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# FINANSIJSKO POSREDOVANJE I PRIVREDNI RAST: DA LI POSTOJI VELIKA ALTERNATIVA?

*Zahvaljujem Ljubomiru Madžaru, Marku Paunoviću i Danici Popović na korisnim komentarima i sugestijama. Naravno, niko od njih ne snosi nikakvu odgovornost za eventualne preostale greške ili za iznete vrednosne sudove. Stavovi izneti u ovom članku ne moraju da budu stavovi Upravnog odbora UniCredit banke Srbija, čiji sam član.*

## Rezime

Cilj ovog rada je da odgovori na pitanje da li postoji velika, fundamentalna alternativa postojećem načinu finansijskog posredovanja koja može da ubrza privredni rast. Pokazalo se da ne postoji velika kontroverza u pogledu uzročno-posledične veze kojom finansijsko posredovanje pospešuje privredni rast. Pokazalo se da regulacija treba da bude *ex ante*, sa unapred definisanim pravilima, da bude selektivna, usredsređena na finansijske institucije koje stvaraju najveći rizik, ali i da bude jednostavna, kako bi se lako ustanovili da li ispunjeni regulatorni zahtevi. Nove ideje u tom pogledu usmerene su ka umanjivanju leveridža, što vodi umanjenju kreditnog potencijala, ali i povećanju stabilnosti sistema. Male i srednje razvijene zemlje ne treba da budu inovativne na planu regulacije finansijskog sektora, već da pažljivo prate razvoj regulatornih instrumenata u svetu. Velika, fundamentalna alternativa postojećem načinu finansijskog posredovanja koja može da ubrza privredni rast ne postoji

**Ključne reči:** finansijsko posredovanje, finansijski sistem, privredni rast, regulacija, bankarski sistem

**JEL:** G20, G21, G28, O42

# FINANCIAL INTERMEDIATION AND ECONOMIC GROWTH: IS THERE A GREAT ALTERNATIVE?

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## Summary

The aim of the paper is to explore whether there is a fundamental alternative to the incumbent pattern of financial intermediation that could accelerate the economic growth. It was demonstrated that there was no substantial controversy regarding the causality in terms of financial intermediation facilitating the economic growth. The regulation should be *ex ante*, with rules specified in advance, it should be selective, focused on those financial institutions that generate the biggest risk, but also simple, so that it is easy to establish whether the regulatory requirements have been breached or not. New ideas in regulation are focused on reducing the leverage, with the reduced lending capacity as the consequence, but also the improved stability of the system. Small countries at the middle level of development should not be innovative in the financial regulation, but carefully monitor the development of new regulatory instruments in the world. There is no fundamental alternative to the incumbent pattern of financial intermediation that could accelerate the economic growth.

**Keywords:** financial intermediation, financial system, economic growth, regulation, banking system

**JEL:** G20, G21, G28, O42

## Uvod

Cilj ovog rada je da razmotri odnos finansijskog posredovanja i privrednog rasta iz specifičnog ugla, tako da odgovori na pitanje da li postoji velika, fundamentalna alternativa postojećem načinu finansijskog posredovanja. Ovakav cilj rada uslovio je i njegovu strukturu. Prvo će se razmotriti odnos finansijskog posredovanja i privrednog rasta, uz usredsređivanje na najznačajnije moguće kontroverze na tom planu. Potom će se pažnja posvetiti nesavršenoj informisanosti kao najznačajnijem vidu nesavršenosti finansijskih tržišta, ukazujući na specifične pojave oblike te nesavršenosti, poput neizvesnosti, rizika i asimetrije informacija, da bi se, nakon toga, ukazalo na mogućnosti i ograničenja da se pojačanom regulacijom finansijskog posredovanja ta nesavršenost umanjí. Sledi zaključak.

U radu se polazi se od konvencionalnog, u savremenoj ekonomskoj nauci široko prihvaćenog poimanja finansijskog posredovanja i mehanizama stvaranja novca (Mishkin, 2007). U tom svetu neminovno postoje izvori i plasmani sredstava - ne postoje plasmani bez izvora. U osnovi svih izvora je štednja, koja se posmatra kao odricanje od potrošnje, tj. ono ponašanje kojim se ne troši celokupan iznos raspoloživog dohotka. U osnovi svih plasmana su investicije, u krajnjoj konsekvenci uvećanje fonda kapitala, pre svega fizičkog, a u određenoj meri i ljudskog. Činjenica da deo plasmana služi finansiranju potrošnje nije relevantna za razmatranje veze finansijskog posredovanja i privrednog rasta, pa se stoga zanemaruje. Finansijsko posredovanje se posmatra kao posredovanje između onih koji poseduju višak novca (štednju) i onih kojima novac nedostaje, a potreban im je radi finansiranja investicija, tj. radi realizacije njihovih poslovnih poduhvata. Konačno, ovaj rad se zasniva na vrednosno neutralnom odnosu prema finansijskom posredovanju i njegovim instrumentima, tako da se ne zalazi u etički odnos prema tom posredovanju, bez obzira na to kakav je taj odnos, niti se, sam po sebi, uzima u obzir dominantan stav široke javnosti prema ovoj privrednoj delatnosti i njenim akterima.

## Odnos finansijskog posredovanja i privrednog rasta: da li postoji kontroverza?

Pre nego što se pristupi razmatranju odnosa finansijskog posredovanja i privrednog rasta, potrebno je definisati rok posmatranja. Za ovaj rad od značaja je jedino dugi rok, odnosno uticaj finansijskog posredovanja na dugoročnu stopu privrednog rasta, a ne na kratkoročnu, na kolebanja obima proizvodnje unutar privrednih ciklusa. To znači da se posmatra isključivo prosečna godišnja stopa privrednog rasta u dugogodišnjim periodima. Ukoliko se radi o razmatranju *pro futuro*, onda je reč isključivo o stopi potencijalnog privrednog rasta - kratkoročna kolebanja unutar privrednih ciklusa nisu od značaja za razmatranja u ovom radu. Ukratko, predmet razmatranja je onaj privredni rast koji određenu zemlju izbavlja iz siromaštva i vodi je ka prosperitetu, onaj rast čije efekte uživa više uzastopnih generacija.

Pokazalo se (Levine, 2005) da finansijsko posredovanje blagotvorno utiče na privredni rast i to na nekoliko načina: (1) mobilizacijom štednje, kako domaće tako i strane; (2) obezbeđivanjem informacija i alokacijom kapitala; (3) nadgledanjem realnog sektora i unapređenjem korporativnog upravljanja; (4) umanjnjem i preraspodelom rizika poslovnih poduhvata i (5) pospešivanjem razmene i unapređenjem društvene podele rada. Pored toga, empirijski se pokazalo (Beck *et al.*, 2007) da finansijsko posredovanje umanjuje apsolutno (broj ljudi čija je dnevna potrošnja ispod 1 USD) i relativno siromaštvo (relativni dohodak ljudi koji spadaju najniži kvantil dohotka). Svih pet navedenih mehanizama u skladu su sa osnovnim nalazima savremene teorije privrednog rasta i oni, sami po sebi, nisu kontroverzni. Finansijsko posredovanje blagotvorno utiče i na akumulaciju proizvodnih faktora i na uvećanje ukupne faktorske produktivnosti. Iako je u literaturi dosta prostora posvećeno uporednoj analizi rezultata različitih tipova finansijskog posredovanja (zasnovanog na bankarskom ili nebankarskom finansijskom posredovanju), rasprava, bar zasad, nije dovela do jednoznačnog univerzalnog zaključaka u tom pogledu.

Međutim, izuzetno je bitno uočiti da

## Introduction

The aim of this paper is to explore the relations between financial intermediation and economic growth from a specific standpoint, answering the question if there is a great, fundamental alternative to the incumbent pattern of financial intermediation. This aim impacts the paper's structure. First, the paper examines the relationship between financial intermediation and economic growth, focusing on the most significant possible controversies in this respect. This is followed by the analysis of imperfect information as the most significant imperfection of financial markets, underlining its specific forms, such as uncertainty, risk, and asymmetrical information. Subsequently, the paper explores the possibilities and limitations for enhanced regulation to reduce these imperfections. The paper concludes with a summary of findings.

The paper is based on the conventional, in modern economics widely accepted concept of financial intermediation and money creation (Mishkin, 2007). This concept inevitably involves both financial assets and liabilities - there are no assets without liabilities. The ultimate source of all financial assets is savings, considered as the forgone consumption, i.e. the behavior which does not result in all available income being spent. The ultimate outcome of financial assets are investments, i.e. the increase of a stock of capital, predominantly physical, but also human. The fact that a part of financial assets is aimed at funding the consumption is not relevant for exploring the relations between financial intermediation and economic growth and will hence be neglected. Financial intermediation is perceived as intermediation between those with the surplus money (savings) and those with the money deficit as they need money to fund the investments, i.e. for materialization of their business endeavors. Finally, this paper is based on the neutral value stance towards financial intermediation and its instruments; accordingly, ethical considerations of financial intermediation, as well as the dominant attitude of the public towards the financial industry as such, are not taken into account.

