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# Efekti listiranja na berzu – veze između broja listiranih akcionarskih društava i ekonomskih pokazatelja ekonomije

## Effects of listing on the stock exchange. Correlation between the number of listed joint stock companies and economic indicators of economy.

### Rezime

Empirijska rasprava o efektima početne javne ponude (IPO) nikada ne jenjava. Finansiranje putem inicijalne javne ponude akcija (engl. initial public offering – IPO) jedan je od načina prikupljanja sredstava za tekuće ili razvojne potrebe društva. IPO predstavlja prvu javnu ponudu akcija nekog društva potencijalnim investitorima i odvija se na primarnom tržištu kapitala, odnosno berzi. Ovaj rad ispituje prednosti i nedostatke procesa listiranja na berzu i delistiranja sa nje. Predmet rada odnosi se na analizu efekata inicijalne javne ponude. Cilj rada je analizirati sve relevantne faktore koji utiču na rezultat inicijalne javne ponude akcija, identifikovati motive zbog kojih se društva odlučuju na IPO, ali i analizirati motive i efekte procesa delistiranja društva sa berze. U istraživanju su korištene metode analize, sinteze, dedukcije, kao i odabrani alati poslovne i finansijske analize. Primarno su korišteni sekundarni izvori podataka, poput naučne i stručne literature, te javno dostupnih statističkih baza podataka. U drugom dijelu istraživanja ispituje se veza između broja listiranih akcionarskih društava u zemlji, BDP-a per capita, broja stanovnika, tržišne kapitalizacije i indeksa razvoja finansijskog tržišta. Rezultati pokazuju da postoji slaba veza između broja listiranih kompanija i broja stanovnika i broja listiranih kompanija i indeksa razvoja finansijskog tržišta, ali da ne postoji veza između broja listiranih kompanija i BDP-a po glavi stanovnika, odnosno veličine tržišta istraženog kao odnos tržišne kapitalizacije u odnosu na BDP.

**Ključne riječi:** inicijalna ponuda akcija, privredno društvo, akcionarsko društvo, listiranje na berzu.

JEL klasifikacija: D21, G11, L21, L25, M13.

### Abstract

The empirical debate on the effects of the initial public offering (IPO) never subsides. Financing through the initial public offering of shares is one of the ways to raise funds for the current or development needs of the company. An IPO is the first public offering of a company's shares to potential investors and takes place on the primary capital market, ie the stock exchange. This paper examines the advantages and disadvantages of listing and delisting. The subject of the paper refers to the analysis of the effects of the initial public offering. The aim of this paper is to analyze all relevant factors that affect the result of the initial public offering of shares, to identify the motives for which companies decide to IPO, but to analyze the motives and effects of the process of delisting the company from the stock exchange. The research used methods of analysis, synthesis, deduction, as well as selected tools of business and financial analysis. Secondary data sources, such as scientific and professional literature, and publicly available statistical databases were also used. In the second part of this research, the relationship between the number of listed joint-stock companies in the country GDP per capita, population, market capitalization and financial market development index is examined. The results show that there is a weak relationship between the number of listed companies and the number of residents and the number of listed companies and the financial market development index, but that there is no relationship between the number of listed companies and GDP per capita, ie the size of the market.

**Keywords:** initial offer of shares, company, joint stock company, listing on the stock exchange.

JEL Classification: D21, G11, L21, L25, M13.

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## UVOD

Inicijalna javna ponuda akcija (IPO) nije faza koju sva privredna društva dostignu, ali je kritična faza u procesu rasta i razvoja privrednog društva. Iako neki preduzetnici aktivno traže mogućnost pristupa javnim tržištima akcija putem IPO, većina privrednih društava ostaje u privatnom vlasništvu. Privrednim društvima koja pokreću poslovanje nije lako izaći na tržište u kratkom vremenskom periodu. Uprkos tome, visokotehnološka privredna društva s nesigurnim poslovima – na primjer, pokretanja biotehnologije za otkrivanje lijekova – često traže pristup javnim tržištima akcija putem IPO, uprkos nedostatku poslovne istorije i evidencije o poslovanju.

Ideja emitovanja akcija vjerovatno je toliko stara da je nije moguće datirati. Poznato je da se akcijama (lat. partes) u kompanijama (lat. publicani) trgovalo u blizini hrama Kastora u antičkom rimskom forumu (Shiler, 2015). Novi zamah akcionarstvo je dobilo u renesansnoj Italiji, a prvo regulisano tržište akcija postalo je amsterdamsko, u 17. vijeku. Prema Shileru, osnova koncepta uvijek je bila „slobodno udruživanje i trgovanje akcijama koje kao rezultat ima maštovito korištenje kapitala za nove ideje i nove poslovne smjernice“. Premda većina tih ideja doživi neuspjeh, neke će uspjeti i u cijelosti donijeti ekonomski razvoj društvu, a svojim akcionarima natprosječne prinose.

Akcije su dokumenti koji pismeno potvrđuju koliko iznosi učešće akcionara u imovini nekog akcionarskog društva, odnosno on je suvlasnik imovine preduzeća. Zbog toga prilikom ulaganja u akcije govorimo o investiciji u stvarne vrijednosti, nasuprot novčanim vrijednostima kod obveznica ili štednih uloga (Eling, 2013). Dakle, za razliku od obveznica i depozita, akcije nemaju rok dospijanja niti u pravilu imaju garantovan prinos, međutim, sa druge strane, potencijalna dobit investicije u akcije je neograničena. Ovo naročito važi za IPO, gdje je rizik ogroman, ali se i rast vrijednosti uspješnih akcija mjeri hiljadama procenata u periodu od samo desetak godina. Firme koje su stvorene u garažama, poput Microsofta i Amazona, donijele su bogatstva svojim prvim investitorima. Npr. kupac Microsoftove jedne akcije sa IPO 13. marta 1986, kojim se tada trgovalo po cijenama između 21 i 27 dolara, danas bi imao 288 akcija (zbog podjela akcija) tržišne vrijednosti početkom juna 2021. od 74.016 dolara, plus dividende koje se redovno isplaćuju još od 2003. Naravno, moramo podsjetiti i na velike gubitke investitora kada je pukao Dotcom balon, koji je donio milijarde gubitaka investitorima u nove high-tech kompanije poput Worldcoma, ili računovodstveni skandal sa kompanijom Enron.

Prednosti izlaska na berzu jednostavniji su vid dokapitalizacije. To je dobar način da privredno društvo koje hoće da se razvija bez zaduživanja stiče kapital za rast i razvoj. Troškovi „nabavke novca“ najviše utiču na odluku da se vlasnik kojem je neophodan kapital odluči za banku umjesto za inicijalnu ponudu akcija. Međutim, postoje i benefiti kao što su iskustvo, vrijeme i pažnja članova predstavnika akcionara u organima listiranog društva. Osim toga, da bi izašla na berzu i pribavila novac, privredna društva treba da skrenu pažnju na sebe, promovišu se, otvore se za javnost i još da dobiju nove vlasnike. Sve to traje i košta, ali šalje sliku o stvarnom stanju u privrednom društvu u javnost. Sa druge strane, kreditno zaduživanje jeste kraće, ne zahtijeva veliku transparentnost, a nema upliva novih vlasnika. Dakle, nema ni podjele vlasništva.

Predmet rada odnosi se na analizu efekata inicijalne javne ponude. Cilj rada je analizirati sve relevantne faktore koji utiču na rezultat inicijalne javne ponude akcija, identifikovati motive zbog kojih se društva odlučuju na IPO, ali i analizirati motive i efekte procesa delistiranja društva sa berze. U istraživanju su korištene metode analize, sinteze, dedukcije, kao i odabrani alati poslovne i finansijske analize. Primarno su korišteni sekundarni izvori podataka, poput naučne i stručne literature, te javno dostupnih statističkih baza

podataka. Osim toga, u radu se ispituje veza između broja listiranih akcionarskih društava u zemlji, BDP-a *per capita*, broja stanovnika, tržišne kapitalizacije i indeksa razvoja finansijskog tržišta.

## 1. METODOLOGIJA

U istraživanju su korištene metode analize, sinteze, dedukcije, kao i komparacija javno dostupnih podataka o broju listiranih akcionarskih društava, BDP-u *per capita*, broju stanovnika, tržišnoj kapitalizaciji i indeksu razvoja finansijskog tržišta za zemlje OECD-a i nerazvijene zemlje. U istraživanju se posmatraju podaci koje je publikovao provajder The global economy (2020) i Međunarodni monetarni fond (2020). Dakle, za svaku posmatranu zemlju uzeti su u obzir broj listiranih akcionarskih društava i regresionom analizom istraživana je jačina veze sa određenim parametrom.

Veza posmatranih pokazatelja odnosno varijabli može se provjeravati na više načina. Linearna regresija korištena je jer se pošlo od pretpostavke da postoji linearni odnos između nezavisne varijable (X) i zavisne varijable (Y). Hipoteze su postavljene kao:

H0 – nul-hipoteza = negacijska hipoteza („pojava X nije u vezi sa pojavom Y“),

H1 – alternativna = afirmacijska.

S tim u vezi, istraživačko pitanje postavljeno je na način da li pojava X utiče na pojavu Y. Prema tome, hipoteze su:

H01: Broj listiranih preduzeća nije u vezi sa BDP-om *per capita*.

H02: Broj listiranih preduzeća nije u vezi sa brojem stanovnika.

H03: Broj listiranih preduzeća nije u vezi sa tržišnom kapitalizacijom.

H04: Broj listiranih preduzeća nije u vezi sa na FD indeksom.

## 2. PREGLED LITERATURE I POZADINA ISTRAŽIVANJA

Razne studije naglašavaju važnost finansiranja vlasnika u istraživanje i razvoj (Carpenter i Petersen, 2002a; Hall, 2002; Colombo i Grilli, 2007). U literaturi se često tvrdi da upravo start-up kompanije imaju značajnu ulogu u ekonomskom rastu (npr. Audretsch, 1995; Audretsch i Acs, 2003). Pojava start-up kompanija koje ostvaruju brzi rast – koje se ponekad nazivaju „gazelama“ – bila je u fokusu mnogih rasprava o javnoj politici jer su takve kompanije ključni doprinos budućem ekonomskom rastu (npr. Henrekson i Johansson, 2010; Koski i Pajarinen, 2013). Nije iznenađujuće što mlade IPO kompanije nadmašuju druge u velikoj mjeri i očekuje se da će podstaći ekonomski rast inovacijama i otvaranjem novih radnih mjesta. Ta privredna društva takođe mogu osigurati akcionarima u ranoj fazi visoku kapitalnu dobit izlaskom na tržište, što često privlači ulagače sklone riziku. Prema tome, izlazak na berzu je postalo jedno od najkritičnijih pitanja, posebno u stagnirajućim ekonomijama. Uprkos tome, malo pažnje se posvećuje efektima i rezultatima izlaska na berzu.

