be. Why is it so? When asked this question, people shake their heads saying that things are extremely complex.

The concept of financial system's stability is tightly related to the notion of systemic risk. As already said, systemic risk refers to the probability of occurrence of certain negative events at the level of the entire financial system. This is a significant feature, given that it clearly differentiates systemic risk from a plethora of (micro) risks that might hit a certain financial institution within the financial system, without being systemic in nature. For instance, a bankruptcy of a financial institution does not have to be systemic, bearing in mind that it is a regular, legally prescribed way for a legal entity to stop performing its operations if certain legal assumptions are fulfilled. Systemic risk can only be identified when we are dealing with a systemically important institution. On the other hand, systemic risks are unavoidably micro-risks as well, given that they also affect the individual components of the financial system, i.e. a large number of financial institutions and markets individually.

Systemic risk can be defined as: (i) the risk of disturbances in providing financial services in the entire financial system or one of its components; (ii) the risk which has the potential to leave some serious negative consequences on the real sector (FSB, IMF, BIS, 2009). The first part of this definition implies that a specific segment of the financial services

is currently unavailable or that the cost of using these services suddenly increased. The second part implies negative effects on the real sector, manifested in a reduction of economic activity. In order for a risk to be described as systemic, it must contain both of these elements. The above definition is very similar to the definition provided by the European Union: "Systemic risk means a risk of disruption in the financial system with the potential to have serious negative consequences for the internal market and the real economy. All types of financial intermediaries, markets and infrastructure may be potentially systemically important to some degree." (EU No 1092/2010)

Until recently the debate on systemic risk was reduced to examining sudden exogenous shocks, similar to the appearance of a comet, which arrives at one point from somewhere outside the normal functioning of the financial system, unpredictably following its own path and disappearing beyond the horizon. In fact, the comets were unpredictable only for children and peoples who still did not possess the complete knowledge about the solar system. They were missing the broader picture.

Today the reference literature emphasizes that systemic shocks may have a source in domestic or international environment. This is particularly important for small, open economies in which the mutual connection among the institutions in the domestic economy and their ties with the international economy may be the source of a contagion. The disruption may appear in the financial sector itself, as a result of: (i) the procyclicality in the behavior of financial institutions and (ii) their mutual correlation. The disruption occurring in the financial sector will spill over to the sector of real economy due to the mutual connection of these two sectors and the feedback loop between them. Systemic risk may also be materialized as a consequence of accumulating imbalances not only in the financial system, but in the real economic sector as well, gradually over time or as a result of a sudden shock (for instance, in case of a collapse of a systemically important institution or a sudden loss of liquidity in the entire market, which happened to some countries during the global financial crisis). The activities of institutions in charge of maintaining

ciklusa u bankarskom sektoru traje daleko duže i ima daleko veće amplitude koje mogu eskalirati u sistemsku bankarsku krizu (Borio, 2012). Sa druge strane, sistemski rizik neraskidivo je povezan i sa eksternim efektima. Pravila tržišne utakmice ne opraštaju prepuštanje poslovnih prilika konkurentima, čak ni po cenu doprinosa stabilnosti finansijskog sistema u kome svi zajedno posluju. Svaka finansijska institucija upravlja svojim odnosom prinosa i preuzetog rizika, ali ne i posledicama (eksternim efektima) koje njeno ponašanje i poslovni model može da izazove u drugim delovima finansijskog sistema, kao ni posledicama ponašanja drugih institucija.

Drugim rečima, rizik je u velikoj meri funkcija karaktera sistema. Svaka greška postaje presedan, presedani postaju navika javnih politika, politika usmerava rad institucija. Političke greške, kao što je oslanjanje na finansijsku pomoć države, gomilanje dugova i preterani rashodi, traženje rupa u zakonu, pokušaji uticaja na kurs nacionalne valute, sve to podriiva temelj društva i dodaje sloj rizika sistemu. Zdrav razum nalaže da se odgovori na pitanja sistemskog rizika potraže u principima koji su trenutno na delu u jednom sistemu, a ne da se uvoze moderne politike upravljanja rizicima. Rizici nisu posledica događaja, oni su posledica karaktera sistema. Događaji su rezultati, oni su efekti karaktera, i u tom smislu razmatranje predostrožnih mera koje su ugrađene na nacionalnom nivou mogu biti jezičak na skali koja određuje marginu bezbednosti za investitore kada razmišljaju o ulaganju u neku zemlju.

Upravo je ovo bila nebranjena, vakuum između monetarne politike na jednoj strani i regulatornog i nadzornog okvira na drugoj koja je zahtevala razvoj nove paradigme u vidu makroprudencijalne politike čiji je cilj kontrola sistemskog rizika u finansijskom sistemu. Makroprudencijalna politika može se definisati kao primena skupa instrumenata koji imaju potencijal da povećaju otpornost stvaranjem zaštitnih slojeva kapitala i likvidnosti, ograničavanjem procikličnosti u ponašanju finansijskog sistema i kontrolom rizika koji individualne finansijske institucije mogu kreirati za sistem kao celinu. Ovako postavljen okvir u suštini popunjava prazan prostor između

monetarne i mikroprudencijalne politike. U odnosu na ove dve politike, makroprudencijalni pristup karakteriše fundamentalno drugačiji način reagovanja na rizike koji prete da ugroze stabilnost finansijskog sistema, a posebno: a) sprečavanje nastanka i razvoja sistemskog rizika adekvatnim upravljanjem finansijskim ciklusima i sistemskim međuzavisnostima i b) povećanje otpornosti finansijskog sistema na sistemske šokove, odnosno, osposobljavanje sistema da nesmetano obavlja svoje funkcije čak i u situacijama sistemskih šokova.

Oblikovanje okvira makroprudencijalne politike, regulacije i nadzora je u toku. Da bi se on uspešno sprovodio neophodno je, pored utvrđivanja institucionalne odgovornosti za funkcionisanje sistema kao celine, ustanoviti efikasne instrumente i mere, znati transmisione mehanizme, kontinuirano poboljšavati kvalitet analiza i kvalitet i dostupnost podataka, posebno indikatora koji upozoravaju na pojavu i narastanje sistemskih rizika. Drugim rečima, neophodno je s jedne strane, napraviti i postaviti precizna sočiva za praćenje strukture sistemskog rizika i kretanja u finansijskom i realnom sektoru, dovoljno jaka da ugledaju začetak potencijalno opasnih žarišta i, sa druge strane, potrebno je pratiti satove koji reaguju na vremensku dimenziju rizika i pokazuju kada je vreme da se interveniše merama pooštavanja makroprudencijalne politike, a kada je vreme da se mere ublaže. Ukratko, kao što po postoje strukturna i vremenska dimenzija sistemskog rizika, tako makroprudencijalna politika postavlja precizna sočiva i prati vremenske mene.

Strukturna dimenzija rizika - šta se vidi kroz sočivo

Strukturna dimenzija (engl. cross-sectional dimension) sistemskog rizika pokazuje koncentraciju i distribuciju sistemskog rizika u finansijskom sistemu u datom trenutku. Izvori ove dimenzije rizika su: (i) zajednička izloženost, tj. izloženost istom tipu rizika, zavisnost od istih izvora finansiranja, korišćenje iste infrastrukture i slično, i (ii) međusobna povezanost različitih finansijskih institucija i tržišta koja povećava rizik od širenja zaraze u trenutku kad se pojavi problem. Često institucije zarad kratkoročnog interesa mogu potceniti potencijalni uticaj svojih aktivnosti na

financial stability must, therefore, be aimed at limiting the procyclicality which characterizes the banking system. As opposed to the business cycle, the extreme volatility of the financial cycle in the banking sector lasts much longer, and has far bigger amplitudes that might escalate into a systemic banking crisis (Borio, 2012). On the other hand, systemic risk is inextricably related to external effects as well. The rules of the market game do not forgive giving up business opportunities to the competitors, not even at the cost of contributing to the stability of the financial system in which everyone does business together. Every financial institution manages its ratio of revenues and undertaken risk, but not the consequences (external effects) that its behaviour and business model might cause in other parts of the financial system, or the consequences of other institutions' behaviour.