## Relationship Between Financial Intermediation and Economic Growth: Is There a Controversy?

A time horizon for the consideration of the relations between financial intermediation and economic growth should be specified in advance. In this paper, the long-term aspect is the only relevant one: the impact of financial intermediation on the long-term rate of economic growth is consequential, not the short-term rate, i.e. the volatility of output within the business cycles. This means that only the annual average growth rate in long-term periods is considered. In the case of *pro futuro* considerations, only the rate of potential economic growth is analyzed; short-term volatilities within the business cycle are not of any concern for the observations in this paper. In short, the object of the analysis is the economic growth that brings a country out of poverty into prosperity, i.e. the growth whose results are enjoyed by a few subsequent generations.

It has been demonstrated (Levine, 2005) that financial intermediation is advantageous for economic growth due to the few mechanisms: (1) mobilizing savings, both domestic and cross-border, (2) providing information and allocating capital; (3) monitoring the real sector and enhancing corporate governance; (4) mitigating and diversifying business risks; and (5) facilitating the exchange and advancing the division of labor. Furthermore, it was empirically demonstrated (Beck *et al.*, 2007) that financial intermediation decreases both the absolute (number of people with consumption below 1 USD per day) and relative poverty (relative income of people from the bottom income quantile). All five mechanisms are consistent with the basic findings of the contemporary theory of economic growth and none of them is *per se* controversial. Financial intermediation is helpful both for the production factors accumulation and for the increase in total factor productivity (TFP). Although there is a substantial number of papers dedicated to the comparative analysis of the outcomes of the different types of financial intermediation (based on banking or non-banking financial intermediation), the debate, at least for the time being, has not produced an unambiguous, universal conclusion in this regard.

finansijsko posredovanje predstavlja potreban, ali ne i dovoljan uslov za (ubrzani) privredni rast. Iako ne postoji saglasnost akademske zajednice u pogledu konkretnih preduslova privrednog rasta, (Easterly, 2001 i Helpman, 2004), pogotovo njihovog relativnog značaja u konkretnim situacijama, postoji saglasnost na apstraktnom nivou teorije privrednog rasta šta su njegovi izvori (Weil, 2009). Na osnovu tog nalaza teorije privrednog rasta, može se zaključiti da je nesporno da treba da se ispuni čitav niz uslova kako bi se uspostavio ubrzan i, naročito, održiv privredni rast (Rodrik, 2010). Finansijsko posredovanje je, očigledno, samo jedan od njih - potreban, ali ne i dovoljan uslov. Stoga, pre nego što se navodno neodgovarajuće finansijsko posredovanje optuži za usporeni ili negativni privredni rast neke zemlje, potrebno je temeljito ispitati ispunjenost ostalih potrebnih uslova.

Na analitičkom planu postavlja se pitanje dvosmerne uzročno-posledične veze. Jasni teorijski argumenti podržavaju stav da smer uzročno-posledične veze ide od finansijskog posredovanja ka privrednom rastu (Rajan i Zingales, 1998). Međutim, izvesno je da ubrzavanje privrednog rasta dovodi do porasta nivoa dohotka *per capita*, što, uvećanjem količine domaće štednje, pozitivno utiče na rast obima finansijskog posredovanja, odnosno na razvijenost finansijskog sektora. Naravno, što je neko društvo bogatije, što su bogatiji pojedinci koji ga čine, veća je ponuda štednje, odnosno, iz drugog ugla posmatrano, ponuda finansijskog kapitala, pa je veća tražnja za uslugama finansijskog posredovanja, čime se podiže nivo njihove razvijenosti (Shiller, 2012). Takođe, što je više poslovnih poduhvata koje treba realizovati, veća je tražnja za štednjom, pa se i sa te strane uvećava tražnja za finansijskim posredovanjem. Upravo na ovom argumentu Lucas (1998) zasniva svoj stav da finansijsko posredovanje nije ključni preduslov privrednog rasta, već da svojim uslugama samo prati rast realnog sektora, zasnovan na odlukama preduzetnika da započnu novu poslovne poduhvate.

Međutim, iako navedeni fenomen dvostrane uzročnosti može da predstavlja metodološki problem pri ekonometrijskom istraživanju, problem endogene objašnjavajuće promenljive, za koji postoje različita rešenja, on sam po

sebi ne predstavlja problem u teorijskom sagledavanju ove uzročno-posledične veze. Štaviše, budući da postoji međusobna pozitivna povratna sprega, ubrzani razvoj finansijskog sektora može znatno da pospeši privredni rast i time ubrzava razvoj finansijskog posredovanja, naročito pri srednjim nivoima dohotka *per capita*, odnosno razvijenosti zemlje i njenog finansijskog posredovanja - stvara se blagotvorna spirala. Više informacija o toj spirali dala je primena Grendžerevog testa uzročnosti: Demetriades i Hussein (1996) su pokazali da je daleko snažniji smer uzročno-posledične veze od finansijskog posredovanja ka privrednom rastu nego obrnuto, a relativna snaga ove dve veze menja se i sa nivoom razvijenosti zemlje i finansijskog posredovanja.

No, za ovaj rad daleko je važnije teorijska kontroverza u pogledu toga da li, pri određenim uslovima, finansijsko posredovanje može da ima nepovoljne efekte po privredni rast. Da li uvećanje nivoa razvijenosti finansijskog posredovanja u nekoj zemlji može da dovede do usporavanja privrednog rasta, čak do njegove negativne stope? Ukoliko postoji takva mogućnost, postavlja se pitanje mehanizama kojima porast nivoa razvijenosti finansijskog posredovanja usporava privredni rast.

Prvi od u literaturi identifikovanih mehanizama te vrste odnosi se na finansijsku nestabilnost, imajući u vidu inherentno veća kolebanja nivoa aktivnosti, pa time i dodate vrednosti koje stvara finansijski sektor u odnosu na realni. Navedena nestabilnost inherentna je usled same prirode finansijskog posredovanja, odnosno inherentno manjeg stepena informisanosti u slučaju finansijskih instrumenata u odnosu na proizvode realnog sektora, o čemu će biti više reči u sledećem odeljku. Shodno tome, povećanje nivoa razvijenosti finansijskog posredovanja obično uvećava učešće ove delatnosti u ukupnim privrednim aktivnostima, pa se time *ceteris paribus* uvećava nestabilnost posmatrane privrede, što ima negativne posledice po dugoročni privredni rast (Kaminsky i Reinhart, 1999). To znači da postoje dva efekta sa suprotnim smerom dejstva. Opravdano je pretpostaviti da na nižem nivou razvijenosti finansijskog posredovanja dominira onaj efekat koji na osnovu ranije opisanih mehanizama

Nonetheless, it is very important to have in mind that financial intermediation is a necessary but not sufficient condition for (accelerated) economic growth. Although there is no academic consensus regarding the specific preconditions for economic growth (Easterly, 2001 and Helpman, 2004), especially not regarding their relative importance in a specific context, there is a consensus at the general level of economic growth theory as to what are the main sources of growth (Weil, 2009). Based on these insights of the economic growth theory, it can be inferred that there is a set of conditions that must be met in order to establish a speedy and, especially, sustainable economic growth (Rodrik, 2010). Apparently, financial intermediation is only a necessary, but not a sufficient condition. Accordingly, before the allegedly inappropriate financial intermediation is accused for a sluggish or even negative economic growth rate in some country, it is necessary to thoroughly examine whether the other conditions have been fulfilled.

On the analytical front, there is an issue of a two-way causality relationship. There are clear theoretical arguments in favor of the view that the causality goes from financial intermediation towards the economic growth (Rajan and Zingales, 1998). Nonetheless, it is evident that the acceleration of economic growth produces an increase of income per capita, which by increasing the domestic savings, positively affects the growth of the financial intermediation output, i.e. the level of the financial sector's development. Of course, the more affluent the society is, the wealthier the individuals that the society consists of, the bigger the supply of savings, i.e. the supply of financial capital, hence the higher the demand for financial intermediation services, and the higher the level of their development (Shiller, 2012). Furthermore, the bigger the number of business endeavors that should materialize, the bigger demands for savings, which increases the demand for financial intermediation from that side, too. It is exactly on this argument that Lucas (1998) founded his view that financial intermediation is not the key precondition of economic growth, but rather that it just follows the growth of the real sector, based on the entrepreneurs' decisions to launch new business endeavors.

Nonetheless, although the observed phenomenon of two-way causality can pose a methodological problem in econometric research, i.e. the problem of endogenous explanatory variable, for which there are various solutions, in itself it does not pose a problem for the theoretical consideration of this cause and effect relationship. Furthermore, as there is a positive causal loop, the accelerated development of the financial sector can substantially boost the economic growth thereby facilitating the development of financial intermediation, especially at the middle level of income *per capita*, i.e. the level of development of a country and financial intermediation in it - the virtuous circle is created. More information about the circle is provided by the Granger causality test (Demetris and Hussein, 1996), demonstrating that the causality from financial intermediation towards the economic growth is much stronger than the reverse one, and that the relative strength of these two causality directions changes with the level of development of a country and financial intermediation in it.