Mlada i inovativna privredna društva po prirodi stvari imaju jači podsticaj za inovacije od postojećih, starijih kompanija (Honjo, 2020). Takva privredna društva igraju ključnu ulogu u podsticanju inovacija kao sredstva za prenos i kapitalizaciju znanja (Audretsch i sar., 2008; Colombo i sar., 2016; Block i sar., 2018). Kako bi promovisali pojavu mladih i inovativnih privrednih društava s potencijalom za rast, kreatori politika i donosioci odluka u razvijanim

## INTRODUCTION

The initial public offering of shares (IPO) is not a phase that all companies reach, but it is a critical phase in the process of growth and development of a company. Although some entrepreneurs are actively seeking access to public stock markets through IPOs, most companies remain privately owned. It is not easy for companies that start a business to enter the market in a short period of time. Nevertheless, high-tech companies with insecure jobs - for example, launching biotechnology for discovery of medicines - often seek access to public stock markets through IPOs despite a lack of business history and business records.

The idea of issuing shares is probably so old that it is not possible to date it. It is known that shares (lat. Partes) in companies (lat. Publicani) were traded near the temple of Castor in the ancient Roman forum (Shiler 2015). Shareholding gained new momentum in Renaissance Italy, and the first regulated stock market became Amsterdam in the 17th century. According to Schiller, the basis of the concept has always been “free association and stock trading that results in an imaginative use of capital for new ideas and new business guidelines. Although most of these ideas fail, some will succeed and bring economic development to society as a whole, and above-average returns to their shareholders.

Shares are documents that confirm in writing the amount of the shareholder's share in the property of a joint stock company, ie he is a co-owner of the company's property. Therefore, when investing in stocks, we are talking about investing in real values, as opposed to monetary values in bonds or savings deposits (Eling 2013). Thus, unlike bonds and deposits, shares do not have a maturity nor, as a rule, have a guaranteed return, but on the other hand, the potential profit of investing in shares is unlimited. This is especially true for IPOs where the risk is huge but the growth in the value of successful stocks is measured in thousands of estimates over a period of just ten years. Firms created in garages like Microsoft and Amazon brought wealth to their first investors. For example, the buyer of Microsoft's 1 share with an IPO on March 13. 1986 which was then traded at prices between 21 and 27 dollars today would have 288 shares (due to the division of shares) with a market value in early June 2021 of 74016 dollars plus dividends that have been paid regularly since 2003. Of course we must recall the large losses of investors burst a Dotcom bubble that brought billions of losses to investors in new high tech companies like Worldcom or an accounting scandal with Enron.

The advantages of going public are a simpler form of recapitalization. It is a good way for a company that wants to develop without borrowing to acquire capital for growth and development. The cost of “purchasing money” mostly influences on the decision where the owner who needs the capital decides for a bank instead of the initial offering of shares. However, there are also benefits such as the experience, time and attention of the members of the shareholders' representatives in the bodies of the listed company. In addition, in order to go public and raise money, companies need to draw attention to themselves, to promote themselves, to open up to the public and still get new owners. All this lasts and costs, but it sends a picture of the real situation in the company to the public. On the other hand, loan borrowing is shorter, it does not require great transparency and there is no inflow of new owners. Therefore, there is no division of property either.

The subject of the paper refers to the analysis of the effects of the initial public offering. The aim of this paper is to analyze all relevant factors that affect the result of the initial public offering of shares, to identify the motives for which companies decide on the IPO, but also to analyze the motives and effects of the process of delisting

the company from the stock exchange. The methods of analysis, synthesis, deduction as well as selected tools of business and financial analysis were used in the research. Primarily, the secondary data sources were used, such as scientific and professional literature, and publicly available statistical databases. In addition, the paper examines the correlation between the number of listed joint stock companies in the country, GDP per capita, population, market capitalization and financial market development index.

## 1. METHODOLOGY

The research used methods of analysis, synthesis, deduction and comparison of publicly available data on the number of listed joint stock companies and GDP per capita, population, market capitalization and financial market development index for OECD countries and underdeveloped countries. The research observes data published by the provider The Global Economy (2020) and the International Monetary Fund (2020). Therefore, for each observed country, the number of listed joint stock companies was taken into account and the strength of the correlation with a certain parameter was investigated by regression analysis.

The correlation of the observed indicators or variables can be checked in several ways. Linear regression was used because it was assumed that there was a linear correlation between the independent variable (X) and the dependent variable (Y). Hypotheses are set as following:

H0 – null hypothesis = negative hypothesis (“phenomenon X is not related to phenomenon Y”)

H1 – alternative hypothesis = affirmative hypothesis

In this regard, the research question was asked whether the phenomenon X affects the phenomenon Y. Therefore, the hypotheses are as following:

H01: The number of listed companies is not related to GDP per capita.

H02: The number of listed companies is not related to the number of inhabitants.

H03: The number of listed companies is not related to market capitalization.

H04: The number of listed companies is not related to the FD Index.

## 2. LITERATURE REVIEW AND RESEARCH BACKGROUND

Various studies emphasize the importance of owner's financing for research and development (Carpenter and Petersen 2002a; Hall 2002; Colombo and Grilli 2007). It is often argued in the literature that startups play a significant role in economic growth (e.g. Audretsch 1995; Audretsch and Acs 2003). The emergence of fast-growing startups - sometimes referred to as “gazelles” - has been the focus of many public policy debates as such companies are a key contributor to future economic growth (e.g. Henrekson and Johansson 2010; Koski and Pajarinen 2013). It is not surprising that young IPO companies outperform others to a large extent and are expected to drive economic growth through innovation and job creation. These companies can also provide early-stage shareholders with high capital gains by entering the market, which often attracts risk-loving investors. Therefore, going public on the stock exchange has become one of the most critical issues, especially in

zemljama fokusirali su se na to kako te kompanije osiguravaju finansiranje za rizične R&D projekte (Block et al., 2018). Ne iznenađuje da start-up kompanije ne dobijaju uvijek potrebna sredstva pri osnivanju, čak i ako im je potrebno ulaganje da bi tek održale poslovanje. Ta privredna društva se ponekad susreću sa značajnim ograničenjima na polju finansiranja. Na primjer, vanjski dobavljači kapitala, poput banaka, imaju manje informacija o projektima takvih kompanija, za razliku od samih vlasnika, a takve je informacije skupo dobiti (Binks i sar., 1992; Binks i Ennew, 1996). Neizvjesnost i informaciona asimetrija između preduzetnika i vanjskih dobavljača kapitala teže su za privredna društva koja se pokreću zbog nedostatka poslovne istorije i dosadašnjih evidencija (Honjo i sar., 2014). Takva neizvjesnost i asimetrija informacija onemogućavaju privredna društva koja započinju s radom da dobiju kredite. Naime, trošak kapitala se povećava s asimetrijom informacija, uz neizvjesnost u poslovnim izgledima (Honjo, 2020).

Prethodne studije naglašavale su moralni rizik i probleme selekcije usljed informacione asimetrije. Navedene anomalije otežavaju vanjsko finansiranje visokorizičnih privrednih društava, uključujući i novoosnovana privredna društva (npr. Arrow, 1962; Himmelberg i Petersen, 1994; Carpenter i Petersen, 2002a). Banke nerado posuđuju novac novoosnovanim preduzećima, prije svega zbog poteškoća u procjeni novih poduzeća i tehnologija. Povratak projekata istraživanja i razvoja vrlo je neizvjestan i njihov kvalitet je teško procijeniti (Müller i Zimmermann, 2009). Ulaganja u istraživanje i razvoj imaju veću vjerovatnost da postanu gubitak, a takve kompanije imaju malo materijalne imovine koja bi osigurala dovoljno kolateralu (Kamien i Schwartz, 1978; Carpenter i Petersen, 2002b; Hall, 2002). Dakle, novoosnovane kompanije će se suočiti s većim troškovima koji proizlaze upravo iz nesigurnosti i asimetrije informacija zbog poteškoća u procjeni novih firmi i tehnologija (Honjo i sar., 2014). Te kompanije će se suočiti sa finansijskim ograničenjima za ulaganja u istraživanje i razvoj jer nisu akumulirale dobit ili stalni novčani tok od svojih projekata istraživanja i razvoja (Czarnitzki i Hottenrott, 2011).

IPO se smatra fazom u procesu rasta, ali odluka da se izađe na tržište je kompleksna (Pagano i sar., 1998). Razne studije isticale su koristi od izlaska na tržište: diverzifikacija, mogućnost finansiranja vlasničkim udjelima izvan ograničenog bogatstva preduzetnika, jeftiniji pristup tržištu kapitala, poboljšani imidž i publicitet privrednog društva te motivisanje menadžmenta i zaposlenih (Zingales, 1995; Röell, 1996; Pagano i sar., 1998). Ritter i Welch (2002) analizirali su efekte inicijalne javne ponude. S gledišta privrednog društva, odluka da izađu na tržište zavisi od kompromisa između njihovih koristi i troškova izlaska na berzu. Dakle, privredna društva imaju podsticaj da se listiraju na berzu ako su očekivane neto koristi od toga veće od očekivanih neto koristi od ostajanja u statusu društva sa ograničenom odgovornošću ili zatvorenog akcionarskog društva.

Razne studije na osnovu podataka o evropskim i američkim privrednim društvima pokazuju da karakteristike privrednih društava, poput veličine i starosti, utiču na odluku o listiranju na berzu (npr. Pagano i sar., 1998; Chemmanur i sar., 2010; Aslan i Kumar, 2011; De Jong i dr., 2012; Cattaneo i sar., 2015). Međutim, iako su Ritter i Welch (2002) napravili podjelu o životnom ciklusu kompanije, malo je istraživanja fokusirano na inicijalnu ponudu akcija kao fazu u procesu rasta privrednog društva. Iako su određene studije dale određene dokaze o rezultatima i efektima inicijalne ponude akcija, njihovi rezultati su možda posljedica fokusa na privredna društva koja su uspješno izašla na berzu. Osim toga, privredna društva koja su u privatnom vlasništvu duže vrijeme su uključena u uzorak, dok su mlada i mala privredna društva obično isključena jer je veća vjerovatnoća da će ona nestati zbog bankrota ili likvidacije u prvim fazama postojanja. Honjo (2020) ističe da najviše pažnje treba posvetiti odluci o inicijalnoj javnoj ponudi mladih umjesto starijih privrednih društava. Još preciznije, za IPO će se radije odlučiti privredno društvo koje je nastalo kao start-up privredno društvo s potencijalom za rast. Međutim,

uprkos važnosti mladih firmi u jačanju ekonomskog rasta, malo je studija ispitivalo IPO novoosnovanih privrednih društava.