In other words, risk is to a large extent the function of the system's character. Each error becomes a precedent, and precedents grow into habits of public policies, while the politics guides the activities of institutions. Political mistakes, like leaning on the financial support of the state, accumulating debts and excessive expenditures, finding loopholes in the law, attempting to impact the national currency's FX rate - all of that undermines the foundation of the society and adds another layer of risk to the system. Common sense instructs us to search for answers to the systemic risk issues in the principles currently at work in a given system, instead of importing modern risk management policies. Risks are not the consequence of events; they are the consequence of the

system's character. Events are the results; they are the effects of that character, and thus, the examination of prudential measures undertaken at the national level may tip the scales when it comes to safety for investors thinking about investing in a country.

This was the very vacuum between monetary policy, on the one hand, and regulatory and supervisory framework, on the other, requiring the development of a new paradigm in the form of macroprudential policy aimed at controlling the systemic risk in the financial system. Macroprudential policy can be defined as the implementation of a group of instruments with the potential to increase resilience by generating protective layers of capital and liquidity, limiting procyclicality in the financial system's behavior and controlling risks that individual financial institutions may create for the system overall. Thus positioned framework essentially fills in the empty space between the monetary and microprudential policy. In relation to these two types of policy, macroprudential approach is characterized by a fundamentally different way of reacting to the risks threatening to jeopardize the financial system's stability, in particular: a) by preventing the occurrence and development of the systemic risk through adequate management of financial cycles and systemic inter-dependencies, and b) by increasing resilience of the financial system to systemic shocks, i.e. by equipping the system for unhindered functioning even in case of systemic shocks.

The shaping of the framework of macroprudential policy, regulation and supervision has been underway. In order for it



rizik finansijske mreže i na stvaranje negativnih eksternih efekata u drugim delovima sistema.

Tipično, zajednička izloženost najčešće nastaje kao rezultat efekta ugledanja na druge (engl. lemming effect). On se ispoljava tako što finansijska institucija formira svoj portfolio ugledanjem na portfolio druge slične finansijske institucije. Na ovaj način ona štedi resurse koje bi morala da potroši na tehnike upravljanja portfoliom, ispitivanje tržišta, kontrolu rizika i sl. U meri u kojoj se portfolija različitih institucija sastoje od slične ili iste vrste aktive, ona su izložene i istim vrstama rizika. Po pravilu, realizacija nekog od tih rizika pogađa sve institucije koje imaju približno istu ili sličnu strukturu portfolia što dovodi do realizacije sistemskog rizika, budući da iznuđena prodaja finansijske imovine svojim uticajem na pad cena imovine dodatno pogađa sve institucije koje u svom posedu imaju finansijsku imovinu slične vrste.

Međusobna povezanost rezultat je zaključivanja brojnih poslovnih ugovora, kako sa institucijama u okviru sistema, tako i sa institucijama van finansijskog sistema. Direktno poslovne veze između učesnika na tržištu čine mrežu isprepletanih potraživanja i obaveza koja predstavlja kanal mogućeg širenja 'zaraze', baš kao što se to dešava i u slučaju iznuđene prodaje finansijske imovine.

U uslovima oštrem konkurencije i asimetričnog širenja informacija, finansijske institucije nisu u stanju da procene potencijalni uticaj vlastitih aktivnosti na ponašanje drugih institucija i realizaciju sistemskog rizika, kao ni na stvaranje negativnih eksternih efekata u drugim delovima sistema. I obrnuto je takođe istina, iz istih razloga finansijske institucije nisu u stanju ni da se odbrane od negativnih efekata ponašanja drugih institucija.

Finansijske institucije koje su deo finansijske mreže suočavaju se s rizikom mreže od koga je veoma teško ostvariti delotvornu odbranu. Propast jedne sistemski važne lokalne finansijske institucije može uticati i na propast drugih sa kojima je ta institucija intenzivno povezana (preko dužničko-poverilačkih odnosa, izloženosti i tokova likvidnosti u platnom sistemu i sl.). Jasno je da se korist od međusobne povezanosti u obliku podele rizika između finansijskih institucija ostvaruje

na račun rizika širenja zaraze. Šok, međutim može doći iz spoljnog okruženja, kao rezultat propasti međunarodne banke koja je direktno (ili indirektno) povezana sa lokalnom.

Zaraza sistemskim rizikom nije ograničena samo na finansijski sektor. Negativni efekti šire se od finansijskog sektora ka realnom i utiču na potrošnju, investicije ekonomski rast. Neprozirna i isprepletana priroda finansijskog sistema pojačava i ubrzava uticaj šoka. Pored toga, izvor sistemskog šoka može biti u realnom sektoru. Pogoršani uslovi privređivanja mogu uticati na propast preduzeća koja su se u prethodnom periodu zaduživala. Nemogućnost redovnog servisiranja obaveza od strane klijenata, može toliko opteretiti bilanse banke da izazove njenu propast. Na isti način, deprecijacija može dovesti do nemogućnosti redovnog servisiranja obaveza u slučaju preduzeća koja imaju valutno neusklađene bilanse.

Iz gornjih primera jasno je da makroprudencijalna politika u centru svog sočiva prelama različite uticaje strukture finansijskog sistema kako u njegovim internim karakteristikama međudejstvom sa privredom, tako i u smislu povezanosti sa drugim finansijskim sistemima.

Vremenska (ciklična) dimenzija rizika - navijanje časovnika

Vremenska dimenzija (engl. time dimension) sistemskog rizika podrazumeva razvoj rizika u sistemu tokom vremena. Njen izvor leži u repetitivnosti i procikličnosti ponašanja finansijskih institucija koji mogu dovesti do vidljivih promena u kreditnoj aktivnosti i zaduženosti ekonomskih agenata tokom vremena, pri čemu su najčešće ove fluktuacije van kontrole pojedinačnih institucija i regulatora. Kriza, kao i period koji krizi prethodi, odlična je ilustracija prekomernih cikličnih fluktuacija na finansijskom tržištu. Istorijski posmatrano, većina finansijskih kriza posledica je mehanizma kreditnog (cenovnog) ciklusa, odnosno, naglog skoka i zatim oštrog pada cena imovine i kreditne aktivnosti. Mehanizam kreditnog (cenovnog) ciklusa može se opisati kao kreditno indukovana (uslovljena) ekspanzija (kontrakcija) agregatne

to be successfully implemented, it is necessary, in addition to establishing institutional responsibility for the functioning of the system as a whole, to determine efficient instruments and measures, be familiar with transmission mechanisms, continuously improve the quality of analyses and the quality and accessibility of data, especially the indicators warning against the occurrence and accumulation of systemic risks. In other words, it is necessary, on the one hand, to create and implement the precise lenses for monitoring the structure of systemic risk and the trends in the financial and real sector, sufficiently strong to detect the roots of potentially dangerous hubs, and on the other hand, it is necessary to follow the clocks reacting on the time dimension of risk, showing when the time is right to intervene by introducing measures to toughen the macroprudential policy, and when the time is right for such measures to be loosened. To put it briefly, the cross-sectional and time dimensions of systemic risk are reflected in the macroprudential policy positioning the precise lenses and monitoring the time changes.

Cross-Sectional Dimension of Risk - What Do You See Through the Lens

The cross-sectional dimension of systemic risk refers to the concentration and distribution of systemic risk in the financial system in a given moment. The sources of this risk dimension are: (i) joint exposure, i.e. the exposure to the same type of risk, dependence from the same sources of finance, usage of the same infrastructure, etc. and (ii) mutual connection among different financial institutions and markets which increases the risk of contagion spreading once a problem arises. It often happens that institutions, for the purpose of short-term interest, underestimate the potential impact of their activities on the risk in the financial network, and the creation of negative external effects in other parts of the system.

