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uvodnik

Bankarski sektor u borbi za ublažavanje efekata pandemije

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U prvom kvartalu 2020. godine, svetska ekonomija suočila se sa izazovima bez presedana. Pandemija COVID-19 virusa koja je zahvatila ceo svet rezultirala je ne samo dubokom zdravstvenom krizom, već je uzrokovala i velike promene u globalnoj ekonomiji i ekonomijama pojedinačnih zemalja. Ekonomisti očekuju da će bruto društveni proizvod širom sveta biti značajno smanjen, a trajanje i ozbiljnost ekonomske krize, kao i brzinu oporavka, još uvek je teško sagledati.

U analizama krize uzrokovane koronavirusom neizbežno je poređenje sa prethodnom globalnom finansijskom krizom koja je ne tako davno pogodila svet, uzrokujući velike promene. Analitičari ističu da je, za razliku od prethodne krize koja je nastala u finansijskom sektoru, a zatim se prenela u realni sektor ekonomije, ovu krizu finansijski sektor dočekao u mnogo boljem stanju, sa velikim rezervama kapitala i likvidnosti, što je omogućilo bankama da i u uslovima pada ekonomske aktivnosti nastave da pružaju usluge svojim klijentima. Pad ekonomske aktivnosti neizbežno će imati uticaj na tržište rada, ali i na finansijska tržišta, pre svega razvijenih zemalja. U ovakvim uslovima banke se u velikoj meri oslanjaju na izvore finansiranja koje obezbeđuju centralne banke u vidu različitih programa kupovine imovine uz relaksaciju uslova za instrumente obezbeđenja. Mnoge centralne banke, uključujući i Narodnu banku Srbije, snizile su referentne kamatne stope, te na taj način, kroz povoljne uslove finansiranja, dale podršku oporavku privrednog rasta.

Regulatori i supervizori podržali su banke da iskoriste fleksibilnost koja već postoji u regulatornim okvirima i koja dozvoljava upotrebu zaštitnih slojeva likvidnosti i kapitala za pokriće gubitaka, kako bi se nastavilo kreditiranje ekonomije. Takođe, data su i tumačenja u vezi sa fleksibilnom primenom međunarodnog računovodstvenog standarda za priznavanje i vrednovanje finansijskih instrumenata IFRS 9 na način da se privremene poteškoće ne smatraju automatskim događajem koji podrazumeva povećanje kreditnog rizika i porast očekivanih gubitaka, već se preporučuje pažljiva procena bazirana na preostalom veku trajanja finansijskog instrumenta.

Vlade i centralne banke mnogih država posegnule su za setom mera fiskalne i monetarne politike kako bi se ublažili negativni efekti pandemije koronavirusa i podržala ekonomija.

Za kompanije od strateške važnosti za ekonomiju zemlje (kao što su nacionalni avio prevoznici, nacionalni distributeri električne energije i slično), u uslovima krize države obezbeđuju sredstva za njihov opstanak i oporavak, bilo u vidu direktnog finansiranja ili garancija za vraćanje zajmova komercijalnim kreditorima. Pri tome, treba imati u vidu da države i u takvoj vrsti aranžmana uglavnom insistiraju na unapređenju ekoloških i drugih standarda poslovanja i ispunjenju dugoročnih ciljeva održivog razvoja, u skladu sa nacionalnim strategijama i međunarodnim sporazumima.

Set mera podrške ekonomiji koji je do sada implementiran u različitim državama najčešće obuhvata direktno finansiranje najugroženijih sektora privrede od strane države, različite vrste garancijskih šema od strane država i međunarodnih finansijskih institucija, kao i inicijative za implementaciju privremenih zastoja u plaćanju, takozvanih moratorijuma u otplati obaveza, itd.

Moratorijum u otplati obaveza u različitim zemljama ima različite modalitete, od obavezne ponude moratorijuma od strane banaka za sve klijente, kao što je to bio slučaj u Srbiji, pa do mogućnosti za moratorijum koji banka odobrava na zahtev klijenta, kao što je to slučaj u nekim zemljama u okruženju. U nekim zemljama moratorijum je implementiran kao opcija dogovorena na nivou bankarskog sektora. U slučaju Srbije, moratorijum je široko primenjen kao opcija koju je prihvatilo oko 90% privrednih subjekata i 93% građana, pri čemu je u većem procentu primenjen kod malih i srednjih preduzeća u odnosu na velika preduzeća, dok je kod fizičkih lica veći procenat korisnika prihvatio moratorijum za gotovinske kredite i kreditne kartice u odnosu na korisnike stambenih kredita.

Programom ekonomskih mera za podršku privredi u našoj zemlji omogućene su određene fiskalne pogodnosti i direktna davanja iz budžeta privrednim subjektima u privatnom sektoru, kao i isplata jednokratne novčane pomoći u iznosu od 100 evra u dinarskoj protivvrednosti svim punoletnim građanima Republike Srbije. U okviru paketa ekonomskih mera vrednog 5,1 milijardu evra, država je, u cilju podrške likvidnosti malih i srednjih preduzeća, obezbedila direktno finansiranje pod povoljnim uslovima preko Fonda za razvoj Republike Srbije, kao i garanciju za kredite malim i srednjim preduzećima koje odobravaju komercijalne banke u ukupnoj vrednosti 2 milijarde evra. Garantna šema omogućava bankama da i u uslovima povećanog rizika nastave sa kreditiranjem privrede kojoj je, u uslovima krize izazvane koronavirusom, neophodna podrška za prevazilaženje negativnih efekata krize.

Za banke će u narednom periodu najveći izazov predstavljati pogoršanje kvaliteta aktive, sa verovatnim povećanjem problematičnih plasmana i povećanjem rezervisanja za očekivane kreditne gubitke. I pored regulatorne podrške koja se ogleda u tumačenjima da se ne očekuje automatsko klasifikovanje u kategorije povećanog kreditnog rizika, očekivano je da će doći do pogoršanja naplativosti plasmana i povećanja rezervisanja za plasmane za određeni broj privrednih subjekata koji posluju u delatnostima koje su najviše pogođene krizom, kao i za plasmane fizičkim licima zaposlenim u tim kompanijama. Garancije države mogu pomoći bankama da ublaže efekte pogoršanja naplativosti na bilanse banaka.

Kriza uzrokovana COVID-19 virusom donela je velike operativne izazove za banke. Banke su brzo reagovale preduzimajući mere za nastavak poslovanja, vodeći računa o nesmetanom odvijanju osnovnih funkcija banke, ali i očuvanju zdravlja svojih zaposlenih. Banke su ubrzano aktivirale opcije rada od kuće za najveći broj zaposlenih, podelu timova i njihovo raspoređivanje na različite lokacije sa jedne strane, dok su sa druge strane klijenti banaka ohrabrivani da koriste digitalne kanale komunikacije, uključujući i beskontaktna plaćanja.

Iako još uvek postoji veliki stepen neizvesnosti u pogledu daljeg razvoja zdravstvene situacije i sa njom povezane ekonomske krize, kako u pogledu trajanja tako i u pogledu amplitude negativnih efekata, izvesno je da svetska ekonomija nakon krize neće biti ista, što važi i za bankarski sektor kao neodvojivi deo ekonomije. Da bi opstale i vršile svoju misiju, banke će morati da se prilagode novonastalim okolnostima, da preispitaju svoje poslovne modele, povećaju stepen digitalizacije svojih usluga, unaprede efikasnost i snize troškove poslovanja. Snažna kapitalna baza i dostignuta otpornost bankarskog sektora na vanjske šokove, kao i posvećenost unapređenju tehnoloških rešenja predstavljaju dobru osnovu da banke očuvaju stabilnost poslovanja i, kao jedan od stubova ekonomije, doprinesu njenom daljem rastu i razvoju.

Glavni i odgovorni urednik
Vladimir Vasić

editorial

Banking Sector Fighting to Mitigate the Effects of the Pandemic

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In the first quarter of 2020, the global economy faced unprecedented challenges. The COVID-19 pandemic that spread throughout the world has resulted in a massive health crisis, at the same time having caused huge changes in the global economy and the economies of individual countries. Economists expect the gross domestic product to be significantly decreased worldwide, while the duration and severity of the economic crisis, and the speed of recovery, are still difficult to fully understand.

When analysing the crisis caused by the coronavirus, it is unavoidable to compare it to the previous financial crisis which had, relatively recently, caused massive changes worldwide. Analysts highlight that, unlike during the previous crisis which originated in the financial sector, and then spread into the real economic sector, the financial sector was much better prepared for this crisis, with large capital and liquidity reserves, which enabled the banks to continue providing services to their clients, even with the decline in economic activity. The decrease in economic activity will unavoidably affect the job market, as well as the financial markets, primarily in developed countries. In these conditions, the banks largely rely on financing sources provided by the central banks, through different programmes of purchasing property with the relaxation of the collateral requirements. Many central banks, including the National Bank of Serbia, lowered the benchmark interest rates, thus supporting the recovery of economic growth through accessible terms of financing.

Regulators and supervisors alike encouraged the banks to make use of the existing flexibility in the regulatory frameworks which allows for the use of protective liquidity and capital layers to cover losses, so that the lending to the economy could be continued. Moreover, they provided interpretation of the flexible implementation of international accounting standards for recognition and impairment of financial instruments (IFRS 9) in a way that the temporary difficulties are not automatically viewed as an event which implies an increase in credit risk and expected losses, instead suggesting a careful evaluation based on the remaining duration of the financial instrument.

The governments and central banks of many countries have implemented sets of fiscal and monetary policy measures in order to mitigate the adverse effect of the coronavirus pandemic and support the economy.

During a crisis, the government sets aside funds for the aid and recovery of companies with strategic value for the country's economy (such as national air transport companies, national electricity distribution companies, etc.), either via direct financing or via guarantees for repaying loans to commercial creditors. Moreover, it should be noted that, even in such arrangements, countries mostly insist on improving environmental and other business standards and meeting long-term goals of sustainable development, in accordance with the national strategies and international agreements.

The set of supportive measures that has been implemented thus far in different countries usually includes direct state financing for the most jeopardised economic sectors, different guarantee schemes by the governments and international institutions, as well as initiatives for the implementation of temporary delays in payments, a.k.a. moratoria in the repayment of obligations, etc.

A moratorium in the repayment of obligations has different modalities in different countries, ranging from an obligation for all banks to offer the moratorium to their clients, as was the case in Serbia, to the possibility of the moratorium being granted at the request of the client as was the case in some neighbouring countries. In some countries, the moratorium was implemented as an option agreed to at the level of the banking sector. In Serbia, the moratorium was accepted by about 90% of legal entities and 93% of individuals, where a much larger percentage of SMEs than large companies accepted the moratorium, and more natural persons accepted the moratorium for cash loans and credit cards than for housing loans.

The programme of economic measures for supporting our economy enabled certain fiscal benefits and direct budget funding for legal entities in the private sector, as well as the disbursement of one-off financial aid of 100 euros in dinar equivalent to all adult citizens of the Republic of Serbia. Within the package of economic measures worth 5.1 billion euros, in order to support the liquidity of SMEs, the state provided direct financing under favourable conditions through the Development Fund of the Republic of Serbia, as well as guarantees for loans to SMEs approved by commercial banks, worth 2 billion euros. The Guarantee Scheme enables banks to continue lending to the economy in conditions of increased risk, as the economy needs support to overcome the negative effects of the crisis.

In the coming period, the biggest challenge for the banks will be the deterioration of asset quality, with a probable increase in non-performing loans and an increase in provisions for expected credit losses. Despite regulatory support, which is reflected in the interpretation that the automatic classification into categories of increased credit risk is not expected, there will probably be a deterioration in the collectability of placements and an increase in provisions for a number of economic entities most affected by the crisis, as well as for placements to individuals employed in those companies. Government guarantees can help banks mitigate the effects of deteriorating collection on the banks' balance sheets.

The crisis caused by the COVID-19 virus has brought major operational challenges for banks. Banks reacted quickly by undertaking business conti-

nuity measures, taking care to enable the smooth running of the banks' basic functions, while also preserving the health of their employees. Banks have rapidly activated home-based options for most employees, assigned teams and deployed them to different locations on the one hand, while on the other hand the bank customers were encouraged to use digital communication channels, including contactless payments.

Although there is still a high degree of uncertainty regarding the further development of the health situation and the related economic crisis, both in terms of duration and in terms of the amplitude of negative effects, it is certain that the global economy will not be the same after the crisis, and the same is true for the banking sector, which is an integral part of the economy. To survive and fulfil their mission, banks will have to adapt to the new circumstances, rethink their business models, increase the degree of digitalisation of their services, improve efficiency and lower operating costs. A strong capital base and achieved resilience of the banking sector to external shocks, as well as the commitment to improving technological solutions are a good basis for banks to maintain business stability and contribute to the further growth and development of the economy, being one of its main pillars.

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Efikasnost investicione politike i politike povećanja doprinosa u održavanju dugoročne fundiranosti sponzorisanih penzijskih planova

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Rezime: Sponzorisani penzijski planovi sa definisanim naknadama su suočeni sa dugoročnim izazovima u održavanju nivoa fundiranosti koji je propisan nacionalnom regulativom koja uređuje penzijski sistem. U relativno kratkom periodu od svega dve decenije, privatni penzijski fondovi su se suočili sa dve finansijske krize (*dot.com* kriza s početka 21. veka i globalna finansijska kriza iz 2008. godine), višegodišnjim periodom niskih kamatnih stopa nakon globalne finansijske krize, a odskora i negativnim efektima epidemije korona virusa. U takvom ambijentu, aktuelno je pitanje koji je mehanizam najefikasniji za postizanje i održavanje adekvatnog nivoa fundiranosti sponzorisanih penzijskih planova sa definisanim naknadama. Cilj rada se ogleda u ispitivanju efikasnosti investicione politike i politike povećanja doprinosa u održavanju dugoročne fundiranosti penzijskog plana, korišćenjem VAR modela i *bootstrap* reuzorkovanja za simuliranje posmatranih varijabli. Rezultati analize pokazuju da je investiciona politika efikasniji alat za postizanje fundiranosti u dugom roku, uz ograničenja u pogledu agresivnosti investicione politike.

Ključne reči: sponzorisani penzijski planovi, investiciona politika, politika povećanja doprinosa, nivo fundiranosti, *bootstrap* reuzorkovanje

JEL: G11, G17, J26, J32

Uvod

Funkcionisanje penzijskih planova se odvija prema jednostavnom principu: doprinosi se uplaćuju u penzijski fond, tako akumulirana sredstva se investiraju na finansijskom tržištu, a iz sredstava u penzijskom fondu se vrši isplata penzijskih naknada. Dakle, politika povećanja doprinosa i investiciona politika predstavljaju dva osnovna mehanizma putem kojih sponzor penzijskog plana obezbeđuje dugoročnu sigurnost isplate penzijskih naknada u uslovima izražene neizvesnosti. Gotovinski prilivi po osnovu doprinosa i investicionih prinosa su, takođe, neizvesni, to jest, ne može se sa potpunom sigurnošću predvideti njihovo kretanje u budućnosti. Shodno tome, neizvesnost sa kojom se penzijski fond suočava se mora modelirati, razvijanjem diskretnog modela sa konačnim vremenskim horizontom u kojem se donose odluke.

Sponzorisani penzijski planovi koje organizuju kompanije za svoje zaposlene mogu, u zavisnosti od načina raspodele rizika između kompanije i zaposlenih, da funkcionišu prema modelu sa definisanim naknadama i prema modelu sa definisanim doprinosima. U sponzorisanom penzijskom planu sa definisanim naknadama, kompanija, kao sponzor penzijskog plana, predstavlja ugovornu stranu koja garantuje zaposlenima isplatu penzije do kraja života, a čiji iznos zavisi od dužine radne karijere i visine ostvarenih zarada. Ovakav način razmišljanja pred kreatore investicione politike u penzijskom planu sa definisanim naknadama postavlja dva protivrečna zadatka: postizanje sigurnosti plasmana i stope prinosa koja garantuje isplatu penzija u budućnosti. Osnovni cilj investicione politike penzijskog plana predstavlja postizanje dugoročne fundiranosti penzijskog plana, to jest, u svakom trenutku sredstva u penzijskom fondu treba da budu dovoljna za isplatu penzija. Ukoliko je iznos sredstava u penzijskom fondu u dužem vremenskom periodu manji od sadašnje vrednosti projektovanih penzijskih obaveza, penzijski plan je nedovoljno fundiran i neće moći da odgovori finansijskim obavezama u budućnosti bez sprovođenja značajnih korektivnih mera.

U tom pogledu, penzijski planovi sa definisanim naknadama se dijametralno razlikuju u odnosu na penzijske planove sa definisanim doprinosima, kod kojih kompanija koja je sponzor penzijskog plana uplaćuje doprinose na individualni penzijski račun zaposlenog, a, u zavisnosti od regulative, pojedinac ima manji ili veći stepen slobode u donošenju odluka o visini stope doprinosa i načina na koji će sredstva biti investirana. Međutim, kompanija nema zakonsku obavezu uplaćivanja dodatnih doprinosa niti garantovanja isplate određenog iznosa penzije, u slučaju da su sredstva na penzijskom računu nedovoljna za isplatu zahtevanog nivoa penzije, što predstavlja ključnu razliku u odnosu na penzijske planove sa definisanim naknadama.

U savremenim uslovima poslovanja, investicione strategije penzijskih planova su sve više orijentisane ka riziku, s obzirom na to da penzijski planovi sazrevaju, to jest, osigurana populacija postepeno stari, a teret finansiranja penzijskih obaveza kontinuirano raste (Franzen, 2010, 26). Povećanje očekivanog životnog veka i prosečne starosti populacije povećava gotovinske odlive iz fonda, s obzirom na to da se povećava broj korisnika penzija i prosečan vremenski period u kojem se penzije isplaćuju. Pored demografskog rizika, inflatorni rizik

i regulatorni rizik mogu značajno da utiču na poziciju fundiranosti penzijskog plana. Neočekivani rast inflacije predstavlja ozbiljan problem za penzijske planove u kojima se vrši indeksacija penzijskih naknada, pošto to značajno komplikuje proces utvrđivanja penzijskih obaveza (Clark & Monk, 2006, 44). Rizik povećanja troškova funkcionisanja penzijskog plana koji podnosi sponzor penzijskog plana usled regulatornih promena je postao naročito značajan u poslednje dve decenije.

Od početka 21. veka, penzijski planovi sa definisanim naknadama se sve više suočavaju sa značajnim izazovima u održavanju zadovoljavajuće fundiranosti. Nakon dot.com krize iz 2001. godine, usledila je globalna finansijska kriza iz 2008. godine koja je dugoročno narušila finansijsku poziciju penzijskih planova, s obzirom da se nivo fundiranosti ni deset godina nakon krize nije značajnije poboljšao (Willis Towers Watson, 2017, 2). Nakon globalne finansijske krize usledio je višegodišnji period niskih kamatnih stopa koji je, usled duže ročnosti penzijskih obaveza od ročnosti aktive, uslovio rast sadašnje vrednosti projektovanih penzijskih obaveza i pogoršanje pozicije fundiranosti penzijskih planova (Committee on the Global Financial System, 2018, 31). Epidemija korona virusa u prvom kvartalu 2020. godine je dodatno pogoršala poziciju fundiranosti penzijskih planova. Prema podacima Mercer (2020), nivo fundiranosti penzijskih planova čiji su organizatori kompanije na listi S&P 1500 indeksa je samo u martu 2020. godine opao za 3% na nivo od zabrinjavajućih 76%. Čak su i penzijski planovi u Holandiji, koji tradicionalno imaju više nivoe fundiranosti u odnosu na druge zemlje Zapadne Evrope i Severne Amerike, krajem februara 2020. godine ostvarili pad nivoa fundiranosti od 6% u odnosu na prethodni mesec, usled snižavanja kamatnih stopa i nepovoljnih kretanja na tržištu akcija izazvanih pojavom globalne epidemije (IPE Magazine, 2020).

S obzirom na značajne izazove u održavanju adekvatnog nivoa fundiranosti sponzorisanih penzijskih planova sa definisanim naknadama u prethodne dve decenije, pitanje koji je mehanizam najefikasniji u realizaciji ovog cilja sve više dobija na aktuelnosti. Cilj rada se ogleda u ispitivanju efikasnosti investicione politike i politike povećanja doprinosa u održavanju dugoročne fundiranosti sponzorisanog penzijskog plana sa definisanim naknadama. U radu je analiziran model penzijskog plana sa definisanim naknadama, čije se finansijske performanse simuliraju u velikom broju iteracija. U skladu sa navedenim ciljem istraživanja, postavljena je sledeća istraživačka hipoteza:

Investiciona politika predstavlja efikasniji mehanizam za poboljšanje pozicije fundiranosti sponzorisanog penzijskog plana sa definisanim naknadama u odnosu na politiku povećanja doprinosa.

S obzirom da je reč o penzijskom planu sa definisanim naknadama, neophodno je izvršiti modeliranje penzijskih obaveza i finansijskih sredstava. Modeliranje penzijskih obaveza podrazumeva formiranje aktuarskih i finansijskih pretpostavki. Aktuarske pretpostavke se odnose na postavku vrednosti za aktuarske varijable. Broj aktuarskih varijabli zavisi od nivoa složenosti modela penzijskog plana. Uz aktuarske pretpostavke, za uspešno modeliranje penzijskih obaveza neophodne su finansijske pretpostavke. Bez definisanja vrednosti diskontne stope, stope rasta zarada i stope inflacije, nije moguće

izračunavanje sadašnje vrednosti penzijskih naknada i drugih pokazatelja penzijskih obaveza. Diskontna stopa bi trebalo da odražava ročnost penzijskih obaveza, ali i dugoročna tržišna kretanja i promene u stopi inflacije. S obzirom da u penzijskom planu sa definisanim naknadama penzijske obaveze imaju karakter izvesnosti, diskontna stopa je najčešće jednaka stopi prinosa na državne obveznice ili stopi prinosa na kvalitetne kompanijske obveznice (Bartram, 2018, 334). Ročnost ovih obveznica mora biti najmanje deset ili više godina, uvažavajući činjenicu da su penzijski planovi dugoročno orijentisani finansijski subjekti, a penzijske obaveze imaju dugoročni (višedecenijski) karakter.

Modeliranje stope rasta zarada je neophodno u penzijskim planovima u kojima se u penzijskoj formuli koristi poslednja ostvarena zarada ili prosečna zarada u toku radne karijere za obračun penzije. Aktuari u penzijskim planovima često koriste skalu zarada za projektovanje kretanja zarada. Skala zarada je prikaz povećanja zarada zaposlenih u kompaniji sa protokom vremena, to jest, sa svakom dodatnom godinom radne službe u kompaniji. Pozicija zaposlenih na skali zarade zavisi od dužine radne karijere, stečenog nivoa obrazovanja, pozicije u hijerarhiji radnih mesta i ostvarenih radnih učinaka. Velike kompanije imaju propisane skale zarada, koje aktuari primenjuju prilikom aktuarske evaluacije penzijskih planova.

Kada je reč o finansijskim sredstvima, varijable koje su od značaja su stopa doprinosa i stope prinosa različitih vrsta finansijskih instrumenata. U projektovanju stope doprinosa može se poći od stava da ova stopa treba da bude relativno stabilna, što znači da je ne bi trebalo često menjati u budućnosti. U pogledu utvrđivanja stopa prinosa, prvi korak predstavlja definisanje koje će vrste finansijskih instrumenata da čine investicioni portfolio. Dakle, u ovom koraku je neophodno utvrditi strukturu investicionog portfolija penzijskog plana. Sledeći korak podrazumeva utvrđivanje stopa prinosa različitih vrsta finansijskih instrumenata. S obzirom da za sve vrste finansijskih instrumenata postoje podaci o referentnim prinosima u prethodnom vremenskom periodu, stopa prinosa portfolija u sadašnjem trenutku se može relativno lako utvrditi. Međutim, stopa prinosa bi trebalo da odražava tržišne fluktuacije u definisanom vremenskom horizontu, što znači da se mora projektovati. Poslednji i najvažniji korak predstavlja projektovanje stopa prinosa za vremenski period koji se posmatra.

Nakon definisanja aktuarskih i finansijskih parametara može da se izvrši modeliranje penzijskih obaveza i finansijskih sredstava. Najznačajniji deo modeliranja predstavlja generisanje ekonomskih scenarija. Razlog leži u činjenici da je buduća realizacija svih varijabli koje su od značaja za penzijski plan neizvesna, to jest, ne postoji nijedna varijabla za čiju se buduću realizaciju može reći da je u potpunosti izvesna. Ekonomski scenario predstavlja opis budućeg kretanja različitih ekonomskih varijabli. Postoji veliki broj načina za generisanje ekonomskih scenarija. U određenim studijama, generisanje scenarija je izvršeno primenom stohastičkog programiranja (Kouwenberg, 2001; Kouwenberg & Zenios, 2006). Pristup dinamičkog programiranja primenjuju Rudolph & Ziemba (2004), sa ciljem optimizacije investicione strategije penzijskog plana ili društva za životno osiguranje, u smislu maksimizacije očekivane korisnosti viška finansijskih sredstava tokom životnog ciklusa.

Stohastičku simulaciju, kao kombinaciju metoda simulacije i optimizacije, primenjuje Boender (1997) sa ciljem optimizacije simulacionog modela i pronalaska skupa struktura portfolija koje najbolje zadovoljavaju kriterijum optimizacije, to jest, minimiziranje rizika nedovoljne fundiranosti.

Generisanje velikog broja ekonomskih scenarija se vrši sprovođenjem simulacije. Svrha upotrebe simulacionih tehnika je analiziranje finansijske pozicije penzijskog plana u mogućim realističnim ekonomskim scenarijima u sukcesivnim vremenskim periodima. Početna tačka u generisanju scenarija je tekuće stanje stvari, to jest, vektor vrednosti parametara koji je poznat u sadašnjem trenutku. Za svaki ekonomski scenario mogu da se izračunaju vrednosti aktive i penzijskih obaveza, što znači da će za određeni broj ekonomskih scenarija biti dobijen isti toliki broj simuliranih nivoa fundiranosti.

Izbor podataka i primenjena metodologija

Penzijske obaveze predstavljaju najvažniji element finansijske strukture penzijskih planova sa definisanim naknadama. Najvažniji pokazatelj finansijske pozicije penzijskog plana predstavlja nivo fundiranosti, kao odnos finansijskih sredstava kojima upravlja penzijski plan, i penzijskih obaveza koje se isplaćuju iz sredstava u penzijskom fondu. Za potrebe dalje analize, može se istaći da je osnovni cilj funkcionisanja penzijskog plana održavanje adekvatne pozicije fundiranosti u dugom roku. To znači da će penzijski plan dugoročno biti sposoban da ispunjava penzijske obaveze, što suštinski jeste svrha njegovog funkcionisanja. Iz te perspektive gledano, investiciona politika i politika povećanja doprinosa predstavljaju mehanizme koje sponzor penzijskog plana ima na raspolaganju da obezbedi adekvatnu poziciju fundiranosti.

Prvi korak u analizi predstavlja formulisanje modela penzijskog plana sa pretpostavljenim demografskim profilom članova. Hipotetički penzijski plan ima tri aktivna člana različite starosti. Prvi član je star 30 godina, drugi osiguranik je srednje starosti od 45 godina, dok je treći osiguranik star 60 godina i nalazi se neposredno pred penzionisanjem. Sva lica su, zaposlenjem u kompaniji, sponzoru penzijskog plana, automatski postala i članovi penzijskog plana. Pretpostavka je da su sva lica počela u kompaniji da rade sa 25 godina, a da u penziju odlaze sa navršenih 65 godina. To znači da lice sa navršenih 30 godina ima 5 godina radnog staža u kompaniji, lice sa navršenih 45 godina ima 20 godina radnog staža, a lice sa navršenih 60 godina ima 35 godina radnog staža.

Za optimalno formulisanje investicione politike i politike doprinosa neophodno je da se utvrdi visina i dinamika penzijskih obaveza. Aktuarski metod korišćen za utvrđivanje penzijskih obaveza je metod projektovanog jediničnog kredita. Penzija se utvrđuje kao procentualni iznos poslednje ostvarene zarade za svaku dodatnu godinu radnog staža. Stopa prirasta za svaku dodatnu godinu radnog staža iznosi 1,75%, što znači da osiguranik sa navršenim punim radnim stažom od 40 godina ostvaruje stopu zamene od 70%. S obzirom da poslednja zarada za osiguranike u trenutku penzionisanja nije poznata, ona se mora projektovati, što se postiže primenom metoda projektovanog jediničnog kredita. Projekcija se vrši korišćenjem skale zarada, to jest, stope rasta

zarada u svakoj godini radne karijere, uz pretpostavku da je stopa rasta zarada jednaka stopi inflacije.

Za utvrđivanje penzijskih obaveza neophodno je da se izračuna aktuarska obaveza, korišćenjem metoda projektovanog jediničnog kredita. Prema ovom metodu, aktuarska obaveza se izračunava korišćenjem sledeće formule:

$$AL_x = (k\%) * \prod_{i=x}^{r-1} (1+s_i) * S_x * (x-e) * v^{r-x} * a_r$$

gde je k% stopa prirasta penzijske naknade po dodatnoj godini radnog staža, S_x je zarada osiguranika koji ima x godina u sadašnjem trenutku, x-e predstavlja broj godina od ulaska osiguranika u penzijski plan do sadašnjeg trenutka, v je diskontni faktor, r-x je broj godina od sadašnjeg trenutka do trenutka penzionisanja, a_r je sadašnja vrednost doživotnog anuiteta od jedne novčane jedinice, a

$$\prod_{i=x}^{r-1}(1+s_i)$$

$\prod_{i=x}^{r-1}(1+s_i) \prod_{i=x}^{r-1}(1+s_i)$ je skala zarada za period od sadašnjeg trenutka do godine pre penzionisanja. Početna zarada za svakog osiguranika iznosi 30 hiljada novčanih jedinica (na godišnjem nivou) u trenutku ulaska u penzijski plan. To znači da se zarada svakog osiguranika mora prvo utvrditi u sadašnjem trenutku S_x, a na osnovu početne zarade S_o, projektovanjem uz korišćenje skale zarade:

$$S_x = S_0 * \prod_{i=e}^{x-1}(1+s_i)$$

Projektovanjem poslednje ostvarene zarade u godini pre penzionisanja, stiču se uslovi za utvrđivanje penzijske naknade, a samim time i aktuarske obaveze. S obzirom na to da se penzija utvrđuje na nivou godišnjeg iznosa i isplaćuje se do kraja života osiguranika, množi se sadašnjom vrednošću doživotnog anuiteta od jedne novčane jedinice. Za potrebe analize, odabrana je vrednost anuiteta za kamatnu stopu od 5% i period od 15 godina u kojem će se u proseku isplaćivati penzija.

Kada je reč o projektovanju finansijskih sredstava, dva osnovna toka priliva u penzijski fond su doprinosi i investicioni prinosi. Reč je o regularnim doprinosima koji se u propisanim vremenskim intervalima uplaćuju kao procentualni iznos zarade svakog osiguranika. Projekcije stopa prinosa su neophodne za optimizaciju portfolija. U projektovanju stopa prinosa mogu da se koriste istorijski podaci, ukoliko se polazi od pretpostavke da dobro odražavaju buduća kretanja. Ukoliko se prihvati suprotna pretpostavka, neophodno je da se podaci o prinosima projektuju, to jest, simuliraju upotrebom jedne od tehnika simulacije.

U početnom trenutku, utvrđena je aktuarska obaveza za svakog člana, a zbir individualnih obaveza daje ukupnu aktuarsku obavezu. Sredstva u penzijskom fondu su postavljena na nivo koji je jednak aktuarskoj obavezi, to jest, početni nivo fundiranosti je jednak 100%. Stopa doprinosa je utvrđena tako da ukupan normalan trošak penzijskog plana bude jednak uplaćenim doprinosima u početnom periodu. Diskontovanje penzijskih obaveza je izvršeno

prema diskontnoj stopi od 5%, što je jedna od češće korišćenih diskontnih stopa u penzijskim fondovima (Chandler, 2017, 9). Diskontovanjem se dobija sadašnja vrednost budućih penzijskih obaveza.

Vremenski horizont za koji se vrši simuliranje neizvesnih ishoda iznosi 20 godina. Pretpostavlja se da osiguranici ne napuštaju penzijski plan ni na koji drugi način nego odlaskom u penziju. Osiguranici odlaze u penziju sa navršenih 65 godina života. To znači da će osiguranik starosti 60 godina uplaćivati doprinose 5 godina, a nakon toga će u narednih 15 godina primati penzije. Preostali osiguranici će doprinose uplaćivati do kraja vremenskog perioda.

Varijable koje se simuliraju su stopa inflacije, stopa prinosa akcija i stopa prinosa obveznica. Modeliranje posmatranih varijabli će biti izvršeno primenom VAR (*vector-autoregression*) metode. VAR model je pogodan za analizu zavisnosti varijable od sopstvenih prošlih vrednosti i prošlih vrednosti drugih varijabli uključenih u model. Definisanjem VAR modela, uz ocenu koliko se dobro model prilagođava stvarnim vrednostima, moguće je izvršiti predviđanje vrednosti posmatranih varijabli. Modeliranje primenom vektorske autoregresije se često koristi u analizi vremenskih serija finansijskih i ekonomskih podataka. Jedna od osnovnih prednosti VAR modela je fleksibilnost, s obzirom na to da se u model može uključiti veliki broj endogenih varijabli. S druge strane, sa povećanjem broja endogenih varijabli, povećava se broj jednačina za ocenjivanje varijabli, a, samim time, složenost modela. Model sa *n* varijabli i *p* pomaka (docnji) može da se predstavi na sledeći način (Zivot & Wang, 2006, 386):

$$Y_t = c + \Pi_1 Y_{t-1} + \Pi_2 Y_{t-2} + \ldots + \Pi_p Y_{t-p} + \varepsilon_t$$

za t = 1, ..., T, gde je $Y_t = (y_{1t}, y_{2t}, \ldots, y_{nt})$ *n*1* vektor varijabli, Π_i je *n*n* matrica koeficijenata, a ε_t je *n*1* vektor slučajne greške sa aritmetičkom sredinom koja je jednaka nuli i matricom kovarijansi koja se ne menja s vremenom.

U daljoj analizi se formira VAR model sa tri varijable (stopa inflacije, stopa prinosa državnih obveznica i stopa prinosa akcija). Sa sigurnošću se može tvrditi da sve varijable utiču jedna na drugu. Međutim, ne može se sa sigurnošću utvrditi kakav je karakter relacije između posmatranih varijabli, odnosno smer uzročno-posledične veze (ukoliko postoji). U skladu sa time, u analizi se koristi nerestriktivni VAR model, što znači da se sve varijable tretiraju kao endogene.

U VAR modelu, na endogene varijable mogu da utiču prethodne vrednosti varijable odabranog pomaka, ali i prethodne vrednosti drugih endogenih varijabli u modelu. Shodno tome, svaka varijabla može da se oceni zasebnom jednačinom, što znači da, koliko ima varijabli, toliko će biti i jednačina. Kada se posmatra *k* pomak za svaku od *n* varijabli, neophodno je oceniti $n+kn^2$ koeficijenata u *n* jednačina (Brooks, 2002, 333).

Na osnovu ocenjenih koeficijenata, moguće je odrediti ocenjene vrednosti različitih varijabli, kao i reziduale, koji predstavljaju razliku između ocenjene vrednosti i stvarne vrednosti varijable, čija je suma jednaka nuli. Sa tako utvrđenim rezidualima moguće je izvršiti simulaciju vrednosti varijabli. Pristup koji se koristi za simuliranje vrednosti varijabli je *bootstrap* metod reuzorkovanja. Primenom ovog metoda može uspešno da se aproksimira nepoznata populacija podataka, izvlačenjem velikog broja reuzoraka iz uzorka određene veli-

čine (Kennedy, 2003, 76). *Bootstrap* reuzorkovanje podrazumeva nasumično izvlačenje uzoraka koji su iste veličine kao originalan uzorak, s tim da se, nakon izvlačenja, podaci vraćaju u uzorak i ponovo su na raspolaganju za izvlačenje u narednim uzorcima. Osnovna prednost primene ovog metoda leži u činjenici da omogućava generisanje podataka bez uvođenja pretpostavki o rasporedu verovatnoća postojećih podataka. S druge strane, nedostatak leži u tome da parametri uzorka mogu da budu nedovoljno značajni u oceni stvarnog rasporeda verovatnoća, pa *bootstrap* metod može da generiše uzorke čiji se parametri razlikuju od parametara originalnih podataka (Pažicky, 2017, 159).

Na uzorku reziduala biće izvršeno *bootstrap* reuzorkovanje sa veličinom reuzorka koji je jednak dužini vremenskog perioda u kojem se vrši projektovanje, a koji u ovom slučaju iznosi 20 godina. *Bootstrap* reuzorkovanje se sprovodi hiljadu puta, a u svakoj iteraciji se vrednosti reuzorkovanih reziduala pripisuju ocenjenim vrednostima varijabli, čime se formiraju simulirane vrednosti varijabli za period od 20 godina. Pri svakom ponavljanju reuzorkovanja, to jest, simulaciji, beleže se simulirane vrednosti stope inflacije, stope prinosa akcija i stope prinosa državnih obveznica. S obzirom da je stopa rasta zarade jednaka stopi inflacije, stopa inflacije utiče na visinu aktuarske obaveze. Stopa prinosa akcija i stopa prinosa obveznica utiču na iznos finansijskih sredstava u penzijskom fondu. S obzirom da odnos sredstava u penzijskom fondu i aktuarske obaveze predstavlja nivo fundiranosti, to znači da se u svakoj simulaciji dobija određeni nivo fundiranosti, to jest, u hiljadu sprovedenih simulacije biće zabeleženo hiljadu simuliranih nivoa fundiranosti.

Kao mehanizmi koje sponzor penzijskog plana ima na raspolaganju za popravljanje pozicije fundiranosti definisane su investiciona politika i politika povećanja doprinosa. Bazični model polazi od toga da investicioni portfolio penzijskog fonda čini 50% ulaganja u akcije, a preostalih 50% ulaganja u državne obveznice. Kao input za simulaciju prinosa akcija biće korišćeni prinosi S&P 500 tržišnog indeksa, za period od 1971. godine do 2017. godine, dok će za simulaciju prinosa državnih obveznica biti korišćeni prinosi američkih državnih obveznica sa rokom dospeća od 10 godina u istom vremenskom periodu. Podaci o godišnjim prinosima S&P 500 indeksa i američkih dugoročnih državnih obveznica su prikupljeni korišćenjem elektronske baze podataka o prinosima akcija, obveznica i trezorskih zapisa u SAD koju periodično ažurira A. Damodaran (Damodaran, 2020). Što se tiče stope doprinosa, stopa doprinosa je varijabla koja će biti korigovana u cilju ostvarivanja adekvatnije pozicije fundiranosti. Sponzor penzijskog plana ima diskreciono pravo da povećava stopu doprinosa, ukoliko proceni da se penzijski plan suočio sa ozbiljnim problemom nedovoljne fundiranosti.

Rezultati istraživanja

Definisanje VAR modela podrazumeva ispitivanje (ne)stacionarnosti varijabli u prvom koraku. Ispitivanje (ne)stacionarnosti bazira se na primeni testa jediničnog korena, pri čemu je postojanje jediničnog korena pokazatelj nestacionarnosti vremenske serije. Shodno tome, u Tabeli 1 su dati rezultati ADF i PP testa jediničnog korena.

Tabela 1: Rezultati ADF i PP testa jediničnog korena (varijable u nivou)

H_0:I(1), H_1: I(0)	Komponente	ADF statistika	PP statistika
Državne obveznice	Trend i konstanta	-7,824881***	-7,813525***
Inflacija	Trend i konstanta	-4,325437***	-4,483565 ***
S&P 500	Trend i konstanta	-6,583471***	-6,583976***
ADF – Augmented Dickey-Fuller test PP – Phillips-Perron Unit Root test			

**** označava statističku značajnost na nivou od 1% (Izvor: Autori)*

Nulta hipoteza ADF testa je da vremenska serija ima jedinični koren, odnosno, nestacionarna je. Za visoku apsolutnu vrednost statistike testa (s obzirom na to da statistika ima negativan predznak), može da se prihvati alternativna hipoteza da vremenska serija nema jedinični koren, to jest, stacionarna je. Ukoliko je vremenska serija nestacionarna, mora se izvršiti diferenciranje, to jest, nalaženje prve diference (razlike). Na nivou prve diference vremenska serija uglavnom dobija karakter stacionarnosti i može se dalje koristiti u VAR modelu. S obzirom da su vrednosti statistika ADF testa i PP testa statistički značajne na nivou od 1%, može se reći da se sve varijable mogu koristiti u VAR modelu u nivou, bez potrebe za diferenciranjem.