Nonetheless, for this paper much more important is the theoretical controversy about whether, under some conditions, financial intermediation can have adverse effects on the economic growth. Can the increase in the level of development of financial intermediation cause the economic growth to slow down or even bring about its negative growth rates? If such a possibility exists, then there is a question of mechanisms which enable the increase in the level of financial intermediation development to slow down the economic growth.

The first mechanism of this kind identified in the literature refers to financial instability, taking into account the inherently higher volatility of the output level, and consequently the value added generated by the financial sector compared with the real one. That instability is inherent to the financial sector due to its character, i.e. the inherently lower level of information in the case of financial instruments compared with the products of the real sector, which will be considered into more detail in the next section of the paper. Accordingly, the increase in the level of financial intermediation development typically increases the share of

pospešuje privredni rast, dok pri višim nivoima razvijenosti finansijskog posredovanja, tj. pri visokom učešću finansijskog sektora u ukupnoj privrednoj aktivnosti dominira drugi efekat.

Ipak, potrebno je razlikovati da li se posmatraju kratkoročna kolebanja nivoa privredne aktivnosti usled poslovnih ciklusa ili je reč o dugoročnim tendencijama privrednog rasta. Navedene nestabilnosti finansijskog sektora utiču na pojačavanje kratkoročnih kolebanja nivoa privredne aktivnosti, na frekvenciju privrednih ciklusa i na varijabilitet kratkoročne stope privrednog rasta, ali je njihov uticaj na dugi rok, na stopu potencijalnog privrednog rasta ipak ograničen. Upravo se stoga može zaključiti da, posle prelaska određenog nivoa relativne veličine finansijskog sektora (u odnosu na realni), dalje napredovanje, odnosno širenje finansijskog sektora može negativno da utiče na uvećanje kolebanja kratkoročne stope privrednog rasta, na povećanje njenog varijabiliteta, ali ne i na dugoročnu stopu privrednog rasta (Loayaza i Ranciere, 2006).

Na odnosu relativne veličine realnog i finansijskog sektora zasnovan je i drugi mehanizam koji može da dovede do opadajućih prinosa razvoja finansijskog posredovanja na privredni rast. Reč je o sledećem: ukoliko finansijski sektor raste brže od realnog, tada dolazi do realokacije proizvodnih faktora, pre svega radne snage, iz realnog sektora u finansijski. Ovakva realokacija, budući da se realni sektor suočava sa nestašicom radne snage, pogotovo one koja poseduje najviši nivo ljudskog kapitala, dovodi do usporavanja privrednog rasta usled manjeg angažovanja proizvodnih faktora u tom sektoru (Bolton *et al.*, 2011). Međutim, navedeni stav nikako nije bezuslovno tačan. Postoje dva potrebna uslova da jeste. Prvi je da je ukupna faktorska produktivnost viša u realnom sektoru u odnosu na finansijski, odnosno da brže raste. Ukoliko se posmatra stopa rasta BDP-a *per capita*, onda je od ključne važnosti relativna produktivnost rada u ova dva sektora. Drugi je da zakon o opadajućim prinosima u realnom sektoru deluje slabije u odnosu na finansijski. Bez simultane ispunjenosti oba navedena potrebna uslova ni prethodni iskaz nije tačan. Potpuno je jasno da sa stanovišta usporavanja privrednog

rasta realokacija resursa nije relevantna ukoliko se odvija iz delatnosti kojima ima nižu ukupnu faktorsku produktivnost ka onoj koja ima višu. Naprotiv, takva realokacija dovodi do ubrzavanja, doduše tranzitornog privrednog rasta - jednokratnog podizanja nivoa BDP-a, samo dok je ona u toku, odnosno dok se osećaju njeni jednokratni efekti. Shodno tome, sve dok se ne pokaže da finansijski sektor ima nižu ukupnu faktorsku produktivnost, kako pre tako i posle realokacije proizvodnih faktora, navedeni mehanizam kojim podizanje nivoa razvijenosti finansijskog posredovanja usporava privredni rast ne može da se prihvati kao relevantan. Verovatnoća da navedena dva uslova budu simultano ispunjena, raste sa povećanjem učešća finansijskog sektora u ukupnom BDP-u, tj. sa rastom nivoa razvijenosti finansijskog posredovanja. Naime, razborito je pretpostaviti da tek na veoma visokim nivoima razvijenosti finansijskog sektora može da dođe do izraženijih opadajućih graničnih prinosa, i to relativno, u odnosu na realni sektor. Naravno, da li postoji i koji je to nivo razvijenosti finansijskog posredovanja pri kome njegov dalji rast dovodi *ceteris paribus* do obaranja stope privrednog rasta empirijski je pitanje, tj. pitanje je na koje odgovor mogu da daju samo empirijska istraživanja. Nadalje, kao što su pokazali Ductor i Grechyna (2015), reč je u osnovi, ne toliko o nivou razvijenosti finansijskog posredovanja, koliko o relativnoj veličini finansijskog sektora u odnosu na realni. Poenta je u tome da se implicitno pretpostavlja da sa podizanjem nivoa razvijenosti privrede, odnosno nivoa razvijenosti finansijskog posredovanja, dolazi do rasta njegove relativne veličine u odnosu na realni sektor - učešće finansijskog sektora u stvaranju ukupnog BDP-a raste.

Međutim, treba očekivati da u takvim okolnostima deluje mehanizam automatskog prilagođavanja. Opadanje relativne ukupne faktorske produktivnosti, pa stoga i opadanje relativnih graničnih prinosa finansijskog sektora, neminovno dovodi do opadanja relativnih prinosa investicija u taj sektor - pada relativna rizikom korigovana očekivana profitna stopa - što znači da jača podsticaj investitorima da ulažu u realni sektor. Drugim rečima, ukoliko dođe do opisane situacije, do

this industry in the total output, *ceteris paribus* increases the volatility of the economy, which in turn adversely affects the long-term economic growth (Kaminsky and Reinhart, 1999). This means that there are two countervailing effects. It is reasonable to assume that at the lower level of financial intermediation development dominates the effect which, by means of the already described mechanisms, spurs economic growth, while at the higher level of financial intermediation development, i.e. when there is a high share of the financial sector in the total output, the other effect dominates.

Yet it should be clarified what is observed: short-term volatility of the economic activity due to the business cycles, or long-term trends of economic growth. The observed instabilities of the financial sector trigger the amplification of short-term volatility of the total output, the frequency and variability of the short-term growth rate, but their impact in the long run on the potential economic growth rate is limited. Accordingly, after crossing the certain threshold of the relative size of the financial sector (in relation to the real one), further development and advance of the financial sector can adversely influence the volatility of the short-term economic growth, but not the long-term economic growth rate (Loayaza and Ranciere, 2006).

The relative size of the real and financial sector is the foundation for the second mechanism that can lead to the decreasing contribution of the financial intermediation development to economic growth. This is the point: if the financial sector grows faster than the real one, then a reallocation of the production factors happens, predominantly labor, from the real sector to the financial one. As the real sector faces the deficit of the labor supply, especially the one with the highest level of human capital, this reallocation slows down the economic growth due to the smaller utilization of the production factors in the real sector (Bolton *et al.*, 2011). Nonetheless, this finding is not unconditionally true. There are two necessary conditions for that. The first one is that the total factor productivity in the real sector is higher than in the financial one. If the growth rate of the GDP *per capita* is considered, then the key issue is the relative labor productivity in these

two sectors. The second one is that the law on diminishing returns in the real sector operates less intensively than in the financial one. Without the simultaneous fulfillment of both conditions, the view about the adverse effects of financial development on the economic growth is not true. It is quite clear that the reallocation of the resources from the sector with the lower to the sector with the higher total factor productivity is not relevant from the perspective of slowing down the economic growth. On the contrary, such a reallocation facilitates the acceleration of the economic growth, as transitory as it may be, i.e. a one-off increase of GDP which lasts only during the reallocation and its one-off effects. Therefore, if it is not demonstrated that the financial sector features the total factor productivity lower than in the real one, both before and after the reallocation, the identified mechanism of slowing down the economic growth accompanied by the increase in the level of financial intermediation development cannot be accepted as relevant. The probability for those two necessary conditions to be simultaneously fulfilled increases with the increase of the financial sector's share in the total GDP, i.e. with the increase in the level of financial intermediation development. It is reasonable to assume that the more prominently decreasing returns of the financial sector compared to the real one can be recorded only at the very high levels of the financial sector development. Of course, whether such a level of financial intermediation development exists and what exactly is the level at which its further growth generates *ceteris paribus* a decrease of the economic growth rate is an empirical question, i.e. the question that can be answered only by empirical research. Furthermore, as demonstrated by Ductor and Grechyna (2015), the matter is not so much about the level of financial intermediation development, but about the relative size of the financial sector compared with the real one. The point is that there is an implicit assumption that the increase in the level of development of the country, i.e. the level of financial intermediation development, generates the increase of the size of the financial sector compared with the real one - in other words, the share of the financial sector in the total GDP increases.



pada relativne ukupne faktorske produktivnosti finansijskog sektora, može se očekivati da će to dovesti do opadanja njegove relativne veličine.