Typically, joint exposure occurs as a result of the so-called lemming effect. It is manifested when a financial institution forms its portfolio by modelling it based on the portfolio of another similar financial institution. Thus, it saves its resources otherwise spent on the portfolio

management techniques, market research, risk control, etc. To the extent the portfolios of different institutions consist of similar or the same types of assets, they are also exposed to the same types of risks. As a rule, the occurrence of any of these risks affects all institutions with approximately the same or similar portfolio structure, which leads to the systemic risk, given that the fire sale of financial assets, by causing a drop in asset prices, additionally hits all institutions possessing the financial assets of a similar kind.

The mutual correlation is a result of concluding numerous business contracts, both with the institutions within the system, and the institutions outside the financial system. The direct business links among market participants build a network of intertwined receivables and liabilities, serving as a channel for potential "contagion" spreading, just like it happens in case of fire sales of financial assets.

Given the harsh competition and asymmetric information spreading, financial institutions are unable to assess the potential impact of their own activities on the behavior of other institutions and the realization of systemic risk, or on the creation of negative external effects in other parts of the system. The other way around is also true, for the same reasons financial institutions are unable to defend themselves from the negative effects of other institutions' behavior.

Financial institutions that are part of the financial network are facing the network risk which is extremely difficult to effectively defend from. The collapse of a systemically important financial institution may cause the collapse of the others with which the former institution is profoundly connected (through debtor-creditor relations, exposure and liquidity flows in the payment system, etc.). Clearly enough, the benefit from mutual connection in the form of risk distribution among the financial institutions is achieved at the expense of a risk from contagion spreading. The shock, however, may come from the external environment, as a result of the collapse of an international bank directly (or indirectly) connected with the local bank.

The systemic risk contagion is not limited to the financial sector only. Negative effects are

tražnje ili tražnje na specifičnim tržištima, kao što je, na primer, tržište nekretnina. U uzlaznoj fazi ekonomskog ciklusa, raste i tražnja za kreditima, posebno tražnja korporativnog sektora za investicionim kreditima i sektora stanovništva za hipotekarnim. Finansijske institucije i njihovi klijenti obično potcenjuju rizik koji prati ekonomske odluke koje donose. U oštroj tržišnoj utakmici, povećava se tolerantnost prema riziku i preuzimaju se sve veći rizici, što naravno zavisi od raspoloživosti eksternih izvora finansiranja.

U kojoj će meri likvidnost biti izdašna i dostupna, zavisi od percepcije rizika koja je odraz ekonomskog optimizma u uslovima visoke ekonomske aktivnosti. Ukoliko ekonomski akteri pogrešno procene da je umesto privremenog i cikličnog rasta, na delu dugoročni rast produktivnosti, to će dovesti do prekomernog zaduživanja domaćinstva, preduzeća i države. Kao po pravilu, cene različite vrste imovine rastu sa padom premije rizika. Budući da su banke motivisane profitom, one povećavaju svoje bilanse povećavajući time sopstvenu zaduženost i to velikim delom finansiranjem iz kratkoročnih izvora.

Ovo aktivira spiralu odnosno povratnu spregu koja se ispoljava kao smanjena sposobnost prepoznavanja rizika, uz konstantan rast cena imovine, sve veću dostupnost eksternih izvora finansiranja, visoku investicionu aktivnost, rast bruto domaćeg proizvoda i profita. Tako, na primer, u odsustvu mehanizma koordinacije, sve dok cene nekretnina rastu, a dužnici izmiruju svoje obaveze, finansijska institucija nastavlja sa povećanjem svoje izloženosti prema tržištu nekretnina - bez obzira na dugoročniju neodrživost takvog pristupa. Kako kreditna aktivnost i cene imovine sve više rastu, sve

je veća verovatnoća nastajanja krize u kojoj će se finansijski sistem naći u situaciji rizične izloženosti prema predimenzioniranom tržištu nekretnina. Iz mikroprudencijalne perspektive, nema razloga da se interveniš, sve dok su finansijske institucije u stanju da održavaju zadovoljavajuće nivoe likvidnosti i kapitala. Međutim, to nije dovoljno u uslovima visoke zaduženosti ekonomskih aktera i njihove međusobne povezanosti, i može biti okidač materijalizacije sistemskog rizika.

Rast finansijske neravnoteže i akumulacija sistemskog rizika obično se ne primete sve dok ne dođe do slabljenja ekonomske aktivnosti, što takođe aktivira jednu spiralu, ali u obrnutom smeru. U silaznoj fazi ciklusa, ekonomski akteri prepoznaju da je rast njihovog dohotka bio neodrživ, kao i dostignuta zaduženost. U uslovima pada cena imovine, restrukturiranje imovinskih bilansa postaje neminovnost. Da bi održale zahtevani nivo kapitalizovanosti, banke smanjuju kreditnu aktivnost i prodaju potraživanja iz svog kreditnog portfolija za koja su uvereni da su rizična, a time aktiviraju negativnu povratnu spregu kreditne aktivnosti i cena imovine. Mehanizam „razduživanja“ predstavlja proces u kome pad cena imovine negativno utiče na vrednost kolaterala i dostupnost kredita. Čim cene imovine počnu da padaju, a vrednost kolaterala da se topi, banke smanjuju kreditnu aktivnost kako bi održale konstantan odnos vrednosti kredita naspram vrednosti hipoteke (barem za novoodobrene kredite). Međutim, umanjena dostupnost kredita vrši dodatni pritisak na cene imovine i podiže učešće loših kredita.

Negativna spirala između kreditne aktivnosti i cena imovine može biti aktivirana i tzv. „ponirućom spiralom likvidnosti“.



spreading from the financial sector to the real sector, affecting the consumption, investments, economic growth. The opaque and intricate nature of the financial system amplifies and accelerates the impact of the shock. Moreover, the source of a systemic shock may be in the real sector. The aggravated business conditions may lead to bankruptcy of those companies that borrowed in the preceding period. Inability of clients to regularly service their liabilities may burden the bank's balance sheets to the point of causing its bankruptcy. Furthermore, depreciation can cause inability of regular servicing of liabilities by those companies with currency mismatches in their balance sheets.

The above examples clearly show that macroprudential policy, through its lens, refracts the different influences of the financial system's structure, both in terms of the interdependence between its internal characteristics and the economy, and in terms of its connectedness with other financial systems.

Time (Cyclical) Dimension of Risk - Winding Up the Clock

The time dimension of systemic risk refers to the development of risk in a system over time. Its source is in the repetitiveness and procyclicality of the financial institutions' behavior which may lead to visible changes in lending activity and indebtedness of economic entities over time, these fluctuations most frequently being beyond the control of individual institutions and regulators. The crisis, and the period preceding it, is the excellent illustration of excessive cyclical fluctuations at the financial market. Historically, most financial crises are the consequence of the lending (price) cycle mechanism, i.e. the sudden increase followed by a sharp decline in the prices of assets and lending activities. The lending (price) cycle mechanism can be described as a lending induced (conditioned) expansion (contraction) of aggregate demand or demand at the specific markets, such as, for instance, the real estate market. In the ascending stage of the economic cycle, the demand for loans is also growing, especially the demand of the corporate sector for investment loans and the demand of the retail sector for mortgages. Financial institutions

and their clients usually underestimate the risk accompanying the economic decisions they make. In the harsh market game, the risk tolerance increases and bigger risks are being undertaken, which, of course, depends on the accessibility of external sources of finance.

The extent to which liquidity will be ample and accessible depends on the risk perception which is the reflection of economic optimism in the conditions of buoyant economic activity. If economic subjects mistakenly assess that, instead of a temporary and cyclical growth, there is a long-term growth in productivity at work, this will lead to excessive indebtedness of households, enterprises and the state. As a rule, the prices of different types of assets increase as the risk premium declines. Given that banks are motivated by profit, they expand their balance sheets, thereby increasing their own indebtedness, largely financed from the short-term sources.