U cilju utvrđivanja prisustva autokorelacije u VAR modelu, primenjen je *Breusch-Godfrey* LM test autokorelacije kojim se testira autokorelacija grešaka u regresionom modelu. Primena ovog testa podrazumeva korišćenje reziduala iz VAR modela. S obzirom da je nulta hipoteza ovog testa da ne postoji autokorelacija za bilo koji broj pomaka do odabranog nivoa, pojava *p* vrednosti, koja je niža od odabranog nivoa značajnosti, znači odbacivanje nulte hipoteze i prihvatanje alternativne hipoteze da je autokorelacija prisutna u modelu. U Tabeli 2 su date vrednosti statistike LM testa koje pokazuju da problem autokorelacije nije izražen u VAR modelu, to jest, sve *p* vrednosti su više od nivoa značajnosti od 5% (0,05).

Tabela 2: Rezultati LM testa autokorelacije

Pomak	LRE statistika	df	p vrednost	Rao F- statistika	df	p vrednost
1	3,766581	9	0,9261	0,404216	(9,46.4)	0,9265
2	9,797198	9	0,3672	1,118433	(9,46.4)	0,3691
3	16,69316	9	0,0537	2,048268	(9,46.4)	0,0547
4 9,478434 9 0,3943				1,078481	(9,46.4)	0,3963
5	10,12946	9	0,3401	1,160349	(9,46.4)	0,3421
6	15,31719	9	0,0826	1,852333	(9,46.4)	0,0838
7	11,01011	9	0,2750	1,272806	(9,46.4)	0,2770
8	4,88993	9	0,8438	0,530805	(9,46.4)	0,8446
9	7,986835	9	0,5355	0,894890	(9,46.4)	0,5373
10	4,980341	9	0,8360	0,541110	(9,46.4)	0,8368

Izvor: Autori

Izbor pomaka u VAR modelu predstavlja sledeći važan korak u formiranju VAR modela, s obzirom na to da preveliki broj pomaka (*lag*-ova) smanjuje snagu modela usled ocene prevelikog broja parametara, dok premali broj pomaka dovodi do pojave autokorelacije (Ozcicek & McMillan, 1999, 518). U Tabeli 3 su dati kriterijumi za izbor dužine pomaka koji će biti korišćen u VAR modelu. Kao što se vidi, prema većini testova, optimalan broj pomaka je četiri i sa tom dužinom pomaka se formira model sa tri endogene varijable i dužinom pomaka k = 4.

Tabela 3: Kriterijum za odabir dužine pomaka

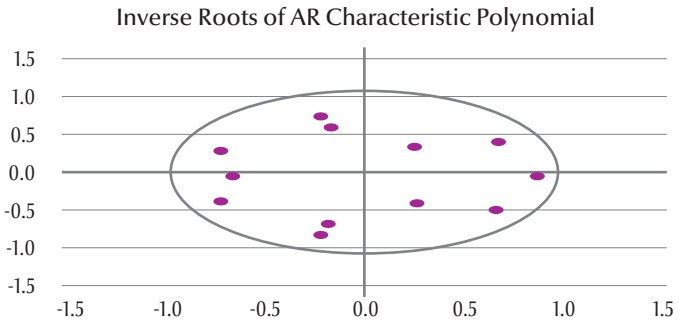
Pomak	LogL	LR	FPE	AIC	SC	HQ
0	147,8055	NA	1,72e-07	-7,063682	-6,938298*	-7,018024
1	154,2330	11,60087	1,95e-07	-6,938194	-6,436661	-6,755564
2	168,4551	23,58797	1,52e-07	-7,192934	-6,315250	-6,873330
3	178,4014	15,04070	1,49e-07	-7,239093	-5,985260	-6,782516
4	195,5965	23,48603*	1,03e-07*	-7,638855*	-6,008872	-7,045305*
5	201,5193	7,222891	1,28e-07	-7,488747	-5,482613	-6,758223
6	209,8532	8,943704	1,46e-07	-7,456254	-5,073971	-6,588758

* označava pomak izabran u skladu sa kriterijumom
LR: sekvencijalni modifikovani LR test
FPE: Final Prediction Error
AIC: Akaike information criterion
SC: Schwartz information criterion
HQ: Hannan – Quinn information criterion

Izvor : Autori

Stabilnost VAR modela se može utvrditi sprovođenjem testa stabilnosti, koji podrazumeva utvrđivanje inverznih korena AR (*autoregressive*) karakteristične jednačine (polinoma). Ukoliko su svi inverzni koreni manji od jedan, za VAR proces se može reći da je stabilan. Rezultati testa stabilnosti su prikazani na Slici 1, odakle se može videti da su svi inverzni koreni manji od jedan, što ukazuje na stabilnost (stacionarnost) VAR (4) modela.

Slika 1: Rezultati testiranja stabilnosti modela



Izvor: Autori

Izabrani VAR model sa tri endogene varijable i dužinom pomaka k = 4 omogućava formiranje regresionih jednačina sa ocenjenim vrednostima koeficijenata. Primenom ovih jednačina mogu da se izračunaju ocenjene vrednosti stope inflacije, stope prinosa na državne obveznice i stope prinosa akcija. Simulacija godišnjih stopa prinosa akcija i državnih obveznica, kao i godišnje stope inflacije je izvršena tako što su reziduali, kao odstupanja vrednosti ocenjenih primenom VAR (4) modela od stvarnih vrednosti, nasumično izabrani primenom *bootstrap* metode i pripisani ocenjenim vrednostima u svakoj iteraciji. Ovaj postupak je sproveden u svakoj od hiljadu simulacija, što znači da je iz početnog uzorka izvučeno hiljadu uzoraka iste veličine. Veličina uzoraka je određena dužinom vremenskog perioda za koji se vrši modeliranje penzijskog fonda. U ovom slučaju reč je o vremenskom periodu od 20 godina, što znači da uzorak uključuje dvadeset nasumično odabranih godišnjih opservacija za svaku od posmatranih varijabli.

U početnom trenutku, penzijske obaveze su u potpunosti pokrivene raspoloživim sredstvima, a povećanje zarada se odvija u skladu sa promenama stope inflacije. U Tabeli 4 su prikazani rezultati simulacije verovatnoće nefundiranosti penzijskog plana pri različitim stopama doprinosa u rasponu od 4% do 15% u različitim vremenskim trenucima (nakon isteka perioda od 5, 10, 15 i 20 godina). Pri simuliranju verovatnoća korišćen je portfolio koji je podjednako investiran u akcije i državne obveznice i stopa indeksacije penzija koja je jednaka prosečnoj stopi inflacije za period od pet godina pre penzionisanja.

Tabela 4: Rezultati simulacije verovatnoće nefundiranosti za procentualne promene stope doprinosa u rasponu od 4% do 15% (u procentima)

Verovatnoća nefundiranosti penzijskog plana				
Stopa doprinosa	nakon 5 godina	nakon 10 godina	nakon 15 godina	nakon 20 godina
4%	65	44,6	28,6	26,8
5%	62,6	45,6	26,2	21,4
9%	54,4	38,2	18,6	11,8
10%	54,6	34,2	19,6	11,4
14%	44,8	28,2	12,8	5,4
15%	43,6	25,2	8,8	2,8

Izvor: Autori

Kao što se vidi iz Tabele 4, za sve buduće realizacije se može izvesti zaključak da se, sa povećanjem stope doprinosa, verovatnoća nefundiranosti smanjuje. Na primer, verovatnoća da će penzijski plan biti nefundiran nakon 5 godina sa stopom doprinosa od 4% je visoka i iznosi 65%, dok sa stopom doprinosa od 15%, ta verovatnoća iznosi približno 43%. S druge strane, verovatnoća da će penzijski plan biti nefundiran nakon 20 godina, pri stopi doprinosa od 4%, iznosi približno 27%, dok, pri stopi doprinosa od 15%, ova verovatnoća iznosi približno 3%.

U Tabeli 5 su dati rezultati simulacije verovatnoće nefundiranosti penzijskog plana, uz različite strukture portfolija. Pri simuliranju je korišćena stopa doprinosa od 10% i indeksacija penzija koja odgovara prosečnoj stopi inflacije za period od 5 godina pre penzionisanja.

Tabela 5: Rezultati simulacije verovatnoće nefundiranosti, uz različite strukture portfolija (u procentima)

Izloženost portfolija akcijama	Verovatnoća nefundiranosti penzijskog fonda			
	Nakon 5 godina	Nakon 10 godina	Nakon 15 godina	Nakon 20 godina
0%	67,8	53,6	40,4	36,6
10%	58,6	40,4	23,2	18,8
20%	54	35,6	17,4	10,8
30%	45,6	27,2	10,6	5
40%	32,6	16	7,2	2,6
50%	28,6	16,6	5,8	1,8
60%	24,8	16,8	6,2	2
70%	24	16,2	5,6	2,4
80%	17,8	15,6	7,2	3,6
90%	26,8	18,4	8,4	3
100%	23,2	18,6	7,4	3,2

Izvor: Autori

Promenom strukture investicionog portfolija menadžeri mogu u značajnoj meri da utiču na verovatnoću nefundiranosti penzijskog plana. Sa vođenjem izuzetno konzervativne investicione politike verovatnoća da će penzijski plan biti nefundiran nakon 10 godina iznosi približno 53%, a nakon 20 godina približno 36%. S druge strane, ukoliko je učešće akcija u portfoliju 50%, verovatnoća nefundiranosti se drastično smanjuje i nakon 10 godina iznosi približno 16%, a nakon 20 godina iznosi približno 2%. Interesantno je da dalje povećanje učešća akcija u portfoliju ne doprinosi značajnijem smanjenju verovatnoće nefundiranosti. Pri povećanju učešća akcija u portfoliju sa 80% na 90%, verovatnoća nefundiranosti se ne smanjuje, već se povećava. Na osnovu izloženog, može da se izvede zaključak da izuzetno agresivna investiciona politika nije najpoželjnija iz perspektive finansijske stabilnosti penzijskog plana, već je poželjnije rešenje balansirani portfolio sa približno jednakom zastupljenošću akcija i državnih obveznica.

Sponzori penzijskog plana nisu zainteresovani samo za verovatnoću da li će penzijski fond biti nefundiran, već i za kvantifikaciju veličine moguće nefundiranosti. U Tabeli 6 je dat prikaz rezultata simulacije prosečnog odstupanja od nivoa fundiranosti od 100%, pri različitim stopama doprinosa i strukturama portfolija, za sve simulacije u kojima je simulirani nivo fundiranosti manji od 100%.

Tabela 6: Rezultati simulacije prosečnog odstupanja od nivoa fundiranosti od 100%, pri različitim stopama doprinosa i strukturama portfolija, (u procentima)

Nakon 10 godina											
	Učešće akcija										
Stopa doprinosa	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
5%	21,91	20,8	19,0	17,31	15,37	18,91	18,08	21,68	22,08	26,66	29,56
7,5%	21,72	19,02	16,92	15,32	16,85	18,09	20,66	23,32	24,99	23,72	26,74
10%	21,32	17,64	17,02	14,49	15,44	13,6	20,15	19,38	23,3	24,11	32,28
12,5%	20,58	18,5	15,34	15,42	14,73	15,25	20,38	20,31	25,16	26,82	29,37
15%	21,63	16,42	15,76	14,32	14,07	16,43	18,16	20,03	18,52	26,81	28,88
Nakon 20 godina											
	Učešće akcija										
Stopa doprinosa	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
5%	32,34	27,97	27,7	26,28	21,32	25,47	24,33	28,84	31,45	31,48	34,87
7,5%	30,62	24,99	27,43	23,47	21,42	22,26	29,02	31,66	30,52	33,19	28,09
10%	30,11	22,86	19,21	17,1	23,41	13,2	27,43	23,36	27,39	28,23	34,52
12,5%	29,94	26,29	19,6	21,83	21,71	14,89	20,11	22,48	26,38	23,4	29,76
15%	27,96	24,22	20,31	18,96	20,08	17,69	17,66	25,00	22,59	23,94	28,51

Izvor: Autori

Rezultati simulacije pokazuju da se prosečno odstupanje simuliranih nivoa fundiranosti od nivoa pune fundiranosti smanjuje sa povećanjem učešća akcija, ali do određenog nivoa. Na primer, nakon deset godina, odstupanje se smanjuje sve do nivoa učešća akcija od 60%. Sa daljim povećanjem učešća akcija u strukturi portfolija, prosečno odstupanje pokazuje tendenciju povećanja, to jest, smanjuje se verovatnoća nefundiranosti penzijskog plana, ali po cenu povećanja prosečnog odstupanja od nivoa pune fundiranosti. Ovakvo kretanje je karakteristično za sve nivoe stope doprinosa i za sve posmatrane vremenske periode. Prosečno odstupanje nepovoljnih simulacija u odnosu na nivo fundiranosti od 100% se povećava sa produženjem vremenskog perioda, ali je osnovni trend uočen za kraće vremenske periode isti. Povećanje učešća akcija u portfoliju utiče povoljno na smanjenje prosečnog odstupanja od nivoa pune fundiranosti, ali do određenog stepena. Nakon toga, dalje povećanje učešća akcija u portfoliju ne dovodi do smanjenja prosečnog odstupanja od nivoa pune fundiranosti. S druge strane, povećanje stope doprinosa ne predstavlja efikasan mehanizam za smanjenje prosečnog odstupanja od nivoa pune fundiranosti, s obzirom na to da povećanje stope doprinosa, pri fiksiranoj strukturi portfolija, ne dovodi do značajnijeg smanjenja prosečnog odstupanja. Efikasnost investicione politike u ovom smislu je značajno veća u odnosu na politiku doprinosa, što ukazuje na validnost postavljene istraživačke hipoteze.

Zaključak

Sponzori penzijskih planova su zainteresovani ne samo za verovatnoću da će penzijski plan dospeti u poziciju nedovoljne fundiranosti već i za veličinu potencijalne nefundiranosti. U skladu sa time, može se izvesti nekoliko konkretnih preporuka za donosioce odluka u penzijskom planu. Investiciona politika predstavlja mehanizam koji sponzori plana mogu da koriste u cilju postizanja dugoročne finansijske stabilnosti, to jest, smanjenja verovatnoće nefundiranosti penzijskog plana. U cilju smanjenja verovatnoće nefundiranosti, penzijski plan može da koristi i politiku povećanja doprinosa, dok kombinovana upotreba investicione politike i politike povećanja doprinosa daje još povoljnije rezultate.

Iz perspektive smanjenja prosečnog odstupanja nepovoljnih ishoda od nivoa pune fundiranosti, politika povećanja doprinosa ne predstavlja efikasno rešenje. Kada je reč o strukturi investicionog portfolija, nisu poželjna ni izuzetno konzervativna, ali ni izuzetno agresivna ulaganja. Najpovoljniji rezultati se ostvaruju formiranjem balansiranog portfolija, sa približno jednakom zastupljenošću akcija i državnih obveznica. Pretežna zastupljenost akcija u portfoliju doprinosi daljem smanjenju verovatnoće nefundiranosti, ali po cenu povećanja prosečnog odstupanja od nivoa pune fundiranosti. Drugim rečima, verovatnoća da će penzijski plan biti nefundiran se smanjuje, ali uz povećanje prisustva ekstremno nepovoljnih ishoda. Imajući u vidu orijentisanost penzijskih planova ka sigurnosti isplata penzija u dugom roku, ovakav način razmišljanja predstavlja neprihvatljivo rešenje za sponzore penzijskih planova.

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Efficiency of the Investment Policy and the Policy of Increasing Contributions in Maintaining the Long-Term Funding of Occupational Pension Plans

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Summary: Defined benefit occupational pension plans are facing long-term challenges in maintaining the funding level required by the pension system regulation. During a relatively short period of just two decades, private pension funds have seen two financial crises (the dot.com crisis at the beginning of the 21st century and the Global financial crisis in 2008), the period of low interest rates following the global financial crisis, and more recently, the negative effects of the corona virus epidemic as well. In such environment, the question is which mechanism is the most efficient one in achieving and maintaining the adequate level of funding for defined benefit occupational pension plans. The paper's aim is to examine the efficiency of investment policies and the policy of increasing contributions in maintaining the long-term funding of the pension fund, by using the VAR model and bootstrap resampling for simulating the observed variables. The empirical results show that the investment policy is the most efficient tool for achieving long-term funding, together with limitations in terms of the aggressiveness of the investment policy.

Keywords: occupational pension plans, investment policy, contribution rate policy, funding level, bootstrap resampling

JEL: G11, G17, J26, J32

Introduction

The functioning of pension plans is carried out in the following manner: contributions are paid into the pension fund, thus accumulated resources are invested into the financial market, and pensions are paid out from the assets in the pension fund. Therefore, the policy of increasing contributions and investment policy are two key mechanisms that enable pension plans to provide the long-term stability of retirement payments, in conditions of uncertainty. Cash inflows based on contributions and investment returns are uncertain as well, namely, their changes in the future cannot be forecasted with utmost certainty. Therefore, the uncertainty that the pension plan is facing must be adapted by developing a discrete model with a definite time horizon in which decisions are made.

Depending on the way of allocating the risk between the company and its employees, occupational pension plans can operate according to the defined benefits model and the defined contributions model. With defined benefit occupational pension plans, the companies, as pension plan sponsors, represent the contracting party that guarantees its employees the payment of pensions for the rest of their lives. The amount of retirement income depends on the length of a person's working career and their salary level. This way of reasoning poses two contradictory tasks to the creators of the investment policy in defined benefit pension plans: achieving the investment certainty and the rate of return which guarantees the future retirement payments. The primary goal of the pension plan investment policy is achieving the long-term funding of the pension plan, namely, there should be a sufficient amount of money in the pension fund for paying the pensions at any moment. If the amount of assets in the pension fund is lower than the current value of projected retirement liabilities in the long run, the pension plan is insufficiently funded, and will not be able to meet the financial obligations without implementing significant corrective measures.

In that aspect, defined benefit pension plans are completely opposite to defined contribution pension plans where the company, as the pension plan sponsor, pays the contributions directly to the individual retirement account of an employee. Depending on the regulation, an individual has more or less freedom in deciding upon the amount of contributions and the way the accumulated assets are invested. The company, however, has no legal obligation of paying extra contributions or guaranteeing the retirement payment in case the assets in the retirement account are insufficient for paying the expected amount of retirement income, which represents the key difference when compared to defined benefit pension plans.

In the modern business environment, pension plans' investment strategies are becoming more risk oriented, given that pension plans are maturing, i.e., the insured population is gradually growing older, and the burden of financing the pension obligations is continuously increasing (Franzen, 2010, 26). The rise in life expectancy and median age of the population increases cash outflows from the fund, given that the number of retired persons is increasing, as well as the average time frame within which pensions are paid. Apart from

demographic risks, the inflation risk and regulatory risk can also significantly affect the funding position of pension plans. The unexpected increase in inflation poses a serious threat to pension plans that provide benefit indexation, given that it significantly complicates the process of determining pension obligations (Clark & Monk, 2006, 44). The risk of increasing the compliance costs of pension plan sponsors, due to regulatory changes, has become quite significant in the last two decades.

Since the beginning of the 21st century, defined benefit pension plans have been facing an increasing number of challenges in maintaining the appropriate funding level. After the dot.com crash in 2001, the global financial crisis occurred in 2008 which affected the pension plans' financial position in the long run, given that the funding levels have not improved significantly even ten years after the crisis (Willis Towers Watson, 2017, 2). After the Global financial crisis, the prolonged period of low interest rates ensued which, due to longer duration of pension liabilities compared to pension plan assets, conditioned the growth of the projected pension obligations and deterioration of the pension plans' funding level (Committee on the Global Financial System, 2018, 31). In the first quarter of 2020 the corona virus epidemic has additionally worsened the funding position of pension plans. According to Mercer (2020), the funding level of occupational pension plans whose sponsors are companies listed on the S&P 1500 index decreased by 3 percent in March 2020 to a worrying 76 percent. Even the pension plans in the Netherlands which traditionally have higher funding levels compared to other countries in Western Europe and North America, saw a drop in the funding level at the end of February 2020, compared to the previous month, due to the lowering of interest rates and unfavorable market changes in the stock market caused by the global epidemic (IPE Magazine, 2020).

Given the significant challenges in maintaining the adequate funding level that occupational pension plans have been facing in the past two decades, the question of which mechanism is the most efficient one in achieving this goal is gaining more popularity. The paper's aim is to examine the efficiency of investment policies and the policy of increasing contributions of the defined benefit occupational pension plan in maintaining the long-term funding. The analysis of the defined benefit pension plan model is carried out, based on the simulation of financial performances in the large number of iterations. In accordance with the research objective, the following research hypothesis has been defined:

Investment policy represents a more efficient mechanism for improving the funding position of the defined benefit occupational pension plan compared to the policy of increasing contributions.

Given the defined benefit model, it is necessary to conduct the modeling of pension liabilities and assets. The pension liabilities modeling requires the actuarial and financial assumptions. Actuarial assumptions refer to setting the values for actuarial variables. The number of actuarial variables introduced in the model depends on the complexity level of the pension plan model. Together with actuarial assumptions, financial assumptions are required for successful pension liabilities modeling. Without defining the discount rate

value, salary growth and the inflation rate, it would be impossible to calculate the present value of retirement benefits and other indicators of pension liabilities. Discount rate should primarily reflect the duration of pension liabilities, but also the long-term market changes and changes of inflation rate. Given that, in the defined benefit pension plans, the future realization of pension liabilities is certain, discount rate is most often equal to the government bond or high-quality corporate bond return rate (Bartram, 2018, 334). The duration of these bonds must be at least ten or more years, considering the fact that pension plans are long-term investors and the pension liabilities reveal the long-term (decades long) duration.

Salary projection is necessary in pension plans in which the retirement benefit formula uses the final salary or the average salary during the working career for benefit calculation. Actuaries in pension plans often use the salary scale for projecting the salary changes. Salary scale is the scheme of employees' salary increase in a company as time goes by, namely, with each additional year of working service in a company. The employees' position on the salary scale depends on the length of an employee's working career, their education level, position in the organizational hierarchy and the acquired working skills. Big companies most often have defined salary scales, which actuaries utilize during actuarial evaluation of pension plan.

When it comes to pension plan assets projection, the required variables are the contribution rate and the return rate of asset classes. In projecting the contribution rate, the starting point can be that this rate should be relatively stable, meaning that it should not be changed frequently in the future. In terms of determining the return rate, the first step is defining which asset classes comprise the investment portfolio. Therefore, at this stage, it is necessary to shape the portfolio. The next step is determining the rates of return for different asset classes. Given that there are sufficient data for benchmark returns in the past for different asset classes, the portfolio's rate of return can be determined relatively easy. The return rate, however, should reflect the market fluctuations within the defined time frame, which means that it must be projected. The last and crucial step is projecting the return rate during the observed period of time.

After defining the actuarial and financial parameters the modeling of pension liabilities and pension assets can be carried out. The most significant part of modeling is generating economic scenarios. The reason lies in the fact that the future realization of all variables important in the pension plans is uncertain, namely, there is no variable whose future realization can be said to be certain. An economic scenario represents the possible evolution of future changes of economic variables. There are various ways to generate economic scenarios. In some studies, the generation of economic scenarios is performed by applying stochastic programming (Kouwenberg, 2001; Kouwenberg & Zenios, 2006). The approach of dynamic programming is applied in Rudolph & Ziemba (2004), with the aim of optimizing investment strategies of the pension plans and life insurance companies, in the sense of maximizing the expected utility of the surplus of assets during the life cycle. Stochastic simulation, as a combination of simulation and optimization methods, is applied in Boender (1997) with the aim of optimizing the simulation model and finding

the portfolio which meets the optimization criteria, namely, minimizing the risk of inadequate funding.

Generating a large number of economic scenarios is done through simulation implementing. The purpose of using simulation techniques is analyzing the financial position of the pension plan in possible realistic economic scenarios in successive time periods. The starting point in generating the scenarios is the current state of affairs, namely, the vector of parameter values set in the present moment. The value of assets and pension liabilities can be calculated for each economic scenario, which means that for a defined number of scenarios the same number of simulated funding levels will be obtained.

Data Selection and Applied Methodology

Pension liabilities are the essential element of the financial structure of defined benefit pension plans. The most important indicator of the pension plan's financial position is the funding level, as the ratio of assets managed by the pension plan, and the pension liabilities which are paid from the pension fund. For further analysis, it can be pointed out that the basic aim of functioning of defined benefit pension plans is maintaining the adequate funding in the long run. It means the pension plan would be able to meet the pension liabilities in every point of time in future. Accordingly, investment policy and the contribution rate policy are mechanisms used by the pension plan to ensure the adequate funding position in the long run.

The first step in the analysis is to create the pension plan model with the assumed demographic profiles of its members. This hypothetical pension plan has three members of different ages. The first member is aged 30; the second member is a middle-aged 45-year-old, whereas the third one is 60 years old and about to retire. All the individuals, by being employed in a company that sponsors the pension plan, have automatically become pension plan members. The assumption is that all members started working in the company at the age of 25, and that they will retire at the age of 65. This means that a person aged 30 has 5 years of service in the company, a person aged 45 has 20 years of service, and a person aged 60 has 35 years of service.

For the formulation of the investment policy and the contribution rate policy it is necessary to project the amount of pension liabilities. Actuarial method used for determining the pension liabilities is a method of projected unit credit. Retirement benefit is calculated as the percentage amount of the final salary for each additional year of service. The accrual rate is 1.75% for each additional year of service, which means that the individual with 40 years of service achieves the replacement rate of 70%. Given that the final salary at retirement is unknown, it must be projected, which is achieved by applying the method of projected unit credit. The projection is done by using the salary scale, namely, the salary increases in each year of the employee's working career, under the assumption that the salary increases are equal to the inflation rate.

For projecting the pension liabilities, it is necessary to calculate the actuarial liability by using the projected unit credit method. According to this model, actuarial liability is calculated by using the following formula:

$$AL_x = (k\%) * \prod_{i=x}^{r-1} (1+s_i) * S_x * (x-e) * v^{r-x} * a_r$$

where k% denotes the accrual rate per an additional year of service, S_x denotes the salary of an individual at the x attained age, presently, x-e denotes the length of period of time since the employee joined the pension plan until the present moment, v is the discount factor, r-x is the length of period of time from the present moment until the retirement, a_r is the present value of the whole-life annuity, and

$$\prod_{i=x}^{r-1} (1+s_i)$$

is the salary scale for the period of time from the present moment until the year prior to retirement. The initial salary of each member is 30 thousand monetary units (annually) in the moment of joining the pension plan. It means that the salary must be determined firstly in the present moment S_x, based on the initial salary S_o, by using the salary scale:

$$S_x = S_0 * \prod_{i=e}^{x-1} (1+s_i)$$

By projecting the final salary in the year before retirement, the conditions for determining the retirement benefit are met, as well as the actuarial liability. Given that the retirement benefit is calculated as the annual amount and is being paid until the retiree's death, it is multiplied by the present value of whole-life annuity. For further analysis, the annuity value for the 5% interest rate and the 15 years period within which the pension will be paid on average is chosen.

When it comes to projecting assets, the two main inflows into the pension fund are contributions and investment returns. The contributions are being paid in the defined time intervals as percentage amounts of members' salaries. Projections of the return rate are necessary for portfolio optimization. In projecting the return rate, historical data can be used, if the assumption that they reflect future changes accurately is accepted. If the opposite assumption is accepted, the rates of return data must be projected, namely, simulated by using one of the simulation techniques.

At the initial moment, the actuarial liability is determined for each member, and the sum of individual liabilities gives the total actuarial liability. The pension assets are set on the level equal to the actuarial liability. Hence, the initial funding level equals 100%. The contribution rate is determined so that the total normal cost of a pension plan is equal to the contributions paid at the initial moment. The discounting of pension liabilities is done by applying the 5% discount rate, which is commonly used in pension plans (Chandler, 2017, 9). Discounting gives the present value of future pension liabilities.

The time horizon used for simulating uncertain outcomes is 20 years. It is assumed that pension plan members do not leave the pension plan in any way other than retiring. Insured persons retire at the age of 65. This means that the insured person aged 60 will pay the contributions for 5 years, and after

that will draw the retirement benefits in the following 15 years. The rest of the insured persons will pay the contributions until the end of the time frame.

The variables being simulated are the inflation rate, return rate of stocks and return rate of bonds. Modeling of the observed variables will be done by applying the VAR (vector-autoregression) method. The VAR model is suitable for analyzing the dependency of a variable from its own past values and the past values of other variables included in the model. By defining the VAR model, with the evaluation of how well the model adapts to the real values, it is possible to conduct forecasting of the observed variables. Modeling by applying vector-autoregression is often used in analyzing the financial and economic data time series. One of the basic advantages of the VAR method is its flexibility, given that a large number of endogenous variables can be included in the model. On the other hand, with the increasing number of endogenous variables, the number of regression equations increases too, as well as the model's complexity. Model with n variables and p lags can be represented in the following way (Zivot & Wang, 2006, 386):

$$Y_t = c + \Pi_1 Y_{t-1} + \Pi_2 Y_{t-2} + \ldots + \Pi_p Y_{t-p} + \varepsilon_t$$

for $t = 1, \ldots, T$, where $Y_t = (y_{1t}, y_{2t}, \ldots, y_{nt})$ $n*1$ is variable vector, Π_i are $n*n$ coefficient matrices, and ε_t is $n*1$ white noise vector process with arithmetic mean equal to zero and time invariant covariance matrices.

In further analysis, the VAR model with three variables (inflation rate, government bond return rate and stock return rate) is formed. It can be stated with certainty that all variables influence one another. It cannot be stated, however, what is the character of correlation between the observed variables, that is, the direction of causal relation (if there is one). In accordance with that, the unrestrictive VAR model is used in the analysis, which means that all variables are treated as endogenous.

In the VAR model, endogenous variables can be affected by previous variable values of chosen lags, but also by the previous values of other endogenous variables in the model. Hence, each variable can be evaluated by a separate equation, which means that the number of equations is equal to the number of variables. When each k lag is observed for each of the n variables, it is necessary to estimate the $n+kn^2$ coefficients in n equations (Brooks, 2002, 333).

Based on the estimated coefficients, it is possible to determine the estimated values of variables, as well as residuals, which represent the difference between the estimated value and the actual value of the variable whose sum equals zero. With residuals obtained from the VAR model the simulation is performed. The approach used for simulating the variables is bootstrap method of resampling. By applying this method, the unknown population can be successfully approximated by drawing samples from the sample of the set size (Kennedy, 2003, 76). Bootstrap resampling means random drawing of samples that are of the same size as the original sample, with returning the data in the sample after drawing and having them at disposal for the next samples drawing. The basic advantage of applying this method lies in the fact that it enables generating data without introducing the assumptions about the distribution of the underlying data. On the other hand, a drawback lies in the

fact that parameters of a sample can be statistically insufficiently significant in estimating the true distribution, so the bootstrap method can generate samples whose parameters differ from those of original data (Pažicky, 2017, 159).

The sample of residuals will be *bootstrap* resampled with the sample size equal to the length of a time period in which projecting is made, which is 20 years in this case. *Bootstrap* resampling is carried out one thousand times, and within each iteration the values of resampled residuals are attributed to the estimated values of variables, thus forming simulated values of variables for a period of 20 years. With each new resampling (simulation), simulated values of inflation rate, return rate of stocks, and return rate of government bonds are collected. Given that the salary growth rate equals the inflation rate, inflation rate affects the level of actuarial liability. The return rate of stocks and the return rate of bonds affect the pension plan assets. Since the ratio of assets and actuarial liability represents the funding level, it means that each simulation generates a different funding level, namely, in one thousand simulations one thousand simulated funding levels will be obtained.

Investment policy and contribution rate policy are defined as mechanisms that pension plan has at its disposal for improving the funding position. The basic model stems from the fact that the investment portfolio is invested 50% in stocks and the remaining 50% in government bonds. As the input for the stock return simulation S&P 500 index data will be used, for the period from 1971 to 2017, whereas the Treasury bonds with 10 years maturity in the same time period will be used for the simulation of government bond returns. Data about annual returns of S&P 500 index and long-term Treasury bonds are gathered by using the electronic database of the returns of stocks, bonds, and treasury notes in the United States, periodically updated by A. Damodaran (Damodaran, 2020). As for the contribution rate, it is to be adjusted with the aim of achieving a more adequate funding position. Sponsor of the pension plan has a discretionary right to increase the contribution rate in case the pension plan faces the grave issue of insufficient funding.

Research Findings

Defining the VAR model means testing (non) stationarity of variables in the first step. Testing (non) stationarity is based on applying the unit root test, where the existence of unit root shows non-stationarity of a time series. Thus, the results of ADF and PP unit root tests are given in Table 1.

Table 1: The Results of ADF and PP Unit Root Tests (Variables in Level)

H_0:I(1), H_1: I(0)	Components	ADF statistics	PP statistics
Government bonds	Trend and constant	-7.824881***	-7.813525***
Inflation	Trend and constant	-4.325437***	-4.483565 ***
S&P 500	Trend and constant	-6.583471***	-6.583976***
ADF – Augmented Dickey-Fuller test PP – Phillips-Perron Unit Root test			

**** denotes statistical significance at the level of 1 % (Source: Authors)*

The null hypothesis of the ADF test is that a time series has unit root, namely, it is non-stationary. For high absolute value of test statistics (given that the statistics is preceded by a negative sign) an alternative hypothesis can be accepted that a time series has no unit root, i.e. it is stationary. If the time series is non-stationary, differentiation must be done, i.e. finding the first difference. For the first difference data time series commonly retrieves the stationary character and can be used further in the VAR model. Given that the ADF and PP tests' statistics are statistically significant at the level of 1% it can be said that all variables can be used in the VAR model, without the need of differentiation.

With the aim of determining the presence of serial correlation in the VAR model, the Breusch-Godfrey LM serial correlation test is applied, which tests the serial correlation errors in the regression model. The application of this test means using the residuals from VAR model. Given that the null hypothesis of this test is that there is no serial correlation of any lag order up to the chosen level, the occurrence of *p* value which is lower that the chosen level of significance, means rejecting the null hypothesis and accepting an alternative one that serial correlation is present in the model. Table 2 gives the values of LM test statistics which show that serial correlation problem is not high in the VAR model, namely, all *p* values are higher than the significance level of 5% (0.05).

Table 2: The Results of the LM Serial Correlation Test

Lag	LRE statistics	df	p value	Rao F- statistics	df	p value
1	3.766581	9	0.9261	0.404216	(9,46.4)	0.9265
2	9.797198	9	0.3672	1.118433	(9,46.4)	0.3691
3	16.69316	9	0.0537	2.048268	(9,46.4)	0.0547
4 9.478434 9 0.3943				1.078481	(9,46.4)	0.3963
5	10.12946	9	0.3401	1.160349	(9,46.4)	0.3421
6	15.31719	9	0.0826	1.852333	(9,46.4)	0.0838
7	11.01011	9	0.2750	1.272806	(9,46.4)	0.2770
8	4.88993	9	0.8438	0.530805	(9,46.4)	0.8446
9	7.986835	9	0.5355	0.894890	(9,46.4)	0.5373
10	4.980341	9	0.8360	0.541110	(9,46.4)	0.8368

Source: Authors

The choice of lags in the VAR model is the next important step in forming a VAR model, given that an excessive number of lags diminishes the strength of the model due to the estimation of an excessive number or parameters, whereas a meager number of lags brings about serial correlation (Ozcicek & McMillan, 1999, 518). Table 3 presents the criteria for choosing the lag length which is to be used in the VAR model. As it can be seen, according to most tests, an optimal number of lags is four, and with that lag length a model with three endogenous variables and lag length k = 4 is formed.

Table 3: Criteria for Choosing Lag Length

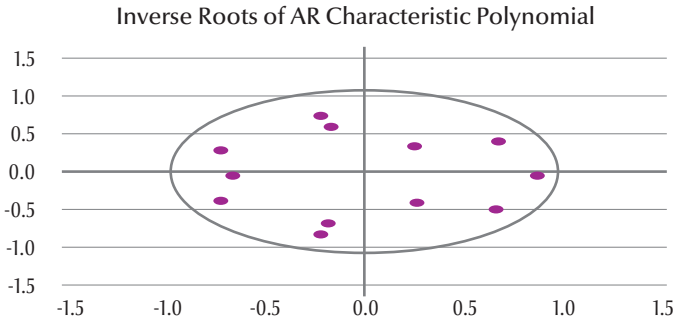
Lag	LogL	LR	FPE	AIC	SC	HQ
0	147.8055	NA	1.72e-07	-7.063682	-6.938298*	-7.018024
1	154.2330	11.60087	1.95e-07	-6.938194	-6.436661	-6.755564
2	168.4551	23.58797	1.52e-07	-7.192934	-6.315250	-6.873330
3	178.4014	15.04070	1.49e-07	-7.239093	-5.985260	-6.782516
4	195.5965	23.48603*	1.03e-07*	-7.638855*	-6.008872	-7.045305*
5	201.5193	7.222891	1.28e-07	-7.488747	-5.482613	-6.758223
6	209.8532	8.943704	1.46e-07	-7.456254	-5.073971	-6.588758

* Denotes the lag chosen in accordance with the criteria
LR: sequential modified LR test
FPE: Final Prediction Error
AIC: Akaike information criterion
SC: Schwartz information criterion
HQ: Hannan – Quinn information criterion

Source: Authors

The stability of the VAR model can be determined by conducting a stability test, which means determining the inverse roots of the AR (autoregressive) characteristic polynomial. If all inverse roots are less than one, it can be said that the VAR model is stable. Stability test results are shown in Figure 1, where it can be seen that all inverse roots are less than one, which implies the stability (stationarity) of the VAR (4) model.

Figure 1: Stability Test Results



Source: Authors

The chosen VAR model with three endogenous variables and lag length of k=4 enables the formation of regressive equations with estimated coefficient values. By applying these equations, estimated values of the inflation rate, government bond rate of return and stock rate of return can be calculated. The simulation of annual return rates of stocks and government bonds, as well as annual inflation rate is conducted, so the residuals, as differences between the values estimated by the VAR (4) model and the actual values, are being randomly chosen via bootstrap method and attributed to the estimated values in each iteration. This procedure is conducted in each of a thousand

simulations, which means that one thousand samples of the same size are drawn from the initial sample. Sample size is determined by the length of the time period for which the modeling of the pension plan is performed. In this case, it is a 20-year time frame, which means that the sample includes twenty randomly chosen annual observations for each of the observed variables.

At the starting point, pension liability is fully covered with pension assets, and salaries are being increased in accordance with inflation rate changes. Table 4 shows the simulation results for the probability of underfunding of the pension plan with various contribution rates ranging from 4% to 15% in different moments of time in the future (after the expiration of a 5-, 10-, 15-, and 20-year period, respectively). A portfolio that is equally invested in stocks and government bonds and the pension indexation rate that is equal to the average inflation rate for the period of five years before retirement is used in the simulation.

Table 4: Simulation Results for the Probability of Underfunding for Percentual Changes of the Contribution Rate Ranging from 4% do 15% (in percentages)

Probability of pension plan underfunding				
Contribution rate	After 5 years	After 10 years	After 15 years	After 20 years
4%	65	44.6	28.6	26.8
5%	62.6	45.6	26.2	21.4
9%	54.4	38.2	18.6	11.8
10%	54.6	34.2	19.6	11.4
14%	44.8	28.2	12.8	5.4
15%	43.6	25.2	8.8	2.8

Source: Authors

As it can be seen in Table 4, for all future realizations a conclusion can be drawn that, as the contribution rate increases, the probability of underfunding decreases. For example, the probability that a pension fund will be underfunded after 5 years with a 4% contribution rate is high and amounts to 65%, while, with the 15% contribution rate, that probability approximately amounts to 43%. On the other hand, the probability that a pension fund will be underfunded after 20 years, with a 4% contribution rate, amounts to approximately 27%, whereas with a 15% contribution rate, this probability approximately amounts to 3%.

Table 5 gives the results of the simulation of the probability of underfunding with different portfolio structures. A 10% contribution rate has been used for the simulation, together with pension indexation which matches the average inflation rate for the 5-year period prior to retirement.

Table 5: Simulation Results of the Probability of Underfunding, with Different Portfolio Structures (in percentages)

Portfolio exposure to stocks	Probability of pension plan underfunding			
	After 5 years	After 10 years	After 15 years	After 20 years
0%	67.8	53.6	40.4	36.6
10%	58.6	40.4	23.2	18.8
20%	54	35.6	17.4	10.8
30%	45.6	27.2	10.6	5
40%	32.6	16	7.2	2.6
50%	28.6	16.6	5.8	1.8
60%	24.8	16.8	6.2	2
70%	24	16.2	5.6	2.4
80%	17.8	15.6	7.2	3.6
90%	26.8	18.4	8.4	3
100%	23.2	18.6	7.4	3.2

Source: Authors

By changing the portfolio structure, managers can significantly influence the probability of the pension plan being underfunded. By leading an extremely conservative investment policy, the probability that the pension plan will become underfunded after 10 years amounts to approximately 53%, and after 20 years to approximately 36%. On the other hand, if the stocks account for 50% of portfolio, the probability of underfunding decreases drastically and after 10 years amounts to approximately 16%, and after 20 years to approximately 2%. It is interesting that a further increase of stock percentage in a portfolio does not contribute to a significant decrease of the probability of underfunding. With a stock exposure increase from 80% to 90%, the probability of underfunding does not decrease, but rather increases. Based on what was previously stated, from the perspective of the pension plans' financial stability, a conclusion can be drawn that a more desirable solution is a balanced portfolio with an approximately equal share of stocks and government bonds, rather than an extremely aggressive investment policy.