Identifikacija ova dva mehanizma kojima se objašnjavaju mogući opadajući, pa čak i negativni granični prinosi finansijskog posredovanja na privredni rast otvara mogućnost da postoji nelinearna uzročno-posledična veza između finansijskog posredovanja i privrednog rasta. Empirijska istraživanja (Rioja i Valev, 2004, Manganelli i Popov, 2013, Cecchetti i Kharroubi, 2015, Ductor i Grachyna, 2015, i Gould *et al.*, 2016) pokazala su da postoji empirijska osnova da se tvrdi da taj odnos karakteriše određena vrsta obrnute U krive, što znači da je najjače pozitivno dejstvo finansijskog posredovanja na privredni rast na srednjem nivou njegove razvijenosti. Nešto su slabiji rezultati napredovanja tog posredovanja u slučaju zemalja na visokom nivou razvijenosti finansijskog sektora, što može da znači da ipak postoje opadajući, a posle određenog nivoa čak i negativni granični prinosi finansijskog posredovanja na privredni rast. Na primer, rezultati jednog od najnovijih empirijskih istraživanja (Arcand *et al.*, 2015) pokazuju da se negativni prinosi podizanja nivoa finansijskog posredovanja na privredni rast javljaju ukoliko odnos ukupne vrednosti kredita odobrenih privatnom sektoru i BDP-a pređe 100% - dalje povećanje nivoa razvijenosti finansijskog sektora, uvećanje „finansijske dubine“, dovodi do obaranja stope rasta.

Treba, međutim, biti obazriv sa ovim nalazima, budući da postoji snažna korelacija između relativne veličine finansijskog sektora i dostignutog nivoa privrednog razvoja. To znači da, zbog konvergencije ka stabilnom stanju, dolazi do opadajućih prinosa na nivou privredne u celini i, na toj osnovi, obaranja stope privrednog rasta - relacija uočena u svim značajnim empirijskim istraživanjima privrednog rasta. Odatle sledi da opadanje stope privrednog rasta sa porastom učešća finansijskog sektora možda ne predstavlja ništa drugo do maskirane konvergencije koja se odigrava pod plaštom porasta nivoa razvijenosti finansijskog posredovanja.

Najslabiji rezultat finansijskog posredovanja u pogledu privrednog rasta beleži se u slučaju zemalja u kojima je to posredovanje na najnižem

nivou razvijenosti. To se može protumačiti potrebom da efikasnost finansijskog posredovanja, u smislu njegovog uticaja na privredni rast, zahteva makar minimalni nivo razvijenosti, barem postojanje osnovnih finansijskih instrumenata - dakle, svojevrstni prag razvijenosti. Značaj navedenog nalaza za ovaj rad leži u tome da nikako nije sporan blagotvorni uticaj finansijskog posredovanja na rast privreda koje se nalaze na srednjem nivou razvijenosti, odnosno, iz drugog ugla posmatrano, zemalja koje karakteriše srednji nivo razvijenosti finansijskog posredovanja.

### **Nesavršena informisanost u finansijskom posredovanju: univerzalna optužba?**

Neizvesnost pri finansijskom posredovanju, odnosno, iz drugog ugla posmatrano, na finansijskim tržištima, daleko je veća nego na drugim tržištima, kako proizvoda, tako i ostalih proizvodnih faktora. Ta neizvesnost inherentna je finansijskim instrumentima - njihova vrednost zasniva se na očekivanjima, na nekom budućem novčanom toku, upravo zbog toga što oni sami za sebe, otkako je robni novac prestao da se upotrebljava u razmeni, nemaju intrinzičnu vrednost, poput proizvoda realnog sektora. Novac nije ništa drugo do isprava o dugu, odnosno uverenje o potraživanjima (*IOU - I Owe You*). Kolika su efektivno ta potraživanja, odnosno koji njihov deo može da se realizuje u budućnosti, ostaje otvoreno pitanje, pa zato dolazi do kolebanja tih vrednosti. Budući da su kolebanja vrednosti finansijskih instrumenata međusobno povezana, imajući u vidu da su očekivanja njihovih vlasnika međusobno povezana, to kolebanje se multiplikuje.

Poslovni poduhvati u finansijskom sektoru zasnivaju se, poput onih u realnom, na očekivanjima budućih vrednosti, na spekulaciji o tome kolike će te vrednosti biti. Međutim, neizvesnost, odnosno rizici koji karakterišu poslovne poduhvate u finansijskom sektoru neminovno su, iz prethodno navedenih razloga, veći nego u realnom. U uslovima u kojima ogromna većina učesnika na finansijskom tržištu ima averziju prema riziku, finansijski posrednici zahtevaju premiju na rizik, kao kompenzaciju za to što su njemu izloženi.

Nonetheless, it should be expected that the mechanism of automatic adjustment operates in those circumstances. The decrease in the relative total factor productivity, hence the decrease of the relative marginal returns of the financial sector, inevitably generates the decrease of the relative returns of the investments in that sector - the relative risk-adjusted profit rate falls - and that means that the incentives to investors for investing into the real sector become stronger. In other words, if the described situation of the decreased relative total factor productivity occurs, it can be expected to generate the decrease in its relative size.

Identification of these two mechanisms that explain the possible diminishing and even negative marginal returns of financial intermediation to economic growth opens the possibility for the nonlinear causality relationship between financial intermediation and economic growth. Empirical research (Rioja and Valev, 2004, Manganelli and Popov, 2013, Cecchetti and Kharroubi, 2015, Ductor and Grachyna, 2015, and Gould *et al.*, 2016) demonstrated that there was an empirical ground for the view that this relationship features some kind of the inverted U curve, meaning that the strongest beneficial impact of the financial intermediation to economic growth exists at the middle level of its development. Somewhat weaker results of such an advance of the financial intermediation have been recorded in the case of countries with high level of financial sector development, meaning that there might be diminishing and after a certain threshold even negative contributions of the financial intermediation to economic growth. For example, the results of a recent empirical research (Arcand *et al.*, 2015) demonstrate that the negative contributions of financial intermediation to economic growth begin if the ratio of total loans to the private sector and GDP exceeds 100% - further development of the financial sector, i.e. a further increase of the "financial depth" generates a decrease of the economic growth rate.

Nonetheless, one should be cautious with these results, since there is a strong correlation between the relative size of the financial sector and the level of economic development. That means that, due to the convergence towards the

steady state, diminishing returns exist in all the sectors, and due to that, the economic growth rate decreases - which is a relation recorded in all significant empirical research concerning the economic growth. Accordingly, the decrease in the economic growth rate accompanied by the increasing share of the financial sector can be nothing more but a disguised convergence under the veil of the increase in the level of financial intermediation development.

The worst result of financial intermediation regarding economic growth is recorded in the countries with the lowest level of its development. This can be explained by the insight that the efficient financial intermediation, in terms of its effect on economic growth, demands a bare minimum level of development, at least the existence of basic financial instruments - i.e. some sort of a development threshold. The importance of this insight for this paper is that the advantageous impact of the financial intermediation to economic growth is not disputed for the countries that are at the middle level of economic development, i.e. at the middle level of financial intermediation development.

### **Imperfect Information in Financial Intermediation: A Universal Accusation**

Uncertainty in financial intermediation, i.e. in the financial markets, is much higher than in the case of product or other production factors markets. That uncertainty is inherent to the financial instruments - their value is based on the expectations, on some future cash flow, exactly because on their own these instruments (since the demise of the commodity money), have no intrinsic value, unlike the products of the real sector. Money is nothing but a debt certificate, i.e. a document on receivables (IOU - I Owe You). What is the amount of effective receivables, i.e. which part of the receivables can be cashed-in in the future is an open question; hence there is a volatility of these values. Since the volatilities of the values of financial instruments are intertwined, due to the interlinked expectations of their owners, the volatility is multiplied.

Business endeavors in the financial sector are based, like those in the real one, on the

Prihvatanje rizika stoga je uobičajena stvar pri finansijskom posredovanju, ali je od veoma velike važnosti da se rizik alokira na one koji su u najboljoj poziciji da ga podnose, kao i da svi učesnici na finansijskom tržištu budu informisani o riziku kojem jesu ili mogu da budu izloženi.