Nalazi teorijskih modela privrednog rasta zasnivaju se na implicitnoj pretpostavci o tome da su ekonomske institucije identične u svim slučajevima, odnosno svim zemljama (Begović, 2011). U stvarnosti to nije ni blizu tačno i postoji čitav spektar institucionalnih okvira koji mogu djelovati inspirativno ili pak inhibirajuće na preduzetnike i njihove aktivnosti. Od posljednje decenije prošlog vijeka neke su države, poput Kanade, evropskih zemalja i Japana, uvele nova tržišta akcija (juniorska tržišta akcija) nakon Nacionalnog udruženja automatizovanih kotacija trgovaca hartijama od vrijednosti (NASDAQ) u SAD. Cilj je bio upravo da se obezbijedi kapital za finansiranje mladih kompanija s potencijalom za rast. S ciljem da bi se malim i visokotehnološkim kompanijama omogućilo da izađu na tržište bez borbe sa prekomjernim propisima, neke berze su pokrenule sekundarna i neregulisana tržišta u Evropi (Vismara i sar., 2012). Na primjer, tržište alternativnih ulaganja (AIM) (Ujedinjeno Kraljevstvo), Neuer Markt (Njemačka), Nouveau Marché (Francuska) i Nuovo Mercato (Italija) pokrenuti su u posljednjoj deceniji prošlog vijeka. Kako su zahtjevi za uvrštavanjem na uspostavljene berze bili strogi za mlade i male kompanije, ta su tržišta akcija osmišljena tako da udovolje potrebama malih kompanija (Ritter i sar., 2013). Nakon ovog talasa nastaju razni fondovi i biznis anđeli specijalizovani za ulaganje s ciljem podsticanja rasta i razvoja perspektivnih kompanija.

Zbog manje strogih zahtjeva za uvrštavanjem na tržište, inicijalne javne ponude akcija na četiri razvijena tržišta – u Francuskoj, Njemačkoj, Italiji i Velikoj Britaniji (Vismara i sar., 2012) činile su najveći dio broja svih inicijalnih javnih ponuda na svijetu od 1995. do 2009. Međutim, uprkos očekivanju povećanja broja inicijalnih javnih ponuda, njihov broj se smanjio tokom i nakon 2008. godine u evropskim zemljama (Vismara et al., 2012; Ritter et al., 2013; Akyol et al., 2014). Zanimljivo je zapaziti i oprečne stavove o IPO malih kompanija. Gao i saradnici (2013) sugerišu da male kompanije gube koristi od izlaska na berzu i obratno – traže strateška preuzimanja kao alternativu izlasku na berzu.

Procesu listiranja akcija prethodi objava prospekta. Priprema i objava ovog dokumenta predstavlja pružanje informacija o emitentu. Struktura i sadržaj prospekta precizno su pravno regulisani u Evropskoj uniji. Takođe, da bi se podstaklo kompletno i pouzdano sastavljanje prospekata, postoji i poseban režim odgovornosti za sadržaj takvih dokumenata. On ima slična obilježja u razvijenim ekonomijama, kao što su Evropska unija i Sjedinjene Američke Države. Na kraju, sprovođenjem složene, tzv. due diligence provjere (provjere boniteta privrednog društva), može se zaključiti o pouzdanosti i cjelovitosti objavljenih informacija, čime se može ublažiti ili izbjeći pravni rizik (Kecskés, Halász, 2015).

Argument za izlazak na berzu jesu zbirna iskustva na razvijenim tržištima kapitala koja pokazuju da se „nakon prelaska u otvoreno akcionarsko društvo organizaciono disciplinuje“ (Von Eije, De Witte, Van der Zwaan, 2004). Dolazi do razdvajanja vlasničke i upravljačke funkcije, a osim interne revizije, obavezna je i eksterna revizija. Menadžeri koji rukovode akcionarskim društvom se putem menadžerskih ugovora motivišu da upravljaju privrednim društvom u najboljem interesu svih akcionara. Uz to, u otvorenom akcionarskom društvu svi vlasnici, srazmjerno svom učešću u kapitalu, učestvuju u procesu donošenja važnijih odluka (Dai, Tan, Tang, Xiao, 2017).

## 2.1. (De)listiranje na malim berzama

Promet na Banjalučkoj berzi prošle godine iznosio je 734,02 miliona maraka. Najveći dio, 621,39 miliona maraka ili 84,66 odsto od ukupnog prometa, odnosi se na promet dužničkim hartijama od vrijednosti. Gotovo pola ostvarenog prometa, odnosno 365,69 miliona maraka, odnosi se na promet obveznicama, a 255,70 miliona ili 35% na promet trezorskim zapisima. Ostatak od 112,62 mili-

stagnant economies. Despite that, little attention is paid to the effects and results of going public on the stock exchange.

Young and innovative companies, by the nature of things, have a stronger incentive for innovation than existing, older companies (Honjo, 2020). Such companies play a key role in fostering innovation as a means transfer and capitalization of knowledge (Audretsch et al. 2008; Colombo et al. 2016; Block et al. 2018). To promote the emergence of young and innovative companies with growth potential, policymakers and decision makers in developed countries focused on how these companies secure financing for risky R&D projects (Block et al., 2018). It is not surprising that startup companies do not always receive the necessary funds when establishing, even if they need an investment in order to maintain their business. These companies sometimes face significant financial constraints. For example, external capital suppliers, such as banks, have less information about the projects of such companies than the owners themselves, and such information is expensive to obtain (Binks et al. 1992; Binks and Ennew 1996). Uncertainty and information asymmetry between entrepreneurs and external capital suppliers are more difficult for companies that are starting their operations precisely because of the lack of business history and previous records (Honjo et al. 2014). Such uncertainty and asymmetry of information make it impossible for companies that start operating to obtain loans. Namely, the cost of capital increases with the asymmetry of information, along with uncertainty in the business outlook (Honjo, 2020).

Previous studies have emphasized that moral hazard and adverse selection occur due to information asymmetry. These anomalies make external financing difficult for high-risk companies, including newly established companies (e.g., Arrow 1962; Himmelberg and Petersen 1994; Carpenter and Petersen 2002a). Banks are reluctant to lend money to startups, primarily because of difficulties in evaluating new businesses and technologies. The return of research and development projects is very uncertain and their quality is difficult to assess (Müller and Zimmermann 2009). Investments in research and development are more likely to become a loss, and such companies have few tangible assets that would provide sufficient collateral (Kamien and Schwartz 1978; Carpenter and Petersen 2002b; Hall 2002). Therefore, newly established companies will face higher costs arising precisely from the uncertainty and asymmetry of information due to difficulties in evaluating new firms and technologies (Honjo et al. 2014). These companies face financial constraints on research and development investment because they have not accumulated profits or steady cash flow from their research and development projects (Czarnitzki and Hottenrott 2011).

The IPO is considered a stage in the growth process, but the decision to enter the market is complex (Pagano et al. 1998). Various studies have highlighted the benefits of going to the market: diversification, the possibility of equity financing beyond the limited wealth of entrepreneurs, cheaper access to the capital market, improved company image and publicity, and motivating management and employees (Zingales 1995; Röell 1996; Pagano et al. 1998). Ritter and Welch (2002) analyzed the effects of the initial public offering. From the point of view of a company, the decision to go to the market depends on a compromise between their benefits and the costs of going public. Therefore, companies have an incentive to be listed on the stock exchange if the expected net benefits are greater than the expected net benefits from remaining in the status of a limited liability company or a closed joint stock company.

Various studies based on data on European and American companies show that the characteristics of companies, such as size and

age, influence the decision to list on the stock exchange (e.g. Pagano et al. 1998; Chemmanur et al. 2010; Aslan and Kumar 2011; De Jong et al. 2012; Cattaneo et al. 2015). However, although Ritter and Welch (2002) made a division on the life cycle of a company, few researches have focused on the initial offering of shares as a stage in the process of business growth. Although certain studies have provided certain evidences of the results and effects of the initial public offering, their results may be a consequence of a focus on companies that have successfully went public. In addition, privately owned companies have been included in the sample for a long time, while young and small companies are usually excluded because they are more likely to disappear due to bankruptcy or liquidation in the early stages of existence. Honjo (2020) points out that the biggest attention should be paid to the decision on the initial public offering of younger, instead of older, companies. More precisely, the IPO will be chosen by a company that emerged as a startup company with growth potential. However, despite the importance of young firms in boosting economic growth, few studies have examined the IPOs of newly established companies.

The findings of theoretical models of economic growth are based on the implicit assumption that economic institutions are identical in all cases, ie in all countries (Begović 2011). In reality, this is not even close to true and there is a whole range of institutional frameworks that can have an inspiring or inhibitory effect on entrepreneurs and their activities. Since the last decade of the last century, some countries, such as Canada, European countries and Japan, have introduced new stock markets (junior stock markets) after the National Association of Securities Dealers Automated Quotations (NASDAQ) in the United States. The goal was to provide capital to finance young companies with potential for growth. In order to enable small and high-tech companies to enter the market without combating excessive regulations, some stock exchanges have launched secondary and unregulated markets in Europe (Vismara et al. 2012). For example, the Alternative Investment Market (AIM) (United Kingdom), Neuer Markt (Germany), Nouveau Marché (France) and Nuovo Mercato (Italy) were launched in the last decade of the last century. As the requirements for listing on established stock exchanges were strict for young and small companies, these stock markets were designed to meet the needs of small companies (Ritter et al. 2013). After this wave, various funds and business angels were created that are specialized for investment with the aim of encouraging the growth and development of promising companies.