Pension plan sponsors are interested not only in the probability of pension plans being underfunded, but also in the underfunding gap quantification. Table 6 shows the results of a simulation of the average deviation from the 100% funding level, with different contribution rates and portfolio structures, for all simulations in which the simulated level of funding is less than 100%.

Table 6: Results of the Simulation of the Average Deviation from the full Funding Level, with Different Contribution Rates and Portfolio Structures (in percentages)

After 10 years											
	Stock exposure										
Contribution rate	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
5%	21.91	20.8	19.0	17.31	15.37	18.91	18.08	21.68	22.08	26.66	29.56
7.5%	21.72	19.02	16.92	15.32	16.85	18.09	20.66	23.32	24.99	23.72	26.74
10%	21.32	17.64	17.02	14.49	15.44	13.6	20.15	19.38	23.3	24.11	32.28
12.5%	20.58	18.5	15.34	15.42	14.73	15.25	20.38	20.31	25.16	26.82	29.37
15%	21.63	16.42	15.76	14.32	14.07	16.43	18.16	20.03	18.52	26.81	28.88
After 20 years											
	Stock exposure										
Contribution rate	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
5%	32.34	27.97	27.7	26.28	21.32	25.47	24.33	28.84	31.45	31.48	34.87
7.5%	30.62	24.99	27.43	23.47	21.42	22.26	29.02	31.66	30.52	33.19	28.09
10%	30.11	22.86	19.21	17.1	23.41	13.2	27.43	23.36	27.39	28.23	34.52
12.5%	29.94	26.29	19.6	21.83	21.71	14.89	20.11	22.48	26.38	23.4	29.76
15%	27.96	24.22	20.31	18.96	20.08	17.69	17.66	25.00	22.59	23.94	28.51

Source: Authors

Simulation results show that the average deviation of the simulated funding levels from the full funding is decreasing as the stock amount increases, only to a certain level, however. For example, after ten years, deviation is decreasing all the way to the point of 60% stock exposure. With the further increase of stock portion in the portfolio structure, average deviation shows tendency of increase, namely, the pension plan underfunding probability is decreasing, but at the expense of increasing the average deviation from the level of full funding. Movement like this is typical for all contribution rates and for all observed time periods. Average deviation of undesirable simulations from full funding is increasing if the time period is extended, but the basic trend noted during shorter time periods is the same. Increasing the stock exposure favorably affects the reduction of average deviation from the full funding, but to an extent. Afterwards, further increase of the stock portion in portfolio does not lead to a decrease of average deviation from the full funding. On the other hand, increase of the contribution rate is not an effective mechanism for reducing the average deviation from the full funding level, given that the increase of contribution rate, with a fixed portfolio structure, does not lead to a more significant decrease of the average deviation. The efficiency of the investment policy in this sense is significantly higher when compared to the contribution rate policy, which implies the validity of the set research hypothesis.

Conclusion

Pension plan sponsors are interested not only in the probability that the pension fund will reach the position of insufficient funding, but also in the scale of the potential underfunding gap. Accordingly, several concrete recommendations for decision makers in pension plans can be made. Investment policy represents a mechanism which can be used by plan sponsors with the aim of achieving long-term financial stability, namely, reducing the probability of the pension plan becoming underfunded. In terms of reducing the probability of underfunding, the pension plan sponsors can use the policy of increasing contributions as well, whereas the combined usage of investment policy and the policy of increasing contributions gives even more favorable results.

From the perspective of reducing the average deviation of unfavorable outcomes from the full funding level, policy of increasing contributions does not make an efficient solution. When it comes to the portfolio structure, neither extremely conservative nor extremely aggressive portfolio structures are desirable. The most favorable results are achieved by forming a balanced portfolio, with approximately equal shares of stocks and government bonds. Extremely high stock exposure contributes to the further decrease of the probability of underfunding, but at the expense of increasing the average deviation from the full funding level. In other words, the probability that the pension plan will be underfunded is decreasing, but with the increasing presence of extremely unfavorable outcomes. Having in mind that pension plans are oriented towards safe long-term pension payouts, this way of reasoning is an unacceptable solution for pension plan sponsors.

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Gubitak pre oporezivanja i porez na dobitak: primer banaka iz Srbije

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Rezime: Uobičajeno se smatra da banke sa dobitkom pre oporezivanja plaćaju porez na dobitak, a banke sa gubitkom pre oporezivanja ne. Ipak, usled nezavisnog obračuna rezultata pre oporezivanja u bilansu uspeha i oporezivog dobitka u poreskom bilansu, moguće je da banka sa gubitkom pre oporezivanja zabeleži rashod za porez na dobitak. U radu je ispitano zašto i u kojoj meri banke sa gubitkom pre oporezivanja imaju opterećenje porezom na dobitak. Empirijsko istraživanje je obuhvatilo ceo bankarski sistem Srbije u periodu od 2013. do 2018. godine. S tim u vezi, formiran je uzorak od 175 opservacija. Rezultati istraživanja pokazuju da uključivanje opservacija sa gubitkom pre oporezivanja značajno utiče na procenu opterećenja porezom na dobitak bankarskog sektora u Srbiji. Takođe, porez na kapitalne dobitke jeste najčešći izvor opterećenja porezom na dobitak u opservacijama sa gubitkom pre oporezivanja. S druge strane, usklađivanje rashoda i prihoda u poreskom bilansu ima manji uticaj na opterećenje porezom na dobitak u opservacijama sa gubitkom pre oporezivanja.

Ključne reči: profitabilnost, rezultat pre oporezivanja, opservacije sa gubitkom, porez na dobitak, banke

JEL: G21, H25

Uvod

U uslovima izražene konkurencije, minimiziranje rashoda predstavlja glavni (nekad čak i jedini) način povećanja efikasnosti banaka (Barbuski, 2013). Jedna od važnih kategorija rashoda kojom banke mogu efikasno upravljati jeste rashod za porez na dobitak.

Bankarski sektor Srbije je tokom dve decenije XXI veka prošao kroz turbulentan period. Početkom XXI veka, bankarski sektor Srbije je prošao kroz proces vlasničke transformacije i ulaska stranog kapitala (Dimić & Barjaktarović, 2017). Dodatno, na performanse bankarskog sektora tranzicionih država negativno je uticala globalna ekonomska kriza (Dreca, 2012).

Porez na dobitak banaka je postao posebno važno pitanje sa ulaskom stranog kapitala u bankarski sektor Srbije. S tim u vezi, Claessens i saradnici (2001) smatraju da u zemljama u razvoju banke u stranom vlasništvu ostvaruju višu profitabilnost i, posledično, plaćaju više poreza na dobitak u odnosu na banke u domaćem vlasništvu.

Opterećenje porezom na dobitak najčešće se meri efektivnim poreskim stopama, koje u imeniocu obično sadrže dobitak pre oporezivanja. To znači da su opservacije sa gubitkom pre oporezivanja uobičajeno eliminisane iz poreskih istraživanja. S druge strane, usled usklađivanja rashoda i prihoda sa poreskim propisima i plaćanja poreza na kapitalne dobitke, moguće je da opservacije sa gubitkom pre oporezivanja imaju opterećenje porezom na dobitak. Stoga je važno ispitati kakav je uticaj uključivanja opservacija sa gubitkom pre oporezivanja na sprovođenje poreskih istraživanja.

Predmet rada jeste oporezivanje dobitka banaka u Srbiji. Performanse bankarskog sektora poslednjih godina imaju rastući trend, mada i dalje postoji značajan prostor za njihov napredak – primarno usled činjenice da banke imaju visok nivo rezervi likvidnosti koje ne plasiraju u alternative sa visokim prinosom (Todorović i saradnici, 2018).

Shodno definisanom predmetu rada, identifikovana su dva osnovna cilja rada. Prvi cilj rada jeste ispitivanje uticaja opservacija sa gubitkom pre oporezivanja na procenu opterećenja porezom na dobitak bankarskog sektora u Srbiji. Drugi cilj rada jeste utvrđivanje izvora opterećenja porezom na dobitak u opservacijama sa gubitkom pre oporezivanja.

U skladu sa predmetom i ciljevima, u radu su empirijski testirane sledeće istraživačke hipoteze:

H_1: Uključivanje opservacija sa gubitkom pre oporezivanja značajno utiče na procenu opterećenja porezom na dobitak banaka u Srbiji.
H_2: Porez na kapitalne dobitke predstavlja najčešći izvor opterećenja porezom na dobitak banaka u Srbiji u opservacijama sa gubitkom pre oporezivanja.

Nalazi u ovom radu doprinose rezultatima istraživanja u dve relativno slabo istražene oblasti. Oporezivanje dobitka banaka u Srbiji, kao i značaj opservacija sa gubitkom pre oporezivanja na globalnom nivou, predstavljaju dve oblasti u kojima su dodatna istraživanja neophodna. Rezultati istraživanja mogu biti korisni brojnim interesnim grupama. Primarno, rezultati mogu

koristiti Narodnoj banci Srbije (kao kontroloru bankarskog sistema) i Poreskoj upravi Srbije (kao nacionalnoj poreskoj vlasti) prilikom procene opterećenja bankarskog sektora Srbije porezom na dobitak. Takođe, rezultati mogu biti korisni menadžmentu banaka prilikom projektovanja profitabilnosti i opterećenja banke porezom na dobitak.

Gubitak pre oporezivanja i merenje opterećenja porezom na dobitak

S obzirom na to da porez na dobitak podrazumeva trajni odliv monetarnih resursa banke u korist države, opterećenje porezom na dobitak je više decenija predmet istraživanja. S tim u vezi, razvijena su brojna merila opterećenja porezom na dobitak, pri čemu je efektivna poreska stopa najčešće korišćeno merilo (Wu i saradnici, 2012). Efektivna poreska stopa se obično dobija iz odnosa opterećenja porezom na dobitak i nekog računovodstvenog rezultata.

Usled poverljivosti podataka iz poreskog bilansa, primarno o visini oporezivog dobitka, u imeniocu efektivne poreske stope se najčešće koristi rezultat pre oporezivanja iz bilansa uspeha. Smatra se da je rezultat pre oporezivanja najpribližnija aproksimacija oporezivog dobitka iz poreskog bilansa. Dodatno, Eberhartinger i Klostermann (2007) nalaze da se opterećenje porezom na dobitak ne bi značajno razlikovalo ukoliko bi se dobitak pre oporezivanja koristio umesto oporezivog dobitka kao poreska osnovica.

Ukoliko je banka u posmatranoj godini ostvarila gubitak pre oporezivanja, efektivna poreska stopa postaje negativna i nema jasno ekonomsko značenje. Stoga se u brojnim istraživanjima (na primer, Richardson & Lanis, 2007; Stamatopulos i saradnici, 2019; Todorović i saradnici, 2019) opservacije ili kompanije sa gubitkom pre oporezivanja eliminišu, pa istraživački uzorak čine jedino opservacije sa dobitkom pre oporezivanja.

Još u XX veku, na važnost opservacija sa gubitkom pre oporezivanja je ukazao Siegfried (1974), ističući da se poseban problem može javiti prilikom analize panela podataka. Primera radi, banka je ostvarila gubitak pre oporezivanja i, posledično, opservacija sa gubitkom pre oporezivanja će biti eliminisana. S druge strane, ukoliko u narednoj godini banka ostvari dobitak, onda će opservacija sa dobitkom pre oporezivanja biti obuhvaćena analizom, a njeno opterećenje porezom na dobitak će biti nisko usled korišćenja poreskih gubitaka iz prethodne godine. Ovakva analiza dovodi do potcenjivanja efektivnih poreskih stopa.

Eliminisanje opservacija sa gubitkom pre oporezivanja je posebno problematično kada opservacija, uprkos gubitku pre oporezivanja, ima opterećenje porezom na dobitak. To je posebno moguće u državama u kojima su utvrđivanje rezultata pre oporezivanja i oporezivog dobitka nezavisne aktivnosti, respektujući različite ciljeve finansijskog i poreskog izveštavanja (Huang & Wang, 2013). Tako je moguće da banka ostvari gubitak pre oporezivanja, ali oporezivi dobitak i opterećenje porezom na dobitak po tom osnovu.

U prošlosti su zabeleženi pokušaji da se opservacije sa gubitkom pre oporezivanja uključe pri izračunavanju efektivnih poreskih stopa. S tim u vezi, Gupta

i Newberry (1997) ograničavaju visinu efektivnih poreskih stopa na minimum od 0% i maksimum od 100%. Zatim, opservacije sa gubitkom pre oporezivanja bez opterećenja porezom na dobitak imaju efektivnu poresku stopu od 0%, dok opservacije sa gubitkom pre oporezivanja i opterećenjem porezom na dobitak imaju efektivnu poresku stopu od 100%.

S obzirom na to da metod koji su primenili Gupta i Newberry (1997) dovodi do suviše veštačke analize, neki autori su razvili drugačije metode obuhvatanja opservacija sa gubitkom pre oporezivanja. Merilo opterećenja porezom na dobitak može predstavljati odnos rashoda (ili odliva) za porez i ukupne imovine (Jansky & Prats, 2015). Ovo merilo obuhvata opservacije sa gubitkom pre oporezivanja bez metodoloških problema. Međutim, ovo merilo ne uzima u obzir profitabilnost banke.

Henry i Sansing (2018) obuhvataju opservacije sa gubitkom pre oporezivanja tako što opterećenje porezom na dobitak mere oduzimajući proizvod propisane stope poreza na dobitak i rezultata pre oporezivanja od odliva za porez na dobitak. Kako bi ovo merilo bilo uporedivo u prostoru, dobijeni iznos se deli sa tržišnom vrednosti ukupne imovine.

Ukoliko je ovo merilo veće od nule, onda je poresko opterećenje banke veće od propisanog opterećenja. Ukoliko je merilo jednako nuli, onda je poresko opterećenje jednako propisanom. Konačno, ukoliko je vrednost merila manja od nule, onda je poresko opterećenje banke manje od propisanog. Koristeći ovo merilo, Henry i Sansing (2018) pružaju značajno drugačije rezultate istraživanja u odnosu na tradicionalno korišćenje efektivnih poreskih stopa.

Uzevši u obzir poverljivost poreskih izveštaja i sistematske razlike u obelodanjivanjima o porezu na dobitak (Kvaal & Nobes, 2013), u praksi nije uvek lako doneti zaključak o izvorima opterećenja porezom na dobitak banke koja je ostvarila gubitak pre oporezivanja. Usled specifičnosti nacionalnih sistema poreza na dobitak, izvori ove okolnosti se mogu značajno razlikovati između različitih država.

Profitabilnost i porez na dobitak banaka u Srbiji

Bankarski sektor Srbije je u poslednje tri decenije prošao kroz niz turbulentnih okolnosti. Značajni pad profitabilnosti bankarskog sektora je zabeležen devedesetih godina XX veka, usled velike recesije, anomalija na finansijskom tržištu i odsustva adekvatne regulative (Mihailović i saradnici, 2009).

Radić (2018) primećuje da su, u proseku, banke u Srbiji ostvarile negativne stope prinosa na ukupnu imovinu (ROA) i sopstveni kapital (ROE) u periodu od 2008. do 2016. godine, primarno usled ekstremnih negativnih vrednosti pojedinih banaka (na primer, Srpska banka ili Telenor banka). Ipak, profitabilnost bankarskog sektora u Srbiji je od 2015. u konstantnom porastu (Vesić i saradnici, 2019).

Alihodžić (2017) nalazi značajne razlike u profitabilnosti između banaka u Srbiji, jer pojedine banke imaju, između ostalog, lošu politiku kreditiranja, visoku izloženost kreditnom riziku i visoke operativne troškove. Profitabilnost banaka se, takođe, razlikuje u zavisnosti od vrste vlasništva banke – domaće

ili strano, i u zavisnosti od načina ulaska inostrane bankarske grupe na srpsko bankarsko tržište – grinfild ili akvizicija (Erić i saradnici, 2019).

U zemljama bivše Socijalističke Federativne Republike Jugoslavije (SFRJ) su, generalno, utvrđivanje dobitka pre oporezivanja i oporezivog dobitka odvojene aktivnosti (Novak & Valentinčić, 2017). Za analiziranje razlika između dobitka pre oporezivanja i oporezivog dobitka u Srbiji neophodno je razumeti sadržinu poreskog bilansa u Srbiji. Skraćeni i uprošćeni poreski bilans je predstavljen u Tabeli 1.

U računovodstvenoj praksi se poreski bilans često deli na poslovni i kapitalni podbilans. Poslovni podbilans je kompleksniji deo poreskog bilansa i podrazumeva isključivanje dobitaka i gubitaka od prodaje imovine (utvrđenih prema Međunarodnim standardima finansijskog izveštavanja) iz rezultata pre oporezivanja, i usklađivanje rashoda i prihoda prema poreskim propisima. Ukoliko je usklađeni rezultat pozitivan (usklađeni dobitak), banka ga može umanjiti za poreske gubitke iz prethodnih godina.

Tabela 1: Uprošćeni poreski bilans

	I Poslovni podbilans
	Rezultat pre oporezivanja
	± dobici (gubici) od prodaje imovine
	± usklađivanje rashoda
	± usklađivanje prihoda
	Usklađeni rezultat
	- preneti poreski gubici
1	**Ostatak dobitka***
	II Kapitalni podbilans
	Tekući kapitalni dobici
	- tekući kapitalni gubici
	- preneti kapitalni gubici
2	**Ostatak kapitalnih dobitaka***
1+2	Oporezivi dobitak
* ako je pozicija negativna, unosi se 0.	

Usklađivanjem rezultata pre oporezivanja moguće je da banka sa gubitkom pre oporezivanja (prezentovanim u bilansu uspeha) pređe u zonu dobitka za svrhe poreskih obračuna. Ovo se primarno može desiti usled nepriznavanja određenih rashoda (kao što su troškovi reprezentacije) u poreske svrhe. Avi-Yonah i Lahav (2012) zaključuju da su značajne razlike između rezultata pre oporezivanja i oporezivog dobitka primarno moguće kada je profitabilnost poreskog obveznika blizu nule. S druge strane, na osnovu istraživanja Šodana (2012) se može primetiti da u zemljama bivše SFRJ razlike između rezultata pre oporezivanja i oporezivog dobitka često nisu velike, s obzirom na to da rezultat pre oporezivanja predstavlja polaznu tačku za utvrđivanje oporezivog dobitka.

Drugi deo poreskog bilansa u Srbiji predstavlja kapitalni podbilans. Oporezivanje kapitalnih dobitaka po osnovu prodaje imovine je nezavisno od ostva-

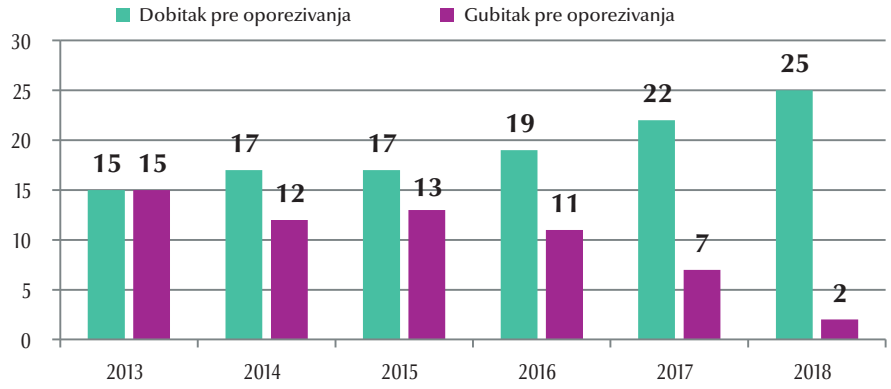
renog rezultata iz ostalih aktivnosti. Analogno poslovnom podbilansu, banka ima pravo da umanjuje poresku obavezu po osnovu kapitalnih gubitaka iz prethodnih godina. Todorović i saradnici (2019) smatraju da kapitalni dobici predstavljaju ključni izvor opterećenja porezom na dobitak u opservacijama sa gubitkom pre oporezivanja u bankarskom sektoru Srbije.

Zakonom o porezu na dobit pravnih lica (Službeni glasnik RS, br. 86/2019) propisano je da se porez na kapitalne dobitke plaća po osnovu prodaje nepokretnosti, prava intelektualne svojine, dugoročnih finansijskih plasmana i investicionih jedinica otkupljenih od otvorenih investicionih fondova. Dodatno, kapitalni dobitak se utvrđuje kao razlika prodajne cene i nabavne cene, pri čemu se nabavna cena umanjuje za iznos amortizacije u skladu sa poreskim propisima.

Dakle, oporezivi dobitak predstavlja zbir ostatka dobitka i ostatka kapitalnih dobitaka iz poslovnog i kapitalnog podbilansa, respektivno. Ukoliko je jedna od te dve komponente negativna, ona se ne uzima u obzir prilikom utvrđivanja oporezivog dobitka.

U bankarskom sektoru Srbije je u periodu od 2013. do 2018. godine moguće identifikovati 175 opservacija. Pri tome je 115 opservacija (65,71%) ostvarilo dobitak pre oporezivanja, dok je 60 opservacija (34,29%) ostvarilo gubitak pre oporezivanja. Raspodela opservacija prema rezultatu pre oporezivanja po godinama je prikazana na Grafiku 1.

Grafik 1: Raspodela opservacija prema rezultatu pre oporezivanja



Izvor: kalkulacija autora.

S obzirom na to da čine više od 30% uzorka, opservacije sa gubitkom pre oporezivanja ne smeju biti zanemarene. S druge strane, broj opservacija sa gubitkom pre oporezivanja se u posmatranom periodu generalno smanjuje, podržavajući tvrdnju o rastućem trendu profitabilnosti bankarskog sektora u Srbiji (Todorović i saradnici, 2018; Vesić i saradnici, 2019).

Metodologija istraživanja i podaci

Empirijsko istraživanje u ovom radu je sprovedeno sa ciljem objašnjenja opterećenja porezom na dobitak opservacija koje su ostvarile gubitak pre oporezivanja u bankarskom sektoru Srbije. S tim u vezi, u radu je poređena efektivna poreska stopa koja ne obuhvata opservacije sa gubitkom pre oporezivanja sa efektivnom poreskom stopom koja obuhvata opservacije sa gubitkom pre oporezivanja.

Efektivna poreska stopa koja ne obuhvata opservacije sa gubitkom pre oporezivanja je označena kao prosečna efektivna poreska stopa (engl. *average effective tax rate*, *av_ETR*). Dobijena je kao aritmetička sredina efektivnih poreskih stopa opservacija sa dobitkom pre oporezivanja u posmatranoj godini.

S obzirom na to da obuhvata ceo bankarski sektor nezavisno od profitabilnosti, efektivna poreska stopa koja obuhvata opservacije sa gubitkom pre oporezivanja je označena kao makro efektivna poreska stopa (engl. *macro effective tax rate*, *macro_ETR*). Dobijena je kao odnos zbira opterećenja porezom na dobitak i zbira rezultata pre oporezivanja svih opservacija u posmatranoj godini.

Matematički, način izračunavanja *av_ETR* i *macro_ETR* za godinu *t* se može predstaviti na sledeći način:

$$av\_ETR_t = \frac{\sum_{i=1}^{n} ETR_{i,t}}{n} = \frac{\sum_{i=1}^{n} \frac{CTE_{i,t}}{PTR_{i,t}}}{n} \quad \forall\ PTR_{i,t} > 0 \qquad (1)$$

$$macro\_ETR_t = \frac{\sum_{i=1}^{n} CTE_{i,t}}{\sum_{i=1}^{n} PTR_{i,t}} \qquad (2)$$

pri čemu *ETR* označava efektivnu poresku stopu (engl. *effective tax rate*), *CTE* tekući rashod za porez na dobitak (engl. *current tax expense*) kao aproksimaciju opterećenja porezom na dobitak, a *PTR* rezultat pre oporezivanja (engl. *pretax result*) *i*-te opservacije od ukupno *n* opservacija. Treba primetiti da će broj opservacija (*n*) biti manji kod obračuna *av_ETR* kada bar jedna opservacija u posmatranom uzorku ostvaruje gubitak pre oporezivanja.

U uslovima prisustva opservacija sa gubitkom pre oporezivanja, racionalno je pretpostaviti da će *macro_ETR* biti veće od *av_ETR*. U ovom radu je ispitano da li je razlika između *av_ETR* i *macro_ETR* statistički značajna. S tim u vezi, imajući u vidu veličinu uzorka (svega šest godina), u radu je korišćen neparametarski Mann-Whitney test za testiranje značajnosti razlika između dve nezavisne grupe.

Opterećenje porezom na dobitak je mereno tekućim rashodom za porez na dobitak iz bilansa uspeha banke. Ova veličina se može smatrati reprezentativnom aproksimacijom opterećenja porezom na dobitak, s obzirom na to da je utvrđena u poreskoj prijavi za porez na dobitak. Tekući rashod za porez na dobitak je u prošlosti često korišćen kao aproksimacija opterećenja porezom na dobitak banaka u Srbiji (Todorović i saradnici, 2019; Vržina, 2019). Tekući rashod za porez na dobitak u Srbiji ne može biti negativan, s obzirom na

to da nije predviđena mogućnost povraćaja poreza na dobitak plaćenog u prethodnim godinama po osnovu tekućih poreskih gubitaka (engl. *tax loss carryback*).

Istraživanjem su obuhvaćene sve poslovne banke u Srbiji, aktivne između 2013. i 2018. godine. Tokom posmatranog perioda, propisana stopa poreza na dobitak je iznosila 15% uz proporcionalni sistem oporezivanja. Tako je identifikovano 175 opservacija. Spisak uzorkovanih banaka po godinama je dat u Prilogu.

Podaci o tekućem rashodu za porez na dobitak i rezultatu pre oporezivanja su preuzeti iz pojedinačnih finansijskih izveštaja banaka. Uprkos njihovoj istorijskoj orijentaciji, finansijski izveštaji predstavljaju najobjektivniju osnovu za praćenje poslovanja banaka (Jakšić i saradnici, 2011). Izvori postojanja opterećenja porezom na dobitak kod opservacija sa gubitkom pre oporezivanja su pronađeni u napomenama uz pojedinačne finansijske izveštaje banaka. Svi podaci su preuzeti od Agencije za privredne registre Republike Srbije (www.apr.gov.rs) i zvaničnih Internet prezentacija banaka. S obzirom na to da finansijske izveštaje najvećeg dela banaka u Srbiji revidiraju velike revizorske kompanije (tzv. velika četvorka revizorskih kompanija) i da najveći deo banaka dobija nekvalifikovano mišljenje revizora (Stanišić i saradnici, 2013), preuzeti podaci se mogu smatrati pouzdanim.

Rezultati istraživanja

Prezentacija rezultata istraživanja započinje rezultatima deskriptivne statistike za efektivnu poresku stopu banaka, dobijenu kao odnos tekućeg rashoda za porez na dobitak i dobitka pre oporezivanja. Deskriptivna statistika je prikazana u Tabeli 2.

Tabela 2: Deskriptivna statistika efektivne poreske stope

Broj opservacija	115
Aritmetička sredina	5,8619%
Minimum	0,0000%
25. percentil	0,0000%
Medijana	0,2837%
75. percentil	8,8558%
Maksimum	112,0843%
Standardna devijacija	13,3175%

Izvor: kalkulacija autora.

Efektivne poreske stope banaka su, u proseku, značajno niže od propisane stope poreza na dobitak. S tim u vezi, aritmetička sredina je značajno veća od medijane efektivne poreske stope, što ukazuje na neuobičajeno visoke ekstremne vrednosti efektivnih poreskih stopa. Ovi rezultati su u skladu sa rezultatima prethodnih istraživanja o opterećenju porezom na dobitak banaka u Srbiji (Todorović i saradnici, 2019; Vržina, 2019). Prethodna istraživanja, takođe, smatraju da su relativno niske efektivne poreske stope banaka

u Srbiji posledica prihoda od kamata na državne hartije od vrednosti koji se izuzimaju iz oporezivog dobitka, i prenetih poreskih gubitaka iz prethodnih godina.

U narednom delu istraživanja je prikazana matrica poreza na dobitak, koja prikazuje raspodelu opservacija prema rezultatu pre oporezivanja i postojanju opterećenja porezom na dobitak. Matrica poreza na dobitak je prikazana u Tabeli 3. Osenčene su opservacije sa gubitkom pre oporezivanja i opterećenjem porezom na dobitak, s obzirom na to da one predstavljaju ključnu grupu opservacija u ovom radu.

Tabela 3: Matrica poreza na dobitak

		Rezultat pre oporezivanja	
		> 0 (dobitak)	< 0 (gubitak)
Tekući rashod za porez na dobitak	> 0	2013: 8 opservacija	2013: 5 opservacija
		2014: 13 opservacija	2014: 2 opservacije
		2015: 12 opservacija	2015: 1 opservacija
		2016: 12 opservacija	2016: 4 opservacije
		2017: 12 opservacija	2017: 2 opservacije
		2018: 15 opservacija	2018: 0 opservacija
		Σ: **72** opservacije (**41,14% uzorka**)	Σ: **14** opservacija (**8,00% uzorka**)
	= 0	2013: 7 opservacija	2013: 10 opservacija
		2014: 4 opservacije	2014: 10 opservacija
		2015: 5 opservacija	2015: 12 opservacija
		2016: 7 opservacija	2016: 7 opservacija
		2017: 10 opservacija	2017: 5 opservacija
		2018: 10 opservacija	2018: 2 opservacije
		Σ: **43** opservacije (**24,57% uzorka**)	Σ: **46** opservacija (**26,29% uzorka**)

Izvor: kalkulacija autora.

Relativno niska prosečna efektivna poreska stopa je, takođe, rezultat činjenice da čak 43 opservacije od 115 opservacija sa dobitkom pre oporezivanja nemaju opterećenje porezom na dobitak, odnosno imaju efektivnu poresku stopu od 0%. S druge strane, 14 opservacija od 60 opservacija sa gubitkom pre oporezivanja imaju opterećenje porezom na dobitak. To znači da opservacije sa gubitkom pre oporezivanja koje su imale opterećenje porezom na dobitak ne smeju biti lako zanemarene.

U Tabeli 4 je izvršeno poređenje *av_ETR* i *macro_ETR* za banke u Srbiji za svaku posmatranu godinu. Dodatno, prezentovani su rezultati Mann-Whitney testa.

U skladu sa logikom uključivanja opservacija sa gubitkom pre oporezivanja, u svakoj posmatranoj godini *av_ETR* je niže u odnosu na *macro_ETR*. Dodatno, može se primetiti da se *macro_ETR* smanjuje, odnosno da se razlika između *av_ETR* i *macro_ETR* smanjuje u godinama kada je broj opservacija sa gubitkom pre oporezivanja relativno mali. Efektivna poreska stopa celog bankarskog sektora Srbije (*macro_ETR*) je u tri posmatrane godine niža od propisane stope poreza na dobitak, dok za 2013. godinu nije mogla biti utvrđena usled gubitka

pre oporezivanja koje je zbirno ostvario bankarski sektor Srbije. S obzirom na to da *p*-vrednost Mann-Whitney testa iznosi 0,045 može se zaključiti da je razlika između *av_ETR* i *macro_ETR* statistički značajna na nivou od 5%.

Tabela 4: Poređenje av_ETR i macro_ETR

Godina	av_ETR	macro_ETR
2013.	3,1632%	/*
2014.	7,8199%	61,8234%
2015.	12,4900%	25,1134%
2016.	3,5881%	13,3670%
2017.	3,8862%	6,2894%
2018.	5,1094%	7,4537%
Ukupno	**5,8619%**	**10,5618%**
Mann-Whitney U	4,000	
Z	-2,008	
p-vrednost	0,045	

** nije moguće izračunati usled negativnog imenioca.*
Izvor: kalkulacija autora.

Rezultati Mann-Whitney testa pokazuju da uključivanje opservacija sa gubitkom pre oporezivanja može značajno uticati na zaključke o opterećenju porezom na dobitak. Ovaj zaključak je u skladu sa stavom koji su izneli Henry i Sansing (2018). Dodatno, to znači da opservacije sa gubitkom pre oporezivanja koje imaju opterećenje porezom na dobitak treba da budu detaljno razmotrene.

Stoga je u Tabeli 5 prikazano svih četrnaest opservacija sa gubitkom pre oporezivanja i opterećenjem porezom na dobitak u posmatranom periodu. Takođe, prikazana je i materijalnost tekućeg rashoda za porez na dobitak, odnosno stepen u kojem poreski rashod pogoršava profitabilnost banke.

Tabela 5: Opservacije sa gubitkom pre oporezivanja i opterećenjem porezom na dobitak

R.b.	Godina	Naziv banke	Tekući rashod za porez na dobitak (u 000 RSD)	Gubitak pre oporezivanja (u 000 RSD)	Materijalnost tekućeg rashoda za porez na dobitak
[1]	[2]	[3]	[4]	[5]	[4/5]
1.	2013.	Expobank	34	504.779	0,0067%
2.	2013.	Jubanka	785	1.558.769	0,0504%
3.	2013.	NLB banka	946	9.886.537	0,0096%
4.	2013.	Piraeus Bank	1.451	1.006.749	0,1441%
5.	2013.	Telenor banka	699	7.438.863	0,0094%
6.	2014.	Addiko Bank	2.190	1.797.592	0,1218%
7.	2014.	NLB banka	3.153	2.170.260	0,1453%
8.	2015.	Jubanka	7.914	937.106	0,8445%
9.	2016.	Addiko Bank	1.283	1.277.225	0,1005%

R.b.	Godina	Naziv banke	Tekući rashod za porez na dobitak (u 000 RSD)	Gubitak pre oporezivanja (u 000 RSD)	Materijalnost tekućeg rashoda za porez na dobitak
10.	2016.	Banka Poštanska štedionica	86	6.360.205	0,0014%
11.	2016.	Direktna banka	91.303	188.731	48,3773%
12.	2016.	MTS banka	1.467	284.477	0,5157%
13.	2017.	Bank of China Srbija	2.691	21.862	12,3090%
14.	2017.	Vojvođanska banka	1.447	2.058.137	0,0703%
Ukupno			**115.449**	**35.491.292**	**0,3253%**

Izvor: kalkulacija autora.

Generalno, tekući rashod za porez na dobitak pogoršava profitabilnost posmatranih opservacija za manje od 1%. Ipak, u slučaju dve opservacije materijalnost tekućeg rashoda za porez na dobitak je veća od 10%.

Analizom napomena uz pojedinačne finansijske izveštaje banaka, moguće je identifikovati izvore opterećenja porezom na dobitak posmatranih opservacija, uprkos ostvarenom gubitku pre oporezivanja. Istraživanjem su obuhvaćene napomene uz finansijske izveštaje dvanaest opservacija, s obzirom na to da napomene za dve opservacije nisu javno dostupne. Reč je o bankama koje su preuzete i više nisu aktivne.

Izveštajnim entitetima je ostavljena značajna sloboda u pogledu obelodanjivanja informacija u napomenama uz finansijske izveštaje. Međunarodnim računovodstvenim standardom (MRS) 12 – Porezi na dobitak, je utvrđen minimum informacija o porezu na dobitak koje izveštajni entiteti moraju obelodaniti u napomenama uz finansijske izveštaje. Ipak, banke u Srbiji se značajno razlikuju u pogledu načina i detaljnosti obelodanjivanja o porezu na dobitak.

Od analiziranih dvanaest opservacija, u samo jednoj opservaciji je navedeno da je usklađivanje rashoda uzrok opterećenja porezom na dobitak. Drugim rečima, u napomenama je naveden poreski efekat nepriznatih rashoda, odnosno rashoda koji su priznati u bilansu uspeha, ali ne i u poreskom bilansu. Time je potvrđen stav Šodana (2012) o relativno malom značaju usklađivanja rashoda i prihoda u zemljama bivše SFRJ.

S druge strane, u preostalih jedanaest opservacija je navedno da porez na kapitalne dobitke predstavlja izvor opterećenja porezom na dobitak. Izuzev toga, u većini opservacija nisu obelodanjene detaljnije informacije o imovini na koju se kapitalni dobitak odnosi. Interesantno je da je najdetaljnija obelodanjivanja izvršila Banka Poštanska Štedionica u napomenama uz finansijske izveštaje za 2016. godinu, iako je materijalnost tekućeg rashoda za porez na dobitak u toj opservaciji najniža. Konkretno, u napomenama je navedeno da kapitalni dobici potiču od prodaje dve garaže. Time je potvrđen stav Todorovićeve i saradnika (2019) o značaju poreza na kapitalne dobitke u bankama u Srbiji.

Zaključak

Pitanje poreskog tretmana opservacija sa gubitkom pre oporezivanja u bankarskom sektoru postalo je posebno važno u post-kriznom periodu, s obzirom na to da je značajan broj banaka ostvario gubitak pre oporezivanja. Međutim, neke od tih banaka su imale opterećenje porezom na dobitak, uprkos ostvarenom gubitku.

Istraživanje u ovom radu sprovedeno je sa ciljem objašnjenja opterećenja porezom na dobitak opservacija koje su ostvarile gubitak pre oporezivanja. S tim u vezi, empirijsko istraživanje je obuhvatilo bankarski sektor Srbije u periodu od 2013. do 2018. godine. U tom periodu je propisana stopa poreza na dobitak bila na konstantnom nivou od 15%.

Rezultati istraživanja pokazuju da uključivanje opservacija sa gubitkom pre oporezivanja prilikom izračunavanja efektivne poreske stope značajno utiče na rezultate istraživanja. Naime, u radu je pronađena statistički značajna razlika između efektivnih poreskih stopa obračunatih samo sa opservacijama sa dobitkom pre oporezivanja i efektivnih poreskih stopa obračunatih sa svim opservacijama. Stoga, *prva istraživačka hipoteza se ne može odbaciti*.

U radu su, takođe, istraženi izvori koji dovode do toga da opservacije sa gubitkom pre oporezivanja imaju opterećenje porezom na dobitak. Ključni izvor se može pronaći u oporezivanju kapitalnih dobitaka banke. U Srbiji se kapitalni dobici oporezuju u sklopu poreza na dobitak, ali nezavisno od ostvarenog rezultata iz ostalih aktivnosti banke. S druge strane, usklađivanje rashoda i prihoda nije značajan izvor. Stoga, *druga istraživačka hipoteza se ne može odbaciti*.

Ključni doprinos istraživanja se može pronaći u osvetljavanju pitanja poreskog tretmana opservacija sa gubitkom pre oporezivanja. U većini prethodnih istraživanja se opservacije sa gubitkom pre oporezivanja eliminišu na početku i istraživanje se sprovodi isključivo sa opservacijama sa dobitkom pre oporezivanja. Dodatno, istraživanje ukazuje na značaj poreza na kapitalne dobitke za sprovođenje poreskih istraživanja u Srbiji.

Rad pruža alternativne mogućnosti za procenu opterećenja porezom na dobitak bankarskog sektora Srbije – jednu sa korišćenjem samo opservacija sa dobitkom pre oporezivanja i jednu sa korišćenjem svih opservacija. U tom smislu, autor veruje da se rezultati istraživanja mogu koristiti prilikom budućih poreskih analiza u bankarskom sektoru.

Ključno ograničenje rada se nalazi u tome da je istraživanje obuhvatilo banke iz samo jedne države. Uzevši u obzir značajne razlike u nacionalnim sistemima poreza na dobitak, rezultati istraživanja ne trebaju biti analogno preneti na banke u drugim državama. S obzirom na rastuće performanse bankarskog sektora u Srbiji, u narednim godinama se može očekivati manji broj opservacija sa gubitkom pre oporezivanja. Stoga bi bilo interesantno sprovesti istraživanje za nekoliko godina i uporediti rezultate tog istraživanja sa prezentovanim rezultatima.

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Prilog

Spisak uzorkovanih banaka

Naziv banke	Matični broj	Period
Addiko Bank	07726716	2013-2018.
AIK banka	06876366	2013-2018.
API Bank	20439866	2013-2018.
Banca Intesa	07759231	2013-2018.
Bank of China Srbija	21251640	2017-2018.
Banka Poštanska štedionica	07004893	2013-2018.
Credit Agricole banka Srbija	08277931	2013-2018.
Direktna banka	07654812	2013-2018.
Erste Bank	08063818	2013-2018.
Eurobank	17171178	2013-2018.
Expobank	07534183	2013-2018.
Findomestic banka	17076841	2013-2016.
Halkbank	07601093	2013-2018.
Jubanka	07736681	2013-2016.
JUBMES banka	07074433	2013-2018.
Jugobanka Jugbanka	09023321	2013-2017.
Komercijalna banka	07737068	2013-2018.
Mirabank	21080608	2015-2018.
MTS banka	09081488	2013-2018.
NLB banka	08250499	2013-2018.
Opportunity banka	08761132	2013-2018.
OTP banka Srbija	08603537	2013-2018.
Piraeus Bank	17082990	2013-2017.
ProCredit Bank	17335677	2013-2018.
Raiffeisen banka	17335600	2013-2018.
Sberbank Srbija	07792247	2013-2018.
Societe Generale banka Srbija	07552335	2013-2018.
Srpska banka	07092288	2013-2018.
Telenor banka	17138669	2013-2018.
Unicredit bank Srbija	17324918	2013-2018.
Univerzal banka	06031676	2013-2013.
Vojvođanska banka	08074313	2013-2018.