No, nesavršena informisanost pri finansijskom posredovanju, tj. na finansijskim tržištima ne završava se neizvesnošću. U gotovo svim transakcijama na ovim tržištima postoji znatna asimetrija informacija i to dve njene osnovne vrste: *ex ante* asimetrija, pre nego što dođe do transakcije, koja se ispoljava kao negativna selekcija u najširem smislu, koja može da dovede do potpunog nestanka tržišta, odnosno nekih njegovih segmenata, i *ex post* asimetrija, nakon što je došlo do transakcije, koja se ispoljava kao moralni hazard. Uz to se kao posledice asimetrije informacija javljaju problemi poput agencijskog problema i konflikta interesa u smislu protivrečnih podsticaja kojima su izloženi učesnici na tržištu.

Upravo u cilju eliminisanja asimetrije informacija u formi negativne selekcije, a sve u cilju maksimizacije profita, finansijski posrednici, poput banaka, proizvode informacije o dužnicima, delom i tako što dužnicima pružaju priliku da pošalju verodostojne signale. To dovodi do selekcije dužnika, a to znači i do selekcije poslovnih poduhvata, tako da se finansiraju samo oni najefikasniji, preciznije rečeno, samo oni koji *ex ante* izgledaju kao najefikasniji. Isto tako, finansijski posrednici u cilju minimizacije asimetrije informacija u vidu moralnog hazarda stvaraju snažne podsticaje dužnicima da ulože maksimalni napor u realizaciji sopstvenih poslovnih poduhvata, kao i ispunjenja dužničkih obaveza. Rečnikom agencijske teorije, stvaraju se podsticaji agentu da svoje ponašanje uskladi sa interesima principala.

Asimetrija informacija stvara velike probleme učesnicima na finansijskim tržištima, onima koji se bave delatnošću finansijskog posredovanja. Stoga eliminisanje ili bar ublažavanje asimetrije informacija jeste jedan od osnovnih operativnih ciljeva poslovanja finansijskog sektora, budući da njegova realizacija predstavlja uslov za realizaciju osnovnog cilja - maksimizacije profita. Pokazalo se da je, upravo stoga što postoje snažni podsticaji, privatni sektor

(finansijski posrednici, učesnici na finansijskom tržištu) stvorio brojne institucije, definisane kao „ljudski osmišljena ograničenja koja oblikuju interakcije između ljudi“ (North, 1981), kojim se ovakva asimetrija informacija umanjuje ili eliminiše. I to proizvodnjom informacija, odnosno stvaranjem podsticaja svim učesnicima u transakcijama da iskazuju istinite informacije.

To, međutim, ne znači da ne postoji prostor za državnu intervenciju na finansijskim tržištima. Potrebu za tom intervencijom, samu po sebi, niko ozbiljan ne osporava. Postavlja se samo pitanje mere, mehanizama i rezultata, željenih i uzgrednih, te intervencije u formi regulacije finansijskog sektora.

### Regulacija finansijskog posredovanja: univerzalan lek?

Veoma se često u literaturi iskazuje sledeći stav: budući da finansijsko tržište nije savršeno, potrebna je državna intervencija, koja se svodi na njegovu regulaciju. Naravno, načelno posmatrano (Bator, 1958), nesavršenost tržišta (*market failure*) koristi se kao opravdanje za državnu intervenciju. Međutim, treba imati u vidu da se nesavršenost tržišta definiše kao ono funkcionisanje tržišta koje ne dovodi do najboljeg mogućeg ishoda - do maksimizacije blagostanja opisane optimumom u smislu Pareta. Sintagma nesavršeno tržište označava teorijsku koncepciju ekonomike blagostanja, namenjenu objašnjavanju odstupanja stvarnosti od prve fundamentalne teoreme ekonomike blagostanja. Stoga nije reč o relativnoj nesavršenosti tržišta, tj. njegovoj nesavršenosti u odnosu na neki alternativni mehanizam alokacije resursa. Pri korišćenju koncepcije nesavršenog tržišta za razmatranje različitih institucionalnih rešenja, treba uvek imati u vidu da je državna intervencija takođe nesavršena, da ona ne dovodi do optimuma u smislu Pareta. Stoga je relevantno pitanje da li je državna intervencija manje ili više nesavršena od tržišta na kome treba da se interveniše - da li su ishodi više ili manje udaljeni od optimuma u smislu Pareta? Drugim rečima, pitanje je da li lek ima nepovoljnije efekte od bolesti koju treba da izleči. Sameravanje jedne i druge nesavršenosti (tržišne i regulatorne), a ne isključivo insistiranje na nesavršenosti finansijskog tržišta, predstavlja

expected future values, on the speculation about the values in the future. However, risks associated with the business endeavors in the financial sector is, for the already mentioned reasons, higher than in the real sector. Taking into account that the majority of market players on the financial market have risk aversion, financial intermediaries demand risk premium as the compensation for the risk they are exposed to. Accepting the risk is, thus, typical in financial intermediation, but it is essential that the risk is allocated to those who are best equipped to sustain it, and that all financial market players are informed about the risk they are and can be exposed to.

Nonetheless, imperfect information in the case of financial intermediation, i.e. financial markets, does not end with uncertainty. In almost all transaction on the financial markets asymmetrical information exists in two basic types: *ex ante* asymmetry, before the transaction is concluded, as negative selection in the broadest sense of the term, which can make markets or their segments disappear (lemons' markets), and *ex post* asymmetry, after the transaction is concluded, as moral hazard. Further problems generated by the asymmetrical information include the agency problem and conflict of interest in the sense of contradictory incentives that market players are exposed to.

In order to eliminate asymmetrical information embodied in negative selection, with the aim of maximizing their profit, financial intermediaries, like banks, produce information on debtors, partly by granting the debtors an opportunity to send credible signals. That brings about the selection of debtors and selection of business endeavors; hence it is only the most efficient projects (i.e. only those which *ex ante* look like most efficient) that are funded. Furthermore, financial intermediaries aiming at the asymmetrical information embodied in moral hazard create the strong incentives to the debtors to do their maximum in materializing their business endeavors and to fulfill their obligations towards the creditors. Using the vocabulary of the principal-agent theory, incentives are created for the agent to adjust his/her behavior to the interest of the principal.

Asymmetrical information creates huge

problems for the market players on financial markets, including those involved in financial intermediation. Therefore, the elimination or at least mitigation of asymmetrical information is one of the basic operating goals of the financial sector, since meeting this goal is a precondition for the fulfillment of the basic goal - i.e. profit maximization. It was established that, exactly because of the strong incentives, the private sector (financial intermediaries and other market players) has created numerous institutions, specified as "humanly devised constraints that shape human interaction" (North, 1981), which mitigate or eliminate the information asymmetry. And this is done by producing information, i.e. by creating incentives for all market players to reveal true information.

This, however, does not mean that there is no room for government intervention on financial markets. No one serious would dispute this intervention per se. The thing is that the measures, mechanisms, and outcomes, both intended and unintended, of that intervention in the form of financial markets regulations, must be considered.

### **Regulation of Financial Intermediation: A Panacea**

The following view can frequently be found in the reference literature: since the financial market is not perfect, a government intervention (i.e. market regulation) is needed. Of course, in principle (Bator, 1958), market failure is used as a justification for the government intervention. Nonetheless, it should be kept in mind that the notion of market failure specifies the situation in which operations of the market do not produce the best possible outcome - i.e. the welfare maximization described as Pareto optimum. Market failure is a theoretical concept in the welfare economics, designed to explain the deviation of reality from the first fundamental theory of welfare economics. Accordingly, this notion is not about a relative market failure, i.e. a failure compared with some other mechanism of resource allocation. When using the notion of market failure, one should always keep in mind that there is also a government failure, that a government intervention also does not produce the Pareto optimum; hence, the

način za uravnoteženo posmatranje i definisanje optimalne regulacije finansijskog sektora.

Ozbiljne nesavršenosti finansijskih tržišta su neizbežne, upravo zbog njegove prirode, odnosno zbog karaktera finansijskih instrumenata. To, nezavisno od prethodno iznete ograde, otvara prostor za razmatranje državne intervencije putem regulacije finansijskih tržišta. A time se stvara osnova za raspravu o koncepciji i konkretnim formama te regulacije. Ta rasprava treba da se odvija u okviru spoznaje da nesavršena informisanost, kao osnovni vid nesavršenosti finansijskih tržišta, postoji i na tržištu, čiji su učesnici nesavršeno informisani, ali i u slučaju regulacije, budući da su i regulatori isto tako, ako ne i više, nesavršeno informisani. Ta paralela se može povući i unutar biheviorističkog pristupa finansijskim tržištima (Viscusi i Gayer, 2015).