This activates a spiral, i.e. a feedback loop which manifests itself as a limited ability of risk detection, accompanied by a constant growth of asset prices, increasing accessibility of external sources of finance, intense investment activity, higher gross domestic product and bigger profit. Thus, for instance, without a coordination mechanism, as long as the real estate prices are growing, and the debtors service their liabilities, the financial institution keeps increasing its exposure to the real estate market - regardless of the long-term unsustainability of such an approach. As the lending activity and asset prices keep increasing, there is a higher probability of a crisis, in which the financial system will find itself exposed to the risk of the overblown real estate market. From the microprudential perspective, there is no reason to intervene, as long as the financial institutions are able to maintain satisfactory levels of liquidity and capital. However, this is not enough in the circumstances of high indebtedness of economic subjects and their mutual connectedness, and may be what triggers the materialization of the systemic risk.

The increasing financial imbalance and the accumulated systemic risk usually go unobserved until there is a weakening of economic activity, which also activates a spiral, but in the opposite direction. In the descending

Inicijalni gubitak kapitala banke nepovoljno deluje na likvidnost. Da bi obezbedile potrebnu likvidnost na tržištu, banke prodaju finansijsku imovinu, ponekad i pod nepovoljnim i iznuđenim uslovima, što dovodi do daljeg pada cena imovine. Ovakva situacija uticaće na novi talas gubitaka i probleme sa likvidnošću. U tzv. poniru spirali kreditori na tržištu pokazuju sve manju toleranciju prema riziku. Zato reaguju smanjenjem obima kreditne aktivnosti i povećanjem cene zaduživanja. U ovim uslovima mnogi dužnici će se suočiti sa problemom otplate svojih kredita. Povećava se broj bankrotstava, što povratno deluje na povećanje kreditnih gubitaka u bankama. U domaćoj bankarskoj praksi je primećeno da su neke banke cenu zaduživanja posle početka svetske finansijske krize 2008. godine uvećale ne samo korisnicima novoodobrenih kredita, već i korisnicima koji su već bili u otplati kredita. One su kao pravni osnov za uvećanje koristile „neodredive“ bitne elemente ugovora koji su najčešće utvrđivali da banka može jednostrano da uveća kamatnu stopu ako se promene tržišni uslovi. Zabrana ove prakse je bio jedan od osnovnih razloga za donošenje Zakona o zaštiti korisnika finansijskih usluga 2011. godine. Negativni povratni uticaj koji nastaje između finansijskog sektora i realne ekonomije postaje začarani krug iz koga se ne može izaći, bez intervencije.

‘Istanjivanje’ bilansa banaka koje smanjuje izloženost riziku je racionalna odluka sa aspekta individualne institucije. Ovo je i dobrodošao potez iz mikroprudencijalne perspektive jer se zadovoljavajućim nivoom adekvatnosti kapitala smanjuje verovatnoća da će doći do bankrotstva banke. Međutim, kada sve institucije istovremeno prodaju istu vrstu aktive, cene te aktive dramatično padaju. Banke u sledećem koraku reaguju prodajom i druge vrste aktive, što utiče i na pad drugih cena. Volatilnost cena kao i povezanost između različite vrste aktive raste. Iz perspektive sistema kao celine, istanjivanje bilansa banke može da izazove ozbiljne posledice na cenu finansijske imovine, dostupnost kredita i ekonomsku aktivnost, i to naročito ukoliko se to dešava u većem broju banaka istovremeno. Primena korektivnih mera makroprudencijalne politike u ovakvim slučajevima jedini je način

da se izbegnu ovakvi poremećaji.

Ciklična dimenzija sistemskog rizika sa sobom nosi ne samo sklonost ka preteranoj kreditnoj ekspanziji i zaduženosti u fazi ekspanzije, već i averziji ka riziku i često ishitrenoj prodaji aktive u fazi kontrakcije, kao i povratnu spregu između finansijskog sektora i realne ekonomije. Finansijska zavisnost (engl. leverage) je ključna promenljiva koja opisuje razvoj finansijskog ciklusa tokom vremena. Ovaj pojam se upotrebljava u brojnim oblastima i zato postoje i brojne definicije. U oblasti finansijskih tržišta, pojam se upotrebljava da bi se opisao odnos između investicija i vlastitih sredstava investitora i pokazala zavisnost od eksternih izvora. U slučaju banaka, pojam predstavlja količnik aktive i kapitala. U užem smislu, pojam finansijske zavisnosti se odnosi na zavisnost između aktive ekonomskog aktera i duga na koji se oslanjao da bi tu aktivu stekao. U širem smislu, ovim pojmom se aproksimira priroda finansijskog ciklusa i položaj privrede u njemu (zaduženost ekonomskih aktera, stanje i dinamika duga, raspoloživost eksternih izvora finansiranja, veličina kamatne marže, odnos kapitala i aktive finansijskih institucija). Finansijska zavisnost raste sve do promene smera finansijskog ciklusa, nakon čega opada, ali ostaje visoka. Zbog pada bruto domaćeg proizvoda, finansijska zavisnost može rasti i na početku silazne faze. Proces razduživanja obično traje nekoliko godina i ima potencijal da ograniči ekonomsku aktivnost, ukoliko izostanu intervencije.

U obe faze kreditnog ciklusa (fazi naglog rasta i kontrakcije), pojedinačne institucije ne mogu u punoj meri da kontrolišu posledice (eksterne efekte) svojih kreditnih odluka na ponašanje drugih učesnika na tržištu, kao ni na kreditnu aktivnost i cene imovine. U meri u kojoj kreditni ciklus i sa njim povezani rizik potiču iz nemogućnosti pojedinačnih finansijskih institucija da koordiniraju svoje kreditne politike, makroprudencijalna politika može biti korišćena kao korektivni mehanizam.

Vremenska i strukturna dimenzija ne mogu biti striktno razdvojene

Vremenska i strukturna dimenzija sistemskog rizika se u znatnoj meri razvijaju

stage of the cycle, economic subjects recognize that the growth of their income is unsustainable, just like the indebtedness level they reached. Given the drop of asset prices, the restructuring of balance sheets becomes inevitable. In order to maintain the required level of capitalization, banks reduce lending activities and sell receivables from their credit portfolios which they believe to be risky, thereby activating the negative feedback between lending and asset prices. The mechanism of deleveraging is a process in which the drop in asset prices negatively affects the value of collateral and loans accessibility. As soon as the asset prices start to go down, and the collateral value to dissolve, banks reduce their lending activity in order to maintain a stable ratio of the loans value against the mortgages value (at least for newly granted loans). However, reduced accessibility of loans exerts an additional pressure on the asset prices and increases the share of non-performing loans.

The negative spiral between lending and asset prices may also be triggered by the so-called "plummeting liquidity spiral". The initial loss of the bank's capital has an unfavorable effect on liquidity. In order to obtain required liquidity at the market, banks sell their financial assets, sometimes at the unfavorable and forced conditions, resulting in further drops in asset prices. Such a situation causes a new sequence of losses and liquidity problems. In the so-called plummeting spiral, creditors at the market demonstrate less and less risk tolerance. This is why they react by reducing the volume of lending and by increasing the cost of borrowing. Such conditions will make many debtors face the problem in repayment of their loans. The number of bankruptcies increases, which, in turn, causes higher loan-related losses in banks. In the domestic banking practice it has been observed that, since the outbreak of the 2008 global financial crisis, some banks increased the cost of borrowing not only to the users of newly granted loans, but also to the users which were already in the process of loan repayment. As a legal basis for the increase they used the important "unspecifiable" elements of the contract which typically prescribed that a bank is allowed to unilaterally raise the interest rate if market conditions change. The objective

of banning this practice was one of the main reasons for adopting the Law on the Protection of Financial Services Consumers back in 2011. The negative feedback between the financial sector and the real economy becomes a vicious circle from which it is impossible to get out without an intervention.