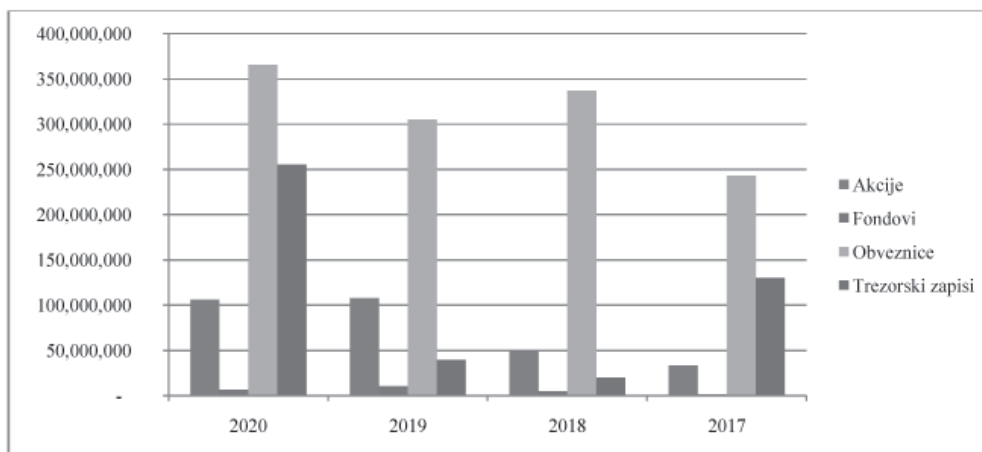
Due to less stringent market listing requirements, initial public offerings of shares in four developed markets - France, Germany, Italy and the United Kingdom (Vismara et al. 2012) accounted for the largest share of all initial public offerings in the world from 1995 to 2009. However, despite the expectation of an increase in the number of initial public offerings, their number decreased during and after 2008 in European countries (Vismara, et al., 2012; Ritter et al. 2013; Akyol et al. 2014). It is interesting to note the conflicting views on the IPOs of small companies. Gao et al. (2013) suggest that small companies lose benefits from going public and vice versa - requesting strategic and takeovers as an alternative to going public.

The process of listing shares is preceded by the publication of a prospectus. The preparation and publication of this document presents the provision of information about the issuer. The structure and content of the prospectus are precisely and legally regulated in the European Union. Also, in order to encourage complete

ona maraka ili 15,34% predstavlja promet akcijama i fondovima (106,14 i 6,48 miliona). Godinama je slična struktura prometa. Pro-

met dužničkim hartijama od vrijednosti, gotovo po pravilu, svake godine prelazi 75% od ukupnog prometa (ilustracija 1).

**Ilustracija 1.** Prikaz strukture prometa na Banjalučkoj berzi



Izvor: prikaz autora

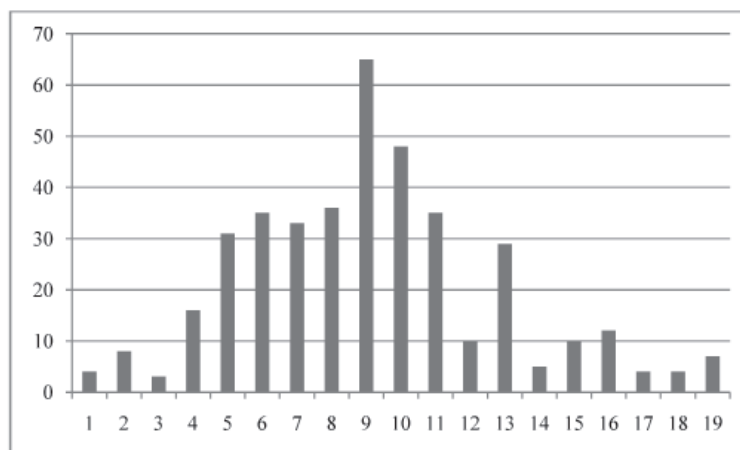
Po ovim podacima može se reći da su uočljivi trendovi koji ukazuju na dalji razvoj tržišta kapitala. Najinteresantniji je smanjen interes za ulaganje u akcije. Smanjen interes za akcije nije „od juče“. Prisutan je već deceniju. Na primjer, samo u posljednje četiri godine promet akcijama nije ni blizu četvrtine ukupnog prometa na Berzi. Posebno treba istaći, a što je i logično, manje zanimanje za ulaganje u akcionarska društva u kojima jedan ili manji broj vlasnika posjeduje većinski paket akcija. Manjinski akcionari u društvima sa ovakvom vlasničkom strukturom (s pravom) strahuju da će jednog dana, i to u skladu sa Zakonom o privrednim društvima, biti „istisnuti“ po trenutnoj tržišnoj cijeni po akciji. S obzirom na male promete i niske cijene, akcionari koji su isplaćeni na ovaj način stiču utisak da su isplaćeni po nefer cijeni. U proteklom periodu, iz određenog broja akcionarskih društava „istisnuti“ su mali akcionari odlukom većinskih vlasnika, koji su to uradili zahvaljujući sticanju 90 odsto akcija od strane jednog akcionara ili grupe povezanih akcionara. Drugi način objedinjavanja vlasništva i napuštanja Berze je da se broj akcionara smanji na manje od sto. Nakon ovih poteza, većinski vlasnik može da promijeni pravnu formu preduzeća u zatvoreno akcionarsko ili društvo sa ograničenom odgovornošću i da „skine“ društvo sa Berze. Na kraju, po istom zakonu, akcionar koji stekne akcije društva koje predstavljaju najmanje 90% osnovnog kapitala društva dužan je da na pisani zahtjev bilo kog od preostalih akcionara društva, u roku od 30 dana po prijemu zahtjeva, ponudi akcionaru primjerenu novčanu naknadu za akcije po jedinog manjinskog

akcionara. Do sada su sa Banjalučke berze delistirana 394 akcionarska društva. Od tog broja, 222 su imala oznaku „u stečaju“, a sedam „u likvidaciji“. Razloge ovakvog stanja treba prije svega tražiti u dva uzroka, i to:

Način „listiranja“ nije posljedica postepenog razvoja tržišta niti posljedica Kejnsovog „spontanog podstreka“, već je rezultat masovne vaučerske privatizacije. Suština vaučerske privatizacije zasniva se na tome da se građanima besplatno podijele vaučeri kojima oni kupuju akcije preduzeća, a sve s ciljem da se u što kraćem roku privatizuje što je moguće više privrednih društava. Vjerovalo se da privatizacija podjelom vaučera prevazilazi probleme koji nastaju procjenom kao kod ostalih modela privatizacije (Grujić, Janjić, 2021). Informaciona asimetrija, slaba finansijska pismenost, odsustvo korporativne kulture neumitno su vodili ka smanjenju broja listiranih preduzeća na Banjalučkoj berzi.

Zemlje se međusobno razlikuju po stepenu razvoja ekonomskih institucija, a stepen institucionalnih razlika objašnjava velike disparitete u dostignutom stepenu razvijenosti mjereno dohotkom *per capita* (Hall i Jones, 1999). Nažalost, ni dvije decenije od privatizacije i nominalnog prelaska na tržišni model privređivanja nije bilo dovoljno da se razvije duboko organizovano finansijsko tržište u kome, zahvaljujući niskim transakcionim troškovima, suficitni subjekti investiraju u vlasničke HOV.

**Ilustracija 2.** Prikaz broja delistiranih akcionarskih društava na Banjalučkoj berzi po godinama



Izvor: kalkulacija autora

and reliable compilation of prospectuses, there is a special regime of responsibility for the content of such documents. It has similar characteristics in developed economies, such as the European Union and the United States of America. In the end, by implementing a complex, so-called due diligence investigation (the investigation of the creditworthiness of a company), it is possible to conclude on the reliability and completeness of the published information, which can mitigate or avoid legal risk. (Kecskés & Halász, 2015).

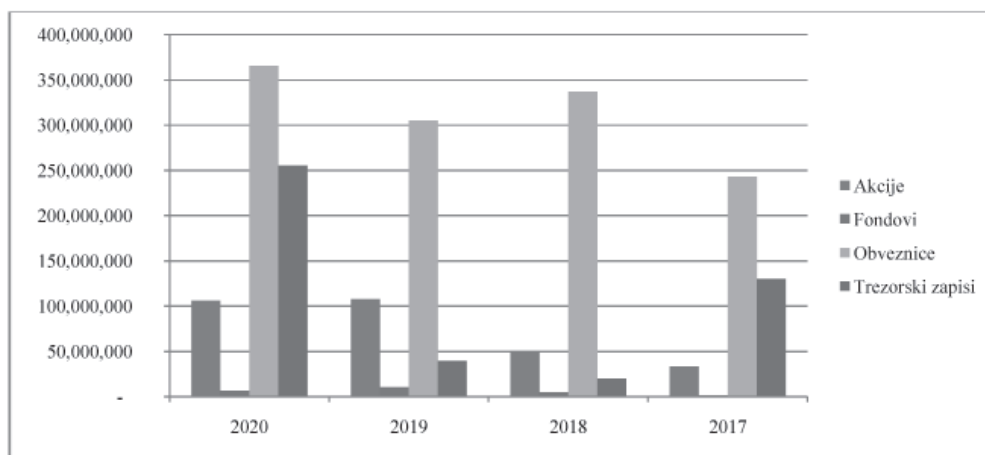
The argument for going public is the cumulative experience in developed capital markets, which shows that “after the transition to an open joint stock company, it gets organizational discipline” (von Eije, de Witte, van der Zwaan, 2004). There is a separation of ownership and management functions, and in addition to internal audit, external audit is also required. Managers who manage a joint stock company are motivated through managerial contracts to manage the company in the best interest of all shareholders. In addition,

in an open joint stock company, all owners, in proportion to their share in the capital, participate in the process of making important decisions. (Dai, Tan, Tang, & Xiao, 2017).

### 2.1. (De)listing on small stock exchanges

The turnover on the Banja Luka Stock Exchange last year amounted to 734.02 million convertible marks (BAM). The largest part, 621.39 million convertible marks, or 84.66 percent of the total turnover, refers to the trade in debt securities. Almost half of the realized turnover, i.e. 365.69 million convertible marks refers to the turnover of bonds and 255.70 million or 35% to the turnover of treasury bills. The remaining 112.62 million convertible marks or 15.34% represents the turnover of shares and funds (106.14 and 6.48 million). The trade structure has been similar for years. Debt securities turnover, almost as a rule, exceeds 75% of the total turnover every year (Figure 1).