Naime, bihevioristička ekonomska analiza insistira na greškama, kognitivnim propustima koje čine učesnici na tržištu prilikom tržišnih transakcija. Te greške su takve prirode da se osporava (savršena) racionalnost, odnosno zaključuje se da pojedinci ne delaju u sopstvenom interesu. U tom smislu ovakva nesavršenost odluka koje donose pojedinci na finansijskom tržištu može da bude osnova za opravdanje državne intervencije putem regulacije. Međutim, kako napominju Viscusi i Gayer (2015), kognitivni propusti nisu rezervisani za ljude koji donose odluke na tržištu - oni postoje i kod ljudi koji osmišljavaju i sprovode državnu intervenciju, regulaciju u slučaju finansijskog sektora. Sve počev od izbora medijskog birača koji je takođe podložan kognitivnim propustima. Irracionalnosti koje se pripisuju ljudskom ponašanju onda, doslednosti radi, treba da se pripišu i medijanskom biraču, upravo na način na koji je to učinio Caplan (2007).

Nadalje, postavlja se pitanje političke ekonomije regulacije, odnosno procesa kojim se dolazi do kolektivnih odluka u pogledu konkretnih regulatornih rešenja. S jedne strane, nalaze se privatni interesi korporacija koje su finansijski posrednici, koje su veoma dobro organizovane u moćnu interesnu grupu i koje se veoma često protive određenim oblicima regulacije, želeći da zadrže slobodu svog poslovanje. S druge strane se nalazi snažan pritisak široke javnosti, tj. biračkog tela, ka

striktnoj, „gvozdenoj“ regulaciji i pojačanom nadgledanju finansijske delatnosti, budući da široka javnost finansijski sistem doživljava kao inherentno nestabilan, a mnogi ga doživljavaju i kao nepravičan, pa ne treba omogućiti preveliku slobodu finansijskim posrednicima. Finansijske krize, kao i recesije koje ih obično prate, ma koliko one bile kratke, pojačavaju taj pritisak (Zingales, 2016), koji se u predstavničkoj demokratiji jednostavno ne može zanemariti prilikom donošenja kolektivnih odluka. Zbog toga je veoma verovatno da taj pritisak više nego kompenzuje lobističke aktivnosti interesne grupe finansijskih korporacija, mada u doba ubrzanog privrednog rasta, u vreme u kome su već zaboravljene finansijske krize iz prošlosti, ovaj pritisak ne mora da bude jak. Upravo se na taj način se može objasniti donošenje zakona 1999. godine (*Gramm-Leach-Bliley Act*) kojim su, u doba prosperiteta američke privrede, van snage stavljena regulatorna ograničenja iz 1933. godine. Suprotno tome, finansijske krize dovode do drastičnog pada poverenja javnosti u finansijski sektor i pojačavaju politički pritisak ka njegovoj regulaciji (Sapienza i Zingales, 2012).

Današnje finansijsko posredovanje veoma je složena privredna delatnost i javljaju se brojne inovacije u pogledu finansijskih instrumenata, tako da regulacija ove delatnosti neminovno postaje sve složenija. Samim tim, kako se regulacija širi i obuhvata nove oblasti finansijskog posredovanja, neminovno dolazi do regulatorne multiplikacije. Primera radi, Glas-Stigelov zakon (*Glass-Steagell Act*) iz 1933. godine, kojim je u SAD organizaciono razdvojeno komercijalno i investiciono bankarstvo, sadrži svega 37 stranica. Nasuprot tome, Dod-Frenkov zakon (*Dodd-Frank Act*) iz 2010. godine, koji je odgovor američke zakonodavne vlasti na finansijsku krizu iz 2008. godine, sadrži 848 stranica (oko 23 puta više), a podzakonska regulativa neophodna za njegovu primenu treba da ima oko 30.000 stranica (samo oko jedne trećine, 8.843 stranice, bilo je spremno krajem 2015. godine). Evropska bankarska regulativa, na zakonskom nivou ima oko 2.000 stranica, a prateći podzakonski pravni akti, koji se (krajem 2016. godine) još uvek donose, treba da imaju 60.000 stranica (Plender, 2015). Ovakav porast broja i složenosti regulatornih pravila znatno uvećava troškove njihovog sprovođenja, budući da svi resursi koji su angažovani na

relevant question is whether the government failure is smaller or bigger than the market failure that requires the intervention - whether the outcomes are more or less remote from the Pareto optimum? In other words, the issue is whether a medicine has more adverse effects than the disease that it is supposed to cure. The comparison of the two failures (market and regulatory), rather than the exclusive insistence on the financial market failure, is the way for a balanced approach and specification of the optimal regulation of the financial sector.

Serious financial market failures are inevitable, exactly because of its nature, i.e. the characteristics of financial instruments. This view, irrespectively of the already mentioned qualifications, clears the way for the consideration of the government intervention embodied in the financial market regulation. This, in turn, opens the debate about the concept and specific forms of that regulation. That debate should be defined by the view that imperfect information as the main type of financial market failure, with market players imperfectly informed, exists even when there is regulation, as the regulators are also, if not more, imperfectly informed. This parallel can also be made within the behavioral approach to the financial markets (Viscusi and Gayer, 2015).

The point is that behavioral economic analysis insists on mistakes, i.e. cognitive failures made by the market players in transactions' decision-making. These failures are of such a character that (perfect) rationality is challenged, i.e. it is concluded that individuals do not behave in their own interest. In this framework, failures of the individuals' decisions about the financial market can be the ground for justification of government intervention embodied in regulation. Nonetheless, as pointed out by Viscusi and Gayer (2015), cognitive failures are not reserved for individuals who are making market decisions; these failures exist in the case of individuals in charge of designing and implementing government regulation, i.e. the regulation in the financial sector. Starting with the median voter, who is also susceptible to cognitive failures. Irrationality that is attributed to human behavior should also be attributed to the median voter, in the way done by Caplan (2008).

Furthermore, there is an issue of political economy of regulation, i.e. a process which leads to the collective decisions regarding the specific regulation. On the one hand, there is a private interest of corporations that are financial intermediaries, and they are very well organized in a powerful interest group, contesting some of the specific regulatory instruments, aiming to keep the freedom of actions in the financial market operations. On the other hand, there is a strong pressure of the general public, i.e. the constituency, asking for the strict, "iron" regulation and enhanced monitoring of the financial sector, as the general public considers this sector to be inherently unstable and many people believe that it is unjust, hence no big freedom should be provided to the financial intermediaries. Financial crises and recessions that usually follow them, however short they are, strengthen such pressures (Zingales, 2016), and they cannot be neglected in the process of collective decision-making in representative democracies. Accordingly, it is very probable that this pressure more than compensates for the lobbying activities of the interest groups of financial corporations, though in the times of dynamic economic growth, when the financial crises from the past are already forgotten, that pressure need not be strong. This is exactly the way to explain the promulgation of the *Gramm-Leach-Bliley Act* in 1993, which at the time of prosperity of the US economy, removed the regulatory constraints from 1933. Contrary to that, financial crises produce a dramatic drop of the general public confidence in financial sector and generate the political pressure aimed at stricter regulation (Sapienza and Zingales, 2012).

Contemporary financial intermediation is a very complex activity and there are numerous innovations regarding financial instruments, which makes the regulation of this industry inevitably more and more complex. Accordingly, as the regulation becomes more widespread and includes new areas, regulatory multiplication is inevitable. For example, *Glass-Steagall Act* from 1933, by which investment and commercial banking got separated in the US, has only 37 pages. Unlike that, *Dodd-Frank Act* from 2010, a response of the US legislators to the 2008 financial crisis, contains 848 pages (roughly 23 times more), and the relevant

tome imaju oportunitetne troškove. Nije reč samo o resursima angažovanim u regulatornim agencijama (centralnim bankama, na primer), već i o resursima koje za usklađivanje svog poslovanja sa regulatornim zahtevima i izveštavanje regulatora o tome moraju da angažuju korporacije koje se bave finansijskim posredovanjem. A reč je o resursima visokih oportunitetnih troškova (veoma kvalifikovana radna snaga), tako da su troškovi primere, odnosno, iz drugog ugla posmatrano, poštovanja regulacije (*compliance costs*) veoma visoki. Ovakvi troškovi upućuju na poželjnost jednostavne regulacije, one koja generiše relativno niske troškove primene, ali je pitanje u kojoj meri se takva regulacija može primeniti ukoliko je cilj sveobuhvatna regulacija i nadzor nad (danas veoma razuđenim) finansijskim sektorom.

Važno je uočiti da se uvek postavlja pitanje uzgrednih, neželjenih posledica neke regulatorne odluke. Na primer, obavezno osiguranje depozita, kojim, u slučaju stečaja i likvidacije banke, vlasnici depozita budu u potpunosti ili u određenoj meri kompenzovani. S jedne strane, načelno posmatrano, ova vrsta osiguranja stvara veće poverenje klijenata u banke i na taj način uvećava depozite, mada iskustvo pokazuje da to nije potreban uslov. S druge strane, međutim, ovo osiguranje dovodi do moralnog hazarda i to u slučaju obe zainteresovane strane. Što se štediša tiče, budući da su njihovi depoziti osigurani, oni nemaju podsticaj da temeljito istraže koja je od banaka najpouzdanija, tj. koja ima najbolju reputaciju u pogledu redovnog izmirenja svih obaveza prema njenim poveriocima. Oni mogu, budući da su depoziti osigurani, da se ponašaju rizičnije i izaberu banku koja jedino nudi najpovoljniju pasivnu kamatnu stopu. Što se banaka tiče, one više nemaju podsticaj da ulažu u svoju reputaciju, da vode trezvenu poslovnu politiku, koja će im omogućiti da ispune sve svoje obaveze prema poveriocima, već se ponašati rizičnije i upuštati u one poslovne poduhvate koji će im omogućiti plasmane iz kojih mogu da plaćaju više pasivne kamatne stope i da na taj način privlače deponente. Umesto da umanju rizično ponašanje svih učesnika na finansijskom tržištu, osiguranje depozita samo ga pospešuje.