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Loss Before Taxation and Corporate Tax: The Example of Banks from Serbia

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Summary: It is usually considered that banks with income before taxation pay corporate tax, while banks with loss before taxation do not. However, it is possible that a bank with loss before taxation incurs corporate tax expense due to the separate calculation of result before taxation in income statement and taxable income in the tax balance. This paper examines why and to which extent banks with loss before taxation have a corporate tax burden. Empirical research captured the whole banking system of Serbia in period between 2013 and 2018. In this regard, a sample of 175 observations was formed. Research results show that the inclusion of observations with loss before taxation significantly impacts the estimation of corporate tax burden of the banking sector of Serbia. In addition, capital gains tax is the most common source of corporate tax burden in observations with loss before taxation. On the other hand, the adjustment of expenses and revenue in tax balance has less impact on corporate tax burden in observations with loss before taxation.

Keywords: profitability, result before taxation, observations with loss, corporate tax, banks

JEL: G21, H25

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Introduction

In stiff competition circumstances, the minimization of expenses is the main (sometimes even the only) mode of increasing the banks' efficiency (Barbuski, 2013). One of the main categories of expenses that may be efficiently managed by banks is the corporate tax expense.

The banking sector of Serbia experienced a turbulent period in the two decades of XXI century. At the begging of the XXI century, the banking sector of Serbia came through the process of ownership transformation and foreign capital inflow (Dimić & Barjaktarović, 2017). In addition, the performances of the banking sector of transitioning countries were negatively affected by the global economic crisis (Dreca, 2012).

Corporate tax of banks has become an important issue with the inflow of the foreign capital in the banking sector of Serbia. In this regard, Claessens et al. (2001) argue that banks with foreign ownership have higher profitability and, as a result, pay more corporate tax in developing countries compared to the banks with domestic ownership.

The corporate tax burden is usually measured by effective tax rates that usually employ income before taxation in the denominator. It implies that observations with loss before taxation are usually eliminated from the tax research. On the other hand, it is possible that observations with loss before taxation have a corporate tax burden due to the adjustment of expenses and revenue with the tax law and payment of capital gains tax. Therefore, it is important to examine how the inclusion of observations with loss before taxation affects the conduction of tax research.

The subject of the paper is taxation of income of banks in Serbia. Performances of the banking sector have been experiencing a growing trend in the last years, though there is still significant room for their improvement – primarily due to the fact that banks have high level of liquidity reserves that are not invested in alternatives that yield a high return (Todorović et al., 2018).

In line with the defined subject of the paper, two main objectives of the paper have been identified. The first objective of the paper is to examine the impact of observations with loss before taxation on the estimation of the corporate tax burden of the banking sector of Serbia. The second objective of the paper is to determine the sources of corporate tax burden in observations with loss before taxation.

In accordance with the subject and objectives, the paper empirically tested the following hypotheses:

H_1: Inclusion of observations with loss before taxation has a significant impact on estimation of corporate tax burden of banks in Serbia.
H_2: Capital gains tax is the most common source of corporate tax burden of banks in Serbia in observations with loss before taxation.

The findings in this paper contribute to the research results in two relatively poorly researched issues. Taxation of income of banks in Serbia, as well as the importance of observations with loss before taxation at the global level

are two research issues needing additional research. Research results may be of interest to many interest groups. Primarily, results may be of interest to National Bank of Serbia (as a controller of banking system) and Tax Administration of Serbia (as a national tax authority) during the estimations of corporate tax burden of the banking sector of Serbia. In addition, the results may be of interest to management of banks during the projections of profitability and corporate tax burden of banks.

Loss Before Taxation and Measurement of the Corporate Tax Burden

Considering that corporate tax assumes the permanent outflow of monetary resources in the favor of a country, the corporate tax burden has been a research subject for many decades. In this regard, a number of corporate tax burden measures have been developed with the effective tax rate being the most commonly used measure (Wu et al., 2012). The effective tax rate is usually given as a relation between the corporate tax burden and some of the accounting results.

Result before taxation is most commonly used in the denominator of the effective tax rate due to the confidentiality of tax balance data (primarily data on the taxable income amount). It is often considered that result before taxation is the closest approximation of taxable income from the tax balance. In addition, Eberhartinger and Klostermann (2007) find that the corporate tax burden would not significantly differ if income before taxation was employed as a tax base instead of taxable income.

If a bank, in the observed year, reported loss before taxation, the effective tax rate becomes negative and does not have clear economic meaning. Therefore, in several research (for instance, Richardson & Lanis, 2007; Stamatopoulos et al., 2019; Todorović et al., 2019) observations or companies with loss before taxation are eliminated, so the research sample consists only of observations with income before taxation.

As early as the XX century, Siegfried (1974) pointed out the importance of observations with loss before taxation, arguing that a particular problem may occur when analyzing panel data. For instance, a bank reported loss before taxation and, as a result, the observation with loss before taxation has been eliminated. On the other hand, if the bank reports an income in the next year, the observation with income before taxation will be captured and corresponding corporate tax burden will be lower due to the utilization of the prior year tax loss carryforward. Such analysis leads to underestimation of effective tax rates.

Eliminating observations with loss with before taxation is particularly problematic when observations have a corporate tax burden despite loss before taxation. It is especially possible in countries with separated activities of calculation of result before taxation and taxable income due to the respect of different objectives of financial and tax reporting (Huang & Wang, 2013). Thus, it is possible that a bank reports loss before taxation, but taxable income and corporate tax burden on this basis.

In the past, attempts to include observations with loss before taxation in the calculation of effective tax rates were recorded. In this regard, Gupta and Newberry (1997) limit the effective tax rate at the minimum of 0% and maximum of 100%. Then, observations with loss before taxation without corporate tax burden have an effective tax rate of 0%, while observations with loss before taxation and corporate tax burden have an effective tax rate of 100%.

Considering that the method implemented by Gupta and Newberry (1997) leads to a significantly more artificial analysis, some authors developed different methods of capturing observations with loss before taxation. The relation between corporate tax expense (or corporate tax paid) and total assets may be a measure of corporate tax burden (Jansky & Prats, 2015). Such measure captures observations with loss before taxation without methodological problems. However, this measure does not account for bank profitability.

Henry and Sansing (2018) capture observations with loss before taxation and measure the corporate tax burden by deduct the product of statutory corporate tax rate and result before taxation from the corporate tax paid. In order to enable cross-company comparison, the given amount is divided by the market value of total assets.

If this measure is higher than null, then the corporate tax burden of bank is higher than the statutory burden. If the measure is equal to null, then the tax burden is equal to the statutory. Finally, if the value of this measure is lower than null, than the tax burden of the bank is lower than statutory. Using this measure, Henry and Sansing (2018) offer significantly different research results than the traditional using of effective tax rates.

In practice, it is not always easy to draw conclusion on the sources of corporate tax burden of a bank that reported loss before taxation, primarily due to the confidentiality of tax reports and systematic differences in disclosures on corporate tax (Kvaal & Nobes, 2013). Due to the specificities of national corporate tax systems, sources of such circumstance may vary between different countries.

Profitability and Corporate Tax of Banks in Serbia

The banking sector of Serbia experienced many turbulent events in the last three decades. Important decrease of profitability of banking sector was recorded in the 1990s due to the big recession, financial market anomalies and a lack of appropriate regulation (Mihailović et al., 2009).

Radić (2018) notes that, on the average, banks in Serbia reported negative rates of return on total assets (ROA) and shareholders' equity (ROE) in the period between 2008 and 2016, primarily due to the extreme negative values for certain banks (for instance, Srpska Banka or Telenor Bank). However, the profitability of banking sector in Serbia has been experiencing a constant growth since 2015 (Vesić et al., 2019).

Alihodžić (2017) finds significant differences in profitability between banks in Serbia, since certain banks have, *inter alia*, bad credit policy, high credit risk exposure and high operative expenses. The profitability of banks also varies

depending on the type of bank ownership – domestic or foreign, and the way of entrance of foreign banking group on Serbian banking market – greenfield or acquisition (Erić et al., 2019).

In general, in countries of the former Socialist Federal Republic of Yugoslavia (SFRY) the calculation of income before taxation and taxable income are two separate activities (Novak & Valentinčić, 2017). In order to analyze differences between income before taxation and taxable income in Serbia, it is necessary to understand the contents of tax balance in Serbia. Summarized and simplified tax balance is presented in Table 1.

In accounting practice, the tax balance is often divided into operating and capital subbalance. Operating subbalance is the more complex part of the tax balance and assumes elimination of gains and losses from assets sale (calculated in line with International Financial Reporting Standards) from the result before taxation, and the adjustment of expenses and revenues with the tax law. If the adjusted result is positive (adjusted income), a bank may reduce it on behalf of prior year' tax loss carryforward.

Table 1: Simplified Tax Balance

	I Operating subbalance
	Result before taxation
	± gains (losses) from assets sale
	± adjustment of expenses
	± adjustment of revenue
	Adjusted result
	- tax loss carryforward
1	**Income surplus***
	II Capital subbalance
	Current capital gains
	- current capital losses
	- capital losses carryforward
2	**Capital gains surplus***
1+2	Taxable income
* if a position is negative, insert 0.	

Due to the adjustment of result before taxation, it is possible that a bank with loss before taxation (presented in the income statement) steps into the income zone for purposes of tax calculation. This may primarily occur due to the certain expenses (such as representation costs) not deductible for tax purposes. Avi-Yonah and Lahav (2012) conclude that considerable differences between result before taxation and taxable income primarily occur when the profitability of taxpayer is close to zero. On the other hand, based on the research of Šodan (2012), it may be noted that differences between result before taxation and taxable income are often not large in countries of the former SFRY, considering that result before taxation represents the starting point for the calculation of taxable income.

The second part of the tax balance in Serbia is capital subbalance. Taxation of capital gains realized on sale of assets is independent from the reported

result from other activities. Analogous to the operating subbalance, a bank has a right to reduce tax liability on behalf of prior years' capital loss tax carryforward. Todorović et al. (2019) argue that capital gains are a key source of corporate tax burden in observations with loss before taxation in the banking sector of Serbia.

Corporate Profit Tax Law (The official Gazette of the RS, no. 86/2019) prescribed that capital gains tax is paid on the basis of sale of the real estate, intellectual property rights, long-term financial investments and investment units purchased from open-end investment funds. In addition, capital gains are calculated as a difference between the selling price and the purchase price, whereby the purchase price is reduced for the amount of depreciation, in accordance with tax law.

Therefore, taxable income is a sum of income surplus and capital gains surplus from the operating and capital subbalance, respectively. If one of these two components is negative, it is not considered in the calculation of taxable income.

There are 175 observations that may be identified in the banking sector of Serbia in the period between 2013 and 2018. In this regard, 115 observations (65.71%) reported income before taxation, while 60 observations (34.29%) reported loss before taxation. Distribution of observations according to the result before taxation by years is presented on the Figure 1.

Figure 1: Distribution of Observations According to the Result Before Taxation

Source: author's calculation.

Considering that they represent more than 30% of the sample, observations with loss before taxation should not be omitted. On the other hand, the number of observations with loss before taxation has a declining trend, supporting the findings about growing trend of profitability of banking sector in Serbia (Todorović et al., 2018; Vesić et al., 2019).

Research Methodology and Data

Empirical research in this paper is conducted in order to explain the corporate tax burden of observations that reported loss before taxation in the banking sector of Serbia. In this regard, this paper compares the effective tax rate that does not capture observations with loss before taxation and the effective tax rate that captures observations with loss before taxation.

The effective tax rate that does not capture observations with loss before taxation is labeled as average effective tax rate (*av_ETR*). It is calculated as an arithmetic mean of the effective tax rate for the observations with income before taxation.

The effective tax rate that captures observations with loss before taxation is labeled as macro effective tax rate (*macro_ETR*) as it captures the whole banking sector regardless of recorded profitability. It is calculated as a relation between the sum of corporate tax burden and the sum of result before taxation of each observation in the observed year.

Mathematically, the method of calculation of *av_ETR* and *macro_ETR* for the year *t* can be presented as follows:

$$av\_ETR_t = \frac{\sum_{i=1}^{n} ETR_{i,t}}{n} = \frac{\sum_{i=1}^{n} \frac{CTE_{i,t}}{PTR_{i,t}}}{n} \quad \forall\ PTR_{i,t} > 0 \qquad (1)$$

$$macro\_ETR_t = \frac{\sum_{i=1}^{n} CTE_{i,t}}{\sum_{i=1}^{n} PTR_{i,t}} \qquad (2)$$

, whereas *ETR* denotes effective tax rate, *CTE* denotes current corporate tax expense as an approximation of corporate tax burden, while *PTR* denotes result before taxation of the observation *i* from the total of *n* observations. It should be noted that the number of observations (*n*) will be lower when calculating *av_ETR* when at least one observation in the observed sample reports loss before taxation.

When observations with loss before taxation occur, it is rational to assume that *macro_ETR* will be higher than *av_ETR*.

In this paper is examined whether the difference between *av_ETR* and *macro_ETR* is statistically significant. Since the sample size is relatively small (only six years), the paper employed the non-parametric Mann-Whitney test for testing the significance between the two independent groups.

Corporate tax burden is measured by current corporate tax expense showed in the income statement of the bank. This value may be treated as the representative approximation of the corporate tax burden, since it is calculated in the tax return for the corporate tax. Current corporate tax expense has been widely used as an approximation of corporate tax burden of banks in Serbia (Todorović et al., 2019; Vržina, 2019). Current corporate tax cannot be negative in Serbia, since banks in Serbia are not allowed to use tax loss carryback on the basis of corporate tax paid in prior years.

This research included each commercial bank in Serbia, active between 2013 and 2018. During the observed period, the statutory tax rate was 15% with flat system of taxation. Thus, there are identified 175 observations. A list of sampled banks by years is presented in the Appendix.

Data on current corporate tax expense and result before taxation has been retrieved from statutory financial statements of banks. Despite their historical orientation, financial statements are the most objective basis to track the banks' operations (Jakšić et al., 2011). Sources for the corporate tax burden in observations with loss before taxation have been found in notes to the statutory financial statements of banks. All the data has been retrieved from the Business Registers Agency of the Republic of Serbia (www.apr.gov.rs) and official Internet presentations of banks. Considering that most of the financial statements of the banks in Serbia are audited by well-known accounting companies (the big four accounting companies) and that most of the banks have unqualified audit opinions (Stanišić et al., 2013), retrieved data can be treated as reliable.

Research Results

The presentation of research results begins with the results of descriptive statistics for the effective tax rate of banks, calculated as a relation between the current corporate tax expense and income before taxation. Descriptive statistics is presented in Table 2.

Table 2: Descriptive Statistics for the Effective Tax Rate

Number of observations	115
Arithmetic mean	5.8619%
Minimum	0.0000%
25th percentile	0.0000%
Median	0.2837%
75th percentile	8.8558%
Maximum	112.0843%
Standard deviation	13.3175%

Source: author's calculation.

Effective tax rates of banks are, on the average, considerably lower than the statutory corporate tax rate. In this regard, the arithmetic mean is considerably higher than the effective tax rate median, indicating unusually high extreme values of effective tax rates. These results are consistent with the results of prior research on corporate tax burden of banks in Serbia (Todorović et al., 2019; Vržina, 2019). Prior research also argues that relatively low effective tax rates of banks in Serbia are primarily result of interest revenue on government securities that are exempt from taxable income and prior years' tax loss carryforward.

The next part of the research is the corporate tax matrix that shows the distribution of observations according to the result before taxation and the exist-

ence of corporate tax burden. Corporate tax matrix is presented in Table 3. Observations with loss before taxation and corporate tax burden are colored grey, since these observations are the key group of observations in this paper.

Table 3: Corporate Tax Matrix

		Result before taxation	
		> 0 (income)	< 0 (loss)
Current corporate tax expense	> 0	2013: 8 observations	2013: 5 observations
		2014: 13 observations	2014: 2 observations
		2015: 12 observations	2015: 1 observation
		2016: 12 observations	2016: 4 observations
		2017: 12 observations	2017: 2 observations
		2018: 15 observations	2018: 0 observations
		Σ: **72** observations **(41.14% of sample)**	Σ: **14** observations **(8.00% of sample)**
	= 0	2013: 7 observations	2013: 10 observations
		2014: 4 observations	2014: 10 observations
		2015: 5 observations	2015: 12 observations
		2016: 7 observations	2016: 7 observations
		2017: 10 observations	2017: 5 observations
		2018: 10 observations	2018: 2 observations
		Σ: **43** observations **(24.57% of sample)**	Σ: **46** observations **(26.29% of sample)**

Source: author's calculation.

Relatively low average effective tax rate is also the result of the fact that 43 observations of the 115 observations with income before taxation do not have corporate tax burden, i.e. have an effective tax rate of 0%. On the other hand, 14 observations of the 60 observations with loss before taxation have corporate tax burden. It means that observations with loss before taxation and corporate tax burden should not be easily omitted.

Table 4 compares *av_ETR* and *macro_ETR* for banks in Serbia, for each observed year. In addition, the results of the Mann-Whitney test are presented there.

In line with the logic of capturing observations with loss before taxation, *av_ETR* is lower than *macro_ETR* in each observed year. In addition, it should be noted that *macro_ETR* and the difference between *av_ETR* and *macro_ETR* decrease in years when the number of observations with loss before taxation is relatively small. The effective tax rate of the whole banking sector of Serbia (*macro_ETR*) is lower than the statutory corporate tax rate in three years, while it could not be calculated for 2013 due to the aggregated loss before taxation of the banking sector of Serbia. Considering that the *p*-value of the Mann-Whitney test is 0.045 it can be concluded that the difference between *av_ETR* and *macro_ETR* is statistically significant at the level of 5%.

Table 4: Comparison of the av_ETR and macro_ETR

Year	av_ETR	macro_ETR
2013	3.1632%	/*
2014	7.8199%	61.8234%
2015	12.4900%	25.1134%
2016	3.5881%	13.3670%
2017	3.8862%	6.2894%
2018	5.1094%	7.4537%
Pooled	5.8619%	10.5618%
Mann-Whitney U	4.000	
Z	-2.008	
p-value	0.045	

** cannot calculate due to negative denominator.*
Source: author's calculation.

Results of the Mann-Whitney test show that the inclusion of observations with loss before taxation may significantly affect the conclusions about the corporate tax burden. This finding is consistent with the arguments of Henry and Sansing (2018). In addition, it implies that the observations with loss before taxation and corporate tax burden should be considered in detail.

Therefore, Table 5 shows all fourteen observations with loss before taxation and corporate tax burden in the observed period. In addition, it shows the materiality of the current corporate tax expense, i.e. the extent to which tax expense decreases the bank's profitability.

Table 5: Observations with Loss Before Taxation and Corporate Tax Burden

No.	Year	Company name	Current corporate tax expense (in 000 RSD)	Loss before taxation (in 000 RSD)	Materiality of current corporate tax expense
[1]	[2]	[3]	[4]	[5]	[4/5]
1	2013	Expobank	34	504,779	0.0067%
2	2013	Jubanka	785	1,558,769	0.0504%
3	2013	NLB Bank	946	9,886,537	0.0096%
4	2013	Piraeus Bank	1,451	1,006,749	0.1441%
5	2013	Telenor Bank	699	7,438,863	0.0094%
6	2014	Addiko Bank	2,190	1,797,592	0.1218%
7	2014	NLB Bank	3,153	2,170,260	0.1453%
8	2015	Jubanka	7,914	937,106	0.8445%
9	2016	Addiko Bank	1,283	1,277,225	0.1005%
10	2016	Postal Savings Bank	86	6,360,205	0.0014%
11	2016	Direktna Bank	91,303	188,731	48.3773%
12	2016	MTS Bank	1,467	284,477	0.5157%
13	2017	Bank of China Serbia	2,691	21,862	12.3090%
14	2017	Vojvođanska Banka	1,447	2,058,137	0.0703%
Pooled			**115,449**	**35,491,292**	**0.3253%**

Source: author's calculation.

In general, current corporate tax expense decreases profitability of observed observations for less than 1%. However, in the case of two observations, the materiality of current corporate tax expense is higher than 10%.

The analysis of notes to the statutory financial statements of banks enables the identification of sources of corporate tax burden of observed observations that reported loss before taxation. Research captures notes to the financial statements of twelve observations, considering that notes for two observations are not available. These two banks are acquired and are not active.

Reporting entities have considerable freedom in terms of disclosure of information in notes to the financial statements. The International Accounting Standard (IAS) 12 – Income Taxes, prescribes a minimum of information that reporting entities must disclose in the notes to the financial statements. However, banks in Serbia significantly differ in terms of the method and the details of corporate tax disclosure.

Out of the twelve observations, only one observation stated that the adjustment of expenses is the source of corporate tax burden. In other words, the notes stated the tax effect of non-deductible expenses, i.e. expenses that are recognized in the income statement, but not in the tax balance. This supports the argument of Šodan (2012) on the relatively low importance of adjustment of expenses and revenues in countries of the former SFRY.

On the other hand, in the other eleven observations it is stated that capital gains tax represents the source of corporate tax burden. Except that, in most of the observations detailed information is not disclosed about the assets that made capital gains. It is interesting that the most detailed disclosure was made by the Postal Savings Bank in notes to the financial statements for 2016, although the materiality of current corporate tax expense in this observation is the lowest. Specifically, it is stated in the notes that capital gains were made from the sale of two garages. These support the argument of Todorović et al. (2019) on the importance of capital gains tax in banks in Serbia.

Conclusion

An issue of the tax treatment of observations with loss before taxation in the banking sector has become especially important in the post-crisis period, since an important portion of banks reported loss before taxation. However, some of these banks had corporate tax burden despite reported loss.

Research is this paper has been conducted in order to explain the corporate tax burden of observations that reported loss before taxation. In this regard, empirical research captured the banking sector of Serbia in the period between 2013 and 2018. In this period the statutory corporate tax rate was at the constant level of 15%.

Research results show that the inclusion of observations with loss before taxation in the calculation of effective tax rates significantly affects the results of the research. Namely, the paper found statistically significant difference between effective tax rates calculated only with observations with income

before taxation and effective tax rates calculated with all observations. Therefore, *the first research hypothesis cannot be rejected*.

The paper also examined the sources that produce corporate tax burden in observations with loss before taxation. Key source may be found in taxation of capital gains of bank. In Serbia, capital gains are taxed as a part of corporate taxation, but independently from the recorded results from other bank activities. On the other hand, the adjustment of expenses and revenues is not an important source. Therefore, *the second research hypothesis cannot be rejected*.

The key contribution of the research may be found in shedding light on an issue of the tax treatment of observations with loss before taxation. In most of the prior research observations with loss before taxation are eliminated at the beginning and the research is carried out only with observations with income before taxation. In addition, research points out at the importance of capital gains tax when conducting tax research in Serbia.

The paper offers alternative possibilities for the estimation of corporate tax burden of the banking sector of Serbia – one using only the observations with income before taxation, and one using all the observations. In this regard, the author believes that the research results may be useful during a future tax analysis of the banking sector.

The main limitation of the paper is found in the fact that the research captured banks from only one country. Considering the important differences in the national systems of corporate tax, research results should not be analogously applied to banks in other countries. Considering the growing performances of banking sector in Serbia, a smaller number of observations with loss before taxation may be expected in the future. Therefore, it would be interesting to conduct research in a few years and compare these results with the presented ones.

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Appendix

The List of Sampled Banks

Bank name	Identification number	Period
Addiko Bank	07726716	2013-2018
AIK Bank	06876366	2013-2018
API Bank	20439866	2013-2018
Banca Intesa	07759231	2013-2018
Bank of China Srbija	21251640	2017-2018
Credit Agricole banka Srbija	08277931	2013-2018
Direktna Banka	07654812	2013-2018
Erste Bank	08063818	2013-2018
Eurobank	17171178	2013-2018
Expobank	07534183	2013-2018
Findomestic banka	17076841	2013-2016
Halkbank	07601093	2013-2018
Jubanka	07736681	2013-2016
JUBMES Banka	07074433	2013-2018
Jugobanka Jugbanka	09023321	2013-2017
Komercijalna Banka	07737068	2013-2018
Mirabank	21080608	2015-2018
MTS Bank	09081488	2013-2018
NLB Bank	08250499	2013-2018
Opportunity Bank	08761132	2013-2018
OTP Banka Serbia	08603537	2013-2018
Piraeus Bank	17082990	2013-2017
Postal Savings Bank	07004893	2013-2018
ProCredit Bank	17335677	2013-2018
Raiffeisen Bank	17335600	2013-2018
Sberbank Serbia	07792247	2013-2018
Societe Generale Bank Serbia	07552335	2013-2018
Srpska Banka	07092288	2013-2018
Telenor Bank	17138669	2013-2018
Unicredit Bank Serbia	17324918	2013-2018
Univerzal Bank	06031676	2013-2013
Vojvođanska Banka	08074313	2013-2018

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Odgovor monetarne i fiskalne politike na COVID 19 u Srbiji

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Rezime: Koronavirus 2019, prepoznatljiv pod skraćenicom Covid-19 (eng. *Coronavirus disease 2019*), zarazna je bolest uzrokovana teškim akutnim respiratornim sindromom virusa korona 2 (SARS-CoV-2). Bolest se pojavila u decembru 2019. godine u kineskom gradu Vuhanu, da bi se potom proširila na ceo svet. Naložene mere izolacije i socijalnog distanciranja su uticale na smanjenje obima, a u mnogim slučajevima i potpuni prekid ekonomske aktivnosti mnogih delatnosti. Kako bi se sanirale posledice koronavirusa Narodna banka Srbije i Ministarstvo finansija su, svaka u svojoj nadležnosti, donele set mera. Narodna banka Srbije je snizila referentnu kamatnu stopu, kako bi podržala kreditni i privredni rast, potom je, putem svopova EUR/RSD i repo aukcija, obezbedila dodatnu dinarsku i deviznu likvidnost bankarskom sektoru i donela odluke kojima se propisuje zastoj u otplati kreditnih obaveza dužnika (moratorijum). Ministarstvo finansija je donelo Program ekonomskih mera za smanjivanje negativnih efekata prouzrokovanih pandemijom virusa Covid-19 i pružanje podrške privredi Srbije. Program obuhvata mere poreske politike, direktnu pomoć privatnom sektoru, mere za očuvanje likvidnosti u privatnom sektoru i ostale mere.

Ključne reči: monetarna politika, fiskalna politika, Covid-19, ekonomska aktivnost, moratorijum, fiskalni stimulans

JEL: E63, H12, I18

*Za stavove iznete u ovom radu odgovoran je autor i stavovi ne predstavljaju nužno zvaničan stav Narodne banke Srbije.

Uvod

Početkom marta 2020. godine u Republici Srbiji je registrovan prvi slučaj zaraze koronavirusom. Nakon toga, 15. marta je na bazi člana 200, stav 5, Ustava Republike Srbije doneta Odluka o proglašenju vanrednog stanja na teritoriji Republike Srbije, koje je ukinuto 6. maja. Prema navedenom članu Ustava, odluka o vanrednom stanju važi najduže 90 dana, a po isteku ovog roka, Narodna skupština odluku može produžiti za još 90 dana, većinom od ukupnog broja narodnih poslanika. Odlukom Vlade Republike Srbije došlo je do zatvaranja graničnih prelaza (prvo prema zemaljama u okruženju, a potom i svih graničnih prelaza), obustavljen je rad sa strankama putem neposrednog kontakta i obustavljeno je izvođenja nastave u visokoškolskim ustanovama, srednjim i osnovnim školama i redovnog rada ustanova predškolskog vaspitanja i obrazovanja. Vlada Republike Srbije je takođe odlučila da ograniči pružanje usluga u oblasti trgovine na malo, koje obuhvataju prodaju robe i vršenje usluga u trgovinskim centrima i lokalima u koje se ulazi iz zatvorenog prostora. Kako bi se obezbedili osnovni proizvodi bitni za stanovništvo 10. aprila, u trajanju od 30 dana, doneta je odluka o zabrani njihovog izvoza, a doneta je odluka i o zabrani izvoza lekova. Sve pobrojane mere su donete kako bi se zaštitilo zdravlje stanovništva. Time se svakako uticalo i na ograničenje vršenja delatnosti većeg dela privrede. Kako bi se sanirale posledice uticaja koronavirusa na privredu, Narodna banka Srbije i Vlada Republike Srbije su donele set mera.

Mere Narodne banke Srbije

Narodna banka Srbije je delovala pravovremeno i proaktivno u donošenju mera sa ciljem pružanja podrške domaćoj ekonomiji. Mere se mogu podeliti u tri grupe: (1) mere monetarne politike, (2) propisan zastoj u otplati obaveza (moratorijum) i (3) ostale mere.

1) Mere monetarne politike

Mere monetarne politike se odnose na snižavanje referentne kamatne stope i na obezbeđivanje dodatne dinarske i devizne likvidnosti bankarskom sektoru. Na vanrednoj sednici, Izvršni odbor Narodne banke Srbije je 11. marta odlučio da snizi referentnu kamatnu stopu za 50 baznih poena na nivo od 1,75%, uz sniženje koridora osnovnih kamatnih stopa, sa ±1,25 procentnih poena na ±1 procentni poen u odnosu na referentnu kamatnu stopu. Time je kamatna stopa na depozitne olakšice smanjena za 25 baznih poena, na 0,75%, a stopa na kreditne olakšice za 75 baznih poena, na nivo od 2,75%. Ovu odluku Narodna banka Srbije je obrazložila kao blagovremenu i adekvatnu reakciju na pojačanu neizvesnost u međunarodnom okruženju izazvanu širenjem koronavirusa (Covid-19), što je u skladu sa aktivnostima koje preduzimaju i druge centralne banke u svetu (NBS). Do dodatnog sniženja referentne kamatne stope došlo je na aprilskom sastanku Izvršnog odbora, koji je održan 9. aprila, kada je stopa snižena za još 25 baznih poena, na nivo od 1,50%, što predstavlja najniži nivo referentne stope u režimu targetiranja inflacije. Ovim sniženjem obezbeđeno

je kretanje inflacije u granicama cilja u srednjem roku i puna podrška merama fiskalne politike, što bi trebalo da doprinese ublažavanju negativnih efekata po privredni rast i zadržavanju povoljnih uslova finansiranja u novonastaloj situaciji (NBSa). Sniženje referentne stope se prenelo i na Belibor stope svih ročnosti (*Tabela 1*). Belibor predstavlja referentnu kamatnu stopu za dinarska sredstva ponuđena od strane banaka Panela, na međubankarskom tržištu. Belibor stope se na Reuters sistemu računaju i objavljuju svakog radnog dana u 11:00 časova kao aritmetička sredina kotacija preostalih posle eliminisanja dve najviše i dve najniže stope, sa dva decimalna mesta.

Tabela 1: Kretanje kamatne stope Belibor, dnevni podaci (u %)

	T/N	S/N	1W	2W	1M	2M	3M	6M
11. mart - prvo sniženje RKS	1.10	1.11	1.15	1.19	1.29	1.43	1.62	1.77
12. mart	0.96	0.96	1.01	1.04	1.15	1.30	1.48	1.62
9. april - drugo sniženje RKS	0.88	0.89	0.93	0.98	1.07	1.18	1.34	1.50
10. april	0.69	0.70	0.79	0.83	0.93	1.03	1.19	1.38
* RKS - referentna kamatna stopa								

Izvor: Narodna banka Srbije

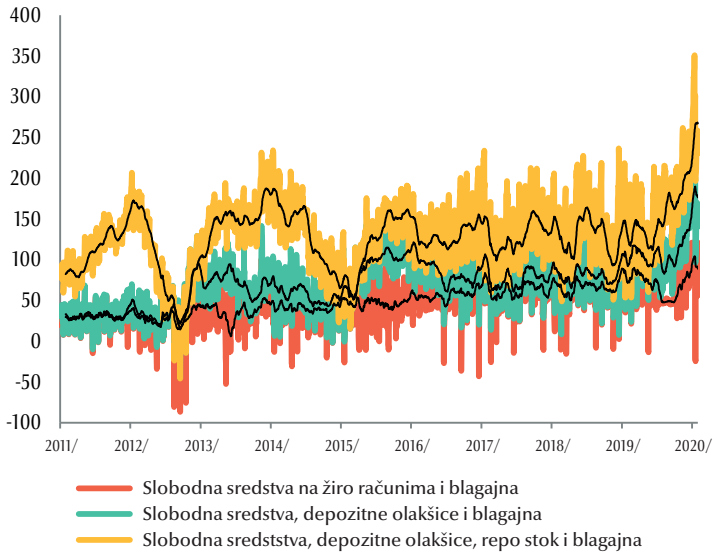
Sledeća mera monetarne politike koju je primenila Narodna banka Srbije jeste obezbeđivanje dinarske i devizne likvidnosti bankarskom sektoru u uslovima vanrednog stanja u Republici Srbiji usled širenja koronavirusa (Covid-19). To je urađeno primenom dodatnih svop aukcija EUR/RSD i repo operacija. Koristimo izraz dodatne svop aukcije kako bismo napravili razliku u odnosu na redovne dvonedeljne i tromesečne svop aukcije koje Narodna banka organizuje prema utvrđenom kalendaru redovnih svop aukcija. Svakog radnog utorka se organizuju tromesečne svop aukcije, a svakog radnog petka dvonedeljne. Za aukcije obe ročnosti istovremeno se organizuje svop prodaje deviza (evra za dinare kojim se obezbeđuje dodatna likvidnost u evrima) i aukcija svop kupovine deviza (evra za dinare kojom se obezbeđuje dodatna dinarska likvidnost). U prvoj polovini 2019. godine Narodna banka Srbije je prvi put primenila dodatne dvonedeljne svop aukcije kako bi obezbedila nastavak nesmetanog funkcionisanja novčanog tržišta u uslovima privremenog smanjenja viška dinarske likvidnosti u bankarskom sektoru. Tada je na sedam dodatnih dvonedeljnih svop aukcija bankama obezbeđena dodatna dinarska likvidnost u ukupnom iznosu od 67 mlrd dinara u zamenu za 567 mln evra.

Dodatna svop aukcija organizovana je 23. marta, gde je Narodna banka Srbije na rok od tri meseca obezbedila dinarsku likvidnost u iznosu od 14,9 milijardi dinara po kamatnoj stopi od 0,85%. Na toj aukciji Narodna banka Srbije je svop kupila, na rok od tri meseca, 127 miliona evra, koliko je iznosila tražnja banaka na aukciji (NBSb). Za razliku od redovnih svop aukcija koje se organizuju po varijabilnim višestrukim svop poenima, ova dodatna tromesečna svop aukcija je organizovana po fiksnim svop poenima koji su iznosili 2.525. Krajem marta (27. marta) Narodna banka Srbije je objavila da će, počevši od utorka, 31. marta, u narednom periodu organizovati redovne devizne svop aukcije (ročnosti tri meseca i dve nedelje) po fiksnim svop poenima, umesto po varijabilnim višestrukim svop poenima. Dodatno, princip realizacije na

deviznim svop aukcijama kupovine i prodaje deviza je izmenjen, tako da svop kupovina i svop prodaja deviza više ne moraju biti identične u realizovanom iznosu. Na ovaj način, uloga Narodne banke Srbije na deviznim svop aukcijama od 31. marta nije više isključivo posrednička, već se ogleda u obezbeđivanju bankama dovoljnog iznosa dinarske, ali i devizne likvidnosti, po povoljnim kamatnim stopama. Za obračun fiksnih svop poena na aukciji svop kupovine deviza i na aukciji svop prodaje deviza koristila se kamatna stopa od 0,85% za dinare i 0% za evre (NBSc). Nakon sniženja referentne kamatne stope u aprilu odlučeno je da kamatna stopa na dinare, u obračunu fiksnih svop poena, iznosi 0,6% (stopa na depozitne olakšice uvećana za 10 baznih poena).

Drugi instrument za obezbeđenje dinarske likvidnosti bankarskom sistemu je repo kupovina dinarskih državnih hartija od vrednosti. Ovaj instrument mogu da koriste banke koje u svom portfelju imaju dinarske državne hartije od vrednosti, koje predstavljaju kolateral za obezbeđenje dinarske likvidnosti. Za razliku od glavnih operacija repo prodaje dinarskih državnih hartija od vrednosti, kojima se povlači višak dinarske likvidnosti, Narodna banka Srbije je tokom marta organizovala dve repo operacije finog podešavanja na rok od sedam dana i jednu repo operaciju dužih ročnosti, čija ročnost iznosi tri meseca. U utorak, 24. marta, organizovane su dve aukcije repo kupovine dinarskih državnih hartija od vrednosti, s rokovima dospeća transakcija od sedam dana i tri meseca, po kamatnoj stopi od 0,75% na obe ročnosti (NBSd). Na tim repo aukcijama Narodna banka Srbije je bankama obezbedila 4,7 milijardi dinara na rok od sedam dana i 20,5 milijardi dinara na rok od tri meseca. U utorak 31. marta organizovana je jedna aukcija repo kupovine dinarskih državnih hartija od vrednosti, s rokom dospeća transakcija od sedam dana, na kojoj je bankama obezbeđena dinarska likvidnost od 1 milijarde dinara po kamatnoj stopi od 0,75%.

Grafikon 1: Dinarska likvidnost (dnevna stanja i tridesetodnevni pokretni proseci, u milijardama dinara)



Izvor: Narodna banka Srbije

Potrebno je istaći da je i pre obezbeđenja dodatne dinarske likvidnosti bankarski sistem u Srbiji bio visoko likvidan. Viškove dinarske likvidnosti Narodna banka Srbije povlači organizovanjem redovnih jednonedeljnih reverznih repo transakcija, tj. repo transakcija prodaje dinarskih državnih hartija od vrednosti. Aukcije se organizuju jednom nedeljno (svake radne srede), po modelu varijabilne višestruke kamatne stope. Ukoliko se sagledaju podaci o kretanju dnevne dinarske likvidnosti bankarskog sektora, prikazanih na *Grafikonu 1*, može se uočiti da je bankarski sistem likvidan, i to ne samo po osnovu repo transakcija, već i po nivou deponovanih viškova, ali i slobodnih sredstava na žiro računima i blagajni. Deponovani viškovi, koji predstavljaju sredstva koje banke na prekonoćnoj osnovi deponuju kod Narodne banke Srbije, su 10. aprila 2020. godine iznosili 272,5 milijardi dinara, što je njihov najviši nivo do tada. Ukoliko se na to doda iznos sredstava banaka u repo portfelju Narodne banke Srbije koji je iznosio 20 milijardi dinara, ukupni viškovi dinarske likvidnosti na dan 10. aprila 2020. godine iznosili su 292,5 milijardi dinara. To ukazuje da su pravovremene i dobro dizajnirane mere Narodne banke Srbije dale rezultat u očuvanju dinarske likvidnosti u uslovima vanrednog stanja u Republici Srbiji usled širenja koronavirusa (Covid-19).

2) Propisan zastoj u otplati obaveza (moratorijum)

Na vanrednoj sednici Izvršnog odbora, koja je održana 12. marta, Narodna banka Srbije je usvojila odluke kojima se propisuje zastoj u otplati obaveza dužnika (moratorijum) i to Odluku o privremenim merama za očuvanje stabilnosti finansijskog sistema i Odluku o privremenim merama za davaoce lizinga u cilju očuvanja stabilnosti finansijskog sistema. Cilj donetih mera je da se očuva i dodatno ojača stabilnost finansijskog sistema i da se zaštite svi dužnici tokom vanredne situacije izazvane zdravstvenom situacijom u zemlji.