**Figure 1:** Overview of the structure of turnover on the Banja Luka Stock Exchange



Source: Author's review

According to these data, it can be said that there are noticeable trends that indicate further development of the capital market. Reduced interest in investing in stocks is the most interesting. Decreased interest in shares is not “as of yesterday”. It has been present for a decade. For example, just in the last four years, stock trading has not even come close to a quarter of the total stock market turnover. What should be especially emphasized, which is logical, is the lower interest in investing in joint stock companies in which one or a smaller number of owners own a majority package of shares. Minority shareholders in companies with such an ownership structure (rightfully) fear that one day, in accordance with the Company Law, they will be “squeezed out” at the current market price per share. Given the small turnover and low prices, shareholders who are paid in this way get the impression that they were paid at an unfair price. In the past period, small shareholders were “squeezed out” from a certain number of joint stock companies by the decision of the majority owners, who did so thanks to the acquisition of 90 percent of shares by one shareholder or a group of related shareholders. Another way to consolidate ownership and leave the stock market is to reduce the number of shareholders to less than a hundred. After these moves, the majority owner can change the legal form of the company into a closed joint stock company or limited liability company and “take off” the company from the stock exchange. Finally, according to the same law, a shareholder who acquires shares of the company representing at least 90% of the share capital of the company is obliged, at the written request of any of the remaining shareholders of the company, within 30 days of receipt of the request, to offer to a share-

holder an appropriate financial compensation for the shares of an individual minority shareholder. So far, 394 joint stock companies have been delisted from the Banja Luka Stock Exchange. Of that number, 222 were marked “in bankruptcy” and seven “in liquidation.” The reasons for this situation should be sought primarily in two causes:

1. The method of “listing” is not a consequence of the gradual development of the market nor a consequence of Keynes’s “spontaneous stimulus”, but is the result of mass voucher privatization. The essence of voucher privatization is based on the distribution of vouchers to citizens free of charge, by which citizens buy company shares, all with the aim of privatizing as many companies as possible in the shortest possible time. It was believed that privatization by distributing vouchers overcomes the problems that arise with the assessment as in other models of privatization (Grujić, Janjić 2021). Information asymmetry, weak financial literacy, and the absence of a corporate culture have inevitably led to a reduction in the number of companies listed on the Banja Luka Stock Exchange.

2. Countries differ in the degree of development of economic institutions and the degree of institutional differences explains the large disparities in the level of development achieved measured by per capita income (Hall and Jones 1999). Unfortunately, even two decades since privatization and the nominal transition to a market economy model have not been enough to develop a deeply organized financial market in which, thanks to low transaction costs, surplus entities invest in equity

Velikom broju vlasnika preduzeća status otvorenog akcionarskog društva predstavlja samo značajne troškove. Naime, vlasnici se odlučuju da smanje troškove zbog obavezne revizije, naknada Berzi, Centralnom registru, organizovanja godišnje skupštine akcionara skupštine i slično. Odluke u preduzećima u kojima je većinski vlasnik stekao dominantno učešće uglavnom se donose u skladu sa interesima, odnosno potrebama i željama većinskih vlasnika. Često manjinski akcionari, čak i kad imaju svoje predstavnike u organima takvih privrednih društava, budu preglasani. Tom logikom, i delistiranje ima smisla, pogotovo ako se ima u vidu da su na svim berzama u regiji preduzeća listirana silom zakona, odnosno kroz proces privatizacije. Stoga, bez namjere da zagovaramo ovaj trend, nije neracionalno očekivati da će se broj listiranih društava još smanjiti. Jednim dijelom kao rezultat uticaja zakonske regulative, a drugim dijelom – zbog troškova koje status listiranog društva nosi.

Za budućnost i razvoj tržišta kapitala najvažnije je da se istisnuti akcionari ne osjećaju prevarenima. Povjerenje je, uz dobre zakone i edukovane i časne učesnike, jedan od stubova tržišta kapitala. Dugoročno, edukovanje stanovništva u pravcu povećanja finansijske pismenosti i znanja o finansijskim tržištima imalo bi pozitivan uticaj na razvoj tržišta kapitala. Za razliku od zemalja u tranziciji, koje su „navrat-nanos” izvršile privatizaciju, razvijene zemlje godinama, osim zakonske zaštite, mnogo novca i pažnje odvajaju za obrazovanje svih učesnika na finansijskim tržištima. Obrazovaniji učesnici lakše prepoznaju (ne)prilike za ulaganje, što se pozitivno odražava i na povjerenje i na promete na Berzi.

S druge strane, postoji ozbiljniji razlog za brigu na domaćem tržištu. Privatna preduzeća (još) ne pokazuju interes da kroz inicijalne javne ponude izađu na berzu i tako dođu do novca. U jednu ruku, ni to ne treba da predstavlja iznenađenje. Praksa i iskustva na razvijenim tržištima kapitala pokazuju da manji broj listiranih društava ne znači nužno i manje razvijeno tržište kapitala. Na primjer, broj listiranih preduzeća na berzi u Budimpešti je 43 ili oko 4,45 na milion stanovnika. Broj listiranih preduzeća na berzi u Ljubljani je 31 ili oko 14,91 na milion stanovnika, na Zagrebačkoj berzi je 127 ili oko 30,94 na milion stanovnika, na Makedonskoj berzi je 100 ili

oko 47,87 na milion stanovnika, na Beogradskoj berzi je 429 ili oko 49,1 na milion stanovnika, na Sarajevskoj berzi je 315 ili oko 96,01 na milion stanovnika, na Banjalučkoj berzi je 541 ili oko 164,9 na milion stanovnika, na Crnogorskoj berzi je 390 ili oko 620,95 na milion stanovnika. S druge strane, na berzama u Zapadnoj Evropi nema mnogo listiranih preduzeća, a prometi su veći. Štaviše, trguje se sa više različitih finansijskih instrumenata.

### 3. REZULTATI

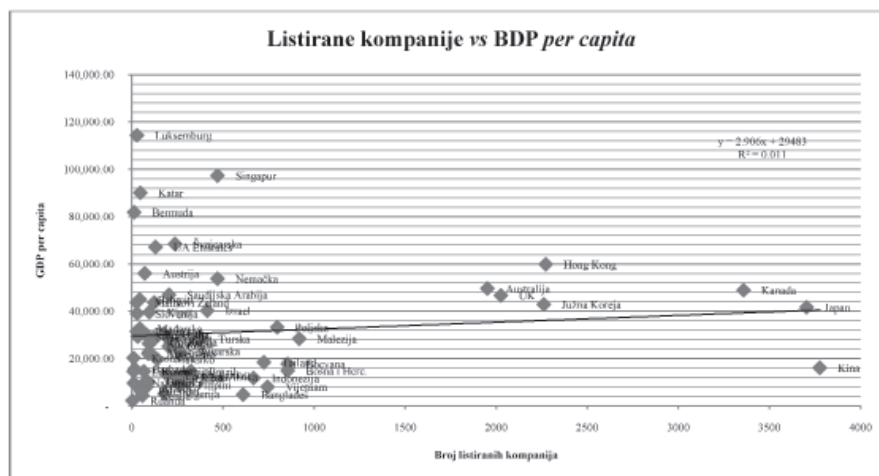
Analiza veze između broja listiranih preduzeća i BDP-a *per capita* na posmatranom uzorku pokazuje da je R kvadrat (R<sup>2</sup>) jednak 0,011415334 (tabela 1). To znači da nezavisna varijabla (varijabla X – broj listiranih kompanija) objašnjava 1,1% varijable Y – BDP *per capita*. Drugim riječima, broj listiranih kompanija utiče sa oko 1,1% BDP-a *per capita*. Koefficient višestruke korelacije (R) jednak je 0,106842566, što znači da ne postoji direktna veza između nezavisne i zavisne varijable (ilustracija 3).

**Tabela 1.** Regresiona analiza podataka za nivo broj listiranih kompanija i BDP *per capita*

Multiple R	0,106842566
R Square	0,011415334
Adjusted R Square	-0,00452958
Standard Error	23672,76469
Observations	64
F	0,715923204
Significance F	0,400738349
F crit	1,812212225
Test	prihvatao

Izvor: kalkulacija autora

**Ilustracija 3.** Prikaz korelacije broja listiranih zemalja i BDP-a po glavi stanovnika



Izvor: prikaz autora

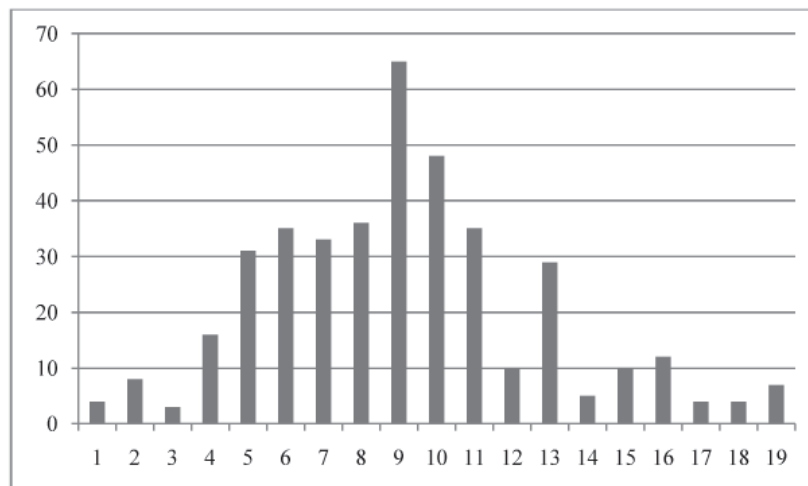
S obzirom na to da je p-vrijednost 0,400738349 veća od 0,05, sa sigurnošću od 95% može se prihvatiti hipoteza da „broj listiranih kompanija ne utiče na BDP *per capita*” te se može zaključiti da broj listiranih kompanija ne stoji u statistički značajnoj vezi sa BDP-om *per capita*.

Posmatrajući odnos broja listiranih kompanija i broja stanovnika, zapaža se da je R kvadrat (R<sup>2</sup>) jednak 0,257584801 (tabela 2). To znači da nezavisna varijabla (varijabla X – broj listiranih kompa-

nija) objašnjava 25,76% varijable Y – broj stanovnika. Koefficient višestruke korelacije (R) jednak je 0,507528129, što znači slabu direktnu vezu između nezavisne i zavisne varijable (ilustracija 4). S obzirom na to da je p-vrijednost 0,0000187 značajno manja od 0,05, sa sigurnošću od 95% može se odbaciti hipoteza da broj listiranih kompanija ne utiče na broj stanovnika te se može zaključiti da broj listiranih kompanija stoji u slaboj vezi sa brojem stanovnika pod pretpostavkom nepromijenjenih ostalih varijabli.