Shodno tome, jasno je da je pri osmišljavanju određenih regulatornih mera potrebno

sagledati ne samo njihove poželjne efekte, one zbog koji se ta regulacija, barem načelno posmatrano, i uvodi, već i neželjene uzgredne efekte takve regulacije. Problem je, međutim, u tome što je ljudska spoznaja nesavršena, tako da se, budući da ih je bilo teško predvideti, mnogi neželjeni efekti otkrivaju tek *ex post*, tek pošto su se dogodili. Naravno, što je regulacija kompleksnija i što je regulatorni okvir komplikovaniji, veća je verovatnoća da *ex ante* promaknu neželjeni efekti - pogrešni podsticaji koje ta regulacija stvara.

No, nezavisno od inherentnih ograničenja koje ima regulacija finansijskog sektora, potrebno je ukazati na neka načela dobre regulacije. Pre svega, dobra regulacija mora da bude *ex ante* regulacija, ona koja unapred uspostavlja čvrsta pravila i potom ih dosledno sprovodi. Pri tome, odrednica *ex ante* samo je potreban, ali ne i dovoljan uslov dobre regulacije. *Ex post* regulacija, tj. državna intervencija pošto se dogodio njen uzrok, obično stvara velike negativne efekte. Tipičan primer takve regulacije jeste finansijsko izbavljenje (*bail out*) velikih finansijskih institucija, pre svega banaka, ali i osiguravajućih društava, koje su zapale u finansijske teškoće i koje su pred propašću - stečajem i likvidacijom. Tada se, procenjujući da bi njihova propast dovela do velike nestabilnosti finansijskog sistema („*Too big to fail*“), pristupa pokrivanju njihovih gubitaka i to najčešće sredstvima državnog budžeta, tj. poreskih obveznika. Nezavisno od toga kolika je šteta ovim predupređena, izvesno je da se na ovaj način stvara snažan moralni hazard, budući da uprava svake velike finansijske institucije, a naročito njeni poverioci i investitori, dobijaju snažan podsticaj da se ponašaju rizičnije nego što bi to bilo da *ex post* regulacije nije bilo. Reč je o tome što se, na osnovu slučaja finansijskog izbavljenja onih koji su se rizično ponašali, stvaraju racionalna očekivanja svih učesnika na tržištu da će se sa ovakvom *ex post* regulacijom nastaviti. Smatra se da, upravo zbog moralnog hazarda koji stvaraju ta očekivanja kompanije, ne samo u finansijskom sektoru, treba pustiti da (finansijski) propadnu (Chari i Kehoe, 2015).

Mogući izlaz iz ovakve situacije jeste pojačana regulacija upravo velikih, sistematski važnih finansijskih institucija (SIFI - *Systemically Important Financial Institutions*), čije je *ex ante* regulacija i

bylaws needed for its enforcement should have around 30,000 pages (only about one third of which, i.e. 8,843 pages, has been completed by the end of 2015). The European banking regulatory rules consist of about 2,000 pages of the statutory legal text, while the relevant bylaws, which were (at the end of 2016) still being produced, should have around 60,000 pages (Plender, 2015). Such increase in the number and complexity of the regulatory rules multiplies the costs of their enforcement, since all the resources allocated to that enforcement incur their own opportunity costs. This does not only refer to the resources utilized by regulatory agencies (central banks, for example), but also the resources used by corporations in the financial intermediation, including the resources used for obtaining compliance with the regulatory requirements and for reporting on that compliance. These resources incur high opportunity costs (highly qualified labor force), hence both the enforcement costs and compliance costs are very high. These high costs indicate how desirable simple regulation is, the one that generates the relatively low costs of enforcement, but the question is whether such regulation is an option if the aim is to thoroughly regulate and monitor the today's extremely diversified financial sector.

It is important to note that there is always an issue of collateral, unintended consequences of any regulatory decision. For example, mandatory deposit insurance, intending to compensate, partially or fully, the deposit owners in the case of bank bankruptcy and liquidation. On the one hand, this type of insurance, in principle, creates the bigger confidence of the clients towards the banks and, thus, increases the level of deposits, though the experience demonstrated that this was not a necessary condition. On the other hand, however, such insurance creates the moral hazard in the case of both concerned sides. As to depositors, since their deposits are insured they do not have an incentive to thoroughly investigate which bank is most trustworthy, i.e. which of the banks has the best reputation in terms of regular servicing of its obligations towards the depositors. Since their deposits are insured, they can simply behave more riskily and select the bank offering the highest interest

rate. As to banks, they do not have an incentive to invest in their reputation, to run a prudent business plan that will enable them to fulfill all the obligations towards the depositors, but rather they will behave more riskily and get involved in the business endeavors with high risk/return combination that will enable them to pay higher interest rates to depositors and to attract them. Instead of decreasing the risky behavior of the market players, deposit insurance only increases it.

Accordingly, it is evident that in designing specific regulatory measures one should consider not only their desired effect, the rationale for introducing such a regulation, at least in principle, but also unintended, collateral effect of the specific regulation. The problem is, however, that the human knowledge is limited, hence it is very difficult to foresee all the unintended effects, and many of them are discovered only *ex post*, after they have already occurred. Naturally, the more complex regulation and the more complicated regulatory framework, the bigger the probability to miss unintended consequences *ex ante*: i.e. the wrong incentives created by the specific regulation.

Regardless of the inherent limitations of the financial sector regulation, some light should be shed on the principles of good regulation. First of all, good regulation must be *ex ante* regulation, which produces firm rules in advance and persistently enforces them. Furthermore, *ex ante* character is only a necessary but not sufficient condition for good regulation. *Ex post* regulation, i.e. a government intervention after the reason for it occurred generally creates huge unfavorable effects. Typical example of such regulation is bailing out big financial institutions, predominantly banks, but also insurance companies, facing the substantial financial difficulties and failure - with the prospects of bankruptcy and liquidation. In that case, after estimating that letting them fail could create huge financial instability - "too big to fail" - the government steps in and covers their financial losses in most cases using the budget, i.e. the money of taxpayers. Irrespectively of the damage that was prevented, this kind of regulation creates the strong moral hazard and the management of big financial institutions, especially their



njeni zahtevi (na primer, u pogledu adekvatnosti kapitala) oštija, a nadzor, naročito u pogledu obaveze izveštavanja, stroži nego u slučaju drugih učesnika na finansijskom tržištu. Time se dolazi do asimetrične, selektivne regulacije, tj. pojačane regulacije pojedinačnih učesnika na tržištu, a ne istovetne regulacije sektora u celini. Na taj način regulator može svojim zahtevima i nadgledanjem da se usredsredi na najrizičnije učesnike na tržištu, bilo da je u pitanju njihova veličini i, time, potencijalni problem po stabilnost finansijskog sistema koji mogu stvoriti, bilo da je reč o učesnicima čije je poslovanje problematično, odnosno čiji postojeći poslovni problemi ukazuju na to da mogu da predstavljaju rizik po stabilnost. Stoga one finansijske institucije koje ne zadovoljavaju ova dva kriterijuma ne bi bile podložne striktnom regulatornom nadzoru, što bi im stvorilo slobodu u njihovim poslovnim poduhvatima, a i efikasnije bi se koristili (oskudni) resursi alocirani u regulaciju finansijskog sektora.

Što se sadržaja regulacije tiče, verovatno da su poželjna jednostavna pravila, budući da upravo takva pravila omogućavaju odgovornost i jedne i druge strane, imajući u vidu da se relativno lako ustanovljava da li su prekršena ili ne (Glaeser i Shleifer, 2001). Takva pravila treba da se odnose na kapitalnu adekvatnost banaka, na razdvajanje poslova koji imaju fundamentalno različite rizike, poslova sa fiksnim prinosima i varijabilnim prinosima, kao i na jasno iskazivanje relevantnih informacija. Problem je, međutim, u tome što se sadašnja kapitalna adekvatnost izračunava kao odnos kapitala i (rizikom ponderisanih) plasmana banke. To neminovno dovodi do složene procedure i komplikovanih pravila klasifikacije plasmana i veoma često do regulatornih nesuglasica. Stoga s pažnjom treba razmotriti predlog (Admati, 2014) da se kapitalna adekvatnost banaka sagledava isključivo na strani pasive njihovog bilansa stanja i to kao klasičan leveridž, tj. odnos obaveza prema poveriocima (pozajmljeni kapital i depoziti) i obaveze prema vlasnicima banke (sopstveni kapitala). U ovom slučaju nije potrebna nikakva klasifikacija rizika plasmana, budući da su ove veličine nesporne. Niska granica dozvoljenog leveridža umanjila bi kreditni potencijal banke, ali bi uvećala njenu finansijsku stabilnost, odnosno otpornost na

problematične plasmane i njihovo otpisivanje.