The "thinning" of banks' balance sheets reducing the risk exposure is a rational decision from the perspective of an individual institution. This is a welcome move from the microprudential perspective because a satisfying level of capital adequacy reduces the probability of the bank's bankruptcy. Nevertheless, when all institutions sell the same type of assets at the same time, the price of those assets will decline dramatically. In the next step, banks react by selling other types of assets, which causes the decline of other prices as well. The volatility of prices, along with the connectedness among various types of assets, increases. From the perspective of the system as a whole, the thinning of a bank's balance sheet can cause some serious consequences when it comes to the price of financial assets, accessibility of loans and economic activity, especially if it happens in a large number of banks at the same time. The implementation of corrective macroprudential policy measures is in such cases the only way to avoid these disruptions.

The cyclical dimension of systemic risk entails not only the propensity towards excessive credit expansion and indebtedness in the expansion stage, but also towards risk aversion and often impetuous sale of assets in the contraction stage, along with the feedback between the financial sector and the real economy. Financial leverage is the key variable describing the financial cycle's development over time. This term is used in numerous fields, which is why there are many definitions of it. In the field of financial markets, this term is used to describe the relationship between investments and investors' own funds, thereby indicating the dependence from external sources. In case of banks, the term refers to the ratio of assets and capital. In a narrower sense, financial leverage refers to the dependence between the assets of an economic subject and the debt it relied on to acquire those assets. In a broader

istovremeno i ne mogu biti striktno razdvojene. U uzlaznoj fazi finansijskog ciklusa prekomeran kreditni rast je praćen: (i) rastućom izloženošću velikog broja banaka prema istim sektorima (na primer tržištu nekretnina) i (ii) povećanom međusobnom povezanošću u zadovoljenju rastućih potreba za likvidnošću.

Finansijske institucije postaju izložene istim vrstama rizika i na strani aktive i na strani pasive. Ovo ih čini pojedinačno ranjivim na iste tipove šokova uslovljavajući ranjivost sistema kao celine. Vremenska dimenzija se ispoljava kroz uticaj na solventnost, dok se strukturna ogleda i kroz kvalitet likvidnosti. Međutim, solventnost i likvidnost su međusobno povezane. Nelikvidnost veoma brzo može da dovede i do nesolventnosti.

Odgovor je u preciznom sočivu i pouzdanom satu

Sistemska rizik je, najjednostavnije rečeno, rizik koji pogađa sve. On može biti izazvan snažnim makroekonomskim udarom i/ili se može javiti u slučaju propasti najveće finansijske institucije u zemlji. U svakom slučaju, ova kriza je pokazala da dosadašnji nadzor nad sistemskim rizikom kroz tzv. izveštaje o finansijskoj stabilnosti i mere centralnih banaka nije bio dovoljan. Nakon izbijanja globalne finansijske krize, u drugoj polovini 2008. godine, Evropska komisija je započela proces preispitivanja arhitekture finansijske stabilnosti. Ekspertska grupa, koju je predvodio Žak de Larosije, dobila je zadatak da uoči nedostatke i predloži ključne elemente globalne finansijske reforme, kako bi se izbeglo ponavljanje slične

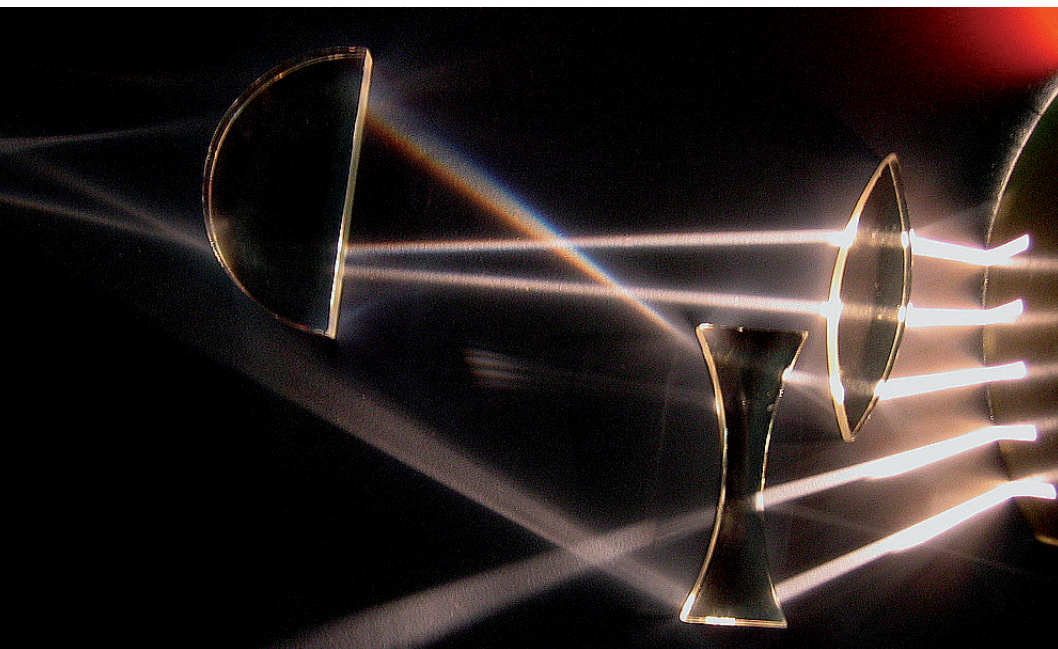
krize u budućnosti. Izveštaj ove ekspertske grupe iz februara 2009. godine utvrdio je brojne slabosti međunarodnog finansijskog sistema, njegove regulative i nadzora, uključujući: prekomernu zaduženost; neadekvatnu procenu rizika, naročito složenih finansijskih proizvoda; nedovoljne rezerve likvidnosti kao rezultat značajne ročne neusklađenosti obaveza i potraživanja; procikličnost regulatornog okvira; odsustvo primene oštrijih standarda za sistemski važne institucije i neadekvatno regulisanje i nadzor nad sistemskim rizicima.

Kao odgovor na uočene nedostake, od 2009. godine traje proces oblikovanja nove finansijske arhitekture i još nije završen. Uprkos nedovršenosti, konture su prilično jasne. Nova arhitektura finansijske stabilnosti koja nastaje u Evropskoj uniji (engl. European Union, EU) i zoni evra uvodi tri vrste inovacija: (1) makroekonomske (fiskalne i monetarne), (2) institucionalne i (3) prudencijalne (HUB Analize 45, 2013).

Najznačajnije makroekonomske inovacije su: Fiskalni pakt, Evropski mehanizam za stabilnost (engl. European Stability Mechanism, ESM) i reforma instrumenata Evropske centralne banke (engl. European Central Bank, ECB) koja uključuje produženje rokova dospeća kreditnih instrumenata i proširenje liste prihvatljivih kolateralala. Takođe, uvedena je i mogućnost neograničenog otkupa dugoročnih državnih obveznica zemalja u finansijskim teškoćama koje se prethodno obrate ESM-u ili tzv. kvantitativno popuštanje (engl. Quantitative easing, QE).

Druga vrsta inovacija odnosi se na institucionalne promene. Uspostavljen je

Evropski sistem finansijskog nadzora (engl. European System of Financial Supervision, ESFS), sa ciljem da se bolje zaštite deponenti, delotvornije bori sa sistemskim rizikom i ponovo uspostavi poverenje u finansijski sistem. Čine ga dva stuba:



sense, this term approximates the nature of the financial cycle and the position of the economy within it (indebtedness of economic subjects, debt position and dynamics, accessibility of external sources of finance, interest margin, ratio of financial institutions' capital and assets). Financial dependence increases until the financial cycle changes its direction, after which point it decreases, yet remains high. Due to the drop in gross domestic product, financial dependence may also increase at the beginning of the downward stage. The process of deleveraging usually takes several years and has the potential to limit economic activity, if there are no relevant interventions.