Ovaj set odluka je donet kako bi se sprečio rast problematičnih kredita (eng. *Nonperforming loan - NPL*), sa kojim se suočavao bankarski sektor Srbije u prethodnom periodu. Učešće problematičnih kredita u ukupnim kreditima bankarskog sektora Srbije je značajno smanjeno i ima evidentan opadajući trend zahvaljujući primeni Strategije za rešavanje problematičnih kredita, kao i drugim regulatornim aktivnostima Narodne banke Srbije. Naime, od avgusta 2015. godine, kada je usvojena Strategija za rešavanje problematičnih kredita, Narodna banke Srbije je ne samo u potpunosti sprovela aktivnosti utvrđene pratećim Akcionim planom, već je i preduzela brojne druge mere koje nisu bile predviđene tim planom. Kako bi podstakla banke da efikasnije rešavaju pitanje problematičnih kredita u svojim portfolijima, Narodna banka Srbije je u avgustu 2017. godine usvojila Odluku o računovodstvenom otpisu bilansne aktive banke, kojom je obavezala banke da iz bilansa otpišu sva ona potraživanja koja su u potpunosti ispravljena. Učešće problematičnih kredita iznosilo je 4,1% na kraju četvrtog tromesečja 2019. godine, što je za 1,6 p.p. manje u odnosu na kraj četvrtog tromesečja 2018. godine, odnosno 18,2 procentna poena manje u odnosu na avgust 2015. godine kada je usvojena pomenuta Strategija. Vlada Republike Srbije je u decembru 2018. usvojila Program za rešavanje problematičnih kredita za period 2018-2020. godine kako bi se sprečio nastanak novih problematičnih kredita i omogućila održivost postignutih rezultata po pitanju problematičnih kredita. Program obuhvata tri

područja aktivnosti. Prvo područje usmereno je ka rešavanju problematičnih potraživanja državnih finansijskih poverilaca. Drugo područje usmereno je ka daljem unapređenju primene stečajnog okvira. Treće područje obuhvata niz aktivnosti koje su usmerene ka prevenciji nastajanja novih problematičnih kredita.

Moratorijum podrazumeva da svi dužnici (fizička lica, poljoprivrednici i preduzetnici i privredna društva) imaju mogućnost da prihvate, ukoliko to žele, ponudu banke/davaoca lizinga o zastoju otplate obaveza (moratororijum) koja može biti najduže 90 dana, odnosno tokom trajanja vanrednog stanja koje je uvedeno zbog pandemije Covid-19. U naznačenom periodu dužnici neće biti u obavezi da otplaćuju svoje obaveze po osnovu kredita odnosno lizinga. Navedene Odluke su objavljene u Službenom glasniku Republike Srbije 17. marta 2020, a stupile su na snagu 18. marta 2020. Time su banke, odnosno davaoci lizinga, imali tri dana (do 21. marta) da dužnicima ponude zastoj u otplati obaveza (moratorijum) i da na svojoj internet prezentaciji objave ponudu o zastoju otplate obaveze, što se smatralo da je ponuda dostavljena svim dužnicima. Nakon što je banka/davalac lizinga objavio tu ponudu na svojoj internet prezentaciji, dužnik je imao rok od deset dana od dana objavljivanja (do 31. marta) da tu ponudu odbije, a ako to ne učini smatraće se da je ponuda prihvaćena tog desetog dana. Dužnici su ponudu o moratorijumu odbijali slanjem imejla banci/davaocu lizinga sa podacima o kreditu, odnosno uzetom lizingu.

Tokom trajanja vanrednog stanja koje je uvedeno zbog pandemije banka/davalac lizinga ne obračunava zateznu kamatu na dospelo, a neizmireno, potraživanje i ne pokreće postupak izvršenja, kao ni postupak prinudne naplate prema dužniku, odnosno ne preduzima druge pravne radnje u cilju naplate potraživanja od dužnika. Kako bi olakšala klijentima otplatu tih obaveza nakon perioda zastoja, Narodna banka Srbije je kao osnovni model preporučila da banke tri mesečna anuiteta dodaju na kraj perioda otplate, produžavanjem perioda otplate za tri meseca i raspoređivanjem obračunate redovne kamate na period otplate kredita. Postoje i dva alternativna modela. Prvi alternativni model podrazumeva da dužnik po isteku zastoja (četvrti mesec) plati odjednom sva tri anuiteta iz perioda zastoja (glavnicu i kamatu), dok drugi alternativni model daje mogućnost da dužnik po isteku zastoja (četvrti mesec) plati samo kamatu koja se odnosi na period zastoja. Banke su u obavezi da osnovni model ponude klijentu, dok su alternativni modeli mogući samo na izričit zahtev dužnika.

Udruženje banaka Srbije je objavilo da je moratorijum prihvatila većina građana i privrede. Za moratorijum se odlučilo 94% građana koji imaju obaveze prema bankama, dok je nepunih 6% izričito tražilo da nastave sa otplatom. Kod preduzeća za moratorijum se opredelilo 92,9% firmi, a 7,1% izjasnilo se da želi i dalje da plaća svoje obaveze. Ukupna suma na koju se odnosi moratorijum iznosi oko 2 milijarde evra, što je podrška bankarskog sektora građanima i privredi da savladaju otežane uslove svakodnevnog života i poslovanja, koji su izazvani epidemijom Covid-19 (Udruženje banaka Srbije).

3) Ostale mere Narodne banke Srbije

Ostale mere Narodne banke Srbije obuhvataju podršku građanima, instrukcije i dodatne mere. Podrška građanima se odnosi na donošenje Instrukcije o načinu privremene isplate penzija za lica sa navršenih 65 i više godina života. Ovom intrukcijom data je moćnost da se lica starija od 65 godina, tokom trajanja vanrednog stanja, opredele za način isplate penzija (dinarskih i deviznih). Jedan način je davanje jednokratnog punomoćja licu od poverenja, a drugi da se penzija isplati na kućnu adresu korisnika u saradnji sa JP „Pošta Srbije". Sledeća mera podrške građanima se odnosi na preporuku društvima za osiguranje da omoguće ugovaračima osiguranja odloženo plaćanje dospelih premija osiguranja na osnovu ugovora o osiguranju kojima je predviđeno periodično plaćanje premije. U slučaju odlaganja njihovog plaćanja, premije dospele u periodu vanrednog stanja bile bi naknadno izmirene od strane ugovarača osiguranja, bez obračuna kamate, uz odgovarajuće raspoređivanje duga za premije osiguranja po isteku tog perioda (NBSe).

Pored Instrukcije o načinu privremene isplate penzija za lica sa navršenih 65 i više godina života, Narodna banka Srbije je 6. aprila 2020. donela Instrukciju o načinu privremenog postupanja banaka u radu sa ovlašćenim menjačima za vreme trajanja vanrednog stanja. Ovom Instrukcijom se propisuje da banka ne može jednostrano da raskine ugovor sa menjačem usled izmenjenih okolnosti poslovanja izazvanih pandemijom Covid-19 (npr. smanjeni obim poslovanja), kao i da je banka dužna da obezbedi minimalni proces rada, odnosno da preduzme sve potrebne aktivnosti kako bi omogućila da ovlašćeni menjač ispuni sve propisane obaveze (npr. prodaja stranog efektivnog novca banci, uplata gotovine na tekući račun banke i sl.). Pored toga, Instrukcija propisuje da su banke dužne da organizuju rad najmanje jedne ekspoziture ili svog drugog organizacionog dela na teritoriji grada Beograda na kojoj je pre uvođenja vanrednog stanja radila jedna ekspozitura ili više njih ili drugih organizacionih delova, i to svakog radnog dana, najmanje dva sata u toku jednog dana, u vreme kada ne postoji zabrana kretanja na javnim mestima, pri čemu ta dva sata ne mogu da obuhvate poslednji sat pred početak zabrane kretanja (NBSf).

Dodatne mere Narodne banke Srbije se odnose na donošenje izmena i dopuna odluka. Dopuna Odluke o izveštavanju o kreditnim poslovima sa inostranstvom propisuje da se, u uslovima vanrednog stanja, obrasci za izveštavanje, koji se inače dostavljaju Narodnoj banci Srbije u papirnom i elektronskom obliku, sada mogu dostavljati samo u elektronskom obliku, dok se dokumentacija, koja se inače dostavlja u papiru, sada može dostavljati i u elektronskom obliku (u pdf formatu), kao i da će Narodna banka Srbije u uslovima vanrednog stanja vršiti overu, odnosno prihvatanje obrazaca u elektronskom obliku. Izmenjena je i Odluka o bližim uslovima i načinu vođenja Jedinstvenog registra sefova i Odluka o bližim uslovima i načinu vođenja Jedinstvenog registra korisnika novčane doznake, tako što su brisane odredbe u navedenim odlukama prema kojima su banke bile dužne da do 15. aprila 2020. godine ispune sve neophodne tehničke uslove za dostavljanje podataka Narodnoj banci Srbije u skladu sa ovim odlukama i o tome obaveste Narodnu banku Srbije.

Treba dodati i preporuke Narodne banke Srbije da je potrebno, kad god je to moguće, koristiti bezgotovinsko plaćanje (mobilnim telefonom, putem računara, platnim karticama), uključujući i plaćanja nedavno uvedenim QR kodom na prodajnim mestima, potom usluge koje banke nude na daljinu putem elektronskog i mobilnog bankarstva i primeniti komunikaciju sa bankom putem elektronske pošte, kol centra i društvenih mreža.

Očekivani efekti mera Narodne banke Srbije

Pravovremenom reakcijom, Narodna banka Srbije je očuvala dinarsku i deviznu likvidnost bankarskom sektoru, olakšala je otplatu ukupnim obavezama dužnicima kroz obezbeđivanje moratorijuma u trajanju od 90 dana i snižavanjem referentne kamatne stope je uticala na sniženje kamatnih stopa na međubankarskom novčanom tržištu. U pogledu očekivanih efekata mera Narodne banke Srbije, možemo da istaknemo sledeće:

1) *podrška kreditnom i privrednom rastu – sniženjem referente stope došlo je do pada kamatne stope Belibor svih ročnosti, što smo prikazali u Tabeli 1, uz istovremeni pad stope Beonia, koja predstavlja prosečnu ponderisanu kamatnu stopu po osnovu prekonoćnih pozajmica na međubankarskom novčanom tržištu u Republici Srbiji. Time je Narodna banka Srbije dala podršku kreditnoj aktivnosti za kredite koji se odobravaju u dinarima, ali i ekonomskim merama Vlade Republike Srbije gde Fond za razvoj privrede kredite odobrava u dinarima. Naročito je važno održati kreditnu aktivnost u vremenima kada je došlo do značajnog opadanja privredne aktivnosti na globalnom nivou, što je rezultiralo smanjenjem ponude u uslovima prekinutih lanaca proizvodnje i snabdevanja, smanjenog angažovanja radne snage i oslabljene pozicije preduzeća.*
2) *preventivno delovanje na sprečavanje rasta problematičnih kredita – donošenjem zastoja u otplati ukupnih obaveza svih dužnika (pravnih i fizičkih lica) Narodna banka Srbije je preventivno delovala kako bi sprečila nastanak novih problematičnih kredita. Problematični kredit za svaku banku znači da mora da to potraživanje klasifikuje u nižu kategoriju po osnovu klasifikacije bilansne aktive i vanbilansnih stavki i da po tom osnovu ima veća izdvajanja po osnovu rezervisanja, čime se narušava kvalitet kreditnog portfolija. Nemogućnost redovne naplate kreditnih obaveza ugrožava dinarsku i deviznu poziciju banke, a u slučaju odluke da se problematično potraživanje proda ili ustupi (najčešće uz značajan diskont) smanjuje se profitabilnost banke. Sve to vodi pojačanoj nestabilnosti u poslovanju banaka.*
3) *podrška procesu dinarizacije – kroz veći kreditni rast dinarskih kredita dolazi do povećanja dinarskih plasmana u ukupnim plasmanima. Pored toga, sniženjem referentne kamatne stope uticalo se na pad izvršnih stopa dinarskih državnih hartija od vrednosti, što utiče na moguće povećanje dinarskog dela javnog duga u ukupnom javnom dugu. Veći nivo dinarizacije daje veći kredibilitet monetarnoj politici Narodne banke Srbije, koja trenutno preko referentne kamatne stope utiče na svega 30% depozita i plasmana koji su u dinarskom znaku. Istovremeno, dinarski krediti nisu izloženi promeni deviznog kursa i kod tih kredita rizik deviznog kursa se ne može pretvoriti u kreditni rizik, što je prisutno kod deviznih i devizno indeksiranih kredita.*

Mere Vlade Republike Srbije

Velika ekonomska neizvesnost, poput širenja pandemije Covid-19 na globalnom nivou, zahteva značajnu intervenciju države. U tom pogledu Ministarstvo finansija je 31. marta predstavilo Program ekonomskih mera za podršku privredi Srbije i smanjivanje negativnih efekata prouzrokovanih pandemijom virusa Covid-19. Program u vrednosti 5,1 milijarde evra ili 608,3 milijarde dinara, obuhvata mere poreske politike, direktnu pomoć privatnom sektoru, mere za očuvanje likvidnosti privatnog sektora i ostale mere (*Tabela 2*). Cilj programa je pomoć privredi, pre svega privatnom sektoru, ali i građanima da sačuvaju svoja radna mesta.

Prvi set mera se odnosi na odlaganje plaćanja poreza i doprinosa tokom trajanja vanrednog stanja i plaćanje tih dospelih obaveza sa početkom najranije 2021. godine, kao i odlaganje plaćanja poreza na dobit u drugom kvartalu. Cilj ove mere je da privreda ostvari poresko rasterećenje i očuva likvidnost, koja je značajno ugrožena tokom vanrednog stanja, kao i da sačuva radna mesta.

Drugi set mera odnosi se na direktnu pomoć preduzetnicima, mikro, manjim i srednjim preduzećima, kroz obezbeđivanje tri minimalne zarade, kao i velikim preduzećima u privatnom sektoru za koje je planirana isplata 50% neto minimalne zarade tokom trajanja vanrednog stanja. Da bi se ostvarila direktna pomoć potrebno da postoji otvoren namenski račun kod izabrane banke. Cilj ove mere je očuvanje zaposlenosti. Treba istaći da je na poslodavcu da odluči da li će direktnu pomoć države da iskoristi kao dodatak na platu ili će to predstavljati deo plate. Vlada je programom vrlo precizno definisala grupe radnika koji će za april, maj i jun, od države dobiti tri minimalne zarade. Privredni subjekti mogu da koriste mere pod uslovom da počev od 15.03.2020. godine do 10.04.2020. godine, nisu smanjivali broj zaposlenih za više od 10%, ne računajući zaposlene sa kojima je zaključen ugovor o radu na određeno vreme pre 15.03.2020. godine za period koji se završava u periodu od 15.03.2020. godine do 10.04.2020. godine (Poreska uprava). Ovom merom nisu obuhvaćeni zaposleni angažovani po ugovoru o povremenim i privremenim poslovima, kao ni ostala lica koja su angažovana van radnog odnosa (npr. sezonski radnici).

Tabela 2: Program ekonomskih mera za podršku privredi Srbije i smanjivanje negativnih efekata prouzrokovanih pandemijom virusa Covid-19

Naziv mere	u milijardama dinara	u % BDP
1. Mere poreske politike	**161,0**	**2,9**
1.1. Odlaganje plaćanja poreza na zarade i doprinose za privatni sektor, tokom trajanja vanrednog stanja, uz kasniju otplatu nastale obaveze u ratama sa početkom najranije od 2021.	140,0	2,5
1.2. Odlaganje plaćanja akontacije poreza na dobit u drugom kvartalu	21,0	0,4
1.3. Oslobađanje davalaca donacija od obaveze plaćanja PDV-a	-	
2. Direktna pomoć preduzećima za zaposlene	**97,3**	**1,8**
2.1. Direktna pomoć preduzetnicima koji se paušalno oporezuju i koji plaćanju porez na stvarni prihod, mikro, malim i srednjim preduzećima u privatnom sektoru - uplata pomoći u vidu minimalca (za vreme trajanja vanrednog stanja - 3 minimalne zarade)	92,8	1,7
2.2. Direktna pomoć velikim preduzećima u privatnom sektoru - uplata pomoći u visini 50% neto mininalne zarade (za vreme trajanja vanrednog stanja) za zaposlene kojima je rešenjem utvrđen prestanak rada.	4,5	0,1
3. Mere za likvidnost privrede	**264,0**	**4,8**
3.1. Podrška privredi preko Fonda za razvoj Republike Srbije	24,0	0,4
3.2. Garantna šema za podršku privredi preko banaka	240,0	4,4
4. Ostale mere	**86,0**	**1,6**
4.1. Moratorijum na isplatu dividendi do kraja godine, osim za javna preduzeća	16,0	0,3
4.2. Isplata 100 evra svim punoletnim građanima.	70,0	1,3
Ukupno	**608,3**	**11,0**

Izvor: Ministarstvo finansija i Fiskalni savet

Treća grupa mera se odnosi na obezbeđivanje likvidnosti privrede i to putem kredita preko Fonda za razvoj Republike Srbije i garantne šeme za podršku privredi preko banaka. Ova mera ima najveće učešće u ukupnom iznosu planiranih sredstava programa ekonomskih mera (264 milijarde dinara, odnosno 4,8% BDP-a). Cilj mere je obezbeđivanje likvidnosti privrede tokom trajanja pandemije Covid-19 i saniranja posledica nakon završetka vanrednog stanja. Preko Fonda za razvoj privreda može da dobije kredit na rok od 36 meseci koji uključuje grejs period do dvanaest meseci, kamatna stopa 1% na godišnjem nivou i otplata kredita je u mesečnim anuitetima. Maksimalni iznos kredita je do 10 miliona dinara za preduzetnike i mikro preduzeća, do 40 miliona dinara za mala pravna lica i do 120 miliona dinara za srednja pravna lica (Fond za razvoj). Narodna banka Srbije je snižavanjem referentne kamatne stope i prenošenjem tog sniženja na kamatne stope novčanog tržišta dala doprinos ekonomskim merama jer se krediti Fonda razvoj odobravaju i vraćaju u dinarima.

U okviru ostalih mera predviđen je moratorijum na isplatu dividenti do kraja ove godine, osim za javna preduzeća, kao i isplata 100 evra svim punoletnim

građanima. U Uredbi o formiranju privremenog registra i načinu uplate jednokratne novčane pomoći svim punoletnim državljanima Republike Srbije u cilju smanjivanja negativnih efekata prouzrokovanih pandemijom bolesti Covid-19 izazvane virusom SARS-CoV-2 precizirano je da pravo na jednokratnu novčanu pomoć u iznosu od 100 evra u dinarskoj protivvrednosti imaju svi punoletni državljani Republike Srbije, koji na dan stupanja na snagu Uredbe (24. april 2020. godine) imaju prebivalište na teritoriji Republike Srbije, sa važećom ličnom kartom. I dok su mere usmerene ka privredi pozitivno ocenjene, budžetski opravdane i dobro struktuirane, mera isplate 100 evra svim punoletnim licima, prema Fiskalnom savetu, predstavlja potpuno neprimerenu meru. Fiskalni savet u svojoj analizi „Ocena antikriznog programa ekonomskih mera" ističe da to nije mera koja će podstaći privredni rast, jer bi to značilo da je niska platežna moć stanovništva, a ne pandemija koronavirusa, uzrok ekonomske krize, što nije tačno. Takođe, predložena mera nije ni socijalnog karaktera, jer će isti iznos biti isplaćen svim punoletnim građanima Srbije, a ne samo materijalno ugroženom stanovništvu.

Kada je reč o interesovanju privrede za korišćenje prethodno navedenih mera Ministarstvo finansija je saopštilo da je zaključno sa 21. aprilom, 169.111 privrednih subjekata izabralo banku za otvaranje namenskog računa za isplatu direktnih davanja. Takođe, zaključno sa 21. aprilom ostalo je još 134.857 privrednih subjekata koji imaju račun u više banaka i još nisu izabrali banku. PPP-PD poresku prijavu (pojedinačna poreska prijava o obračunatim porezima i doprinosima) je podnelo 38.628 privrednih subjekata za 278.530 zaposlenih, a odloženo je ukupno 6,9 milijardi dinara obaveza za poreze i doprinose. Kada je reč o kreditima Fonda za razvoj, zaključno sa 21. aprilom, 52 privrednih subjekata je podnelo zahtev za kredit kod Fonda za razvoj, a traženi iznos kredita preko milijardu dinara, dok su sredstva odobrena za 25 kredita u iznosu od 729,09 miliona dinara.

Očekivani efekti mera Vlade Republike Srbije

Program ekonomskih mera Vlade Republike Srbije je ima dva značajna prioriteta. Prvi je pomoć privrednim subjektima kojima je usled širenja pandemije otežano poslovanje, a drugi prioritet je očuvanje radnih mesta i zarada zaposlenih. Očekivani efekti mera Vlade Republike Srbije su sledeći:

1) *obezbeđivanje povoljnih kredita preko Fonda za razvoj – nesmetana povoljna kreditna podrška je izuzetno bitna u trenucima ugroženosti normalnog poslovanja i nestabilne ekonomske aktivnosti kako u zemlji, tako i na globalnom nivou. Ti krediti se odobravanju i vraćaju u dinarima, što je bitno za privredne subjekte koji iz svojih dinarskih prihoda mogu redovno da servisiraju kreditne obaveze na koje ne utiče promena deviznog kursa dinara u odnosu na evro. Isto tako, grejs period daje mogućnost da privredni subjekti imaju olakšicu u otplati kredita u trajanju od dvanaest meseci, kako bi na osnovu investicije kojom su konkurisali i dobili kredit mogli da dođu do prvih prihoda.*
2) *očuvanje radnih mesta – glavni doprinos postizanju ekonomskog oporavka daju zaposleni. Zvanični podaci Nacionalne službe za zapošljavanje*

pokazuju da su najavljene mere sprečile veće otpuštanje radnika. U martu, broj lica koji se prijavljuje za nadoknadu za slučaj nezaposlenosti je iznosio oko 5.000, što je ispod proseka iz januara i februara – oko 6.000 (NZS). Takođe, Agencija za privredne registre je već s najavom programa podrške registrovala manji broj privremenih prekida obavljanja delatnosti, koji je od početka godine do sredine marta iznosio 7.358, a od 16. marta do 13. aprila 6.290 (APR). Može se očekivati da u narednom periodu dodje do objave još povoljnjih podataka po pitanju postojećih zaposlenih, a kako bude tekao ekonomski oporavak i do otvaranja novih radnih mesta.

3) *očuvanje budžeta Republike Srbije – vraćanjem ekonomske aktivnosti u redovne tokove omogućava se da svi privredni subjekti redovno uplaćuju svoje poreske obaveze. To je naročito bitno imajući u vidu veličinu paketa ekonomskih mera Vlade Republike Srbije, kao i pristizanje dodatnih obaveza koje dospevaju na plaćanje ove godine. Uredba o izmeni opštih prihoda i primanja, rashoda i izdataka budžeta Republike Srbije za 2020. godinu radi otklanjanja štetnih posledica usled bolesti Covid-19 izazvane virusom SARS-CoV-2 predviđa da se jedan deo ekonomskih mera finansira iz zajmova domaćih i međunarodnih komercijalnih i multilateralnih finansijskih institucija i inostranih vlada, ali i kroz emitovanje državnih hartija od vrednosti (državnih zapisa i obveznica na domaćem finansijskom tržištu u domaćoj i stranoj valuti) i iz primanja ostvarenih od emisije evroobveznica (državnih hartija od vrednosti emitovanih na međunarodnom finansijskom tržištu u domaćoj i stranoj valuti). Velikim preduzećima dodatni izvor finansiranja bi moglo da predstavlja tržište korporativnih obveznica, koje bi, po relativno povoljnim uslovima, moglo pribavljati nedostajuća sredstva na domaćem tržištu kapitala i time doprineti njegovom daljem razvoju. Sve ovo treba da doprinese da se prethodno postignuta fiskalna stabilnost ne ugrozi i da se očuva stabilnost javnih finansija.*

Ekonomska perspektiva Srbije

Vrlo je teško predvideti ekonomsku perspektivu Srbije nakon završetka pandemije Covid-19. Sigurno je da će doći do usporavanja privredne aktivnosti, potencijalnog porasta nezaposlenosti, prekida lanca snadbevanja i sniženja kupovne moći. Pre izbijanja pandemije Međunarodni monetarni fond je u izveštaju World Economic Outlook, objavljenom u oktobru 2019, projektovao stopu rasta BDP-a Srbije za 2020. godinu od 4%. U izveštaju World Economic Outlook iz aprila 2020. godine prognoza BDP-a Srbije za ovu godinu je znatno snižena i iznosi -3,0%. Treba istaći da je Međunarodni monetarni fond za Srbiju za 2020. godinu projektovao najniži pad stope BDP-a u odnosu na zemlje u okruženju (Hrvatska -9,0%, Rumunija -5,0%, Bugarska -4,0%, Mađarska -3,1%), ali i u odnosu na glavne ekonomije zone evra (Nemačka -7,0%, Francuska -7,2%, Italija -9,1%, Španija -8,0%). Na globalnom nivou Međunarodni monetarni fond za 2020. prognozira stopu BDP-a od -3,0%, što je znatno veći pad nego tokom finansijske krize 2008-2009. godine, dok se za zonu evra projektuje stopa od -7,5%. Takođe, Fond smatra da će ove godine na globalnom nivou biti zabeležana veća recesija nego tokom Velike depresije (eng. *Great Depression*). U osnovnom scenariju Fonda, koji pretpostavlja da se

pandemija smiri u drugoj polovini 2020. godine, predviđa se da će globalna ekonomija u 2021. godini porasti za 5,8%, uz normalizaciju ekonomske aktivnosti. Za Srbiju se za 2021. prognozira stopa BDP-a od 7,5%, što će biti, ukoliko se realizuje, najviši privredni rast u odnosu na zemlje iz okruženja (Hrvatska 4,9%, Bugarska 6,0%, Mađarska 4,2%, Poljska 4,2%).

Sama pandemija je uticala da se zdravstveni sistem izloži neviđenom pritisku, dok mere svake zemlje nastoje da budu dobro dizajnirane i da podjednako utiču na ponudu i tražnju. Eksterni faktori, uključujući pad cena robe, poremećaj u lancu snadbevanja i pad prihoda turizma i doznaka, znatno utiču na domaću ekonomiju. Evropska banka za obnovu i razvoj je početkom aprila 2020. objavila procenu otpornosti zemalja u razvoju, gde pripada Srbija, na prisustvo virusa Covid-19. Otpornost zemalja se merila u četiri oblasti: otpornost zdravstvenog sistema, otpornost šokova na domaćem tržištu, otpornost na eksterne šokove i otpornost politika. Prema proceni Evropske banka za obnovu i razvoju Srbija ima visok nivo otpornosti u sistemu zdravstvene zaštite, umeren nivo otpornosti od šokova na domaćem tržištu, pretežno visok nivo otpornosti kod eksternih šokova i otpornosti politika (EBRD).

U pogledu saniranja posledica izazvanih širenjem virusa Covid-19 Evropska banka za obnovu i razvoj je krajem aprila 2020. godine saopštila da će za 38 zemalja u razvoju, gde spada i Srbija, da obezbedi pomoć od 21 milijarde evra za period 2020-2021. godine preko tzv. Paketa solidarnosti (eng. *Solidarity Package*). Ključni stub Paketa solidarnosti je Okvir otpornosti (eng. *Resilience Framework*) koji obezbeđuje finansiranje kratkoročnih potreba za likvidnošću i obrtnim kapitalom (EBRDa). U okviru podrške zemljama zapadnog Balkana, Srbija je od Evropske unije dobila 15 miliona evra za podršku zdravstvenom sektoru i 78,4 miliona evra podrške za ekonomski oporavak. Pored toga, Evropska unija je obezbedila dva miliona evra za pet teretnih aviona koji su dopremili više od 280 tona hitne medicinske pomoći i obezbeđeno je još 4,9 miliona evra za nabavku lekova za ugroženo stanovništvo (EU).

Uprkos novonastaloj krizi izazvanoj pandemijom virusa Covid-19 rejting agencija Fitch Ratings je krajem marta 2020. godine zadržala kreditni rejting Srbije na nivou BB+ uz stabilne izglede za njegovo dalje povećanje. Ovu odluku agencija je obrazložila da Srbija ima pojačanu otpornost na krizu izazvanu pandemijom virusa Covid-19, što se duguje visokom nivou deviznih rezervi, smanjenju spoljnog duga, ali i zbog očekivanog pozitivnog uticaja niskih cena energenata. Agencija Standard and Poor's je početkom maja zadržala kreditni rejting Srbije na nivou BB+, uprkos globalnoj krizi izazvanoj pandemijom virusa Covid-19, uz stabilne izglede za njegovo dalje povećanje. Treba istaći da je ekonomija Srbije danas mnogo otpornija nego što je bila pre izbijanja finansijske krize 2008-2009. godine. Bruto devizne rezerve Narodne banke Srbije na kraju marta iznosile su 13,1 milijardu evra, dok su neto devizne rezerve (devizne rezerve umanjene za devizna sredstva banaka po osnovu obavezne rezerve i drugim osnovima) iznosile 10,9 milijardi evra. Smanjenje učešća javnog i spoljnog duga u BDP-u, zabeleženo tokom prethodnih godina, nastavljeno je i tokom 2019. Učešće javnog duga centralne države u BDP-u smanjeno je sa 53,7% (krajem 2018). na 52,0% BDP-a (krajem 2019). Dug opšte države (koji uključuje dug lokalnih samouprava i AP Vojvodine, za koji država nije izdala garancije) smanjen je sa 54,4% BDP-a (krajem 2018)

na 52,9% BDP-a. Usled znatnog rasta privredne aktivnosti, učešće spoljnog duga u BDP-u takođe je opalo i na kraju 2019. iznosilo je 61,9% BDP-a (62,2% krajem 2018). Stopa nezaposlenosti na kraju 2019. je iznosila 10,4% (na kraju 2018. 12,7%), dok je stopa BDP u 2019. iznosila 4,2% (u 2018. 4,4%).

Mere zemalja u okruženju povodom virusa Covid-19

Poput Srbije, i zemlje u okruženju su reagovale primenom različitih mera monetarne i fiskalne politike kako bi sanirale posledice virusa Covid-19. Uporedivost mera predstavićemo u Češkoj, Poljskoj, Mađarskoj i Rumuniji, koje, kao i Srbija, primenjuju inflatorno targetiranje, a istovremeno su i zemlje Evropske unije na čijem putu pridruživanja se nalazi naša zemlja. U pogledu primene mera monetarne politike, centralne banke zemalja centralne i istočne Evrope su reagovale sniženjem referentnih kamatnih stopa, ali i primenom konvencionalnih i nekonvencionalnih mera monetarne politike. Centralna banka Češke je prvo u februaru povećala referentnu kamatnu stopu za 25 b.p., da bi potom u martu stopu snizila dva puta za ukupno 125 b.p. i u maju za 75 b.p., na nivo od 0,25%. Član Izvršnog odbora centralne banke Češke je izjavio da banka može referentnu stopu da spusti na nivo koji predstavlja „tehničku nulu", ali nije precizirao vremenski okvir za sprovođenje ove odluke (CNB). Na vanrednom sastanku u martu, centralna banka Poljske je smanjila referentnu stopu za 50 b.p., što predstavlja prvu promenu stope od marta 2015, a potom za još toliko u aprilu, na 0,5%. Radi obezbeđivanja likvidnosti centralna banka Poljske je započela primenu repo operacija i uvela je obimnu kupovinu državnih obveznica na sekundarnom tržištu kao deo strukturalnih operacija otvorenog tržišta, što će promeniti dugoročnu strukturu likvidnosti u bankarskom sektoru. Ove operacije treba da utiču na održavanje likvidnosti na sekundarnom tržištu državnih obveznica (NBP). Centralna banka Mađarske nije menjala referentnu stopu, koja ujedno predstavlja stopu remuneracije (0,9%), ali je obezbedila neograničenu likvidnost bankama uvođenjem novog instrumenta kolateralizovanog zajma s fiksnom kamatnom stopom (eng. *Lending facility of unlimited total amount at fixed interest rates*), a dodatnu likvidnost je obezbedila i ukidanjem obavezne rezerve za domaće banke i povećanjem obima deviznih svop transakcija (MNB). Centralna banka Rumunije je na vanrednom sastanku u martu uvela set novih mera radi podrške privredi, među kojima su i smanjenje referentne stope za 50 b.p., na 2,0%, sužavanje simetričnog koridora osnovnih kamatnih stopa sa ±1,0 procentni poen na ±0.5 procentnih poena u odnosu na referentnu kamatnu stopu, obezbeđenje likvidnosti putem repo operacija, kao i pokretanje programa kupovine državnih hartija od vrednosti u domaćoj valuti na sekundarnom tržištu kako bi se konsolidovala likvidnost bankarskog sektora i time dala podrška finansiranju realne ekonomije i javnog sektora (NBR).

U pogledu mera fisklane politike kod sve četiri zemlje može se uočiti da se te mere mogu podeliti na budžetske mere, kreditne garancije i ostale mere (*Tabela 3*). Budžetske mere se odnose na pomoć zaposlenima i kompanijama kako bi se očuvala ekonomska aktivnost i zaposlenost, mere kreditnih garancija su usmerene ka obezbeđivanju kredita kroz razvojne fondove ili banke,

dok su ostale mere fokusirane na moratorijum u otplati bankarskih kredita (u slučaju Češke), ali i brži povraćaj PDV (slučaj Rumunije).

Tabela 3: Program mera fiskalne politike Češke, Poljske, Mađarske i Rumunije radi saniranja posledica virusa Covid-19

	Češka Republika	Poljska	Mađarska	Rumunija
Budžetske mere	(1) Podrška od 80 procenata bruto plata zaposlenih koji su upućeni u karantin i zaposlenih u preduzećima, koja su morala da budu zatvorena zbog državnih ograničenja (ako poslodavac i dalje plaća 100% od plate zaposlenika). (2)Samozaposleni mogu dobiti paušalni iznos do 25.000 CZK (oko 900 €), a od 1. maja 500 CZK dnevno, sve dok postoje vladina ograničenja.	(1) Budžetske mere, procenjene na 93 milijardi PLN (4,2% BDP-a)	(1) Socijalni doprinosi poslodavaca biće ukinuti u najteže pogođenim sektorima. (2) Doprinosi za zdravstvo biće umanjeni do 30. juna. (3) Oko 80.000 malih i srednjih preduzeća (uglavnom u sektoru usluga) biće oslobođeno od poreza na mala preduzeća (plaćanje poreza od strane drugih kompanija u pogođenim sektorima biće odloženo do kraja vanrednog stanja). (4) Doprinosi za razvoj turizma biće privremeno otkazani. (5) Pružaocima medijskih usluga dobiće poresku olakšicu za nastali gubitak od reklamnog prihoda. (6) Postupci naplate zaostalih poreza biće obustavljeni tokom vanrednog stanja.	(1) Ključne poreske mere i mere podsticanja najavljene do sada iznose oko dva procenta BDP-a za 2019. godinu i uključuju (a) dodatna sredstva za zdravstveni sistem, (b) delimično delimično plata roditelja koji ostaju kući u periodu zatvaranja škola i (c) mere za podršku preduzećima, uključujući delimično pokrivanje plata samozaposlenih i plate od jednog meseca za zaposlene koji mogu da budu otpušteni, odlaganje plaćanja komunalnih usluga za mala i srednja preduzeća.

	Češka Republika	Poljska	Mađarska	Rumunija
Kreditne garancije	(3) Vlada je putem državne razvojne banke (CMZRB) odobrila kreditnu liniju za preduzeća.	(2) Kreditne garancije i mikro zajmovi za preduzetnike procenjene na 75 milijardi PLN (3,3 procenta BDP-a). (3) Poljski fond za razvoj finansiraće program likvidnosti za kompanije u iznosu od 100 milijardi PLN (4,5% BDP-a).	(7) Stvaranje dva nova fonda, Fonda za zaštitu od epidemije i Fonda za zaštitu privrede. (8) Mere podrške izvozu preko državne Ekimbank. (9) Državna razvojna banka MFB lansirala je paket finansijskih instrumenata za kompanije u vrednosti od 1.490 milijardi HUF	(2) Vlada daje početne garancije od 15 milijardi RON-a - što je ekvivalent 1,5 odsto BDP-a - za garancije za kredite i subvencionisane kamate za obrtni kapital i investicije malih i srednjih preduzeća.
Ostale mere	(4) Vlada je odobrila moratorijum na bankarske kredite do šest meseci.			(3) Ostale mere uključuju brži povraćaj PDV-a, obustavu naplate kamate na dospele obaveze dužnika, popuste za plaćanje poreza na dobit preduzeća i odlaganje poreza na imovinu za tri meseca.

Izvor: Međunarodni monetarni fond (https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19#C)

I analizirane zemlje, kao i Srbija, prema prognozama Međunarodnog monetranog fonda iz aprila 2020. mogu očekivati pad stope bruto domaćeg proizvoda u 2020. godini, a potom i privredni oporavak 2021. godine, porast javnog duga i stope nezaposlenosti, usporavanje inflacije i porast deficita tekućeg računa. Kada se napravi uporedivost mera monetarne i fiskalne politike analiziranih zemalja i Srbije može se uočiti da je Srbija pravovremeno reagovala donošenjem adekvatnih mera kako bi se pomoglo privredi i građanima da što bolje prebrode posledice pandemije virusa Covid-19.

Svet posle Covid-19

Treba očekivati da svet nakon završetka pandemije Covid-19 ne bude isto mesto za život i rad. Tokom trajanja pandemije desili su se značajni lomovi na finansijskom i robnom tržištu, došlo je značajnog narušavanja u lancu snabdevanja, mnogi zaposleni su ostali bez posla i privredna aktivnost je značajno usporena. Sve to je zahtevalo priličnu intervenciju fiskalnih i monetarnih vlasti kako bi se održao zdravstveni sistem koji je izložen najvećem pritisku, ali i da

se privredna aktivnost sačuva kako bi mogla da bude pokretač ekonomskog oporavka.

Predsednica Međunarodnog monetarnog fonda Kristalina Georgieva je početkom aprila 2020. saopštila da je Fond u januaru 2020. očekivao pozitivan rast prihoda po glavi stanovnika u preko 160 zemalja u 2020. godini, a da su se nakon izbijanja pandemije brojke preokrenule: trenutno Fond projektuje da će ove godine preko 170 zemalja doživeti negativan rast prihoda po glavi stanovnika. Fond je saopštio da je ohrabrujuća vest da su sve vlade pokrenule akciju i da je došlo do značajne koordinacije mera fiskalne politike u vrednosti od čak 8 biliona dolara. Gospođa Georgieva je istakla da postoje četiri prioriteta kada je reč o ekonomskom oporavku. Prvi prioritet se odnosi na nastavak sprovođenja osnovnih mera zaštite i podrška zdravstvenim sistemima, drugi na zaštitu ljudi i kompanija primenom pravovremenih i ciljanih mera fiskalne politike i finansijskog sektora. Treći prioritet se bazira na smanjenju nestabilnosti u finansijskom sistemu, dok se četvrti odnosi na pripremu plana za oporavak (MMFa).

Svetska banka prognozira da će doznake na globalnom nivou ove godine da zabeleže pad od skoro 20%, usled ekonomske krize izazvane širenjem Covid-19. Predviđeni pad, koji bi bio najoštriji dosadašnji pad, u velikoj meri je posledica smanjenja plata i zaposlenosti radnika koji rade van matične zemlje i koji su skloniji gubitku posla i plata tokom ekonomske krize. Predviđa se da će doznake u zemljama sa niskim i srednjim nivoom dohotka pasti za 19,7% na 445 milijardi dolara, što predstavlja značajan gubitak finansijskih sredstava za mnoga ugrožena domaćinstva. Svetska banka očekuje da će tokovi doznaka pasti u svim regionima, najviše u Evropi i centralnoj Aziji (27,5%), zatim Subsaharskoj Africi (23,1%), Južnoj Aziji (22,1%), Bliskom Istoku i Severnoj Africi (19,6%), Latinskoj Americi i Karibima (19,3%) i u istočnoj Aziji i Pacifiku (13%).

Prema švajcarskoj banci UBS, ključni trendovi nakon završetka pandemije Covid-19 su (UBS):

1. *Porast nivoa zaduženosti – Prema trenutnim procenama UBS banke, nivo učešća javnog duga u BDP-u u većem delu Evrope i u SAD-a do kraja 2021. biće veći za 15–25 procentnih poena nego što je bio krajem 2019. Postoji nekoliko načina da Vlade finansiraju javni dug, ali uglavnom koriste tri načina: finansijska represija, veće oporezivanje i umereno veća inflacija.*
2. *Smanjenje nivoa globalizacije – Tokom trajanja pandemije Covid-19 mnogim ljudima je zabranjeno da napuštaju svoje domove. Svet će zbog ove krize biti strukturno manje globalan, podstičući trend deglobalizacije. U manje globalnom svetu može se očekivati da se razvije populizam, protekcionizam i usmerenost na lokalna tržišta (eng. Localization). To će dovesti do globalne diversifikacije i daljeg razvoja automatizacije i robotike.*
3. *Veći nivo digitalizacije – Mere izolacije prisilile su mnoge potrošače i kompanije da značajno promene način kupovine i prodaje robe i usluga i postanu digitalniji. Iako postoji uverenost da će se većina pojedinaca i preduzeća vratiti na prethodni način rada kada se ukinu mere izolacije, uslediće trajne promene. Ostaje nejasno koliko brzo će potrošači i regulatori povratiti poverenje u sigurnost ekonomije deljenja, ali neke posledice*

izolacije uključuju: veći nivo digitalizacije, manje deljenja i značajan razvoj zdravstvene tehnologije.