**Figure 2:** Overview of the number of delisted joint stock companies on the Banja Luka Stock Exchange by year



Source: Author's calculation

For a large number of business owners, the status of an open joint stock company represents - only significant costs. Namely, the owners decide to reduce the costs due to the obligatory audit, the fees of the stock exchange, the Central Registry, the organization of the annual assembly of shareholders and similar. Decisions in companies in which the majority owner has acquired a dominant share are generally made in accordance with the interests i.e. needs and wishes of the majority owners. Often, minority shareholders, even when they have their representatives in the bodies of such companies, are outvoted. By that logic, delisting also makes sense. Especially if we keep in mind that on all stock exchanges in the region, companies are listed by force of law, i.e. through the privatization process. Therefore, without intention to advocate this trend, it is not irrational to expect that the number of listed companies will decrease even further. Partly as a result of the influence of legal regulations, and partly due to the costs that the status of a listed company bears.

The most important thing for the future and development of the capital market is that the “squeezed out” shareholders do not feel cheated. Trust is, along with good laws and educated and honourable participants, one of the pillars of the capital market. In the long run, educating the population in the direction of increasing financial literacy and knowledge of financial markets would have a positive impact on the development of capital markets. Unlike the countries in transition, which have “hastily” conducted their privatization, developed countries have been devoting a lot of money and attention to the education of all participants in the financial markets, in addition to legal protection. More educated participants find it easier to recognize investment opportunities (threats), which has a positive effect on both trust and stock market turnover.

On the other hand, there is a more serious reason for concern in the domestic market. Private companies do not (yet) show interest in going public through initial public offerings and making money in that way. On the one hand, that shouldn't come as a surprise either. Practice and experience in developed capital markets show that a smaller number of listed companies does not necessarily mean a less developed capital market. For example, the number of companies listed on the Budapest Stock Exchange is 43 or about 4.45 per million inhabitants. The number of listed companies on the Ljubljana Stock Exchange is 31 or about 14.91 per million inhabitants, on the Zagreb Stock Exchange it is 127 or about 30.94 per million inhabitants, on the Macedonian Stock Exchange it is 100 or about

47.87 per million inhabitants, on the Belgrade Stock Exchange it is 429 or about 49.1 per million inhabitants, on the Sarajevo Stock Exchange there are 315 or about 96.01 per million inhabitants, on the Banja Luka Stock Exchange there are 541 or about 164.9 per million inhabitants, on the Montenegrin Stock Exchange there are 390 or about 620.95 per million inhabitants. On the other hand, there are not many listed companies on the stock exchanges in Western Europe, and the turnover is higher. Moreover, higher number of different financial instruments are traded.

### 3. RESULTS

Analysis of the correlation between the number of listed companies and GDP per capita in the observed sample shows that R square (R<sup>2</sup>) is equal to 0.011415334 (Table 1). This means that the independent variable (variable X - number of listed companies) explains 1.1% of the variable Y - GDP per capita. In other words, the number of listed companies is affected by about 1.1% of GDP per capita. The multiple correlation coefficient (R) is equal to 0.106842566 which means that there is no direct correlation between the independent and dependent variable (Figure 1).

**Table 1:** Regression analysis of data for the level of number of listed companies and GDP per capita

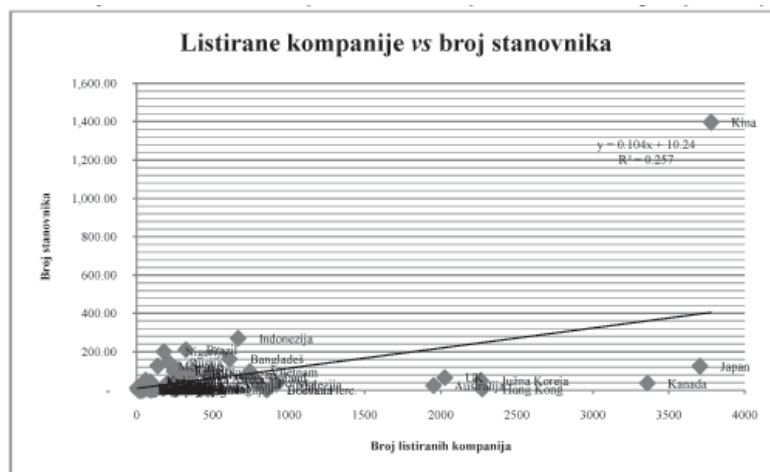
Multiple R	0.106842566
R Square	0.011415334
Adjusted R Square	-0.00452958
Standard Error	23672.76469
Observations	64
F	0.715923204
Significance F	0.400738349
F crit	1.812212225
Test	we accept

Source: Author's calculation

**Tabela 2.** Regresiona analiza podataka za nivo digitalizacije i HD indeksa za zemlje OECD-a

Multiple R	0,507528129
R Square	0,257584801
Adjusted R Square	0,245610363
Standard Error	155,4816358
Observations	64
F	21,51122137
Significance F	1,86554E-05
F crit	1,812212225
Test	odbacujemo

Izvor: kalkulacija autora

**Ilustracija 4.** Prikaz korelacije i determinacije listiranih kompanija i broja stanovnika

Izvor: kalkulacija autora

Kada se posmatra odnos listiranih kompanija po zemljama i tržišna kapitalizacija na berzama u odnosu na BDP, zapaža se da je R kvadrat (R2) jednak 0,06151026 (Error! Not a valid bookmark self-reference.). To znači da nezavisna varijabla (varijabla X – broj listiranih kompanija) objašnjava 6,15% varijable Y – tržišnu kapitalizaciju kao procenat BDP-a (ilustracija 5). Koeficijent višestruke korelacije (R) jednak je 0,24801262, što znači da postoji veoma

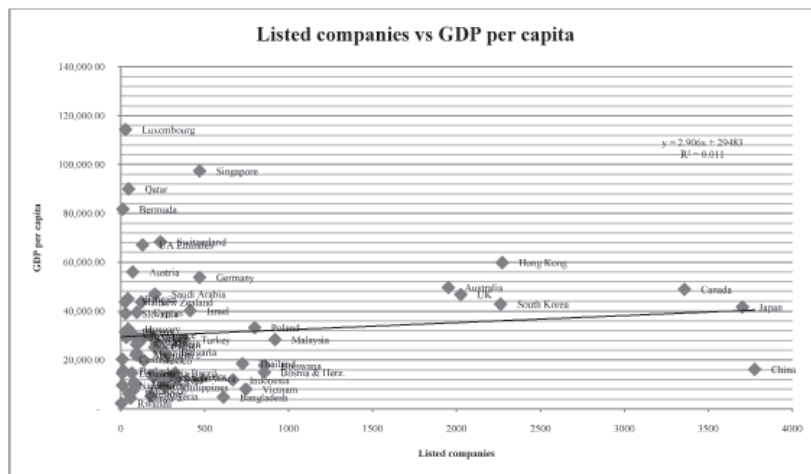
slaba direktna veza između nezavisne i zavisne varijable. S obzirom na to da je p-vrijednost 0,048156289 značajno manja od 0,05, sa sigurnošću od 95% ne može se odbaciti hipoteza da broj listiranih kompanija ne utiče na tržišnu kapitalizaciju u odnosu na BDP te se može zaključiti da broj listiranih kompanija stoji u slabijoj vezi sa brojem stanovnika pod pretpostavkom nepromijenjenih ostalih varijabli.

**Tabela 3.** Regresiona analiza podataka za broj listiranih kompanija i tržišnu kapitalizaciju kao procenat BDP-a

Multiple R	0,24801262
R Square	0,06151026
Adjusted R Square	0,046373328
Standard Error	169,0460981
Observations	64
F	4,063588488
Significance F	0,048156289
F crit	1,812212225
Test	prihvatamo

Izvor: kalkulacija autora

Figure 3: Overview of the correlation between the number of listed countries and GDP per capita



Source: Author's review

Given that the p value of 0.400738349 is greater than 0.05 with a certainty of 95%, the hypothesis that “the number of listed companies does not affect GDP per capita” can be accepted and it can be concluded that the number of listed companies does not stand in statistically significant correlation with GDP per capita.

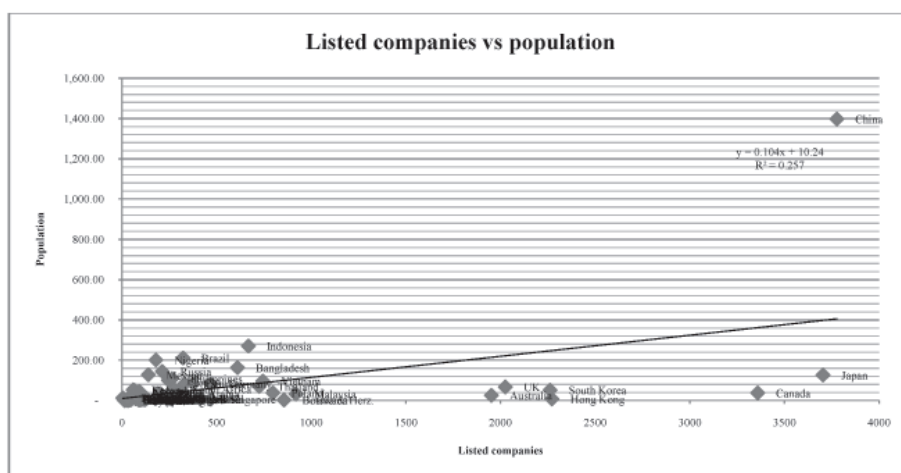
Observing the ratio of the number of listed companies to the number of inhabitants, it can be noticed that R square (R2) is equal to 0.257584801 (Table 2). This means that the independent variable (variable X - number of listed companies) explains 25.76% of the variable Y - population. The multiple correlation coefficient (R) is equal to 0.507528129 which means that there is a weak direct correlation between the independent and dependent variables (Figure 2). Given that the p value of 0.0000187 is significantly less than 0.05 with a certainty of 95%, we can reject the hypothesis that the number of listed companies does not affect the population and to conclude that the number of listed companies is weakly related to the number of inhabitants under the assumption that other variables are unchanged.