In both stages of the credit cycle (sudden expansion and contraction), individual institutions cannot fully control the consequences (external effects) of their credit-related decisions on the behavior of other market participants, or on the lending activity and asset prices. To the extent in which a credit cycle and its related risk arise from the inability of individual financial institutions to coordinate their credit policies, macroprudential policy can be used as a corrective mechanism.

Time and Cross-Sectional Dimension Cannot Be Strictly Separated

The time and cross-sectional dimension of systemic risk are, to a substantial degree, developing simultaneously, and, thus, cannot be strictly separated. In the ascending stage of the financial cycle, the excessive credit growth is accompanied by: (i) the increasing exposure of a large number of banks towards the same sectors (for instance, the real estate market) and (ii) the increased mutual connectedness in the process of satisfying the mounting liquidity needs.

Financial institutions become exposed to the same types of risk both at the assets and at the liabilities side. This makes them individually vulnerable to the same types of shocks, conditioning the vulnerability of the system as a whole. The time dimension manifests itself by affecting solvency, whereas the cross-sectional dimension is also reflected in the quality of liquidity. However, solvency and liquidity are mutually connected. Illiquidity can quickly result in insolvency.

The Answer is a Precise Lens and a Reliable Clock

Systemic risk is, simply speaking, the risk which affects everyone. It can be caused by a powerful macroeconomic shock and/or may occur in case of a collapse of the biggest financial institution in the country. Anyway, the recent crisis has shown that the supervision over the systemic risk until that point, through the so-called financial stability reports and central banks' measures, was not enough. After the outbreak of the global financial crisis, in the second half of 2008, the European Commission launched the process of re-examining the financial stability architecture. The Expert Group, led by Jacques de Larosière, was entrusted with the task of detecting the drawbacks and proposing the key elements of a global financial reform, in order to avoid similar crises repeating in the future. The report of this Expert Group, submitted in February 2009, outlined the numerous weaknesses of the international financial system, its regulations and supervision, including: excessive indebtedness; inadequate risk assessment, especially in relation to complex financial products; insufficient liquidity reserves as a result of the substantial maturity mismatches between liabilities and receivables; procyclicality of the regulatory framework; lack of implementation of the stricter standards for systemically important institutions and inadequate regulations and supervision in terms of systemic risks.

As a response to the detected weaknesses, since 2009 onwards there has been an ongoing process of shaping the financial architecture, which is still not completed. Yet, despite its incompleteness, the contours are already pretty clear. The new financial stability architecture built within the European Union (EU) and the Eurozone introduces three types of innovations: (1) macroeconomic (fiscal and monetary), (2) institutional and (3) prudential (HUB Analyses 45, 2013).

The most significant macroeconomic innovations are: the Fiscal Pact, the European Stability Mechanism - ESM and the reformed instruments of the European Central Bank - ECB, including the extended maturity deadlines

mikroprudencijalni i makroprudencijalni nadzor.

Mikroprudencijalni nadzor, usmeren na očuvanje stabilnosti i sigurnosti pojedinačnih finansijskih institucija, poveren je Evropskim agencijama za nadzor (engl. European Supervisory Authorities, ESAs), koje čine: (1) Agencija za nadzor banaka (engl. European Banking Authority - EBA, koja je zamenila Committee of European Banking Supervisors), (2) Agencija za nadzor tržišta kapitala (engl. European Securities and Market Authority, ESMA, koja je zamenila Committee of European Securities Regulators) i (3) Agencija za nadzor osiguranja i šema penzionog osiguranja (engl. European Insurance and Occupational Pensions Authority, EIOPA), koja je zamenila Committee of European Insurance and Occupational Pensions Supervisors). Uprkos formiranju zajedničkih nadzornih tela, nacionalna tela i dalje imaju mandat da donose odluke.

Makroprudencijalna dimenzija nadzora, čiji je cilj da jačanjem otpornosti i smanjenjem verovatnoće nastanka sistemskih rizika, doprinosi očuvanju stabilnosti finansijskog sistema kao celine, dopunjava mikroprudencijalnu dimenziju nadzora. U skladu sa preporukama pomenute ekspertske grupe koju je predvodio Žak de Larosije, makroprudencijalni nadzor poveren je Evropskom odboru za sistemski rizik (engl. European Systemic Risk Board, ESRB), kao i nacionalnim institucijama nadležnim za njeno sprovođenje. Ključni zadaci Evropskog odbora za sistemski rizik su razvoj sistema za rano upozorenje na rast sistemskog rizika i formulisanje preporuka za njegovo suzbijanje. Ako sistemski rizici ili neravnoteže u evropskom finansijskom sistemu budu identifikovani, on može izdati upozorenja i preporuke koje mogu biti upućene Uniji u celini, ili jednoj ili više država članica, ili jednom ili više Evropskih nadzornih tela ili jednom ili više nacionalnih nadzornih tela.

Drugi talas krize ukazao je na međusobnu povezanost država i banaka u zoni evra. Dok finansijsko tržište funkcioniše na nivou EU, nacionalne institucije odgovorne su za nadzor, spašavanje i rešavanje problema u problematičnim bankama. Mere na nacionalnom nivou koje su bile usmerene na spašavanje

banaka uz pomoć države, i pojačane potrebe za finansiranjem rastućeg javnog duga, dovele su do velikog rasta učešća državnih hartija od vrednosti u portfelju banaka, usled njihovog preferencijalnog regulatornog tretmana, što je uticalo na međusobnu zavisnost banaka i država i stvaranje negativne povratne sprege. Nacionalni model nadzora za međunarodne banke pokazao se kao nedovoljan i nedelotvoran, u uslovima finansijske integracije i globalizacije i nije bilo jasno ko će i kako u slučaju nesolventnosti većeg broja država unutar monetarne unije spašavati sistemski važne banke koje u portfelju imaju veće iznose državnih obveznica.

Ideja o izgradnji Bankarske unije proizašla je iz problema „zagrljaja“ banaka i država (HUB Analize 45, 2013). U monetarnoj uniji u kojoj ne postoji mogućnost rešavanja problema mehanizmom koji se naziva primarna emisija („štampanje“ novca), problemi u bankama, pre svega problemi u velikim, složenim i umreženim, tzv. sistemski važnim bankama, zahtevaju da spašavanje banke ili dela banke koji je značajan za društvo u celini, pređe na teret poreskih obveznika. Ovo opterećenje nije problem dok su fiskalna politika i javni dug održivi. Međutim, ako je fiskalni kapacitet države iscrpljen dugotrajnim deficitom i visokim javnim dugom, problem u sistemski važnoj banci dodatno će ugroziti fiskalni kapacitet i dovesti do fiskalne krize kao na primer, na Kipru, Islandu, Irskoj, Španiji (HUB Analize 45, 2013). S druge strane, krizni ishod je moguć i kada su banke zdrave u delu poslova sa privatnim sektorom, ali je fiskalna politika uvela zemlju u stanje fiskalne nesolventnosti. I tu je na delu bio štetni zagrljaj banaka i država, samo što u prvom slučaju poslovanje banaka utiče na stanje javnih finansija, a u drugom javne finansije utiču na „zdravstveno“ stanje banaka (HUB Analize 45, 2013).

Kreatori institucija Evropske Unije ispravno su zaključili da se iz začaranog kruga (nezdravog braka država i banaka) može izaći samo stvaranjem Bankarske unije, odnosno, zajedničkog nadzora banaka, osiguranja depozita i rešavanja problema u problematičnim bankama. ECB i EBA imaju centralnu ulogu u finansijskoj regulaciji i nadzoru banaka. Pri tome, dok će ECB imati

for credit instruments and the extended list of acceptable collaterals. Moreover, the possibility has been introduced for unlimited purchase of long-term government bonds of the countries facing financial difficulties which previously referred to the ESM, as part of the so-called quantitative easing - QE.