Ekstremni predlog ove vrste (Chocrain, 2016) jeste nulti leveridž, odnosno zabrana bankama da se zadužuju i uzimaju depozite (osim transakcionih). Drugim rečima, u ovom slučaju, kreditni potencijal banke bio bi jednak njenom (sopstvenom) kapitalu. Ovakvo ustrojstvo bankarskog sektora sa stanovišta regulacije bilo bi daleko jednostavnije, tim pre što se više ne postavlja pitanje obavezne rezerve, budući da se rizik likvidnosti u potpunosti eliminiše. Međutim, posledice ovakvog, novog sistema bankarstva bile bi veoma velike. To bi značilo da svi oni koji žele plasmane sa fiksnim prinosima moraju da kupuju obveznice, dok bi se u banke ulagali samo oni koji prihvataju plasmane sa varijabilnim prinosima. Vrlo je veliko pitanje koliki bi deo onih koji imaju oročene (štedne) uloge u bankama pristao da taj novac plasira u akcije banaka. Od odgovora na to pitanje zavisi i odgovor na pitanje u kojoj meri bi se umanjio kreditni potencijal banaka. Nezavisno od konkretnog odgovara, izvesno je da se manje umanjeње kreditnog potencijala može očekivati u onim zemljama, poput SAD, u kojima postoji duboko i dobro urađeno tržište kapitala i u kojima su transakcije na tom tržištu brze i sigurne. U zemljama sa plitkim tržištem kapitala vrlo je verovatno da bi realizacija ovakvog predloga dovela do drastičnog obaranja kreditnog potencijala banaka, pa time i do znatnog umanjeња nivoa finansijskog posredovanja. Od razvijenosti tržišta kapitala, naročito specifičnih institucija, poput kompanija za rejting, zavisi i u kojoj meri bi se istiskivanje štednih uloga pretvorilo u tražnju za obveznicama, tj. u kojoj meri bi pad finansijskog posredovanja putem banaka bio kompenzovan porašću tražnje za obveznicama.

Načelno posmatrano, pri razmatranju novih regulatornih rešenja bitno je imati na umu savet da regulacija treba da bude takva da finansijskom sektoru ostavi prostor za inovacije (Shiller, 2012), za pronalaženje mehanizama finansijskog posredovanja koji će na novi način zadovoljiti potrebe onih između kojih se posreduje.

## Zaključak

Pokazalo se da ne postoji velika kontroverza u pogledu uzročno-posledične veze kojom

creditors and investors (shareholders), receives a strong incentive to behave more riskily than they would without such regulation. The point is that, based on the experience of previous bail-outs of those who behaved in the risky way, the rational expectations have been created that the bailing-out policy of the government, i.e. *ex post* regulation, will continue. This is the ground for a view that, exactly because of the moral hazard that is built on these expectations, the companies, not only in the financial sector, should be left to fail (Chari and Kehoe, 2015).

A possible exit from this situation is the enhanced regulation of the big, systemically important financial institutions (SIFI), whose *ex ante* regulation and its requirements should be more severe (for example concerning capital adequacy) and monitoring more stringent, especially in terms of reporting, than for the other players on the financial market. In this way, the asymmetrical, selective regulation is established, i.e. the more stringent regulation of some players, rather than the equal regulation of the whole sector. This is the mechanism for regulators to focus on the riskiest financial institutions with their requests and monitoring, irrespective of whether the high risk is due to the sheer size and potential problems that could be created, or due to the actual problems in operations that pose a risk for the financial stability. Accordingly, those financial institutions that do not fulfil one or the other criteria would not be under severe regulatory treatment and monitoring; that would create more freedom for them in their business endeavors and the scarce resources allocated to the financial sector regulation would be efficiently utilized.

As to the regulatory content, simple regulatory rules are desirable, since such rules encourage responsibility on both sides, given that it is relatively easy to establish whether the rules have been breached or not (Gleaser and Shleifer, 2001). These rules should be focused on the capital adequacy of banks, separation of operations incurring significantly different risks, like operations with fixed and variable returns, and transparent disclosure of relevant information. The problem is, nonetheless, that capital adequacy is expressed as the ratio of capital and risk weighted assets. Hence, it

inevitably creates the complex and complicated rules of risk classification and very often regulatory disputes. That is why due attention should be paid to the proposed alternative capital adequacy measurement (Admati, 2014), suggesting for capital adequacy of banks to be considered only on the liability side of the balance sheet, as the traditional financial leverage, i.e. the ratio between debt liabilities (borrowed capital and deposits) and equity (liabilities to the shareholders). In this case, there is no need for any classification of assets, as these values are undisputed. Low level of the allowed leverage would decrease the lending potential of the bank, but would increase its financial stability, i.e. the resilience to the NPLs and write-offs.

The extreme proposal of this kind (Chocrain, 2016) is zero leverage, i.e. the ban for all banks on borrowing capital and taking deposits (save transaction deposits). In other words, the lending potential of such a bank would equal its equity. Such a constellation of the banking sector would be much easier for regulation especially as there would be no need for reserve requirements, given that liquidity risk would be eliminated. Nonetheless, the consequences of such a new banking system would be substantial. That would mean that investors who prefer fixed returns would completely turn towards bonds, as the investments in banks would be only for those ready to accept variable returns. The big question is the share of those who now have time (saving) deposits in the banks and are ready to convert them into a share in those banks. The answer to this question would provide a clue about the extent to which the banks' lending potential would decrease. Irrespective of a specific answer, it is evident that a smaller decrease of the lending potential can be expected in the countries like the US, which have a deep and well organized capital market with swift and regular capital transactions. It is rather probable that in the countries with shallow capital markets the introduction of this kind of financial regulation would substantially decrease the banks' lending potential and the level of financial intermediation. The level of capital market development, especially institutions like rating agencies, would determine the extent to which

finansijsko posredovanje pospešuje privredni rast. Identifikovani su osnovni mehanizmi delovanja, uočeni su mogući opadajući prinosi, ali se pokazalo da se oni, ukoliko zaista postoje, javljaju na veoma visokom nivouima razvijenosti finansijskog posredovanja. Ispostavilo se da postoji snažna nesavršena informisanost, naročito asimetrija informacija na finansijskim tržištima. To, međutim, nije dovoljan uslov da bi se preporučila snažna regulacija finansijskog sektora. Pokazalo se da regulacija treba da bude *ex ante*, sa unapred definisanim pravilima, da bude selektivna, usredsređena na finansijske

institucije koje stvaraju najveći rizik, ali i da bude jednostavna, kako bi se lako ustanovili da li ispunjeni regulatorni zahtevi. Nove ideje u pogledu sadržaja finansije regulacije usmerene su ka umanjivanju leveridža, što vodi umanjenu kreditnog potencijala, ali i povećanju stabilnosti sistema. Male i srednje razvijene zemlje ne treba da budu inovativne na planu regulacije, već da pažljivo prate razvoj regulatornih instrumenata u svetu. Velika, fundamentalna alternativa postojećem načinu finansijskog posredovanja koja može da ubrza privredni rast ne postoji.

the suppression of savings deposits would turn into demand for bonds, i.e. the extent to which the decline of the bank-based financial intermediation would be compensated by the increased demand for bonds.

In principle, while considering new regulatory regimes one should keep in mind the recommendation that financial regulation should preserve the space for financial innovation (Shiller, 2012), for finding new mechanisms of financial intermediation that would in a new way meet the needs of those involved in the process.

## Conclusion

It was demonstrated that there was no substantial controversy regarding the causality in terms of financial intermediation facilitating the economic growth. The main mechanisms of the causality have been identified, the possible diminishing returns have been spotted and it was corroborated that, if they exist at all, they occur at the very high levels

of financial intermediation development. It was documented that imperfect information, especially asymmetrical information exists on the financial markets. That is, however, not a sufficient condition to recommend the tough financial sector regulation. The regulation should be *ex ante*, with the rules specified in advance, it should be selective, focused on those financial institutions that generate the biggest risk, but also simple, in order to easily establish whether the regulatory requirements have been breached or not. New ideas in regulation are focused on reducing the leverage, with the reduced lending capacity as the consequence, but also the improved stability of the system. Small countries at the medium level of development should not be innovative in the financial regulation, but carefully monitor the development of the new regulatory instruments in the world. There is no fundamental alternative to the incumbent pattern of financial intermediation that could accelerate the economic growth.

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