Table 2: Regression analysis of data for digitization level and HD index for OECD countries

Multiple R	0.507528129
R Square	0.257584801
Adjusted R Square	0.245610363
Standard Error	155.4816358
Observations	64
F	21.51122137
Significance F	1.86554E-05
F crit	1.812212225
Test	we reject

Source: Author's calculation

Figure 4: Review of correlation and determination of listed companies and population

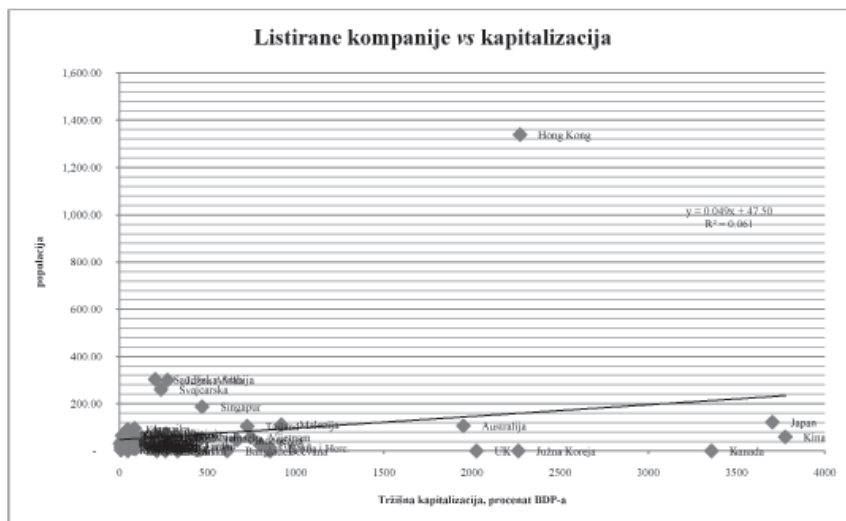


Source: Author's calculation

When observing the ratio of listed companies by countries and market capitalization on stock exchanges in relation to GDP, it can be noticed that R square (R2) is equal to 0.06151026 (Table 3). This means that the independent variable (variable X - number of listed companies) explains 6.15% of the variable Y - market capitalization as a percentage of GDP (Figure 3). The multiple correlation coefficient (R) is equal to 0.24801262 which means that there is a weak

direct correlation between the independent and dependent variable. Given that the p value of 0.048156289 is significantly lower than 0.05 with a certainty of 95%, the hypothesis that the number of listed companies does not affect the market capitalization in relation to GDP cannot be rejected and it can be concluded that the number of listed companies is in weak correlation to the population under the assumption that other variables are unchanged.

Ilustracija 5. Prikaz korelacije i determinacije broja listiranih kompanija i tržišne kapitalizacije u odnosu na BDP



Izvor: kalkulacija autora

Analizirajući korelaciju i determinaciju digitalizacije broja listiranih kompanija i indeksa razvoja finansijskog tržišta u uzorku, zapaža se da je R kvadrat (R2) jednak 0,21005888 (tabela 4). To znači da nezavisna varijabla (varijabla X – broj listiranih kompanija) objašnjava 21% varijable Y – tržišnu kapitalizaciju kao procenat BDP-a (ilustracija 6). Koeficijent višestruke korelacije (R) jednak je

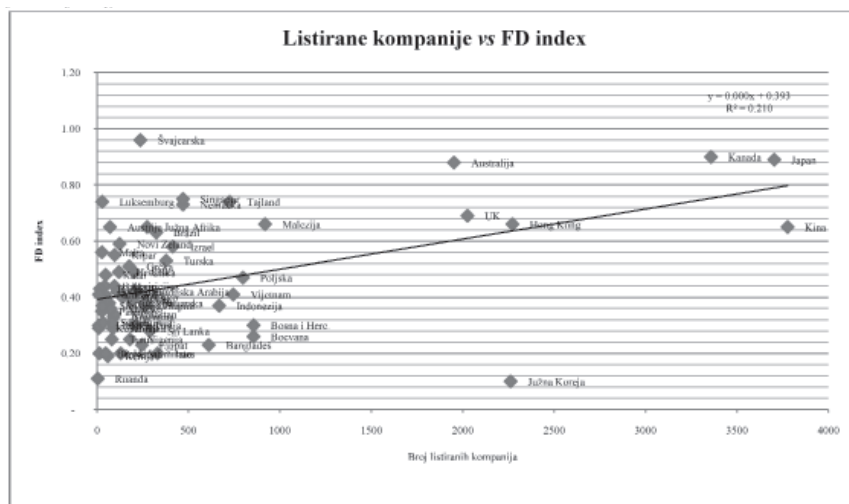
0,458321808, što znači slabu jaku direktnu vezu između nezavisne i zavisne varijable. S obzirom na to da je p-vrijednost 0,00013984 značajno manja od 0,05, sa sigurnošću od 95% možemo da odbacimo hipotezu da broj listiranih kompanija ne utiče na tržišni indeks finansijskog tržišta.

Tabela 4. Regresiona analiza podataka za broj listiranih kompanija i indeks razvijenosti finansijskog tržišta u uzorku

Multiple R	0,458321808
R Square	0,21005888
Adjusted R Square	0,197317894
Standard Error	0,181689948
Observations	64
F	16,48686238
Significance F	0,00013984
F crit	1,812212225
Test	odbacujemo

Izvor: kalkulacija autora

Ilustracija 6. Prikaz korelacije i determinacije broja listiranih kompanija i indeksa razvoja finansijskog tržišta u uzorku



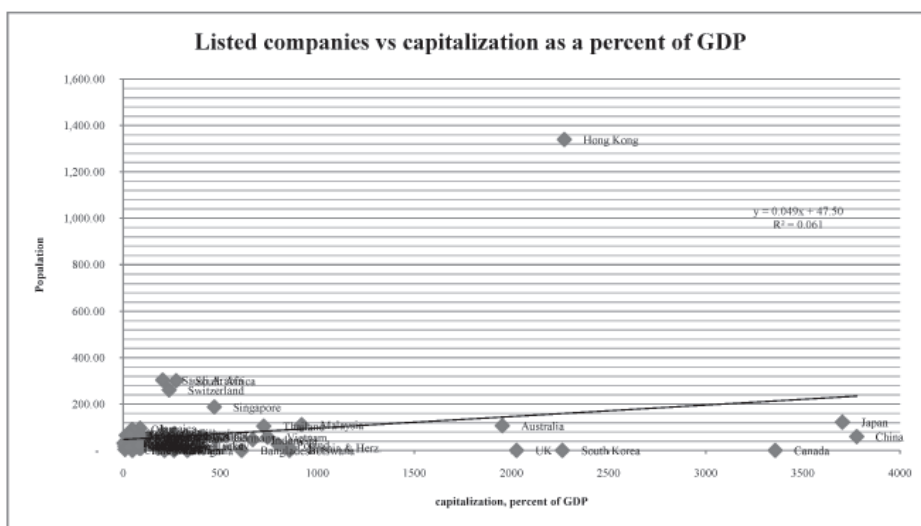
Izvor: kalkulacija autora

**Table 3:** Regression analysis of data for the number of listed companies and market capitalization as a percentage of GDP

Multiple R	0.24801262
R Square	0.06151026
Adjusted R Square	0.046373328
Standard Error	169.0460981
Observations	64
F	4.063588488
Significance F	0.048156289
F crit	1.812212225
Test	we accept

Source: Author's calculation

**Figure 5:** Review of the correlation and determination of the number of listed companies and market capitalization in relation to GDP



Source: Author's calculation

Analyzing the correlation and determination of digitalization of the number of listed companies and the financial market development index in the sample, it can be noticed that the R square (R2) is equal to 0.21005888 (Table 4). This means that the independent variable (variable X - number of listed companies) explains 21% of the variable Y - market capitalization as a percentage of GDP (Figure 4).

The multiple correlation coefficient (R) is equal to 0.458321808 which means that there is a weak direct correlation between the independent and dependent variables. Given that the p value of 0.00013984 is significantly less than 0.05 with a certainty of 95% we can reject the hypothesis that the number of listed companies does not affect the market index of the financial market.

**Table 4:** Regression analysis of data for the number of listed companies and the financial market development index in the sample

Multiple R	0.458321808
R Square	0.21005888
Adjusted R Square	0.197317894
Standard Error	0.181689948
Observations	64
F	16.48686238
Significance F	0.00013984
F crit	1.812212225
Test	we reject

Source: Author's calculation

## 4. DISKUSIJA

Dosad je na Banjalučkoj berzi realizovana jedna javna emisija akcija. U Federaciji BiH i dalje čekaju prvu. Kao odgovor na pitanje zašto u Bosni i Hercegovini nema inicijalnih javnih ponuda akcija moguće je otvoriti raspravu o volji i hrabrosti privrednika da se odreknu dijela vlasništva. Da bi se stvorio ambijent u kojem su i privredna društva i vlasnici spremni za izlazak na berzu, potrebno je da se odgovori na nekoliko dilema. Prvo, da vlasnici prihvate da odricanje od dijela vlasništva ne znači gubitak preduzeća. Drugo, da otvaranje donosi disperziju rizika i da preduzeće mora prihvatiti i implementirati transparentnost u poslovanju. Treće, nužno je prihvatiti benefite koje izlazak na berzu donosi. To su prikupljanje kapitala, veći nivo korporativnog upravljanja, odvajanje vlasničke i upravljačke funkcije, ali i mogućnost izdavanja novih akcija za povećanje kapitala, odnosno mogućnosti novog izvora za zaduživanje.

Relativno zatišje na berzama u svijetu posljedica je globalne krize, koja ostavlja traga i na regiju. Uz sve efekte krize treba znati i da tržišta kapitala nisu uvijek jednako efikasna i da berzama često upravljaju godišnji ciklusi, a ne fundamentalne vrijednosti. Poznato je da tržišta kapitala često bivaju vođena iracionalnim raspoloženjem ulagača koje se može temeljiti i na mentalitetu krda. Uz sve pobrojane razloge, ne treba zaboraviti i činjenicu da je dokazano da na uspavanim tržištima malo kompanija izlazi na berzu, dok su na rastućim tržištima učestalije javne ponude.

Pri odgovoru na pitanje zašto se većina preduzeća iz regije (još) ne odlučuje na izlistavanje akcija na berzi, treba imati u vidu da se velikom broju preduzeća finansiranje rasta i razvoja pomoću kredita kratkoročno još najviše isplati. Naime, jedan od nedostataka inicijalne ponude akcija je pojava novih troškova. Prvo, postoje nefinansijski troškovi, kao što su vrijeme i pažnja članova uprave jer ih taj posao može zaokupljati mjesecima. Na razvijenim tržištima prosječno vrijeme ovog procesa je devet mjeseci. Zatim se plaćaju naknade koje će posrednici i agenti naplatiti za svoje usluge. Akcionarsko društvo listirano na berzi plaća naknade za listiranje berzi, Centralnom registru, revizorima te ima troškove organizovanja i održavanja skupštine, unapređenja korporativnog upravljanja te za isplatu dividende akcionarima.