Another type of innovation refers to institutional changes. The European System of Financial Supervision - ESFS has been established, with a view to achieving better protection of depositors, more effective struggle against the systemic risk, and restoration of confidence in the financial system. It consists of two pillars: microprudential and macroprudential supervision.

Microprudential supervision, aimed at maintaining stability and safety of individual financial institutions, has been entrusted to the European Supervisory Authorities, ESAs, consisting of: (1) the European Banking Authority - EBA, having replaced the Committee of European Banking Supervisors, (2) the European Securities and Market Authority - ESMA, having replaced the Committee of European Securities Regulators and (3) the European Insurance and Occupational Pensions Authority - EIOPA, having replaced the Committee of European Insurance and Occupational Pensions Supervisors. Despite the formation of joint supervisory bodies, the national bodies still have their mandate for decision-making.

The macroprudential dimension of supervision, aimed at contributing to the preservation of the financial system's overall stability by strengthening the resilience and reducing the probability of systemic risks, complements the microprudential dimension of supervision. In line with the recommendations of the mentioned expert group, led by Jacques de Larosière, macroprudential supervision was entrusted to the European Systemic Risk Board - ESRB, and the national institutions in charge of its implementation. The key tasks of the European Systemic Risk Board are to develop the system of early warnings against the accumulating systemic risk, and to formulate the recommendations for its suppression. If systemic risks or imbalances in the European financial system get identified on

time, this system can issue relevant warnings and recommendations to the Union overall, or one or several member states, or one or several European supervisory bodies, or one or several national supervisory bodies.

The second wave of the crisis shed light on the mutual connectedness of countries and banks in the Eurozone. While the financial market functions at the EU level, the national institutions are responsible for the supervision, bail-outs and problems resolution in problematic banks. The national level measures aimed at banks' bail-outs with the state aid, and the increased needs for financing the rising public debt, resulted in a considerably higher share of government securities in the banks' portfolios, due to their preferential regulatory treatment, which, in turn, caused a mutual dependence between the banks and the state, and generated a negative feedback loop. The national supervision model for international banks has proven to be insufficient and ineffective in the circumstances of financial integration and globalization, and it was not clear who and how will be saving systemically important banks holding huge amounts of government bonds in their portfolios, should a larger number of states within the monetary union go insolvent.

The idea about building the Banking Union arose from the problem of "embraced" banks and states (HUB Analyses 45, 2013). In the monetary union which does not offer the possibility of solving the problem through the mechanism called primary issuance (i.e. the "printing" of money), the problems in banks, particularly the problems in large, complex and networked, the so-called systemically important banks, require the burden of the bail-out of a bank or a section of a bank important for the society overall, to be transferred to and carried by tax payers. Such a burden is not a problem as long as the fiscal policy and the public debt are sustainable. However, if the state's fiscal capacity has been exhausted by long-term deficit and high public debt, the problem occurring in the concerned systemically important bank will additionally jeopardize the fiscal capacity and lead to a fiscal crisis as it happened, for instance, in Cyprus, Iceland, and Spain (HUB Analyses 45, 2013). On the other hand, a crisis is a possible outcome

specifičan mandat nadzora prekograničnih banaka u zoni evra i drugih zemalja u EU ako se pridruže jedinstvenom mehanizmu nadzora (engl. Single Supervisory Mechanism, SSM), EBA će se baviti uspostavljanjem zajedničkih regulatornih i nadzornih standarda. Odluka o nadzornom mandatu ECB radikalna je i za ECB i za EBA.

Treća vrsta inovacija odnosi se na primenu Bazela III kao ključnog regulatornog odgovora na krizu i glavnog koraka u procesu stvaranja jačeg i sigurnijeg finansijskog sistema. Izveštaj Žaka de Larosijea pokazao je da regulacija koja je usmerena na individualne institucije ne može adekvatno da se suprotstavi sistemskim rizicima, a posebno procikličnom delovanju finansijskog sistema koje je dodatno pojačano međusobnom povezanošću finansijskih institucija i tržišta. Procikličnost se ispoljava u postojanju tendencije smanjenja zahteva za kapitalom u pretkriznim vremenima (na vrhu ekonomskog ciklusa), kao i tendencije povećanja zahteva za kapitalom u kriznim periodima što može dovesti do produbljanja krize (sloma kreditne aktivnosti u slučaju nemogućnosti dokapitalizacije). Očigledno je da postoji potreba za mehanizmom koji će osigurati dodatni sloj kapitala sistema pre nastupanja krize (recesije), te sprečiti potrebu za prevelikim dokapitalizacijama tokom krize. Pored toga, finansijska institucija kao deo finansijske mreže suočava se sa tzv. rizikom mreže. Propast jedne sistemski važne finansijske institucije može uticati i na propast drugih. Očigledno je, takođe, da postoji potreba za mehanizmom koji će osigurati dodatni sloj kapitala za sistemski važne institucije.

Bazel III, kao ključni regulatorni odgovor na krizu, donosi: (1) jačanje regulatornog okvira koji je uveo Bazel II na nivou pojedinačnih institucija, ali i (2) uvođenje makroprudencijalne politike čiji je cilj jačanje otpornosti finansijskog sistema i izbegavanje (u meri u kojoj je to moguće) sledeće finansijske krize (Caruana, 2010).

Kako bi se standardi Bazela III formalno primenili na evropsku pravnu tekovinu, Savet Evrope i Evropski parlament usvojili su novi regulatorni paket koji će primenjivati kreditne institucije i finansijska preduzeća koja posluju u zemljama članicama Evropske unije. Novim regulatornim paketom, koji je stupio na snagu 1.

januara 2014. s punom primenom od 1. januara 2019. Direktiva Evropske unije III (engl. Capital Requirements Directive, CRD III) zamenjena je Direktivom Evropske unije IV (CRD IV) i Uredbom o prudencijalnim standardima (engl. Capital Requirements Regulation, CRR), koje se zajedničkim imenom nazivaju CRD IV paket (engl. CRD IV package). Dok se Uredba automatski primenjuje na sve zemlje članice, Direktiva se mora uneti u nacionalne zakone.

Tehnički posmatrano, nova finansijska regulativa povećava kvantitet i kvalitet kapitala uspostavljanjem sistema zaštitnih slojeva kapitala, menja strukturu kapitala kreditnih institucija, postavlja jedinstvena pravila za upravljanje rizicima (uključujući rizik likvidnosti koji nije bio obuhvaćen Bazelom II), ograničava finansijske zavisnosti, reguliše trgovinu i aktivnosti van organizovanog tržišta (OTC tržište), povećava transparentnost poslovanja i harmonizuje standarde i sisteme izveštavanja finansijskih institucija (HUB Analize 45, 2013). Očekuje se da će promene povećati otpornost bankarskog sistema. Otporniji sistem bi u budućnosti imao veći kapacitet za apsorpciju ekonomskih i finansijskih šokova što bi omogućilo da banke nastavu da finansiraju ekonomsku aktivnost i rast.

Na osnovu prethodnog može se zaključiti da su se u proteklom periodu desile krupne promene na putu ograničavanja sistemskog rizika i stvaranja nove arhitekture finansijske stabilnosti u EU. Da bi se proces završio ostalo je još da se integriše proces restrukturiranja banaka i sistem osiguranja depozita. U ovom trenutku nije moguće predvideti kada će se to desiti. Međutim, polako počinje da funkcioniše ujedinjeni bankarski nadzor. Ovo je veoma važno za zemlju kao što je Republika Srbija, pošto najveći deo našeg bankarskog sektora posluje u sastavu međunarodnih banaka čija se sedišta nalaze u zemljama članicama zone evra, odnosno SSM. Ulazak najvećih banaka pod nadzor ECB moglo bi se interpretirati kao "pečat kvaliteta". Takođe, iako ECB ima obavezu nadzora međunarodnih banaka na konsolidovanoj osnovi, mora isto tako voditi računa i nadzirati banke ćerke. Ovo znači da će ECB voditi podjednaku brigu o finansijskoj stabilnosti na nivou EU, kao i na nivou svake pojedine zemlje članice.

even when the banks are healthy in the segment of their private sector operations, but when the fiscal policy has brought the country into the state of fiscal insolvency. Here, too, was at work the detrimental embrace of the banks and states, only in the first case the banks' operations affected the position of public finance, and in the second the public finance affected the "health" of banks (HUB Analyses 45, 2013).