Zaključak

Krajem 2019. godine u kineskom gradu Vuhanu došlo je do širenja novog koronavirusa Covid-19, koji se početkom 2020. proširio na ceo svet. Kao mera zaštite i prevencije širenja virusa, koji je početkom marta Svetska zdravstvena organizacija proglasila globalnom pandemijom, preporučeno je socijalno distanciranje, izbegavanje kontakta i, ukoliko poslovne aktivnosti to dozvoljavaju, rad od kuće. Time je došlo do usporavanja, a u nekim delatnostima i do potpunog prekida privredne aktivnosti, što se dalje prenelo na porast nezaposlenosti, veća izdvajanja za socijalnu pomoć i smanjenje platežne moći. U takvim okolnostima potrebno je postoji snažna reakcija kreatora monetarne i fiskalne politike, kako bi se sanirale posledice širenja Covid-19.

U Srbiji je početkom marta zabeležen prvi slučaj zaraze koronavirusom, nakon čega je 15. marta uvedeno vanredno stanje, koje je trajalo do 6. maja. Došlo je zatvaranja graničnih prelaza (prvo prema zemljama u okruženju, a potom i svih graničnih prelaza), obustavljen je rad sa strankama putem neposrednog kontakta i obustavljeno je izvođenja nastave u visokoškolskim ustanovama, srednjim i osnovnim školama i redovnog rada ustanova predškolskog vaspitanja i obrazovanja. Prekinut je avio saobraćaj i znatno je smanjen gradski saobraćaj. Privredna aktivnost je znatno usporena i kako bi se ona ponovo pokrenula Narodna banke Srbije i Vlade Republike Srbije donele su pravovremene i adekvatno definisane mere, svaka u svojoj nadležnosti.

Narodna banka Srbije je u okviru mera monetarne politike dva puta (u martu i aprilu) snizila referentnu kamatnu stopu, kako bi podstakla kreditni i privredni rast, a primenom repo operacija (kupovina dinarskih državnih hartija od vrednosti) i organizovanjem dodatnih svop aukcija EUR/RSD obezbedila je dodatnu dinarsku i deviznu likvidnosti bankarskom sektoru. Pored toga, Narodna banka Srbije je propisala zastoj u otplati obaveza (moratorijum) za sve dužnike kako bi tokom vanrednog stanja imali mogućnost da prihvate, ukoliko to žele, ponudu banke/davaoca lizinga o zastoju otplate obaveza (moratorijum). U okviru ostalih mera Narodna banka Srbije je, u saradnji sa ostalim bankama, omogućila da penzioneri stariji od 65 godina, tokom vanrednog stanja, penzije dobiju na kućnu adresu ili da daju osobi od poverenja jednokratno ovlašćenje za podizanje penzije.

Ministarstvo finansija je 31. marta predstavilo Program ekonomskih mera za podršku privredi Srbije i smanjivanje negativnih efekata prouzrokovanih pandemijom virusa Covid-19. Program u vrednosti 5,1 milijarde evra ili 608,3 milijarde dinara, obuhvata mere poreske politike, direktnu pomoć privatnim sektoru, mere za očuvanje likvidnosti privatnim sektoru i ostale mere. Cilj programa je pomoć privredi, pre svega privatnom sektoru, ali i građanima da sačuvaju svoja radna mesta.

Ekonomska perspektiva Srbije je neizvesna, jer pandemija virusa Covid-19 još uvek traje i trenutno se ne mogu proceniti gubici privredne aktivnosti. Izve-

sno je da će doći do snažajno sniženja stope BDP-a za 2020. godinu i, prema proceni Međunarodnog monetarnog fonda, ta stopa će da iznosi -3,0%, što je znatno ispod prethodno prognozirane stope od 4,0%, dok se za 2021. godinu očekuje oporavak i stopa rasta od 7,5%. Treba istaći da je ekonomija Srbije danas mnogo otpornija nego što je bila pre izbijanja finansijske krize 2008-2009. godine. Bruto devizne rezerve Narodne banke Srbije na kraju marta iznosile su 13,1 milijardu evra, dok je prisutna opadajuća putanja učešća javnog i spoljnog duga u BDP-u. Budžetski opravdane mere fiskalne politike i pravovremena reakcija Narodna banke Srbije treba da doprinesu oživaljavanju privredne aktivnosti, naročito privatnog sektora, uz očuvanje postojećih i otvaranje novih radnih mesta. Sve donete mere treba da doprinesu ekonomskom oporavku privrede i pojedinaca, uz očekivanje da se u 2021. godini postigne privredni rast koji će biti značajno usporen tokom ove godine.

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The Response of the Monetary and Fiscal Policies on COVID 19 in Serbia

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Summary: The coronavirus disease 2019, recognizable under the abbreviation Covid-19, is an infectious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The disease appeared in Wuhan, China in December 2019, and then spread to the entire world. The imposed measures of isolation and social distancing have led to a reduction in the volume and, in many cases, a complete cessation of economic activity in many industries. In order to remedy the effects of the coronavirus, the National Bank of Serbia and the Ministry of Finance, each in their respective jurisdiction, have adopted a set of measures. The National Bank of Serbia lowered the key reference rate to support credit and economic growth, then provided additional dinar and foreign currency liquidity to the banking sector, through EUR/RSD swaps and repo auctions, and made decisions prescribing a moratorium on debt payments. The Ministry of Finance has adopted a The Program of Economic Measures for Reducing the Negative Effects Caused by the Covid-19 Pandemic and Supporting the Serbian Economy. The Program includes tax policy measures, direct assistance to the private sector, measures to preserve liquidity for the private sector and other measures.

Keywords: monetary policy, fiscal policy, Covid-19, economic activity, moratorium, fiscal stimulus

JEL: E63, H12, I18

*The views expressed in this paper are those of the author and do not necessarily represent the official view of the National Bank of Serbia..

Introduction

At the beginning of March 2020, the first case of a coronavirus infection was registered in the Republic of Serbia. Subsequently, on March 15, pursuant to Article 200, paragraph 5, of the Constitution of the Republic of Serbia, the Decision on Declaring a State of Emergency on the Territory of the Republic of Serbia was adopted, which was abolished on May 6. According to the aforementioned article of the Constitution, a decision on a state of emergency is valid for a maximum of 90 days, and after the expiration of this term, the National Assembly may extend the decision by another 90 days, via a majority vote of the MPs. The decision of the Government of the Republic of Serbia resulted in the closure of border crossings (first to neighboring countries and then all border crossings), suspended work with clients through direct contact and suspended teaching in higher education institutions, secondary and elementary schools and the full-time work of preschool education institutions. The Government of the Republic of Serbia also decided to restrict the provision of services in the field of retail trade, which includes the sale of goods and the provision of services in shopping malls and outlets that can only be entered via a closed space. In order to provide essential products for the population, on April 10, for a period of 30 days, a decision was made to ban their export, and a decision was also made to ban the export of medicines. All the above measures have been taken to protect the health of the population. This certainly affected the restriction on the activities of most of the economy. In order to remedy the effects of the coronavirus on the economy, the National Bank of Serbia and the Government of the Republic of Serbia have adopted a set of measures.

Measures of the National Bank of Serbia

The National Bank of Serbia acted in a timely and proactive manner in adopting measures aimed at supporting the domestic economy. The measures can be divided into three groups: (1) monetary policy measures, (2) moratorium on debt payments and (3) other measures.

1) Monetary Policy Measures

Monetary policy measures relate to lowering the key policy rate and providing additional dinar and foreign currency liquidity to the banking sector. At an extraordinary meeting on March 11, the National Bank of Serbia›s Executive Board decided to lower its key policy rate by 50 basis points to 1.75%, while narrowing the corridor of its main interest rates from ± 1.25 percentage points to ± 1 percentage point relative to the key policy rate. As a result, the deposit facility rate was cut by 25 basis points to 0.75%, while the lending facility rate was cut by 75 basis points to 2.75%. The National Bank of Serbia explained this decision as a timely and adequate response to the increased uncertainty in the international environment caused by the spread of the coronavirus (Covid-19), which is in line with the activities undertaken by other central banks in the world (NBS). An additional reduction in the key policy rate occurred

at the April meeting of the Executive Board, held on April 9, when the rate was reduced by another 25 basis points to 1.50%, which is the lowest level of the key policy rate in regime of inflation targeting. This reduction ensured that the inflation remained within the bounds of the target in the medium term and fully supported fiscal policy measures, which should contribute to mitigating the negative effects on economic growth and maintaining favorable financing conditions in the emerging situation (NBS). The decrease in the key policy rate was also carried over to Belibor rates of all maturities (*Table 1*). Belibor represents the benchmark interest rate for dinar funds offered by panel banks on the interbank market. Belibor rates are calculated and posted on the Reuters system every business day at 11:00 AM as the arithmetic mean of the quotations remaining after eliminating the two highest and two lowest rates, with two decimal places.

Table 1: Interest Rate Movements of Belibor, Daily Data (in%)

	T/N	S/N	1W	2W	1M	2M	3M	6M
March 11 - first reduction of KPR	1.10	1.11	1.15	1.19	1.29	1.43	1.62	1.77
March 12	0.96	0.96	1.01	1.04	1.15	1.30	1.48	1.62
April 9 - second reduction of KPR	0.88	0.89	0.93	0.98	1.07	1.18	1.34	1.50
April 10	0.69	0.70	0.79	0.83	0.93	1.03	1.19	1.38
* KPR - key policy rate								

Source: National Bank of Serbia

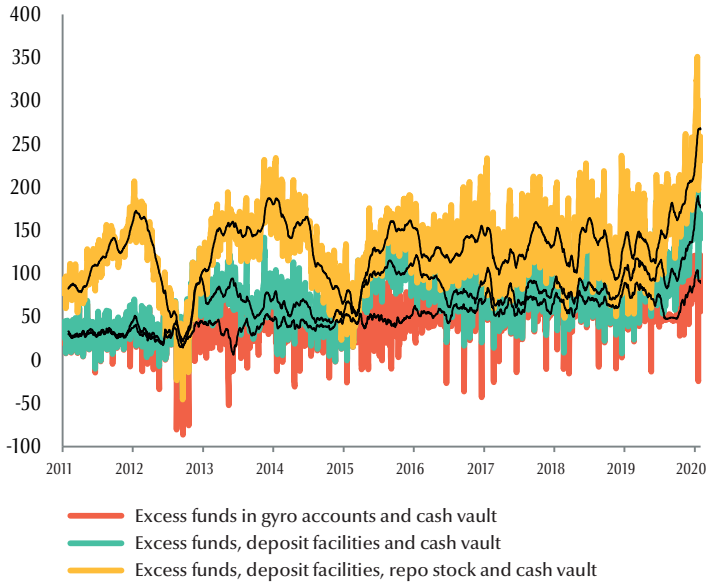
The next monetary policy measure applied by the National Bank of Serbia is to provide dinar and foreign currency liquidity to the banking sector in a state of emergency in the Republic of Serbia, due to the spread of the coronavirus (Covid-19). This was done by applying additional EUR/RSD swap auctions and repo operations. We use the term additional swap auctions to differentiate from the regular two weeks' and three months' swap auctions organized by the National Bank of Serbia, according to the established calendar of regular swap auctions. Every working Tuesday, the swap of auctions with three months' maturity is held, and every working Friday, for those with a maturity of two weeks. Auctions of both maturities are organized simultaneously with a swap of foreign currency sales (euros for dinars providing additional liquidity in euros) and an auction of swap purchases of foreign currency (euros for dinars providing additional dinars liquidity). In the first half of 2019, the National Bank of Serbia, for the first time, implemented an additional two weeks' swap auctions to ensure the continued smooth functioning of the money market in the face of a temporary reduction in the dinar liquidity surplus in the banking sector. At that time, seven additional two weeks' swap auctions provided the banks with additional dinar liquidity in the total amount of RSD 67 billion in exchange for EUR 567 million.

An additional swap auction was organized on March 23, where the National Bank of Serbia provided dinar liquidity worth RSD 14.9 billion for a three-month period, at an interest rate of 0.85%. At that auction, the National Bank of Serbia bought 127 million euros in swaps over a three-month period, which was equal to the demand of the auctioned banks (NBSb). Unlike regular swap auctions organized by variable multiple swap points, these additional three

months' swap auction was organized at fixed swap points of 2,525. At the end of March (March 27th), the National Bank of Serbia announced that starting Tuesday, March 31st, it would organize regular foreign currency swap auctions (three months' and two weeks' maturities) at fixed swap points instead of variable multiple swap points. In addition, the principle of realization on foreign exchange swaps auctions of buying and selling foreign currencies has been changed, so that the swap purchases and swap selling of foreign exchange no longer have to be identical in the realized amount. In this way, the role of the National Bank of Serbia in foreign exchange swap auctions since March 31st is no longer exclusively intermediary, but is reflected in providing banks with sufficient amount of dinar and foreign currency liquidity at favorable interest rates. For fixed swap points calculation on swap auction of buying and selling foreign currencies it was used interest rate of 0.85% for dinars and 0% for euros (NBSc). After lowering the key policy rate in April, it was decided that the interest rate on dinars in the calculation of fixed swap points was 0.6% (the rate on deposit facility increased by 10 basis points).

Another instrument for providing dinar liquidity to the banking system is the repurchase of dinar government securities. This instrument can be used by banks that have dinar government securities in their portfolio, which represent collateral to secure dinar liquidity. Unlike the main repo operations of dinar government securities, which withdraw the dinar liquidity surplus, in March, the National Bank of Serbia organized two fine-tuning repo operations for a seven-day period and one longer-term repo operation, which has a maturity of three months. On Tuesday, March 24th, two repo purchases of dinar government securities were organized, with maturities of seven days and three months, at an interest rate of 0.75% on both maturities (NBSd). At these repo auctions, the National Bank of Serbia provided RSD 4.7 billion to the banks, for a period of seven days and RSD 20.5 billion for a period of three months. On Tuesday, March 31st, a repo purchase of dinar government securities was organized, with a maturity of seven days, at which the banks were provided with dinar liquidity in amount of RSD 1.0 billion at an interest rate of 0.75%.

Graph 1: Dinar Liquidity (daily stock and 30-day moving averages, in RSD billion)



Source: National Bank of Serbia

It should be noted that even before providing additional dinar liquidity, the banking system in Serbia was highly liquid. National Bank of Serbia withdraws excess dinar liquidity by organizing regular one-week reverse repo transactions, i.e. repo transaction of sale of dinar government securities. Auctions are organized once a week (every working Wednesday), according to the variable multiple interest rate model. If we look at the data on the daily dinar liquidity of the banking sector, shown in *Graph 1*, it can be noticed that the banking system is liquid, not only on the basis of repo transactions, but also on the level of deposit facilities, but also the excess funds on bank accounts and in the cash vaults. Deposit facilities, which represent funds deposited overnight by banks with the National Bank of Serbia, amounted to RSD 272.5 billion on April 10, 2020, their highest level ever. Adding to this the amount of the banks' assets in the repo portfolio of the National Bank of Serbia amounted to RSD 20 billion, the total surpluses of RSD liquidity as of April 10, 2020 amounted to RSD 292.5 billion. This indicates that timely and well-designed measures of the National Bank of Serbia have resulted in the preservation of dinar liquidity in emergency situations in the Republic of Serbia, due to the spread of the coronavirus (Covid-19).

2) Moratorium on Debt Payments

At an extraordinary meeting of the Executive Board, held on March 12, the National Bank of Serbia adopted decisions prescribing a moratorium on debt payments, the Decision on Temporary Measures for Preserving Financial System Stability and Decision on Temporary Measures for Lessors Aimed at Preserving Financial System Stability. The aim of the measures taken is to

preserve and further strengthen the stability of the financial system and to protect all debtors during an emergency caused by the health situation in the country.

This set of decisions was made to prevent the nonperforming loan (NPL) growth faced by Serbia's banking sector in the previous period. The share of non-performing loans in total loans to the Serbian banking sector is significantly reduced and has a clearly declining trend, thanks to the implementation of the NPL resolution strategy and other regulatory activities of the National Bank of Serbia. Namely, since August 2015, when the NPL resolution strategy was adopted, the National Bank of Serbia not only fully implemented the activities set out in the accompanying Action Plan, but also took a number of other measures that were not foreseen by that plan. In order to encourage banks to more effectively address the issue of NPLs in their portfolios, in August 2017, the National Bank of Serbia adopted the Decision on the Accounting Write-off of Bank Balance Sheet Assets, obliging banks to write off all those receivables from the balance sheet that are completely impairment. The share of NPLs was 4.1% at the end of the fourth quarter of 2019, up 1.6 p.p. less compared to the end of the fourth quarter of 2018, or 18.2 percentage points less than in August 2015 when the aforementioned Strategy was adopted. In December 2018, the Government of the Republic of Serbia adopted the Program for resolving NPLs for the period 2018-2020 in order to prevent the emergence of new NPLs and to ensure the sustainability of the results achieved on NPLs. The program covers three areas of activity. The first area is directed towards resolving NPLs of state financial creditors. The second area is aimed at further improving the implementation of the bankruptcy framework. The third area covers a series of activities aimed at preventing the emergence of new NPLs.

The moratorium is envisaged for all debtors (natural persons, farmers and entrepreneurs, corporates) may accept the offer from a bank/lessor and it implies a suspension of debt payments for at least 90 days, i.e. for the duration of the emergency state declared due to the pandemic of Covid-19. During the said period, debtors will be relieved of the repayment of their obligations under loan and lease agreements. The aforementioned Decisions were published in the Official Gazette of the Republic of Serbia on 17 March 2020 and entered into force on 18 March 2020. This gave the banks/lessors, three days (until March 21st) to offer debtors a moratorium on debt payments and to post on their website an offer, which was considered to have been submitted to all debtors. Within ten days following the notification (until March 31st), borrowers/lessees could refuse the offer, and if they failed to do so, on the tenth day it will be considered that they had accepted the offer. Debtors rejected the offer on the moratorium by sending an e-mail to the bank/lessor with details of the loan, or leasing.

During a state of emergency introduced as a result of a pandemic, the bank/lessor shall not charge any default interest on past due outstanding receivables and shall not initiate enforcement or enforced collection procedures in respect of the borrower, and/or take other legal actions to collect receivables from the borrower. In order to make it easier for clients to repay these liabilities after the moratorium on debt payments, the National Bank of Serbia has recommended, as a basic model, that banks add three monthly annuities to

the end of the repayment period by extending the repayment period by three months and allocating accrued interest on the repayment period of the loan. There are also two alternative models. The first alternative model implies that the debtor at the end of the payment delay period (fourth month) pays all three annuities from the payment delay period (principal and interest) at the same time, while the second alternative model enables the debtor, after the payment delay period (fourth month), to pay only the interest related to the payment delay period. Banks are obliged to offer the basic model to the client, while alternative models are only possible at the express request of the debtor.

The Association of Serbian Banks has announced that the moratorium has been accepted by most citizens and enterprises. The moratorium was accepted by 94% of citizens who have obligations towards banks, while fewer than 6% explicitly asked to continue their repayment. As many as 92.9% of companies opted for the moratorium, and 7.1% stated that they still want to pay their obligations. The total amount covered by the moratorium is around € 2 billion, which is the support of the banking sector to citizens and the economy, to overcome the harsh conditions of daily life and business that are triggered by the Covid-19 epidemic (Association of Serbian Banks).

3) Other Measures of the National Bank of Serbia

Other measures of the National Bank of Serbia include support for citizens, instructions and additional measures. Support for citizens refers to the adoption of the Instruction on the Temporary Payout of Pensions to Persons Aged 65 and Above. This Instruction gives the ability to choose the mode of payment of pensions (dinar and foreign currency) for persons over 65 during the state of emergency. One way is to give a one-off power of attorney to a trusted person, and the other is to bring the pension to the beneficiary's home address, in cooperation with PE "Pošta Srbije". Another citizen support measure is to recommend that insurance companies allow insurance contractors to defer payment of past due insurance premiums based on insurance contracts that provide for periodic premium payments. In the event of their payment being delayed, the premiums due in a state of emergency would be subsequently settled by the insurance contractor, without interest accrual, with an appropriate allocation of debt to the insurance premiums at the end of that period (NBSe).

In addition to the Instruction on Temporary Payout of Pensions to Persons Aged 65 and Above, on April 6, 2020, the National Bank of Serbia issued the Instruction on Banks' Temporary Operation with Authorised Exchange Dealers during the state of emergency. This Instruction stipulates that a bank may not unilaterally terminate a contract with an authorised exchange dealer solely on account of the circumstances pertaining to bank's altered operations during the state of emergency declared due to the spread of Covid-19 (e.g. lower volume of activity), and the bank must ensure a minimum level of work , i.e. take all necessary activities in order to enable the authorised exchange dealer to fulfil the prescribed obligations, in accordance with the contract (such as the sale of foreign cash to the bank, cash payments in dinars to the current account held with the bank, etc.) In addition, the Instruction

stipulates that banks are obliged to organize the work of at least one branch or other organizational unit in the territory of Belgrade, where, before the state of emergency, one or more of them or other organizational units were open, for at least two working days hours per day, at a time when there is no ban on being in public places, the two hours not including the last hour before the start of the ban on being in public (NBSf).

Additional measures taken by the National Bank of Serbia relate to the adoption of amendments to decisions. Amendments to the Decision on Reporting on Foreign Credit Transactions prescribe that, during the state of emergency, the reporting forms, normally submitted to the National Bank of Serbia in paper and electronic form, may now be submitted in electronic form only, while the documents usually submitted in paper, may now also be submitted in electronic form (pdf format). The supplements also stipulate that the National Bank of Serbia will verify and record the said forms in electronic form during the state of emergency. The Decision on Detailed Terms and Manner of Keeping the Single Register of Safe-Deposit Boxes and the Decision on Detailed Terms and Manner of Keeping the Single Register of Money Remittance Beneficiaries have been amended by way of deleting the provisions pursuant to which banks were required to meet by 15 April 2020 all the necessary technical requirements for the submission of data to the National Bank of Serbia, in accordance with those decisions, and to inform the National Bank of Serbia thereof.

The recommendations of the National Bank of Serbia further suggested, wherever possible, to use cashless payments (by mobile phone, computer, payment cards), including payments with the recently introduced QR code at points of sale, electronic and mobile banking services and to communicate with the bank via email, call center and social networks.

Expected Effects of Measures of the National Bank of Serbia

With a timely reaction, the National Bank of Serbia preserved the dinar and foreign currency liquidity in the banking sector, facilitated the repayment of total liabilities to debtors by providing a moratorium of 90 days and lowering the key policy rate decreases interest rates on the interbank money market. Regarding the expected effects of the measures of the National Bank of Serbia, we can point out the following:

1) *support for credit and economic growth - lowering the key policy rate led to a decline in the interest rate Belibor of all maturities, which we show in Table 1, with a simultaneous decline in the Beonia rate, which is the weighted average interest rate on overnight loans in the interbank money market in the Republic Serbia. Thus, the National Bank of Serbia supported credit activity for loans approved in dinars, but also economic measures of the Government of the Republic of Serbia, where the Development Fund approves loans in dinars. It is especially important to maintain lending activity at a time when there has been a significant decline in economic activity at the global level, which has resulted in reduced supply in terms of broken*

production and supply chains, reduced labor engagement and weakened corporate position.

2) *preventive action to prevent the growth of NPLs - by delaying the repayment of total liabilities of all debtors (legal entities and individuals), the National Bank of Serbia acted preventively to avert the emergence of new NPLs. NPLs for each bank means that the bank must reclassify this receivable in a lower category based on the classification of balance sheet assets and off-balance sheet items and, that on that basis, there are higher allocations based on provisions, which impairs the quality of the loan portfolio. The impossibility of regular collection of credit obligations violates the dinar and foreign exchange position of the bank, and in the case of a decision to sell or assign a problematic claim (usually with a significant discount), the bank's profitability decreases. All this leads to increased instability in the operations of banks.*
3) *support to the dinarization process - through higher credit growth of dinar credit there is an increase in the share of dinar placements in total placements. In addition, the reduction of the key policy rate affected the decline in the executive rates of dinar government securities, which affects the possible increase of the dinar part of the public debt in the total public debt. A higher level of dinarization gives higher credibility to the monetary policy of the National Bank of Serbia, which currently affects only 30% of deposits and placements in dinars through the key policy rate. At the same time, dinar loans are not exposed to changes in the exchange rate and with these loans the exchange rate risk cannot be converted into credit risk, which is present in foreign currency and foreign currency indexed loans.*

Measures of the Government of the Republic of Serbia

Great economic uncertainty, such as the spread of the Covid-19 pandemic globally, requires significant state intervention. In this regard, on March 31st, the Ministry of Finance presented a Program of Economic Measures for Reducing the Negative Effects Caused by the Covid-19 Pandemic and Supporting the Serbian Economy. The program, worth EUR 5.1 billion or RSD 608.3 billion, includes tax policy measures, direct assistance to the private sector, measures to preserve liquidity for the private sector and other measures (*Table 2*). The aim of the Program is to help the economy, especially the private sector, but also the citizens to preserve their jobs.

The first set of measures relates to the deferral of taxes and contributions for the duration of the state of emergency and the payment of those liabilities beginning at the earliest in 2021, as well as the deferral of the payment of income taxes in the second quarter. The objective of this measure is to provide the economy with tax relief and preserve liquidity, which is significantly endangered during a state of emergency, as well as to preserve jobs.

The second set of measures relates to direct assistance to entrepreneurs, micro, small and medium-sized enterprises through the provision of three minimum wages, as well as large private sector enterprises for which the payment of 50% of the net minimum wage is planned during the state of emergency. In

order to achieve direct assistance, it is necessary to have a dedicated account with the selected bank. The aim of this measure is to preserve employment. It should be noted that it is up to the employer to decide whether to use the direct assistance of the state as a wage supplement or whether it will form part of the salary. The government has very precisely defined the groups of workers that will receive three minimum wages from the state for April, May and June. Business entities may use the measures provided under the condition that, in period from 15 March 2020 until 10 April 2020, they had not reduced the number of employees by more than 10%, excluding employees with whom a fixed-term employment contract was concluded before 15 March 2020, for the period ending from 15 March 2020 until 10 April 2020 (Tax Administration). This measure does not cover employees hired under occasional and temporary contracts, as well as other persons hired outside of employment (e.g. seasonal workers).

Table 2: Program of Economic Measures to Support the Serbian Economy and Reduce the Adverse Effects Caused by the Covid-19 Virus Pandemic

Measures	in billion dinars	in% of GDP
1. Tax policy measures	**161.0**	**2.9**
1.1. Postponement of payment of income tax and contributions for the private sector, during the state of emergency, with subsequent repayment obligations incurred in installments starting from 2021 at the earliest.	140.0	2.5
1.2. Delaying the payment of income tax in the second quarter	21.0	0.4
1.3. Exemption of donors from the obligation to pay VAT	-	
2. Direct assistance to the companies for employees	**97.3**	**1.8**
2.1. Direct assistance to flat-rate entrepreneurs who pay taxes on real income, micro, small and medium-sized enterprises in the private sector - payment of assistance in the form of a minimum wages (during the state of emergency - 3 minimum wages)	92.8	1.7
2.2. Direct assistance to large companies in the private sector - payment assistance amounting to 50% of the net minimum wage (during the state of emergency) for employees which is determined decision to stop working.	4.5	0.1
3. Economic liquidity measures	**264.0**	**4.8**
3.1. Support to the economy through the Development Fund of the Republic of Serbia	24.0	0.4
3.2. Guarantee scheme for supporting the economy through banks	240.0	4.4
4. Other measures	**86.0**	**1.6**
4.1. Moratorium on dividend payments by the end of the year, except for public companies	16.0	0.3
4.2. Payment of 100 Euros to all adult citizens.	70.0	1.3
Total amount	**608.3**	**11.0**

Source: Ministry of Finance and Fiscal Council

The third group of measures relates to providing liquidity to the economy through loans from the Development Fund of the Republic of Serbia and a

guarantee scheme for supporting the economy through banks. This measure has the largest share in the total amount of planned measures of the economic measures program (RSD 264 billion, or 4.8% of GDP). The aim of the measure is to provide liquidity to the economy for the duration of the Covid-19 pandemic and to repair the after-effects. Through the Development Fund, corporates can receive a loan for a period of 36 months, which includes a grace period of up to twelve months, an interest rate of 1% per annum and repayment of the loan in monthly installments. The maximum loan amount is up to RSD 10 million for entrepreneurs and micro-enterprises, up to RSD 40 million for small legal entities and up to RSD 120 million for medium-sized legal entities (Development Fund). By lowering the key policy rate and transferring it to the money market interest rates, the National Bank of Serbia contributed to the economic measures as the loans from the Development Fund are approved and paid back in dinars.

Other measures include a moratorium on the payment of dividends by the end of this year, except for public companies, as well as the payment of 100 euros to all adult citizens. The Decree on the establishment of a provisional registry and the method of payment of one-time financial assistance to all adult citizens of the Republic of Serbia in order to reduce the negative effects caused by the Covid-19 pandemic caused by SARS-CoV-2 virus prescribes that all adult citizens of the Republic of Serbia, who, at the date of entry into force of the Regulation (April 24, 2020), reside in the territory of the Republic of Serbia, with a valid identity card, have the right to one-time financial assistance in the amount of EUR 100 in RSD equivalent. While the measures aimed at the economy are positively assessed, budget-justified and well-structured, the payment of 100 euros to all adults, according to the Fiscal Council, is a completely inappropriate measure. The Fiscal Council, in its analysis of the "Assessment of the Anti-Crisis Program of Economic Measures", emphasizes that it is not a measure that will stimulate economic growth, because it would mean that the low paying power of the population, not the pandemic of the coronavirus, is the cause of the economic crisis, which is not true. Also, the proposed measure is not of a social character either, since the same amount will be paid to all adult citizens of Serbia, and not just to the financially struggling population.

As for the interest of the economy in the use of the aforementioned measures, the Ministry of Finance announced that, as of April 21st, 169,111 companies had selected a bank to open a dedicated account for the payment of direct payments. Also, as of April 21st, there were 134,857 businesses remaining that have an account with multiple banks and have not yet selected a bank. The PPP-PD tax return (individual tax return on accrued taxes and contributions) was submitted by 38,628 companies for 278,530 employees, and a total of RSD 6.9 billion of tax and contribution liabilities was deferred. As for the loans of the Development Fund, as of April 21st, 52 companies applied for a loan with the Development Fund, and the requested loan amount exceeded RSD 1 billion, while the funds were approved for 25 loans amounting to RSD 729.09 million.

Expected Effects of the Measures of the Government of the Republic of Serbia

The Program of Economic Measures of the Government of the Republic of Serbia has two significant priorities. The first is assistance to economic entities whose business had been made difficult due to the spread of the pandemic, and the second priority is the preservation of jobs and salaries of employees. The expected effects of the measures of the Government of the Republic of Serbia are as follows:

1) *providing favorable loans through the Development Fund - unhindered favorable credit support is extremely important in times of threat to normal business and unstable economic activity both in the country and globally. These loans are approved and repaid in dinars, which is important for economic entities that can regularly settle credit obligations from their dinar income and are not affected by the change in the dinar exchange rate against the euro. Also, the grace period gives the possibility for economic entities to have a relief in repayment of the loan for a period of twelve months, so that, on the basis of the investment with which a certain entity applied for and received the loan, they could obtain their first income.*
2) *preservation of jobs - the main contribution to achieving economic recovery is given by employees. Official data from the National Employment Service show that the announced measures prevented greater layoffs. In March, the number of people applying for unemployment benefits was around 5,000, which is below the average from January and February - around 6,000 (NZS). Also, with the announcement of the support program, the Business Registers Agency has already registered a small number of temporary interruptions, which amounted to 7,358 from the beginning of the year to the middle of March, and 6,290 from March 16th to April 13th (BRA). It can be expected that in the following period, even more favorable data on the issue of existing employees will be published, and as the economic recovery progresses, new jobs will be created.*
3) *preservation of the budget of the Republic of Serbia - by returning economic activity to regular flows, it is possible for all economic entities to regularly pay their tax liabilities. This is especially important having in mind the size of the package of economic measures of the Government of the Republic of Serbia, as well as the arrival of additional obligations that fall due for payment this year. The Decree on Amendments to General Revenues and Receipts, Expenditures and Expenses of the Budget of the Republic of Serbia for 2020 in order to eliminate harmful consequences due to Covid-19 disease caused by SARS-CoV-2 virus envisages that a part of economic measures be financed from domestic and international commercial and multilateral loans, financial institutions and foreign governments, but also through the issuance of government securities (government bills and bonds on the domestic financial market in domestic and foreign currency) and from the proceeds from the issuance of Eurobonds (government securities issued on the international financial market in domestic and foreign currency). An additional source of financing for large companies could be the corporate bond market, which, under relatively favorable conditions, could raise*

the missing funds on the domestic capital market and thus contribute to its further development. All this should contribute to not jeopardizing the previously achieved fiscal stability and to preserving the stability of public finance.

Economic Perspective of Serbia

It is very difficult to predict Serbia›s economic outlook after the end of the Covid-19 pandemic. It is certain that there will be a slowdown in economic activity, a potential increase in unemployment, a break in the supply chain and a decrease in purchasing power. Prior to the outbreak of the pandemic, the International Monetary Fund projected a 4% GDP growth rate for Serbia in 2020 in its World Economic Outlook report published in October 2019. In the April 2020 World Economic Outlook report, Serbia's GDP forecast for this year was significantly lowered to -3.0%. It should be noted that the International Monetary Fund for Serbia projected the lowest decline in GDP rate for 2020 in relation to the surrounding countries (Croatia -9.0%, Romania -5.0%, Bulgaria -4.0%, Hungary - 3.1%), but also in relation to the main economies of the euro area (Germany -7.0%, France -7.2%, Italy -9.1%, Spain -8.0%). At the global level, the International Monetary Fund for 2020 forecasts a GDP rate of -3.0%, which is a much larger decline than during the 2008-2009 financial crisis, while a rate of -7.5% is projected for the Eurozone. Also, the Fund believes that there will be a greater recession globally this year than during the Great Depression. In the Fund's baseline scenario, which assumes a pandemic calm in the second half of 2020, the global economy is projected to grow by 5.8% in 2021, with a normalization of economic activity. For Serbia, a GDP rate of 7.5% is forecast for 2021, which, if realized, will be the highest economic growth relative to the surrounding countries (Croatia 4.9%, Bulgaria 6.0%, Hungary 4.2%, Poland 4.2%).

The pandemic itself has exposed the health system to unprecedented pressure, while the measures of each country seek to be well designed and to equally affect supply and demand. External factors, including a fall in commodity prices, a disruption in the supply chain, and a decline in tourism and remittance revenues, have a significant impact on the domestic economy. At the beginning of April 2020, the European Bank for Reconstruction and Development published an assessment of the resilience of developing countries, where Serbia belongs, to the presence of Covid-19. The resilience of countries was measured in four areas: resilience of the health system, resilience to shocks in the domestic market, resilience to external shocks, and resilience of policies. According to the European Bank for Reconstruction and Development, Serbia has a high level of resilience in the healthcare system, a moderate level of resilience against domestic shocks, a predominantly high level of resilience to external shocks and policy resilience (EBRD).

With regard to remediation of the effects of the expansion of Covid-19, the European Bank for Reconstruction and Development announced, at the end of April 2020, that it would provide EUR 21 billion in assistance for the 2020-2021 period for 38 developing countries, including Serbia, through

the so-called Solidarity Package. A key pillar of the Solidarity Package is the Resilience Framework, which provides financing for short-term liquidity and working capital needs (EBRDa). In support of Western Balkan countries, Serbia received EUR 15 million from the European Union to support the health sector and EUR 78.4 million to support economic recovery. In addition, the European Union provided EUR 2 million for five cargo aircraft delivering more than 280 tons of emergency medical assistance and another EUR 4.9 million was provided for the procurement of medicines for the for vulnerable groups in society (EU).

Despite the recent crisis caused by the Covid-19 pandemic, Fitch Ratings maintained its credit rating at BB + at the end of March 2020 with a stable outlook for its further increase. The agency explained this decision as saying that Serbia has increased resilience to the crisis caused by the Covid-19 virus pandemic, which is owed to a high level of foreign exchange reserves, reduced external debt, but also due to the expected positive impact of low energy prices. S&P at the beginning of May affirmed Serbia's credit rating at BB+ despite the global crisis caused by the Covid-19 pandemic, with a stable outlook for its further increase. It should be noted that the Serbian economy is much more resilient today than it had been before the outbreak of the 2008-2009 financial crisis. At the end of March, the gross FX reserves of the National Bank of Serbia amounted to EUR 13.1 billion, while the net FX reserves (foreign reserves less banks' foreign exchange reserves on the basis of mandatory reserves and other bases) amounted to EUR 10.9 billion. The decrease in the share of public and external debt in the GDP, recorded in previous years, continued during 2019. The central government's share of public debt in the GDP decreased from 53.7% (end 2018) to 52.0% of the GDP (end 2019). General government debt (including the non-guaranteed debt of local governments and AP Vojvodina) decreased from 54.4% of the GDP (end-2018) to 52.9% of the GDP. Due to the significant growth of economic activity, the share of external debt in the GDP also declined, reaching 61.9% of the GDP at the end of 2019 (62.2% at the end of 2018). The unemployment rate at the end of 2019 was 10.4% (12.7% at the end of 2018), while the GDP in 2019 was 4.2% (4.4% in 2018).

Measures of the Surrounding Countries Regarding Covid-19

Like Serbia, the surrounding countries reacted by implementing various monetary and fiscal policy measures to remedy the consequences of Covid-19. We will present the comparability of measures in the Czech Republic, Poland, Hungary and Romania, which, like Serbia, implemented inflation targeting, and at the same time they are countries of the European Union which our country plans to join. Regarding the implementation of monetary policy measures, the central banks of Central and Eastern Europe cut key policy rates, but also by applying conventional and unconventional monetary policy measures. The Central Bank of the Czech Republic first increased the reference interest rate by 25 bp in February, and then lowered the rate twice by a total of 125 bp in March, and in May by 75 bp, to a level of 0.25%. A member of the Executive Board of the Central Bank of the Czech Republic stated that

the bank could lower the reference rate to the level of a "technical zero", but did not specify the time frame for the implementation of this decision (CNB). At an extraordinary meeting in March, the Central Bank of Poland reduced the reference rate by 50 bp, which was the first rate change since March 2015, and then by the same amount in April, to 0.5%. In order to provide liquidity, the Central Bank of Poland has started repo operations and introduced extensive purchase of government bonds on the secondary market as part of open market structural operations, which will change the long-term liquidity structure in the banking sector. These operations should affect the maintenance of liquidity in the secondary government bond market (NBP). The Central Bank of Hungary did not change the reference rate, which also represents the rate of remuneration (0.9%), but provided unlimited liquidity to banks by introducing a new instrument of lending facility of unlimited total amount at fixed interest rates and provided additional liquidity by abolishing the required reserve for domestic banks and increasing the volume of foreign exchange swap transactions (MNB). At an extraordinary meeting in March, the Central Bank of Romania introduced a set of new measures to support the economy, including reducing the reference rate by 50 bp to 2.0%, narrowing the symmetric core interest rate corridor from ± 1.0 percentage points to ± 0.5 percentage points in relation to the reference interest rate, providing liquidity through repo operations, as well as launching a program of purchasing government securities in domestic currency on the secondary market in order to consolidate the liquidity of the banking sector and thus support financing the real economy and public sector (NBR).

With regard to fiscal policy measures in all four countries, it can be seen that these measures can be divided into budget measures, credit guarantees and other measures (*Table 3*). Budget measures refer to assistance to employees and companies in order to preserve economic activity and employment, credit guarantee measures are aimed at securing loans through development funds or banks, while other measures focus on a moratorium on repayment of bank loans (in the case of the Czech Republic), but and faster VAT refunds (the case of Romania).

Table 3: Program of Fiscal Policy Measures of the Czech Republic, Poland, Hungary and Romania to Remedy the Consequences of the Covid-19 virus

	Czech Republic	Poland	Hungary	Romania
Budgetary measures	(1) Income support of 80 percent of gross wages of employees sent into quarantine and of employees of businesses, that had to close due to containment-related government restrictions (if the employer continues paying 100 percent of employee's salary). (2) Self-employed may receive a lump sum of up to CZK 25,000 (about €900), and starting May 1, CZK 500 per day for as long as government restrictions are in place.	(1) Budgetary measures, estimated at PLN 93 billion (4.2 percent of GDP)	(1) Employers' social contributions will be lifted in the most affected sector (2) The health care contributions will be lowered through June 30. (3) Around 80,000 SMEs (mainly in the services sector) will be exempt from the small business tax (the payment of the tax by other companies in affected sectors will be deferred until the end of the state of emergency). (4) The tourism development contributions will be temporarily cancelled. (5) Media service providers will be given a tax relief for incurred losses of advertising revenue. (6) Procedures for collecting tax arrears will be suspended during the state of emergency.	(1) Key tax and spending measures announced so far about 2 percent of 2019 GDP include (a) additional funds for the healthcare system, (b) covering partially the wages of parents staying home for the period the schools are closed, and (c) measures to support businesses including covering in part the wages of self-employed and workers in danger of being laid off for an initial period of one month, deferral of utilities payments for SMEs.