The creators of the European Union institutions rightfully concluded that the only way to exit the vicious circle (i.e. the unhealthy marriage of states and banks) is by creating the Banking Union, implying the joint supervision of banks, deposit insurance and problems resolution in problematic banks. The ECB and the EBA have the central role in the financial regulation and supervision of banks. While the ECB will have the specific mandate as the supervisor of cross-border banks in the Eurozone and other countries in the EU if they join the Single Supervisory Mechanism - SSM, the EBA will be dealing with the establishment of joint regulatory and supervisory standards. The decision about the supervisory mandate of the ECB is radical both for the ECB and the EBA.

The third type of innovations refers to the implementation of Basle III as the key regulatory response to the crisis, and the main step in the process of generating a stronger and safer financial system. The report by Jacques de Larosière showed that regulation aimed at individual institutions cannot adequately resist systemic risks, especially not the procyclical actions of the financial system additionally strengthened through the mutual connectedness of financial institutions and the market. Procyclicality is manifested in the tendency for reducing capital requirements in the pre-crisis periods (at the peak of the economic cycle), and the tendency for increasing capital requirements during the periods of crisis, which may cause the crisis to deepen (and lending activities to collapse in case that additional capitalization is impossible). There is an evident need for a mechanism that would ensure an additional layer of capital in the system before the crisis (recession), hence preventing the need for excessive additional capitalizations throughout the crisis itself. Moreover, each financial institution, as part

of the financial network, faces the so-called network risk. The collapse of one systemically important financial institution may influence the collapse of the others. Evidently enough, there is also a need for a mechanism that would ensure an additional layer of capital for systemically important institutions.

Basle III, as the key regulatory response to the crisis: (1) strengthens the regulatory framework introduced by the Basle II at the level of individual institutions, but also (2) introduces macroprudential policies aimed at boosting the resilience of the financial system and avoiding (to the extent possible) the next potential financial crisis (Caurana, 2010).

In order for the Basle III standards to be formally implemented on the European *acquis communautaire*, the Council of Europe and the European Parliament adopted the new regulatory package to be implemented by lending institutions and financial enterprises doing business in the European Union member states. The new regulatory package, which came into effect on 1 January 2014 and is to be fully implemented as of 1 January 2019, replaces the Capital Requirements Directive - CRD III by the Capital Requirements Directive - CRD IV and the Capital Requirements Regulation - CRR on prudential standards, jointly referred to as the CRD IV package. While the CRR is automatically applied to all member states, the CRD must be embedded in the national legislation.

Technically speaking, new financial regulations increase the quantity and quality



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Srbija nije članica EU, pa ne može biti članica SSM-a. To je stavlja u dvostruko neugodan položaj: niti su lokalne banke u vlasništvu međunarodnih banaka sa sedištem u EU predmet nadzora ECB, niti su to banke u domaćem ili vlasništvu banaka sa sedištem van EU. Odsustvo "pečata kvaliteta" moglo bi se negativno odraziti na privlačenje perspektivnih investitora u naš bankarski sektor. Dodatno, bankarske grupe koje će biti predmet nadzora ECB mogu biti motivisane da značajno umanje svoju izloženost prema „manje važnim“ tržištima. Zato je od izuzetne važnosti da se nadzor u Srbiji obavlja operativno prema istim kriterijumima kao u EU. Dosledna primena jedinstvenih kriterijuma umanjice značaj činjenice da se kreditne institucije u Srbiji nalaze van SSM-a. Međutim, ne treba isključiti i moguć pozitivan uticaj. Unapređenje poslovnih procesa u bankarskoj grupi koja je obuhvaćena nadzorom ECB može imati uticaj na kvalitet poslovanja supsidijara.

Događa se da prođu godine od trenutka kada se ispolji ranjivost i pokažu pukotine u finansijskom sistemu do trenutka izbijanja finansijske krize. U trenutku izbijanja krize, pak, uslovi se naglo menjaju i proces prilagođavanja postaje izrazito nelinearan (dolazi do naglog prelaza iz dobrog u loše stanje). Sve ovo, međutim, ne umanjuje značaj makroprudencijalne politike. Njen uspeh se ogleda u sprečavanju nastanka sistemskog rizika, kao i njegovog širenja što smanjuje verovatnoću nastanka finansijske krize koja ima dugoročno negativan uticaj na ekonomsku aktivnost. Zbog problema u merenju rezultata, kao i nepopularnih mera u fazi akumulacije rizika, makroprudencijalna politika će uvek biti izložena pritiscima, uključujući i političke. Ipak, za onog ko ume da posmatra i razume ono što vidi, precizna sočiva i pouzdani satovi su neophodni pratioci savremenog života u današnjem svetu.

of capital by establishing the system of capital buffers, changing the structure of capital in lending institutions, setting the uniform rules for risk management (including liquidity risk which was not covered by Basle II), limiting financial dependencies, regulating trade and activities at the OTC market, increasing the transparency of business operations and harmonizing the reporting standards and systems of financial institutions (HUB Analyses 45, 2013). These changes are expected to boost the resilience of the banking system. A more resilient system would in the future have larger capacity to absorb economic and financial shocks, thereby enabling banks to continue to finance economic activities and growth.

Based on the above, it may be concluded that in the preceding period some major changes took place on the path to limiting systemic risk and building the new architecture of financial stability in the EU. To complete this process, there remains for the process of banks' restructuring and the deposit insurance system to be integrated. At this point, it is not possible to predict when this will happen. However, the united banking supervision is slowly beginning to function. This is very important for a country like the Republic of Serbia, given that the predominant part of the Serbian banking sector operates as part of international banking groups whose seats are located in the Eurozone member states, under the jurisdiction of the SSM. The entry of the biggest banks under the supervision of the ECB could be interpreted as the "seal of quality". Moreover, although the ECB is obliged to perform supervision of international banks on a consolidated basis, it must take heed to supervise their daughter banks as well. This means that the ECB will be taking equal care about the financial stability at the EU level, and at the level of each individual member state.

Serbia is not a member of the EU and, hence, cannot be a member of the SSM. This places it in a double unfavorable position: neither are the local banks owned by international banks

seated in the EU subject to the ECB supervision, nor is this the case for banks with domestic ownership or owned by international banks seated outside the EU. The absence of the "seal of quality" may have a negative effect when it comes to attracting prospective investors to the Serbian banking sector. In addition, banking groups subject to the ECB supervision may be motivated to considerably reduce their exposure towards the "less important" markets. This is why it is of utmost importance for the supervision in Serbia to be performed operationally according to the same criteria as in the EU. The consistent implementation of the uniform criteria will make it less significant that the lending institutions in Serbia are outside the SSM. Nevertheless, one should not completely exclude the possible positive influence either. The advancement of operational processes within a banking group covered by the ECB supervision may affect the quality of business in its subsidiaries.

It happens sometimes that years have to pass from the moment certain vulnerability shows the fractures in the financial system until the financial crisis actually breaks out. Once it breaks out, though, the conditions change suddenly and the adjustment process becomes extremely non-linear (there is a sudden shift from the good into the bad state). All this, however, does not reduce the significance of macroprudential policy. Its success is reflected in preventing the occurrence and spreading of systemic risk, which diminishes the probability of a financial crisis with long-term adverse effects on the economic activity. Due to the problem with measuring its results, and the unpopular measures in the risk accumulation stage, macroprudential policy will always be exposed to pressures, including the political ones. Yet, for those who are able to perceive and understand what they see, precise lenses and reliable clocks are the necessary companions of the modern life in the today's world.