	Czech Republic	Poland	Hungary	Romania
Credit guarantees	(3) The government further granted a credit line for businesses through the state development bank (CMZRB) .	(2) Credit guarantees and micro loans for entrepreneurs estimated at PLN 75 billion (3.3 percent of GDP). (3) The Polish Development Fund will finance a PLN 100 billion (4.5 percent of GDP) liquidity program for businesses.	(7) Creation of two new funds, the Anti-Epidemic Protection Fund and the Economy Protection Fund. (8) Export support measures through the state-owned Eximbank. (9) State-owned development bank MFB launched a HUF 1,490 bn package of financial support instruments for companies	(2) The government is providing initial RON 15 billions of guarantees—equivalent to 1.5 percent of GDP—for loan guarantees and subsidized interest for working capital and investment of SMEs.
Other measures	(4) The government approved a moratorium on bank loans of up to six months.			(3) Other measures include faster reimbursement of VAT, suspending foreclosures on overdue debtors, discounts for paying corporate income taxes, and postponement of property tax by three months.

Source: International Monetary Fund (https://www.imf.org/en/Topics/imf-and-Covid19/Policy-Responses-to-COVID-19#C)

According to the International Monetary Fund forecasts from April 2020, the analyzed countries, as well as Serbia, can expect a decline in the gross domestic product rate in 2020, and then an economic recovery in 2021, an increase in public debt and unemployment, a slowdown in inflation and an increase in current account deficits. When the comparability of the monetary and fiscal policy measures of the analyzed countries and Serbia is made, it can be noticed that Serbia reacted in a timely manner by adopting adequate measures to help the economy and citizens overcome the consequences of the Covid-19 virus pandemic.

The World After Covid-19

It should be expected that the world will not be the same place to live and work after the end of the Covid-19 pandemic. During the pandemic, significant breakdowns occurred in the financial and commodity markets, significant disruptions in the supply chain occurred, many employees lost their jobs and economic activity slowed significantly. All this required considerable

intervention by fiscal and monetary authorities in order to maintain the most stressed health care system, but also to preserve economic activity so that it could be a driving force for economic recovery.

The president of the International Monetary Fund, Kristalina Georgieva, stated at the beginning of April 2020, that the Fund had expected positive growth in per capita income in January 2020 in more than 160 countries, and that, after the outbreak of the pandemic, the figures had reversed: currently the Fund projects that this year over 170 countries will experience negative per capita income growth. The Fund said it was encouraging news that all governments had launched action and that there was significant coordination of fiscal policies worth as much as USD 8 trillion. Ms. Georgieva pointed out that there are four priorities when it comes to economic recovery. The first priority relates to the continued implementation of basic protection measures and support to health systems, the second, to the protection of people and companies by applying timely and targeted fiscal policy and financial sector measures. The third priority is based on reducing volatility in the financial system, while the fourth relates to the preparation of a recovery plan (IMF).

The World Bank forecasts that remittances will decline globally by almost 20% this year, amid the economic crisis caused by the expansion of Covid-19. The projected fall, which would be the sharpest decline so far, is largely due to the reduction in wages and employment of non-home workers who are more prone to losing their jobs and wages during the economic crisis. Remittances in low- and middle-income countries are projected to fall 19.7% to USD 445 billion, a significant loss of funding for many at-risk households. The World Bank expects remittance flows to fall in all regions, most in Europe and Central Asia (27.5%), followed by Sub-Saharan Africa (23.1%), South Asia (22.1%), the Middle East and North Africa (19.6%), Latin America and the Caribbean (19.3%) and East Asia and the Pacific (13%).

According to the Swiss bank UBS, the key trends following the end of the Covid-19 pandemic are (UBS):

1. *Rising debt - According to current estimates by UBS, share of public debt in GDP in much of Europe and the US will be 15-25 percentage points higher by the end of 2021 than at the end of 2019. There are several ways that governments finance public debt, but mainly use three ways: financial repression, higher taxation and moderately higher inflation.*
2. *Reducing globalization - During the Covid-19 pandemic, many people are prohibited from leaving their homes. Due to this crisis, the world will be structurally less global, encouraging the trend of deglobalization. In a less global world, one can expect to see populism, protectionism, and localization. This will lead to global diversification and further development of automation and robotics.*
3. *Higher levels of digitalization - Isolation measures have forced many consumers and companies to significantly change the way they buy and sell goods and services and become more digital. While there is a belief that most individuals and businesses will revert to their previous mode of operation when isolation measures are lifted, there will be permanent change. It remains unclear how quickly consumers and regulators will regain confidence in the*

security of the sharing economy, but some of the consequences of isolation include: greater levels of digitalization, less sharing and significant developments in healthcare technology.

Conclusion

At the end of 2019, the Chinese city of Wuhan became the epicenter of the new coronavirus Covid-19, which at the beginning of 2020 spread to the whole world. As a measure of protection and prevention against the spread of the virus, which at the beginning of March, the World Health Organization declared as a global pandemic, it is recommended to practice social distancing, avoid contact and, when possible, to allow work from home. This has led to a slowdown, and in some cases to the complete interruption of economic activity, which is further transferred to the increase in unemployment, higher allocations for social welfare and reducing purchasing power. In such circumstances, there is a need for strong monetary and fiscal policymakers to address the consequences of the Covid-19 expansion.

In Serbia, in early March, the first case of a corona infection was recorded, after which a state of emergency was introduced on 15 March and lasted until 6 May. Border crossings were closed (first to neighboring countries and then all border crossings), suspended work with clients through direct contact and suspended teaching in higher education institutions, secondary and elementary schools and the full-time work of preschool education institutions.. Air traffic was interrupted and city traffic was significantly reduced. Economic activity has slowed down considerably and in order to relaunch it, the National Bank of Serbia and the Government of the Republic of Serbia have adopted timely and adequately defined measures, each in its own jurisdiction.

Within the monetary policy measures, the National Bank of Serbia lowered the key policy rate twice (in March and April), in order to stimulate credit and economic growth, while, by applying repo operations (buying RSD government securities) and organizing additional EUR/RSD swap auctions, it provided additional dinar and foreign currency liquidity to the banking sector. In addition, the National Bank of Serbia has prescribed a moratorium on debt payments for all debtors, so that, during a state of emergency, they will be able to accept, if they wish, the offer of the banks/lessors to accept the moratorium. In other measures, the National Bank of Serbia, in cooperation with other banks, has enabled pensioners over the age of 65, during a state of emergency, to receive pensions at their home address or to give a person of trust a one-time authorization to raise their pension.

On March 31st, the Ministry of Finance presented the Program of economic measures to support the Serbian economy and reduce the negative effects caused by the Covid-19 virus pandemic. The Program, worth EUR 5.1 billion or RSD 608.3 dinars, includes tax policy measures, direct assistance to the private sector, measures to preserve liquidity for the private sector and other measures. The aim of the program is to help the economy, especially the private sector, but also the citizens to save their jobs.

The economic outlook for Serbia is uncertain, as the Covid-19 pandemic is still ongoing, and losses of economic activity cannot currently be estimated. It is certain that there will be a sharp decline in GDP rates for 2020, and according to the International Monetary Fund, these rates will be -3.0%, well below the previously forecasted rate of 4.0%, while a recovery and growth rate of 7.5% is expected for 2021. It should be noted that the Serbian economy is much more resilient today than it was before the outbreak of the 2008-2009 financial crisis. At the end of March, the gross FX reserves of the National Bank of Serbia amounted to EUR 13.1 billion, while a declining trajectory of public and external debt share in GDP is present. Budget justifiable fiscal policy measures and timely response by the National Bank of Serbia should contribute to the revival of economic activity, especially of the private sector, while preserving existing jobs and creating new jobs. All measures taken should contribute to the economic recovery of the economy and individuals, with the expectation that economic growth will be achieved in 2021, which will be significantly slowed down this year.

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Komplajans, pravni poslovi i resursi

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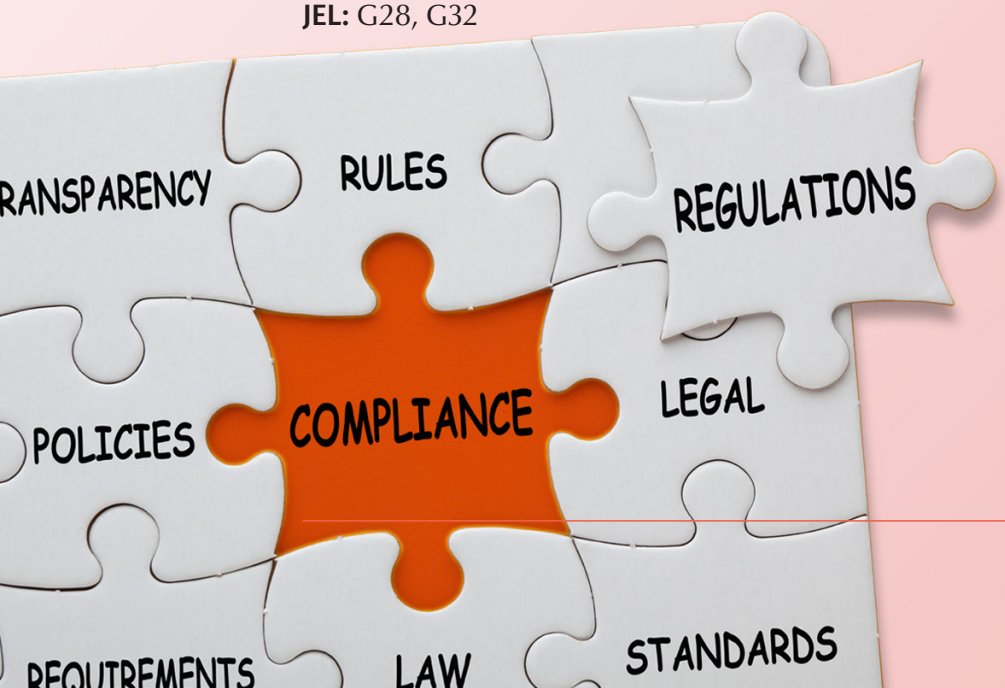
Rezime: Komplajans funkcija se često susreće sa problemom preopterećenosti, koji se dovodi u vezu sa dodeljivanjem dužnosti od strane Upravnog odbora (ili njihove administrativne uprave) ili drugog menadžmenta, čime se dovodi do konstantnog povećavanja obima posla za komplajans funkciju, u slučajevima kada ima isti ili čak smanjen broj zaposlenih ili manje drugih resursa. Istovremeno, postoje propusti u načinu na koji kompanije interno shvataju dužnosti i odgovornosti koje treba da ima komplajans funkcija, kao i razliku između ove funkcije i pravnih poslova ili sličnih funkcija u praksi. Dok stručnjaci za komplajans dobro razumeju da se njihov posao zasniva na riziku, unakrsnim procesima i mešavini savetodavno-upravljačkih nezavisnih aktivnosti, drugi to mogu shvatiti kao linearan, usko stručan, pravno usmeren posao odvojen od ostalih funkcija. Iako neki posmatraju komplajans kao „organizacioni silos“, gde je određeno polje stručnosti ograničeno na zaseban, odvojen sektor sa fiksnim, strogim granicama, koji se tiče cele kompanije, takvo poslovanje zapravo ne dovodi do integracije i saradnje, čime komplajans funkcija mora da se bavi. Ovaj rad se detaljnije bavi takvim izazovima i predlaže proverene, praktične pristupe za efikasno suočavanje sa njima.

Ključne reči: komplajans, pravni poslovi, rizik, korporativno upravljanje, interni sistem kontrole, efektivni menadžment

JEL: G28, G32



Komplajans i pravni poslovi

U mnogim slučajevima, kompanije se suočavaju sa problemima razgraničavanja uloga i odgovornosti komplajansa i pravnih poslova, čime je otežana raspodela poslova u te dve funkcije. Rešenja za ovaj problem treba da budu zasnovana na principima odbrane, pristupu riziku i efektivnom menadžmentu, ali specifične situacije, nedostatak šire slike, shvatanje komplajans funkcije kao ogranka sektora pravnih poslova, problemi nadležnosti ili čak konkurencije toj funkciji, mogu dovesti do pogrešnih odluka. Time se, na kraju, negativno utiče na mogućnost efektivnog i transparentnog menadžmenta, dolazi do lošeg upravljanja rizicima i neodgovarajućih sistema interne kontrole, čime se kompanije izlažu mogućim odgovornostima i gubicima.

Takva situacija se može objasniti činjenicom da se komplajansom bave stručnjaci sa poznavanjem prava, pogotovo u uređenom finansijskom sektoru. Kao posledica toga, pravnici iz pravnog sektora mogu potpuno prepustiti pitanja rizika svojim kolegama iz sektora za komplajans, tako da komplajans funkcija odjednom preuzme i celokupnu pravnu podršku za određenu oblast. Situacija je slična i po pitanju drugih funkcija.

Za razliku od pravnog sektora, komplajans funkcija je jedna od ključnih funkcija za interno upravljanje, pošto predstavlja deo sistema interne kontrole i drugu liniju odbrane od rizika. Ova ključna razlika može biti praktično objašnjena na sledeći način. Pošto se slično može reći i za mnoge druge oblasti komplajans rizika (kao što su sprečavanje pranja novca, prevare itd.), uzmimo za primer zaštitu ličnih podataka. Ako se ova oblast primarno dodeli komplajans funkciji, može doći do problematične situacije u kojoj sve druge funkcije moraju „predati" sve što se tiče pitanja zaštite privatnosti sektoru za komplajans, uključujući pravnu podršku u obezbeđivanju zahteva komplajansa u svakodnevnim poslovima (što je osnovni zadatak pravne funkcije i biznis menadžmenta). Takođe, sva profesionalna i operativna pitanja u vezi sa zaštitom ličnih podataka se u tom slučaju moraju odvojeno predati sektoru za komplajans, čak iako nije u pitanju isključivo problem komplajansa, već i određenih stručnih oblasti ili primene u određenim operativnim segmentima. Na primer, rizik od povrede ličnih podataka u sektoru prodaje, potpuno je u domenu menadžera i radnika u prodaji. Na njima je da primene i održavaju zahteve privatnosti i kontrole prilikom prodaje i da spreče povrede podataka. Komplajans funkcija im pomaže da identifikuju i procene rizik od povrede ličnih podataka, ali odgovornost po pitanju specifičnih informacija o tome kako se sprovodi prodaja i, samim tim, gde i kako može doći do povrede podataka tokom tih aktivnosti, leži u rukama onih koji se bave tim aktivnostima (u ovom slučaju radnika u prodaji). Komplajans funkcija će se postarati da se detektuju značajne promene u pravnom okruženju, a zatim će, na primer, obučiti zaposlene da identifikuju određene rizike po pitanju privatnosti koji mogu proizići iz njihovih aktivnosti i pomoći će menadžmentu da usvoji i primeni prikladna pravila i mere. Takođe, sektor za komplajans može predložiti određene ugovorne klauzule u opštim uslovima prodaje, na primer, ali odsek za pravna pitanja treba da pruži pravnu pomoć kako bi se osigurala privatnost podataka u pojedinačnim slučajevima, pošto komplajans funkcija mora ostati objektivna i biti u mogućnosti da sprovodi provere usklađenosti i da revidira

te procese. Ako bi se komplajans funkcija isuviše uključila u svakodnevne poslove, kako bi osigurala komplajans „na terenu“, ne bi više mogla da kontroliše usklađenost tih procesa, a što bi morala da čini kao kontrolna funkcija. Ovakvo shvatanje je zasnovano na principima upravljanja rizikom sa tri linije odbrane. Prva linija odbrane je menadžment poslovnih sektora i funkcija, uključujući pravne poslove i druge srodne funkcije. Druga linija uključuje funkcije upravljanja rizicima, sajber bezbednosti, upravljanja kvalitetom itd, kao i komplajans funkciju. Treću liniju odbrane predstavlja interna revizija. Upravni odbor je nadređen ovim trima linijama odbrane u sistemu interne kontrole, i sve tri linije odbrane (treba da) odgovaraju direktno odboru, nezavisno jedna od druge.

U ovom sistemu triju linija odbrane, a za razliku od pravne funkcije, komplajans funkcioniše kao druga linija:

(1) Kao savetodavna funkcija, usredsređena na podršku organizaciji da sistematski obezbedi i upravlja komplajansom unutar zahteva koji su primenljivi na datu organizaciju, na osnovu uredbi, zahteva ili preporuka regulatora, itd. i

(2) Kao funkcija interne kontrole, usredsređena na identifikaciju problema iz domena komplajansa, uz procenu rizika i upravljanje istima.

U slučaju zaštite podataka o ličnosti, kao što je dato u primeru iznad, aktivnosti komplajans funkcije treba da budu fokusirane na savetovanje i pomoć pri:

- Detekciji i identifikaciji novina u uredbama (GDPR)
- Organizaciji internih procesa (i) identifikacija gepova između trenutnog stanja komplajansa u organizaciji i novih zahteva (ii) priprema plana akcije da se ti gepovi zatvore (*konkretne aktivnosti komplajansa po pitanju identifikovanih neusklađenosti; uključujući opis aktivnosti, određivanje osoba koje će biti uključene i rok za izvršenje*)
- Pripremi materijala za prezentovanje upravnom odboru, višem menadžmentu i drugima
- Pripremi edukativnih materijala i primeni edukacije za definisane ciljne grupe zaposlenih, podizvođače aktivnosti itd.

**Kod opisanih aktivnosti, uloga komplajans funkcije treba biti organizaciona, inicijalna i kontrolna, dok je uloga pravne funkcije već poznata – podrška i učešće u primeni operativnih poslovnih aktivnosti.*

Dalje, komplajas fukcija treba da se bavi i izvršavanjem sledećih kontrolnih aktivnosti i aktivnosti upravljanja rizikom:

- Monitoring izvršavanja planiranih aktivnosti usaglašavanja sa regulatornim zahtevima (na osnovu izveštaja od strane prve linije odbrane od rizika, uključujući pravnu funkciju) i izveštavanje administraciji o stanju usklađenosti (*nivo pripremljenosti za novu regulativu*). Kako bi komplajans funkcija održala svoju kontrolnu ulogu neophodne su objektivnost i vremenska dostupnost, tako da se ne preporučuje da se komplajans funkcija operativno bavi tim aktivnostima.
- Monitoring usklađenosti stvarnih procesa i identifikacija, izveštavanje i monitoring mera preduzetih kako bi se ublažili rizici ili osigurao komplajans.

Komplajans funkcija mora naći ravnotežu između obe uloge: savetodavno-preventivne kao i kontrolne. Kontrolni aspekt ove funkcije ne sme biti zanemaren zbog prekomernog opterećenja obavljenjem operativnih zadataka prve linije odbrane, pošto tada kompanija, kao takva, ne obezbeđuje efikasno obavljanje značajnog dela zadataka sistema interne kontrole (koji je u finansijskom sektoru propisan regulativama EU, uključujući i komplajans funkciju). Stoga, pravna funkcija ne sme predati pravnu podršku iz prve linije odbrane sektoru za komplajans, tamo gde sama pravna funkcija nema zadatke i odgovornosti interne kontrole (kao što komplajans ima). Komplajans u takvim slučajevima ne zamenjuje niti dopunjuje pravnu funkciju, već pridodaje celom sistemu internog upravljanja u oblasti upravljanja rizikom i interne kontrole. Stoga se po svojoj prirodi i osnovnim ovlašćenjima razlikuje od pravne funkcije.

Ponekad je lakše objasniti razloge zašto ulogu i odgovornost komplajans funkcije često pogrešno shvataju menadžment i druge funkcije, čime se dovodi do toga da se komplajansu nameće previše zadataka van odgovornosti te funkcije.

U nastavku možete naći detaljnije razloge, kao i neke praktične predloge kako da ih rešite, dokazane u praksi.

Uzrok	Primer rešenja
Funkcija komplajansa je nova i često još uvek nepriznata, pa je njeno tumačenje od strane različitih sektora unutar firme vrlo različito. Možda ste suočeni i sa neprimerenim položajem ili nedovoljnim ovlašćenjima u organizacijskoj strukturi	⇨ Redovno komunicirajte i edukujte se, uglavnom koristeći slučajeve koji su specifični i relevantni za vašu firmu. ⇨ Budite profesionalni, ali kratki, sažeti i vrlo konkretni u savetovanju; budite deo tima, ulažite energiju u znanje o poslovnim ciljevima i planovima, pomažite u pronalaženju rešenja, ali ostanite principijelni u smislu usklađenosti i integriteta poslovanja, i time ćete izgraditi istinski autoritet i ugled. ⇨ Ako vaša formalna pozicija unutar firme nije na dovoljno visokom nivou, ovaj pristup će vam možda pomoći da lakše povećate, ali nemojte zaboraviti da upozorite svoje rukovodstvo o tome u pravom trenutku (*koristite argumente iz načela dobrog upravljanja, efikasnosti i nezavisnosti komplajans funkcije, koja u osnovi štiti firmu i odgovorne osobe u njoj*).
Loše definisana funkcija komplajansa u internim dokumentima (klasifikacija, politike upravljanja).	⇨ Predložite izmene internih dokumenata, uključujući definiciju uloge ostalih područja i usluga u komplajans sistemu (*videti npr. ISO 19600 ili EISEP-ov obrazac politike komplajansa, bilo koji drugi izvor - mnogi su dostupni na internetu*); predstaviti specifična područja rizika komplajansa i koristiti konkretne slučajeve za ilustraciju uloge komplajans funkcije i drugih sektora ili funkcija.

Uzrok	Primer rešenja
Nedostatak procene rizika komplajansa.	⇨ Koristite strukturu i profesionalni pristup, pomozite se postojećim metodologijama i postupcima za procenu rizika unutar firme, ali se prilagodite i prirodi rizika komplajansa (koje bi trebalo proceniti kvantitativno, pre nego nego kvalitativno); budite inkluzivni, koristite pristup intervjua i fokus grupa iz svih sektora firme kako biste ih istinski upoznali, poslušali ih i konačno stekli vrlo dobro razumevanje rizika usklađenosti u celoj firmi; i izgradite svoj kapacitet za rano prepoznavanje problema komplajansa i loše prakse.
Nedostatak godišnjeg plana rada ili nedovoljno određene i planirane aktivnosti komplajans funkcije.	⇨ Planirajte određene zadatke i aktivnosti u skladu sa komplajans funkcijom, u zavisnosti od zahteva propisa, vaših internih politika, međunarodnih standarda itd. I stavite naglasak na rizična područja. Uvek ostavite vremena za neplanirane ad-hoc aktivnosti u skladu sa prošlim iskustvom (*poput bavljenja postupcima kontrole i zahtevima regulatora, neočekivanih promena, značajnih internih istraga ili aktivnostima povezanim sa utvrđenim kršenjima, novim zakonodavstvom, zahtevima nadzornog tela, odbora itd.)*
Želja za prebacivanjem odgovornosti je takođe čest razlog	⇨ Kombinacija racionalnih i utemeljenih rešenja, ranije i u nastavku, može biti delotvorna.

Ključni alati, posebno u komunikaciji sa upravom (CEO, viši menadžment) prilikom predstavljanja argumentacije vezano za ulogu i različitost komplajans funkcije, su:

- Sistematično i redovno planiranje zadataka i aktivnosti komplajansa i
- Izveštavanje menadžmenta o komplajans funkciji, na osnovu jasnih i komparabilnih indikatora (kao što su: opseg pruženih saveta, potrebna i postignuta usklađivanja, provere usklađenosti i istrage, izvršena obuka itd.). Na ovaj način, menadžment postaje svesniji onoga što radite, kao i benefita.

Ostali ključni resursi i argumenti za jasno razumevanje funkcije komplajansa:

1. Argument regulisane funkcije. Izvode se iz smernica EBA (Evropskog bankarskog tela) o unutrašnjem upravljanju, Bazelskim smernicama (komplajans i funkcija komplajansa u bankama), smernicama regulatora finansijskog i bankarskog sektora o unutrašnjem upravljanju i ulozi funkcije komplajansa.
2. Interna akta vaše firme - definicija prema politici komplajansa, pravila o radu komplajans funkcije.
3. *Godišnji plan rada funkcije komplajansa* (čak možete imati i poslovnu komplajans strategiju) utemeljen na definisanim zadacima i odgovornostima i na oceni komplajans rizika.
4. Plan alokacije postojećeg osoblja za usklađivanje sa svim potrebnim aktivnostima i zadacima, u godišnjem planiranju - koristeći FTE = *Full Time Equivalent* (*prema maks. raspoloživim resursima, izračunato precizno prema vremenu, ovo je jedan od načina da se transparentno i matematički prikaže opseg posla koji je moguće završiti sa postojećim osobljem*).

5. Procena i izveštavanje o prikladnosti i potpunosti svih resursa (zaposleni, finansije, IT, ovlašćenja itd.) za obavljanje funkcije komplajansa, sa obzirom na regulatorne zahteve i komplajans rizike specifične za firmu. Komplajans funkcija bi to trebalo da predstavi menadžmentu i da ponudi predloge koji se odnose na potencijalne nedostatke. Ovo je takođe dobar alat da se odboru predoči potrebna odluka o tome koji bi trebalo da budu prioriteti u komplajans programu vaše firme, šta komplajans treba ili ne treba da radi, prema njima, a uzimajući u obzir ograničene resurse (*komplajans funkcija bi trebalo da jasno objasni odboru, šta sve mora da raditi funkcija komplajansa, u skladu sa propisima i rizicima*).
6. Samoprocena programa usklađenosti i eventualno sprovođenje eksterne, nezavisne i profesionalne procene komplajans programa *(dostavljanje Politike komplajansa i Kodeksa ponašanja). To bi trebalo predstaviti odboru, zajedno sa predlozima na temelju nedostataka (koji mogu uključivati npr. bolju diferencijaciju funkcija, isključenje određenih aktivnosti iz funkcije komplajansa ili uključivanje nekih drugih, dopunu raspoloživih resursa, nove ili poboljšane politike i procese itd.).*

Vrlo često se događa da je funkcija komplajansa prisiljena da obavlja dodatne operativne zadatke van uobičajenog opsega primarnih odgovornosti komplajansa, a štetne posledice toga mogu biti sledeće:

- Komplajans funkcija počinje da gubi svoju ključnu vrednost menadžmentu i kompaniji u smislu efektivne interne kontrole i sistema odbrane od rizika, što je bitno za bezbednost kompanije. Sve to se dešava nauštrb malih i manje značajnih operativnih zadataka, koji nisu deo internog sistema kontrole i koje mogu obavljati drugi sektori, kao što je pravni.
- Komplajans funkcija počinje da biva zatrpana operativnim zadacima, na štetu svojih sistemskih i strateških aktivnosti. Takođe se može ugroziti i primena propisanih delatnosti komplajans funkcije, što će pre ili kasnije primetiti i regulator (ili revizor), ili će se manifestovati rizici, pošto komplajans funkcija neće moći da pomogne pri njihovoj identifikaciji, ili neće moći da pomogne kompaniji i menadžmentu da se zaštiti od rizika. *Time se mogu uzrokovati gubici i šteta kompaniji i menadžmentu.*

Drugi praktični alat koji se u trenutnoj situaciji može odmah upotrebiti kao argument preopterećenja funkcije komplajansa jeste strukturisani i analitički prikaz svih postojećih zadataka i aktivnosti, te raspodela postojećih resursa uz procenu resursa potrebnih za sve dodatne aktivnosti. To će pokazati da li možete preuzeti dodatne aktivnosti ili ne, ili u kojem obimu. Naravno, pod primarnim uslovom da nema sukoba interesa sa prirodom funkcije komplajansa. Taj alat se u praksi može koristiti na sledeće načine:

i. Napravite popis svih postojećih zadataka i aktivnosti koje već obavljate kao sektor za komplajans i spisak mogućih dodatnih aktivnosti.
ii. Napravite popis mogućih zadataka i aktivnosti koje planirate u kratkom roku dodati kao potrebne za sprovođenje zadataka potrebnih u funkciji komplajansa (u zavisnosti od propisa ili preporuka regulatora, mogućih posebnih propisa ili identifikovanog visokog rizika, zahteva upravnog odbora ili drugog, što nije opcionalno).

iii. Rasporedite raspoložive resurse među tim aktivnostima, korišćenjem FTE. To znači da je „ekvivalent punog radnog vremena" (Full Time Equivalent) = broj sati plaćenih za rad sa punim radnim vremenom u određenom vremenskom periodu, na primer, godišnje; 1 FTE predstavlja 1 stalno zaposlenog radnika. Prema broju radnih dana u 2019. godini (249 dana = 1992 sati), 1 FTE je ove godine u proseku 229 radnih dana (1832 sata), sa 20 dana godišnjeg odmora, bez uračunavanja bolovanja. Ova metoda nam omogućuje da vidimo koliko je ekvivalenata punog radnog vremena dostupno u našem sektoru (obično odgovara broju zaposlenih sa punim radnim vremenom; ako postoji zaposleni sa skraćenim radnim vremenom, smatramo da ima, npr, 0,5 FTE). Zatim organizujemo ekvivalente punog radnog vremena prema aktivnostima na našem spisku. Možda će nekim aktivnostima biti dodeljeno 0,1 FTE (što je prosečno 183h/godišnje, odnosno 15h ili oko 2 radna dana mesečno tokom 2019. godine), ili možda 0,3 FTE (550h/godišnje, odnosno 45h ili oko 5 do 6 radnih dana mesečno). Zbir je jednak broju radnih sati u sektoru za komplajans. Ako premašimo taj broj, možda ne planiramo dobro ili ne posvećujemo dovoljno pažnje određenim aktivnostima, ili da su nam potrebna dodatna sredstva za postojeći obim potrebnih zadataka. Ovde je takođe potrebno istražiti mogućnosti kako povećati produktivnost sa postojećim resursima, smanjujući radne sate potrebne za određene zadatke, na račun dodatnih poboljšanja procesa, učenja novih veština i znanja ili poboljšanja IT ili drugih vrsta podrške.

Lice odgovorno za komplajans je odgovorno za pravilno upravljanje raspoloživim resursima za profesionalno i pouzdano izvršavanje aktivnosti koje zahtevaju propisi i interna akta, a koje su usmerene na ublažavanje najkritičnijih rizika komplajansa. Lice odgovorno za komplajans je takođe odgovorno za prezentaciju ovih aktivnosti i ocenu resursa na jasan način, tako da upravni odbor može doneti odluku koja se temelji na informacijama. Na ovaj način je jasno dokumentovano pitanje mogućeg preopterećenja radnim obavezama ili neodgovarajućih uslova za rad komplajans funkcije za potrebe bilo kakve kontrole od strane regulatora, revizora, nadzornog odbora itd.

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Compliance, Legal and Resources

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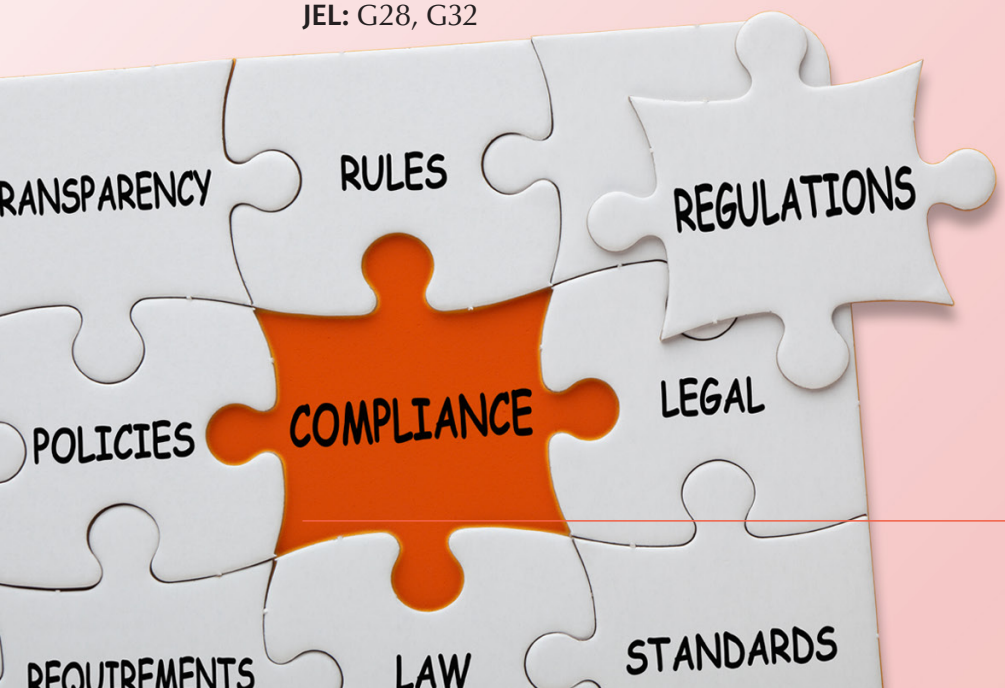
Summary: The compliance function is often faced with difficulties of work overload, associated with random delegation of duties by the management board (or their administration) and by other senior management, leading to a constant increase of the scope of work for compliance, while working with equal or sometimes even reduced staff and a lack of other resources. At the same time, there are also gaps in the companies' understanding of what the duties and responsibilities of the compliance function are supposed to be, and how our role differentiates from legal and other functions in practice. While compliance professionals rightfully understand their work as risk-based, cross process and as a mixture of advisory-controlling independent activity, others may think of it as more linear and narrower, legalistic, and silo-based. While some view compliance as an organizational silo, where a certain area of expertise is limited to a specific, disconnected department with fixed, narrow boundaries, although it concerns the company as a whole, such business conduct and does not lead to integration and cooperation, which the compliance function should definitely strive towards. This article discusses these challenges in more details and presents proven practical approaches for facing them effectively.

Keywords: compliance, legal, risk, corporate governance, internal control system, effective management

JEL: G28, G32



Compliance vs. Legal Operations

In many cases, companies are facing issues concerning the differentiation of roles and responsibilities between the compliance and legal function, and, consequently, arranging the workload between them becomes difficult. Solutions for this should be based on respecting the three lines of defence principles, risks based approach and effective management, however, specific current situations, silo thinking, perceiving compliance as some variation of the legal function, power struggles and competition even, may lead the decisions astray. This eventually has negative impact on effective and transparent governance, causes bad risk management and inappropriate internal controls system, exposing the company to liability and losses.

This kind of situation may be explained with the fact that, especially in regulated financial industries, the compliance function is performed by experts who have legal background. Consequently, the lawyers in the legal department may completely desert risk areas "covered" by the compliance, in a way that compliance function suddenly takes over all the legal support for the certain area, too. The attitude of other functions can be similar.

Unlike the legal function, compliance is one of the key functions in internal governance, as part of the internal control system and the second line of defence against risks. This key difference can be practically explained, as follows. While the same would apply for various compliance risk areas (like prevention of money laundering, fraud etc.), let us take privacy data protection as an example. If this is the area primarily assigned to the compliance function, your problem may be that all other functions tend to "hand over" all the issues connected to privacy over to compliance, including the legal support in ensuring concrete compliance requirements in day-to-day operations (which is the basic task of the legal function and business management). Also, all the professional and operational issues in relation to privacy and data protection tend to be handed over to compliance in isolation, even if they are not only a matter of compliance, but of a specific expert field or the implementation in the specific field of operation. For example, the risk of personal data breach in the sales process is fully a domain of managers and sales staff. They need to put in place and maintain the privacy requirements and controls in sales and prevent breaches. The compliance function helps them to identify and assess the risks of breaching personal data, but the responsibility regarding specific knowledge of how the sales activities are carried out and therefore, where and which breaches of personal data protection may occur in doing so, is in the hands of the process owners (the sales function in this case). The compliance function will primarily ensure that significant changes in the legal environment are detected and will, in this respect, for example, educate the sales staff so they will be able to identify specific privacy risks associated with their activities, and help the management to adopt and implement appropriate rules and measures. Also, compliance may recommend specific contractual provisions in general terms and conditions of sales, for example, but the legal support for assuring data privacy in individual cases, should be provided by the legal department, as compliance needs to remain impartial and available to conduct compliance checks and audits of these processes.

If the compliance function were to take part in day-to-day operations too broadly, assuring compliance 'on the filed', it would not be able to control the compliance of these processes, which it should be doing as a control function. This is based on the governance principles of the three lines of defence against risks. Where the first line represents the management of business areas and functions, including the legal function and other supporting functions. The second line includes the risk management function, cyber security, quality management, etc, and the compliance function. Internal audit represents the third line of defence. The superior body to these lines of defence in the internal governance system is the board, which all three lines of defence (should) report to directly and independently from each other.

The compliance function in this system of three lines of defence, unlike the legal function, operates within the second line:

(1) As an advisory point of contact, focused on supporting the organization to systematically ensure and manage the compliance with the requirements that apply to the organization, based on regulations, requirements or recommendations of a regulator, etc. and

(2) As an internal control function, focused on identifying compliance issues, evaluating and managing compliance risks.

In the case of privacy and data protection, as described above, the compliance function's activities should be focused on advising and assisting in:

- Detecting and identifying the novelties in regulations (GDPR)
- Organizing internal the processes of (i) identifying the gaps between the organization's current state of compliance and the new requirements and (ii) preparing the action plan to close these gaps (*concrete activities for compliance regarding the gaps identified; including descriptions of the activities, definitions of engaged persons and the execution deadline*)
- Preparing presentation materials for the management board, senior management and others
- Preparing educational materials and the implementation of the education for the defined target groups of employees, contractors, etc.

**In the activities described, the role of the compliance function should be organizational, initial and controlling, while the role of the legal function is already known - support and participation* in *implementing operational business activities.*

Secondly, the compliance function should carry out the following controlling activities and risk management activities, too:

- Monitoring of the implementation of planned activities to comply with regulatory requirements (based on reporting on appointed areas of the first line of defence against risks, including the legal function) and reporting to the administration about the state of compliance (*readiness level for the new regulations*). For the compliance function to maintain its controlling nature, impartiality, as well as its timely availability for assuring control, it is not recommended for this function to be operationally executing these activities.

- Conducting monitoring regarding the compliance of actual processes and identifying, reporting and monitoring the measures taken to mitigate risks or to assure compliance.

The compliance function must perform both parts in balance: the consulting-preventive as well as the controlling function. The controlling part of the function must not be neglected due to an excessive burden of performing operational tasks for the first line, because then the company as such does not assure the efficient functioning of a significant part of the internal control system (which is prescribed in the financial sector by the EU regulation, including the compliance function). Consequently, the legal function must not hand its legal support in the first line over to the compliance function, where the legal function itself has no internal-controlling tasks and responsibilities (as the compliance function has). The compliance function in this part does not replace or complement the legal function but adds to the entire system of internal governance in the field of risk management and internal controlling. It is different, therefore. in its nature and its basic mandate, compared to the legal function.

Sometimes, it helps to explain the reasons why the role and responsibilities of the compliance function are differently and wrongly understood by the management and other functions, which subsequently imposes too many tasks outside of the basic sphere of responsibility of the compliance function.

Below, you can find these reasons presented in more details, along with some practical suggestions on how to resolve them, as proven in practice.

The cause	The solution example
The compliance function is a new function, often still unrecognised, therefore its understanding by the various departments within the company can be very different. You might be appointed an improper position or insufficient authority in the organizational structure.	⇨ Regularly communicate and educate, mostly using the cases that are specific and relevant for your company. ⇨ Be professional, but brief, concise and very concrete in your counselling; be part of a team, invest your energy in the knowledge of business objectives and plans, help find solutions, but remain principled in terms of compliance and business integrity, and you should be able to build genuine authority and reputation. ⇨ If your formal position within the company is not on a high enough level, this approach may help you to achieve it easier, but do not forget to warn your management about it, at the right moment (use arguments from the principles of good governance, efficiency and independence of the compliance function, which basically protects the company and the responsible persons in it).
Poorly defined compliance function in the internal documents (classification, management policies).	⇨ Propose amendments to internal documents, including the definition of the role of other areas and services in the compliance system (see e.g. ISO 19600 or EISEP template of compliance policy, any other resources - many are available online); present specific compliance risks areas and use concrete cases to illustrate the role of the compliance function and other departments or functions.

The cause	The solution example
The lack of compliance risk assessments.	⇨ Use the structure and professional approach, help yourself with the existing methodologies and processes for risk assessments within the company, but adjust it to the nature of the compliance risks (which should be assessed more quantitatively than qualitatively); be inclusive, use interviews and the focus group approach in all areas of the company, in order to truly get to know them, listen to them and finally gain a very good understanding of the compliance risks throughout the company; and build your capacity to identify compliance issues and bad practices early.
The lack of the annual plan of operation or insufficiently specified and planned activities of the compliance function.	⇨ Plan specified tasks and activities of the compliance function, depending on the regulation requirements, your internal policies, international standards, etc, and put emphasis on risky areas. Always plan for additional time for unpredictable ad-hoc activities, in accordance with your past experience (like dealing with controlling procedures and requirements of the regulator, unexpected changes, significant internal investigations or activities associated with the identified breaches, the new legislation, the requirements of the Supervisory Board, etc.)
The desire to shift the liability is also a common reason.	⇨ Combination of rational and grounded solutions, described above and below, can be effective.

The key tools, especially in communication with the management board (CEO, senior management) when presenting your argumentation and differentiation of the role of the compliance function, are:

- Systematic and regular planning of compliance tasks and activities and
- Management reporting of the compliance function, based on clear and comparable indicators (such as: the scope of provided advice, necessary and achieved alignments, compliance checks and investigations, the training performed etc.). This way, management becomes gradually more aware of what you do and what the benefits are.

Other critical resources and arguments for clearly defining the compliance function:

1. The argument of the regulated function. Derived from the EBA (European Banking Authority) guidelines on internal governance, Basel Guidelines (Compliance and the Compliance Function in Banks), guidelines of the banking and other financial sector regulators on the internal governance and the role of the compliance function.
2. Your company's own internal acts - definition in the Compliance Policy, Rules on Operation of the compliance function.
3. *Annual work plan of the compliance function* (you may even have the business compliance strategy) based on the defined tasks and responsibilities and on the compliance risk assessment.
4. Allocation plan of the existing compliance staff to all required activities and tasks, in the annual planning – using FTE = *Full Time Equivalent* (*according to the max. available resources, calculated precisely according to the time, this is the one way to very transparently and mathematically*

demonstrate the scope of work that is possible to manage with existing staff).

5. Evaluation and reporting about the suitability and sufficiency of all resources (staff, finances, IT, power of authority etc.) for performing the compliance function, given the regulatory requirements and compliance risks specific for the company. Compliance should present this to the management and offer proposals regarding potential gaps. This is also good tool to confront the board with a necessary decision about what should be the priorities in your company's compliance program, what compliance should or should not be doing according to them, given the limited resources *(compliance should hereby clearly explain to the board, what the compliance function must be doing, according to the regulations and risks*).
6. Self-assessment of the compliance programme and eventually conducting an external, independent and professional assessment of the compliance programme (*delivery of the Compliance Policy and Code of Conduct). This should be presented to the board, together with* proposals based on the gaps *(which may include e.g. better differentiation of functions, exclusion of certain activities from the compliance function or the inclusion of some other, supplementation of available resources, new or improved policies and processes, etc.)*

If very often happens that the compliance function is pressured to undertake additional operational tasks outside the typical scope of the primary responsibilities of the function, and the resulting damaging consequences can be the following:

- The compliance function starts to lose key added value for the board and the company in terms of effective internal controls and the system of defence against risks, which are important for the company's security. All at the expense of small and less important, operational tasks, which are not part of the internal control system and can be performed by other functions, for example the legal function.
- The compliance function starts to lose itself in operational tasks, harming its own systematic and strategic activities. It can also threaten the implementation of the compliance functions' regulated responsibilities, which will be eventually recognized by the regulator (or an auditor), or the risks will materialize, because the compliance function was not able to help identify it, or had no opportunity to assist the company and the management to protect themselves against them. *This can cause the company and managers liability and loses.*

Another practical tool, which can be immediately used in a current situation in favour of the argument of being overburdened as a compliance function, is a structured and analytical display of all existing tasks and activities, the distribution of existing resources, with an estimation of the resources needed for any additional activities. This shows whether you can take over additional activities or not, or in what scope. Of course, under the primary condition

that there is no conflict of interest with the nature of the compliance function. In practice, we could use it in the following manner:

i. Make a list of all existing tasks and activities, which you already perform as a compliance function, as well as of any possible additional ones.
ii. Make a list of possible tasks and activities, which you plan to add shortly, and which are necessary for implementing the tasks required from the compliance function (depending on the regulations or the recommendations of the regulator, possible specific regulations or detected high risk, the request of the Supervisory Board or something else, which is not optional).
iii. Arrange your available resources in respect of these activities, according to the FTE method. This means that "Full Time Equivalent" = number of hours paid for full time work in a specified period of time, *e.g.* per year; 1 FTE represents 1 full-time employee. According to the number of working days in 2019 (249 days = 1992 hours), 1 FTE is on average 229 working days (1832 hours) this year, with 20 days of annual leave included and a sick leave not included. This method allows us to see how many FTEs are available in our department (usually corresponds to the number of full-time employees; if there is a part-time employee, we count them as 0.5 FTE, for example). Then, we arrange them in accordance with the activities on our list. Some activities might be allocated with a 0.1 FTE (which is the average of 183 h/year and 15h or around 2 working days per month in 2019), while others might get a 0.3 FTE (550 h/year and 45h or around 5 to 6 working days per month). The sum shall equal the number of FTEs in the compliance department. If we exceed this number, we may not have been planning well, or it might mean that we have not dedicated enough effort to certain activities, or that we need additional resources for the existing scope of required tasks. Here, one must also explore the possibilities of how to increase productivity with existing resources, by reducing the FTE scope for certain tasks, on account of additional process improvements, skill and knowledge improvement, IT or other types of support.

It is the compliance officer's responsibility to properly manage the available resources for professional and reliable implementation of activities, which are required by regulation and internal acts and focused on mitigating the most critical compliance risks. The compliance officer is also responsible for presenting these activities and evaluating resources in a clear manner, so that the board can make an informed decision. This way, the issue of possible work overload or inappropriate conditions for the compliance function is clearly documented, for the purposes of any control of the regulator, auditors, Supervisory Board etc.

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Think Tank

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Rezime: *Think tank* predstavlja globalni fenomen savremenog sveta. Na svetskom nivou, od preko 6.300 *think tank* institucija koje su postojale 2009. godine, više od polovine je osnovano posle 1989. godine. Tom povećanju značajno je doprinela inostrana finansijska podrška za kreiranje *think tank* institucija u istočnoj Evropi.

Think tank institucije se između sebe razlikuju prema ideološkom pristupu, izvorima finansiranja, temama, odnosno oblastima kojima se bave, kao i prema korisnicima svojih usluga. *Think tank* institucije se, generalno posmatrano, nadmeću za uticaj u sferi politike, biznisa, nauke, medija i društva.

Dominantan broj *think tank* institucija se bavi temama iz politike, socijalne politike, sfere ekonomije i biznisa, integracija i slično. Pri tome je sve veći broj *think tank* institucija koje su posvećene socijalnim i ekološkim temama.

Brojnost *think tank* institucija, njihova globalna rasprostranjenost kao i trendovi daljeg razvoja upućuju na veliku zainteresovanost stručne i šire javnosti za njihovo angažovanje, domete i perspektivu.

Ključne reči: *think tank*, politike, istraživanja, fondacije, energija, vlade, javnost, lobiranje, klima

JEL: I00, Q40, Q50, Y80

Think tank predstavlja globalni fenomen savremenog sveta. Sam pojam „*think tank*" je nastao u toku II svetskog rata i obuhvatio je dve odrednice: mesto koje je bezbedno za vođenje razgovora, dakle bez rizika u pogledu prisluškivanja (eng. *tank* – rezervoar) i na kome su civilni i vojni eksperti zajedno radili na vojnim strategijama (eng. *think* – misliti, razmišljati).

Tokom 60-tih i 70-tih godina 20. veka počele su da se ovim pojmom označavaju istraživačke institucije, koje su orijentisane na praksu izvan okvira nezbednosne politike. U takve aktivnosti spadaju predstavljanje rezultata istraživanja, kao i utvrđivanje postavki programa delovanja i propagiranje odabranih tema, među kojima su najviše fokusirane sledeće: socijalna politika, ekonomija, politička strategija, tehnologija, bezbednost, klima, kultura i neke druge.

Globalno posmatrano, od preko 6.300 *think tank* institucija koje su postojale 2009. godine, više od polovine je osnovano posle 1989. godine. Tom povećanju značajno je doprinela inostrana finansijska podrška za kreiranje *think tank* institucija u Istočnoj Evropi.

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Dominantan broj *think tank* institucija se bavi temama iz politike, socijalne politike, sfere ekonomije i biznisa, integracija i slično. Pri tome je sve veći broj *think tank* institucija koje su posvećene socijalnim i ekološkim temama. Među njima se posebno ističe Tellus Institute, neprofitna institucija sa sedištem u Kembridžu, država Masačusets, SAD. Ova institucija je globalno aktivna, uključujući i Srbiju i zemlje u regionu.

Osnovno grupisanje *think tank* institucija bi moglo biti izvršeno na sledeći način:

- Nezavisne *think tank* institucije civilnog društva osnovane kao neprofitne institucije,
- *Think tank* institucije za istraživanje politike povezane sa univerzitetima,
- *Think tank* institucije organizovane/sponzorisane od strane vlada/država,
- *Think tank* institucije kreirane, odnosno vođene od strane kompanija, i druge.

U cilju podrobnijeg sagledavanja profila i prioriteta delovanja, *think tank* institucije se mogu klasifikovati kako sledi:

- Prema veličini na: velike i univerzalne, velike i specijalizovane, i male;
- Prema osnivačima na: pojedince, kompanije, fondacije (zadužbine), vlade, fondove i druge;
- Prema modelu delovanja na: ugovorni odnos sa osnivačem, savetnička uloga, nezavisno istraživanje, lobiranje itd.;
- Prema periodu angažovanja na: dugi rok ili kratki rok (npr. u slučaju kampanja);
- Prema formalnom odnosu sa političkim establišmentom i/ili partijama i koalicijama u matičnoj zemlji itd.

Sjedinjene Američke Države – SAD imaju dugu tradiciju u sferi *think tank* institucija. Svakako najstarijom *think tank* institucijom u toj zemlji se smatra Karnegijeva zadužbina za međunarodni mir (eng. *Carnegie Endowment for International Peace*) osnovana 1910. godine. Takođe se po svom značaju izdvaja Brukings institucija (eng. *Brookings Institutions*) osnovana 1916. godine. Formiranje navedenih institucija bilo je praćeno angažovanjem uticajnih investicionih bankara i drugih poslovnih ljudi, kao i akademika i političara.

Savremena praksa *think tank* institucija u SAD poznaje tri modaliteta. Prvi modalitet čine akademske *think tank* institucije, koje se prevashodno bave akademskim razmatranjima tema u fokusu, uz izraženu nezavisnost u svom delovanju. Sledeći modalitet predstavljaju državne *think tank* institucije, koje se u u prvom redu angažuju u odnosu na vladu i dominatno su finansirane od strane same države. Takve *think tank* institucije se mogu osloniti na pomoć državnih organa, pri čemu je nepisano pravilo da rezultati njihovih istraživanja nisu javno dostupni, tj. publikovani. Treći modalitet je zastupnički, tj. advokativni koji, za razliku od prethodna dva pomenuta, svoju aktivnost retko temelji na sopstvenim istraživanjima. Naime, glavna funkcionalnost pristupa je u marketingu i u inoviranim izdanjima, odnosno prezentacijama već postojećih ideja. Reč je, dakle, o određenim političkim ili ideološkim linijama koje se agresivno promovišu sa ciljem da utiču na političke debate. Neki analitičari ovakav vid angažovanja upoređuju sa lobiranjem, uzimajući kao argumentaciju da timovi iz ovakvih institucija intenzivno koriste medijska saopštenja, a da se fokusiraju na kratkim, sažetim materijalima koje donosioci odluka, zbog svojih brojnih obaveza, mogu da pročitaju između dva sastanka.

Poznato je da u Sjedinjene Američke Države upravo *think tank* institucije služe za obrazovanje zajednica/klubova eksperata, čiji članovi kasnije kao službenici Vlade postaju deo Uprave, tj. Administracije, putem već uhodanih neformalnih procedura, tzv. efekta odskočne daske.

Velika Britanija ima dugu tradiciju u vezi sa *think tank* institucijama. Isto važi i za saradnju sa *think tank* isntitucijama iz SAD. Među brojnim *think tank* institucijama u Velikoj Britaniji posebnu pažnju zaslužuje Institut Adam Smit (eng. *The Adam Smith Institute*). Adam Smit je bio škotski ekonomista, filozof i autor, pionir političke ekonomije. U ekonomskoj teoriji smatra se „ocem ekonomije" ili „ocem kapitalizma". Ova *think tank* institucija, kao nezavisna, neprofitna i nestranačka institucija, radi na promociji ideja neoliberalnog i slobodnog tržišta putem izdavaštva, medijskih komentara i edukativnih programa. Danas je ovaj Institut okosnica stvaranja primera slobodnih tržišta i slobodnog društva u Velikoj Britaniji.

U značajnije *think tank* institucije u Velikoj Britaniji danas spadaju i: COMMUNITY (zajednica, od latinske reči *civitas*), People (Narod, od grčke reči *demos*), Institut za istraživanje javne politike (eng. *the Institut for Public Policy Research*), Policy Exchange (Razmena politika) i Reform (Reforma). U Srbiji je inače posebno aktivna *think tank* institucija Chatham House poznata i pod imenom Kraljevski Institut za međunarodne poslove iz Velike Britanije.

Godine 1994. sa sedištem u Londonu je osnovan Z/Yen koji predstavlja komercijalnu *think tank* instituciju, konsultantsku kuću i venture firmu. Isti se angažuje u finansijskim uslugama, tehnologiji i u volonterskom sektoru na

istraživanju, praćenju performansi i strateškom upravljanju. Z/Yen je razvio Indeks globalnih finansijskih centara. Većinu svojih istraživanja slobodno objavljuje na sopstvenoj web-stranici, dakle bez naknade za korisnike.

Pažnje vredno je spomenuti i *think tank* instituciju u sastavu Muzeja nauke u Birmingemu. Ovaj *think tank* raspolaže sa impresivnom kolekcijom od preko 200 eksponata i artefakata, te pruža izvanredan uvid u istoriju razvoja industrije, a posebno automobilskih motora i tekstilnih mašina. Brojni inovativni programi i istraživanja ovog *think tank*-a pobuđuju veliku pažnju, kako stručne javnosti, tako i šire publike.

Brisel, kao primarno sedište Evropske unije je istovremeno sedište velikog broja međunarodnih *think tank* institucija. Svakako najznačajnije među njima su: Bruegel, Centar za evropske političke studije (eng. *Centre for European Policy Studies - CEPS*), Centar za novu Evropu (eng. *Centre for the New Europe - CNE*), Evropski centar međunarodne političke ekonomije (eng. *European Centre of International Political Economy - ECIPE*), Evropski politički centar (eng. *European Policy Centre - EPC*) i neki drugi.

Bruegel predstavlja *think tank* posvećen istraživanju politike o ekonomskim temama. Isti je počeo sa radom 2005. godine. Predsednik Upravnog odbora ove institucije je gospodin Žan-Klod Triše, koji je bio Predsednik Evropske Centralne banke u periodu od 2003-2011. godine. Bruegel trenutno sprovodi istraživanja u pet oblasti:

- Evropska makroekonomija i upravljanje – sa fokusom na pitanja evropske fiskalne, ekonomske, bankarske i političke unije.
- Globalna ekonomija i upravljanje – ispituje implikacije odnosa između globalnih i EU učesnika i studije za međunarodnu ekonomiju, sa posebnim akcentom na razvoj Azije;
- Finansije i finansijska regulativa, uključujući nadzor i odlučivanje, kako na međunarodnom planu, tako i na nivou EU;
- Inovacije i konkurencija - analize uloge IT-tehnologija, politika konkurencije i tehnoloških inovacija na ekonomske efekte i rast;
- Energija i klima - sa akcentom na istraživanju bezbednosti energije, energetske efikasnosti, te integrisanih tržišta energije, i druge.

Ovaj *think tank* je prepoznat kao najbolji *think tank* međunarodne ekonomije na svetu i kao drugi najbolji *think tank* na svetu, a prema Izveštaju 2019 Global Go To *Think tank* Report. Izveštaj je sačinjen u okviru Programa istraživačkih centara i civilnih društava (eng. *The Think tank and Civil Societies Program - TTCSP*). Ovaj Program predstavlja neprofitni program Univerziteta Pensilvanije sa sedištem u Filadelfiji, SAD. Isti upravlja istraživanjem politika instituta širom sveta i raspolaže sa datotekom od približno 6,300 *think tank* institucija širom sveta.

U Nemačkoj se pojmom *think tank*, tj. fabrike misli (nem. *Denkfabrik*) označavaju institucije, koje utiču na oblikovanje javnog mnenja putem istraživanja, razvoja i vrednovanja političkih, socijalnih i privrednih koncepata i strategija, uz promovisanje istih u smislu predloga, preporuka odn. direktnih savetovanja o politikama. U tom pogledu neke fabrike misli zastupaju određene konkretne političke, odnosno ideološke linije i/ili koncepte, sa ciljem da

ostvare uticaj na političke diskusije. Fabrika misli može biti organizovana kao fondacija, udruženje, neprofitno društvo sa ograničenom odgovornošću, društvo sa ograničenom odgovornošću ili kao neformalna grupa. Obično su u njima zaposleni naučni radnici - eksperti iz oblasti privrede i socijalnih politika, stručnjaci iz oblasti propagande/oglašavanja i komunikacija, kao i trenutno aktivni ili nekadašnji političari, privrednici, preduzetnici i takozvani svedoci, tj. osobe od integriteta sa učešćem u nekim značajnim događanjima.

U Nemačkoj se fabrike misli pretežno finansiraju od strane države, na primer od strane Naučne zajednice Gotfrid-Vilhelm-Lajbnic (nem. *Wissenschafts-gmeinschft Gottfried-Wilhelm-Leibniz*) sa sedištem u Berlinu, koju trenutno čini 96 ne-univerzitetskih *think tank* institucija i uslužnih institucija u oblasti nauke. Ovu instituciju takođe čine institucije koje pretežno stavljaju na raspolaganje infrastrukture za naučni rad. Uz to ovaj *think tank* ima jednu dodatnu specifičnost, utoliko što u njega spada i osam istraživačkih muzeja.

Drugi segment finansiranja *think tank* institucija u Nemačkoj potiče iz državnih sredstava, kao što je to slučaj kod političkih fondacija. U tom su smislu sve vodeće političke stranke, bez izuzetka, tesno povezane sa fondacijama - istraživačkim centrima koji imaju određenu ulogu u kreiranju politika i to prvenstveno u smislu pružanja podrške kreatorima politika. U najznačajnije spadaju: Fondacija Konrad-Adenauer-Stiftung uz Hrišćansko-demokratsku uniju (nem. *Die Christlich Demokratische Union Deutschlands - CDU*), Fondacija Friedrich-Ebert-Stiftung uz Socijalno-demokratsku partiju (nem. *Die Sozialdemokratische Partei - SPD*), Fondacija Hanns-Seidel-Stiftung uz Hrišćansko-socijalnu uniju (nem. *Die Christlich-Soziale Union - CSU*), Fondacija Heinrich-Böll-Stiftung uz Zelene (nem. *Die Grüne*), Fondacija Friedrich Naumann Stiftung uz Slobodnu demokratsku partiju (nem. *Die Freie Demokratische Partei - FDP*) i Fondacija Rosa Luxemburg Stiftung uz Partiju Levica (nem. *Die Linke*). Spomenute fondacije su aktivne ne samo u svojoj matičnoj zemlji, već i u inostranstvu. S tim u vezi treba konstatovati da su upravo sve gorenavedene fondacije angažovane i u Srbiji.

Pored gorenavedenih, u Nemačkoj postoje i neki privatno finansirani istraživački centri koji dobijaju materijalnu podršku od strane političkih partija, udruženja, firmi, saveza ili privatnih lica.

Pre nego što se pređe na predstavljanje *think tank* institucija u Srbiji, sledi napomena da u srpskom jeziku ne postoji ekvivalentan izraz za *think tank*. U praksi se, pored pojma istraživački centar, sreću i pojmovi trust mozgova, centar za pružanje intelektualnih usluga i sporadično još neki izrazi.

Praksa osnivanja i delovanja *think tank* institucija u Srbiji je novijeg datuma. Najveći broj postojećih *think tank* institucija je angažovan u oblasti evropskih integracija, međunarodnih i spoljnih odnosa, te socijalne politike, a znatno manji broj u oblasti ekonomije i zaštite životne sredine.

Evropski pokret u Srbiji – EpuS je udruženje građana osnovano 1992. godine, sa željom da inicira i prati sveobuhvatan proces evropskih integracija Republike Srbije. Cilj delovanja Evropskog pokreta u Srbiji je izgradnja demokratske i moderne Srbije u ujedinjenoj Evropi.

Fond za razvoj ekonomske nauke – FREN (eng. *The Foundation for the Advancement of Economics - FREN*) je osnovan 2005. godine od strane Ekonomskog fakulteta u Beogradu. FREN se pozicionirao kao jedna od vodećih *think tank* institucija u Srbiji i regionu. Ciljevi FREN-a su unapređenje istraživanja u sferi ekonomske i socijalne politike u Srbiji i regionu, omogućavanje pristupa visoko kvalitetnim statističkim i analitičkim podacima za donosioce odluka, kao i širenje savremenog načina razmišljanja o ekonomiji i socijalnoj politici u profesionalnim krugovima i široj javnosti.

Centar za evropske politike - CEP je nezavisna, neprofitna *think tank* organizacija koju je osnovala grupa stručnjaka u oblasti evropskog prava, ekonomije i javne uprave, sa zajedničkim ciljem da doprinesu unapređenju okruženja za kreiranje javnih politika u Srbiji, tako što će ga učiniti transparentnijim i inkluzivnijim, zasnovanim na činjenicama i suštinski orijentisanim ka EU.

U decembru 2018. godine, Centar za evropske politike - CEP je započeo realizaciju dvogodišnjeg projekta Jačanje kapaciteta organizacija civilnog društva za aktivno učešće u pregovorima o pristupanju EU kroz određene radne grupe Nacionalnog konventa o EU (Pripremite se za učešće – P2P) zajedno sa Nacionalnom alijansom za lokalni ekonomski razvoj - NALED i Centrom za savremenu politiku - CSP kao partnerima na ovom projektu.

Brojnost *think tank* institucija, njihova globalna rasprostranjenost kao i trendovi daljeg razvoja upućuju na veliku zainteresovanost stručne i šire javnosti za njihovo angažovanje, domete i perspektivu.

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Think Tank

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Summary: Think tank is a global phenomenon of the modern world. Globally, out of over 6,300 think tank institutions that existed in 2009, more than half were established after 1989. Foreign financial support for the creation of think tank institutions in Eastern Europe significantly contributed to this increase.
Think tank institutions differ from each other according to their ideological approach, sources of funding, topics or the areas they deal with, as well as the users of their services. Think tank institutions are generally competing for influence in politics, business, science, media and society.
A dominant number of think tank institutions deal with topics from politics, social policy, the sphere of economy and business, integration, etc. There is an increasing number of think tank institutions dedicated to social and environmental issues.
The number of think tank institutions, their global distribution, as well as the trends of further development are indicating a great interest of the professional and general public for their engagement, scope and perspective.

Keywords: think tank, politics, research, foundations, energy, government, public, lobbying, climate

JEL: I00, Q40, Q50, Y80

Think tank is a global phenomenon of the modern world. The term "think tank" originated during World War II and included two determinants: a place that is safe for conversations, hence without the risk of eavesdropping (tank) and where civilian and military experts worked together on military strategies (think). During the 60's and 70's of the 20th century, this term began to be used to denote research institutions, which are oriented towards practice outside the framework of security policy. Such activities include presenting the results of the research, as well as determining the settings of the action program and promoting selected topics, among which the following are most focused: social policy, economy, political strategy, technology, security, climate, culture and some others.

Globally, out of over 6,300 think tank institutions that existed in 2009, more than half were established after 1989. Foreign financial support for the creation of think tank institutions in Eastern Europe significantly contributed to this increase.

Think tank institutions differ from each other according to their ideological approach, sources of funding, topics or the areas they deal with, as well as the users of their services. Think tank institutions are generally competing for influence in politics, business, science, media, and society.

A dominant number of think tank institutions deal with topics from politics, social policy, the sphere of economy and business, integration, etc. There is an increasing number of think tank institutions dedicated to social and environmental issues. Among them, the Tellus Institute, a non-profit institution based in Cambridge, Massachusetts, USA, stands out. This institution is globally active, including Serbia and countries in the region.

The basic grouping of think tank institutions could be presented as follows:

- independent civil society think tanks established as non-profit institutions,
- think tanks for policy research related to universities,
- think tanks organized/sponsored by governments/states,
- think tanks created or managed by companies, and some others.

In order to take a closer look at the profile and priorities of think tank institutions, they can be classified as follows:

- According to size: large and universal, large and specialized, and small:
- According to its founders: individuals, companies, foundations (endowments), governments, funds and others;
- According to the action model: contractual relationship with the founder, advisory role, independent research, lobbying, etc.;
- According to the period of engagement: long term or short term (e.g. in the case of campaigns);
- According to the formal relationship with the political establishment and/or parties and coalitions in the home country, etc.

The United States of America - USA have a long tradition in the field of think tank institutions. Certainly, the oldest think tank institution in that country is considered to be the Carnegie Endowment for International Peace, founded

in 1910. The Brookings Institution, founded in 1916, also stands out for its importance. The formation of these institutions was accompanied by the engagement of influential investment bankers and other businesspeople, as well as academics and politicians.

The modern practice of think tank institutions in the USA recognises three modalities. The first modality consists of academic think tank institutions, which primarily deal with academic considerations of topics in focus, with a pronounced independence in their activities. The next modality is represented by state think tank institutions, which are primarily engaged in relation to the government and are predominantly financed by the state itself. Such think tank institutions can rely on the help of state bodies, where the unwritten rule is that the results of their research are not publicly available or published. The third modality is representative or advocacy which, unlike the previous two mentioned, rarely bases its activity on its own research. Namely, the main functionality of this approach is in marketing and in refurbished editions and presentations of already existing ideas. It is, therefore, a matter of certain political or ideological lines that are aggressively promoted with the aim of influencing political debates. Some analysts compare this type of engagement to lobbying, arguing that teams from such institutions use media announcements intensively, to focus on short, concise materials that decision-makers, due to their numerous obligations, can read between two meetings.

It is known that, in the United States, think tank institutions are used to create communities/clubs of experts, whose members later, as employees of the Government, become part of the Management or Administration through already established informal procedures, the so-called revolving door effect.

The UK has a long tradition of think tank institutions. The same goes for cooperation with think tank institutions from the USA. Among the many think tanks in the UK, the Adam Smith Institute deserves special attention. Adam Smith was a Scottish economist, philosopher and author, a pioneer of political economy. In economic theory, he is considered the "father of economy" or the "father of capitalism". This think tank institution, as an independent, non-profit and non-partisan institution, works to promote the ideas of the neoliberal and free market through publishing, media commentaries and educational programs. Today, this Institute is the backbone of creating examples of free markets and a free society in the UK.

The most important think tank institutions in Great Britain today include: COMMUNITY (from the Latin word *civitas*), People (from the Greek word *demos*), the Institute for Public Policy Research, Policy Exchange and Reform. The think tank institution Chatham House also known as the Royal Institute of International Affairs from Great Britain is especially active in Serbia.

In 1994, Z/Yen was founded in London, as a commercial think tank institution, a consulting company, and a venture firm. It is engaged in financial services, technology and the volunteer sector in research, performance monitoring and strategic management. Z/Yen developed the Global Financial Centre's Index. Most of their research is published on their own website freely, i.e. without user fees.

The think tank institution within the Museum of Science in Birmingham is also noteworthy. This think tank has an impressive collection of over 200 exhibits and artefacts and provides an outstanding insight into the history of industry development, especially automotive engines and textile machinery. Numerous innovative programs and research of this think tank are attracting a lot of attention from both the professional public and the general public.

Brussels, as the primary seat of the European Union, is also the seat of a large number of international Think tank institutions. Certainly, the most important among them are: Bruegel, Centre for European Policy Studies (CEPS), Centre for the New Europe (CNE), European Centre for International Political Economy (ECIPE), European Policy Centre (EPC) and others.

Bruegel is a think tank dedicated to policy research on economic topics. It started operating in 2005. The President of the Management Board of this institution is Mr Jean-Claude Trichet, who was the President of the European Central Bank in the period from 2003 to 2011. Bruegel is currently conducting research in five areas:

- European macroeconomics and governance - with a focus on European fiscal, economic, banking and political union issues.
- Global Economy and Governance - examines the implications of the relationship between global and EU participants and the study on international economics, with particular emphasis on Asian development;
- Finances and financial regulation, including oversight and decision-making, both internationally and at EU level;
- Innovation and competition - analysis of the role of IT technologies, competition policy and technological innovation on economic effects and growth;
- Energy and climate - with an emphasis on research into energy security, energy efficiency, and integrated energy markets and others.

This think tank is recognized as the best think tank of the international economy in the world and as the second-best think tank in the world, according to the 2019 Global Go To Think Tank Report. The report was prepared within the framework of The Think Tank and Civil Societies Program (TTCSP). This Program is a non-profit program of the University of Pennsylvania based in Philadelphia, USA. It manages policy research institutes worldwide and has a file of approximately 6,300 think tank institutions worldwide.

In Germany, the term think tank or "thought factories" (German: *Denkfabrik*) relates to institutions that influence the shaping of public opinion through research, development and evaluation of political, social and economic concepts and strategies, with the promotion of the same in terms of proposals, recommendations or direct policy advice. In this respect, some thought factories represent certain specific political or ideological lines and/or concepts, with the aim of influencing political discussions. A thought factory can be organized as a foundation, association, non-profit limited liability company, limited liability company, or as an informal group. Usually, they employ scientists and experts in the field of economy and social policies, experts in the field of propaganda/advertising and communication, as well as currently active or

former politicians, businessmen, entrepreneurs and so-called witnesses, i.e. persons of integrity who participated in some significant events.

In Germany, thought factories are predominantly funded by the state, for example by the Berlin-based Wissenschaftsgmeinschft Gottfried-Wilhelm-Leibniz, which currently consists of 96 non-university think tank institutions and service institutions in the field of science. This institution also consists of institutions that mostly make the infrastructure available for scientific work. In addition, this think tank has one additional specificity, insofar as it includes eight research museums.

The second segment of think tank financing in Germany comes from state funds, as is the case with political foundations. In that sense, all leading political parties, without exception, are closely connected with foundations - research centres that have a certain role in policy making, primarily in terms of providing support to policy makers. The most important are: the Konrad-Adenauer-Stiftung with the Christian Democratic Union (German: *Die Christlich Demokratische Union Deutschlands - CDU*), the Friedrich-Ebert-Stiftung with the Social Democratic Party (*Die Sozialdemokratische Partei - SPD*), Hanns-Seidel-Stiftung with the Christian Social Union (*Die Christlich-Soziale Union - CSU*), Heinrich-Böll-Stiftung with the Greens (*Die Grüne*), Friedrich Naumann Stiftung with the Free Democratic Party (*Die Freie Demokratische Partei - FDP*) and the Rosa Luxemburg Stiftung with the Left Party (German: *Die Linke*). The mentioned foundations are active not only in their home country, but also abroad. In this regard, we can state that all the above-mentioned foundations are engaged in Serbia as well.

In addition to the above, there are some privately funded research centres in Germany that receive material support from political parties, associations, companies, unions or private individuals.

Before moving on to the presentation of think tank institutions in Serbia, it should be noted that there is no equivalent term for think tank in the Serbian language. In practice, in addition to the term research centre, there are also the terms brain trust, centre for the provision of intellectual services and, sporadically, some other terms.

The practice of establishing and operating think tank institutions in Serbia is more recent. The largest number of existing think tank institutions is engaged in the field of European integration, international and foreign relations, and social policy, and a significantly smaller number in the field of economy and environmental protection.

The European Movement in Serbia - EpuS is an association of citizens founded in 1992, with the desire to initiate and monitor the comprehensive process of European integration of the Republic of Serbia. The goal of the European Movement in Serbia is to build a democratic and modern Serbia in a united Europe.

The Foundation for the Advancement of Economics (FREN) was established in 2005 by the Faculty of Economics in Belgrade. FREN has positioned itself as one of the leading think tank institutions in Serbia and the region. The goals of FREN are to improve research in the field of economic and social policy in

Serbia and the region, to provide access to high quality statistical and analytical data for decision makers, as well as to spread modern thinking about economics and social policy in professional circles and the general public.

Centre for European Policies - CEP is an independent, non-profit think-tank organization founded by a group of experts in the field of European law, economics and public administration, with the common goal to contribute to improving the environment for policy making in Serbia, by making it more transparent and more inclusive, fact-based and essentially EU-oriented.

In December 2018, the Centre for European Policies - CEP launched a two-year project Strengthening the Capacity of Civil Society Organizations to actively participate in EU accession negotiations through certain working groups of the National Convention on the EU (Prepare to Participate - P2P) together with the National Alliance for Local Economic Development - NALED and the Centre for Contemporary Policy - CSP as partners in this project.

The numbers of think tank institutions, their global distribution, as well as the trends of further development are indicating a great interest of the professional and general public for their engagement, scope and perspective.

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5. Centar za evropske politike (eng. Centre for European Policies) – CEP, Beograd www.cep.org.rs Date of access: June, 20th 2020.

BEOGRADSKA BERZA
BELGRADE STOCK EXCHANGE

Barometar / Barometer

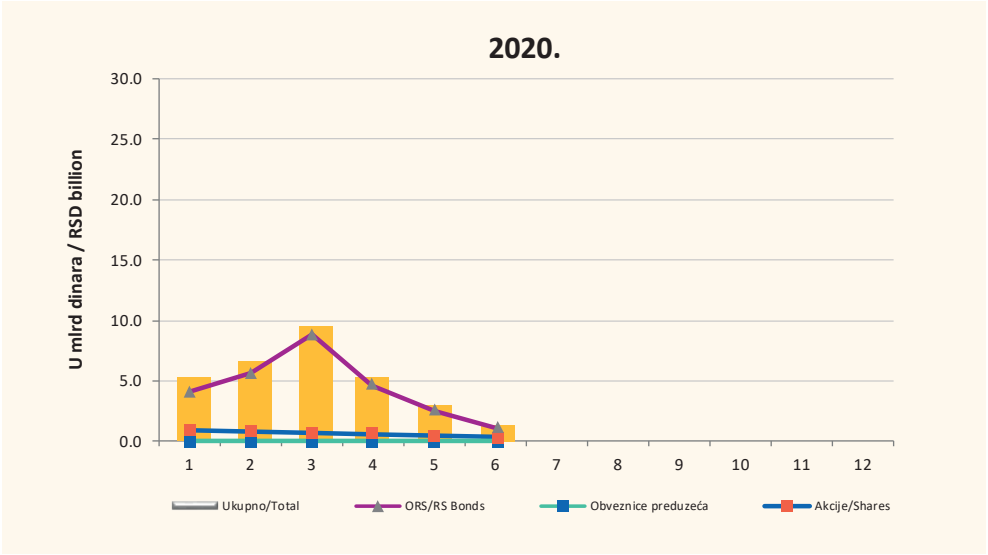
JANUAR 2020 – JUN 2020. / JANUARY 2020 – JUNE 2020

1. PROMET / TURNOVER

Mesec/Month	Listing	Open Market	Regulisano tržište/ Regulated market	MTP/MTF	Ukupno/Total	Broj transakcija/ Number of transactions
Jun 2020	1.284.277.059	61.939.404,00	1.346.216.463	18.295.881,00	1.364.512.344	1.862,00
Maj 2020	3.095.888.499	54.226.931,00	3.150.115.430	3.021.914,00	3.153.137.344	1.384,00
April 2020	5.307.696.037	103.385.875,00	5.411.081.912	11.449.781,00	5.422.531.693	1.039,00
Mart 2020	9.030.036.635	131.788.131,00	9.161.824.766	267.102.814,00	9.428.927.580	2.180,00
Februar 2020	5.854.541.955	538.203.366,00	6.392.745.321	80.558.729,00	6.473.304.050	1.718,00
Januar 2020	4.298.544.657	66.229.693,00	4.364.774.350	687.189.262,00	5.051.963.612	1.826,00
Decembar 2019	9.839.474.538	23.568.588,00	9.863.043.126	43.301.493,00	9.906.344.619	2.222,00
Novembar 2019	26.582.250.140	2.803.970.842,00	29.386.220.982	298.387.620,00	29.684.608.602	2.506,00
Oktobar 2019	1.402.760.533	194.835.647,00	1.597.596.180	341.111.753,00	1.938.707.933	3.532,00
Septembar 2019	8.504.327.210	101.386.268,00	8.605.713.478	36.937.388,00	8.642.650.866	2.135,00
Avgust 2019	3.504.384.758	255.696.664,00	3.760.081.422	24.852.548,00	3.784.933.970	1.733,00
Jul 2019	6.709.126.278	162.146.479,00	6.871.272.757	222.682.301,00	7.093.955.058	2.330,00
Ukupno 12 meseci / 12-Month Total*	85.413.308.298	4.497.377.888,00	89.910.686.186	2.034.891.484,00	91.945.577.670	24.467,00

*RSD

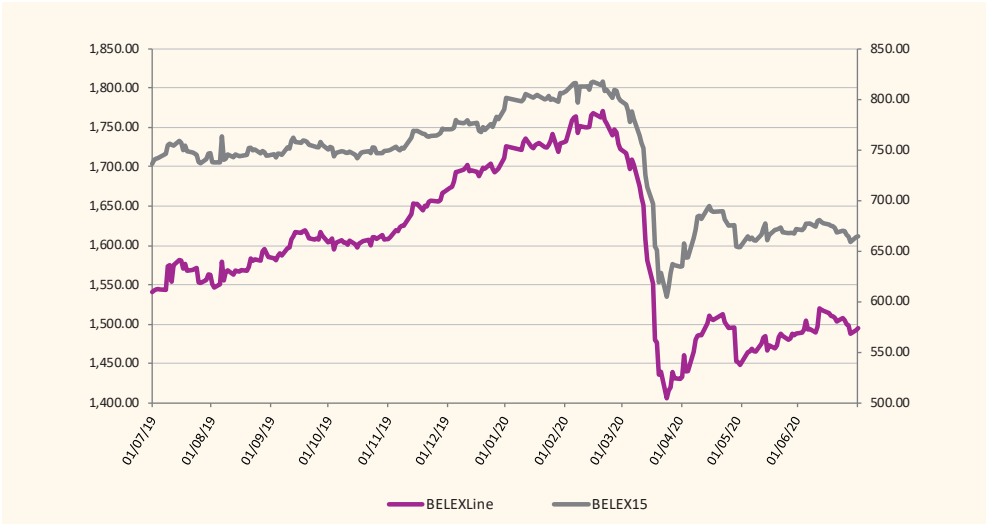
Grafikon / Graph 1: Promet / Turnover



2. *INDEKSI / INDICES*

		BELEX15	BELEXline
Januar/Jun 2020. January/June 2020	Poslednja vrednost / Last value	665,85	1.497,57
	Promena (abs) / Change (abs)	-135,84	-229,25
	Promena (%) / Change (%)	-16,94%	-13,28%
	Najviša vrednost / Maximum value	818,75	1.771,27
	Najniža vrednost / Minimum value	605,30	1.409,41
	Istorijski max / History maximum value	3.335,2	5.007,34
	Istorijski min / History minimum value	347,46	841,99
	Vrednost prometa / Value of turnover	814.606.792	899.372.935

Grafikon / Graph 2: Indeksi / Indices



3. TRŽIŠNA KAPITALIZACIJA / MARKET CAPITALISATION

	April / April	Maj / May	Jun / June
Ukupna tržišna kapitalizacija/ Total market capitalisation	496.499.776	510.117.371	502.578.478
Regulisano tržište/Regulated Market	250.859.149	265.908.454	258.943.833
Listing	182.376.072	195.846.559	188.893.352
Prime Listing – akcije/ Prime Listing – shares	134.962.732	151.828.467	146.552.161
Standard Listing – akcije/ Standard Listing - shares	47.413.340	44.018.092	42.341.191
Open Market	68.483.078	70.061.895	70.050.481
MTP/MTF	245.640.626	244.208.917	243.634.645
BELEX15	195.238.740	207.689.559	200.070.424
BELEXline	232.620.295	247.377.681	238.952.128

*u hiljadama RSD / in RSD thousands

4. UČEŠĆE STRANIH INVESTITORA / FOREIGN INVESTORS PARTICIPATION

	Učešće stranih investitora / Foreign Investors Participation		
Januar/Jun 2020. January/June 2020	FIS	total	31,73%
		b-FIS	16,54%
		s-FIS	46,91%
	FIB		14,76%
	FIT		16,48%

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- Please, correct all grammatical or typing errors.
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In the section intended for reviewers' comments and recommendations, the reviewers are obliged to elaborate on the given grades and recommend whether the paper is to be: published, amended or rejected. The papers will be accepted for publication or sent to be amended only if both reviews are positive.

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