## ZAKLJUČAK

IPO svim, pa i domaćim privrednim društvima, povećava transparentnost poslovanja i odlučivanja, što strateškim ulagačima omogućava da neposredno odlučuju o politici preduzeća. Proces izlaska na berzu prati pažnja medija, što olakšava promovisanje preduzeća i bolju komunikaciju sa javnošću. Naime, mediji mnogo pažnje posvećuju akcionarskim društvima jer je interes za poslovanje akcionarskih društava veći u odnosu na privatna preduzeća. Uz to, kada su akcije nekog preduzeća već uvrštene na berzu, postoji način više za pribavljanje novca – sekundarnom javnom ponudom (SPO). U slučaju krize, u boljoj poziciji je preduzeće koje je novac pribavilo emisijom akcija od onog koje je do novca došlo kreditnim zaduženjem. Naime, novac prikupljen emisijom akcija nema rok dospjeća i kamatnu stopu jer oni koji kupuju akcije u javnoj ponudi očekuju prinos po osnovu dividende ili očekuju kapitalnu dobit kroz rast cijena akcija. Kupujući akcije, sitni tržišni investitori dobijaju pravo na dio vlasništva nad kapitalnim dobrom. Duboka dobro organizovana finansijska tržišta čine da su investicije fiksne za društvo kao cjelinu i istovremeno likvidne za individualca (Radonjić, 2009).

Vlasnicima privrednog društva gubljenje apsolutne kontrole može da predstavlja značajan problem. Takvi vlasnici, kao alternativu

kreditu, treba da razmotre mogućnost emitovanja korporativnih obveznica.

Na domaćem tržištu je očigledan otkup akcija društava sa ciljem delistiranja, uz paralelno ulaganje u dužničke hartije od vrijednosti koje emituje država. Ovaj proces može ukazivati na to da u finansijskom sistemu postoji višak likvidnosti. Drugim riječima, učesnici na tržištu imaju novca, ali ga ulažu u dužničke hartije od vrijednosti koje, najčešće, emituju entiteti.

Mnogo važnije od broja listiranih akcionarskih društava jeste da ona koja su uvrštena na berzu poštuju standarde korporativnog upravljanja i da koriste mogućnosti emisije hartija od vrijednosti. Dakle, da emituju akcije, komercijalne zapise i obveznice za finansiranje rasta i razvoja. Poredeći promete, tržišne kapitalizacije i bruto društveni proizvod regionalnih i razvijenih berzi, očigledno je da na regionalnim berzama ima i previše uvrštenih akcionarskih društava (te je odnos tržišne kapitalizacije i BDP-a na regionalnim berzama relativno visok), ali nema dovoljno interesa za kupovinu tih akcija (odnos prometa i BDP-a je niži). Dakle, delistiranje velikog broja kompanija i pojava sve više obveznica i trezorskih zapisa na berzi je sasvim logičan i očekivan put razvoja tržišta kapitala. Razlog za brigu je činjenica da se veliki broj dobrih kompanija, koje odlikuje velika likvidnost, dobar bonitet i dobar kreditni rejting, uglavnom povlači sa berze. Pritom, mali broj listiranih društava isplaćuje dividendu. Ilustracije radi, samo 11 listiranih akcionarskih društava u Republici Srpskoj je prošle godine isplatilo dividendu.

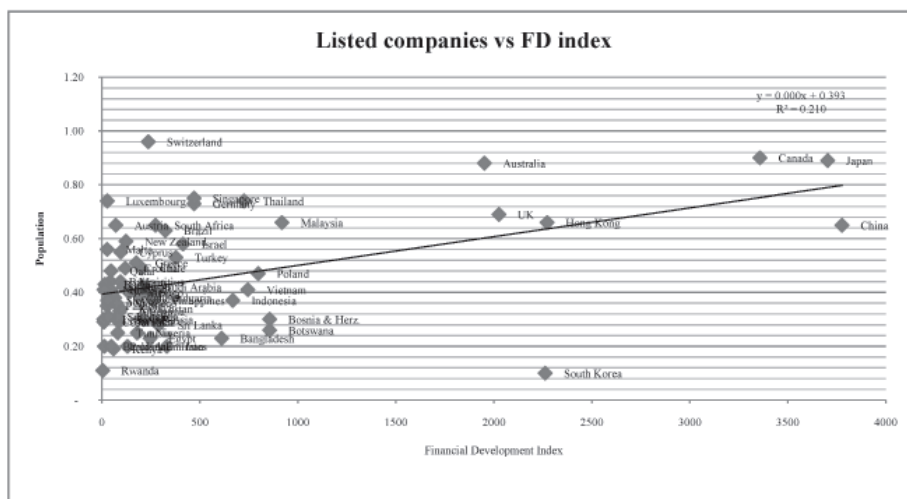
Istraživanje pokazuje da broj listiranih kompanija utiče sa oko 1,1% BDP-a *per capita*. Koeficijent višestruke korelacije (R) jednak je 0,106842566, što znači da ne postoji direktna veza između nezavisne i zavisne varijable. Prema tome, može se prihvatiti hipoteza da broj listiranih akcionarskih društava ne utiče na bogatstvo i razvijenost zemlje mjereno BDP-om *per capita*.

Posmatramo odnos broja listiranih kompanija i broja stanovnika i zapažamo da je R kvadrat (R<sup>2</sup>) jednak 0,257584801. Koeficijent višestruke korelacije (R) jednak je 0,507528129, što znači slabu direktnu vezu između nezavisne i zavisne varijable. S obzirom na to da je p-vrijednost 0,0000187 značajno manja 0,05, sa sigurnošću od 95% može da se odbaci hipoteza da broj listiranih kompanija ne utiče na broj stanovnika. Dakle, broj listiranih kompanija stoji u slabijoj vezi sa brojem stanovnika pod pretpostavkom nepromijenjenih ostalih varijabli.

Kada se posmatra odnos listiranih kompanija po zemljama i tržišna kapitalizacija na berzama u odnosu na BDP, zapaža se da je R<sup>2</sup> jednak 0,06151026. Koeficijent višestruke korelacije jednak je 0,24801262, što znači slabu direktnu vezu između nezavisne i zavisne varijable. S obzirom na to da je p-vrijednost 0,048156289 značajno manja 0,05, sa sigurnošću od 95% može se prihvatiti hipoteza da broj listiranih kompanija ne utiče na tržišnu kapitalizaciju u odnosu na BDP. Dakle, može se zaključiti da broj listiranih kompanija stoji u slabijoj vezi sa brojem stanovnika pod pretpostavkom nepromijenjenih ostalih varijabli.

Analizirajući korelaciju i determinaciju digitalizacije broja listiranih kompanija i indeksa razvoja finansijskog tržišta u uzorku, zapaža se da je R<sup>2</sup> jednak 0,21005888. To znači da nezavisna varijabla – broj listiranih kompanija objašnjava 21% tržišne kapitalizacije kao procenat BDP-a. Koeficijent višestruke korelacije jednak je 0,458321808, što znači slabu jaku direktnu vezu između nezavisne i zavisne varijable. S obzirom na to da je p-vrijednost 0,00013984 značajno manja 0,05, sa sigurnošću od 95% možemo da kažemo da broj listiranih kompanija utiče na tržišni indeks finansijskog tržišta.

**Figure 6:** Review of the correlation and determination of the number of listed companies and the financial development index of the market in the sample



Source: Author's calculation

## 4. DISCUSSION

So far, one public issue of shares has been realized on the Banja Luka Stock Exchange. In the Federation of BiH, they are still waiting for the first one. In response to the question why there are no initial public offerings of shares in Bosnia and Herzegovina, it is possible to open a debate on the will and courage of businessmen to give up part of their ownership. In order to create an environment in which both companies and owners are ready to go public, it is necessary to answer several dilemmas. Firstly, that the owners accept that the renunciation of part of ownership does not mean the loss of the company. Secondly, that opening and going public brings a dispersion of risk and that the company must accept and implement transparency in business. Thirdly, it is necessary to accept the benefits that going public brings. These are the raising of capital, a higher level of corporate governance, the separation of ownership and management functions, but also the possibility of issuing new shares to increase capital i.e. the possibility of a new source of borrowing.

The relative calm on stock exchanges in the world is a consequence of the global crisis, which has also left a trace across the region. In addition to all the effects of the crisis, it should be noted that capital markets are not always equally efficient and that stock exchanges are often governed by annual cycles rather than fundamental values. It is well known that capital markets are often driven by an irrational mood of an investor that can also be based on a herd mentality. In addition to all the above reasons, we should not forget the fact that it has been proven that few companies go public on dormant markets, while public offerings are more frequent in growing markets.

When answering the question why most companies from the region do not (yet) decide to list their shares on the stock exchange, one should have in mind that for a large number of companies, financing growth and development with loans pays off the most in the short term. Namely, one of the disadvantages of the initial offer of shares is the emergence of new costs. Firstly, there are non-financial costs, such as the time and attention of members of the management because that job can keep them busy for months. In developed markets, the average time of this process is nine months. The fees that intermediaries and agents will charge for their services are then paid. A joint stock company listed on the stock exchange pays fees for listing to the stock exchange, to the Central Registry, to auditors and it has the costs of organizing and holding the general assemblies, improving corporate governance and paying dividends to shareholders.

## CONCLUSION

The IPO for all, including domestic companies, increases the transparency of business and decision-making, which enables strategic investors to directly decide on company policy. The process of going public is accompanied by media attention, which facilitates the promotion of a company and better communication with the public. Namely, the media pay a lot of attention to joint stock companies because the interest in the business of joint stock companies is higher than interest in private companies. In addition, when the shares of a company are already listed on the stock exchange, there is more way to raise money - through a secondary public offering (SPO). In the event of a crisis, the company that obtained the money by issuing shares is in a better position than the one that obtained the money through loan indebtedness. Namely, the money collected by the issue of shares does not have a maturity and interest rate because those who buy shares in the public offering expect a dividend yield or expect a capital gain through share prices growth. By buying shares, small market investors get a share of the ownership of the capital good. Deep well-organized financial markets make investments fixed for society as a whole and at the same time liquid for the individual (Radonjić 2009).

For business owners, losing absolute control can be a significant problem. Such owners, as an alternative to loan, should consider issuing corporate bonds.

In the domestic market, the purchase of company shares is obvious with the aim of delisting with a parallel investment in debt securities issued by the state. This process may indicate that there is excess liquidity in the financial system. In other words, market participants have money but they invest it in debt securities that are most often issued by the entities.

Much more important than the number of listed joint stock companies is that those listed on the stock exchange respect corporate governance standards and that they take advantage of the issue of securities. Therefore, to issue shares, commercial papers and bonds to finance development growth. Comparing the turnover, market capitalization and gross domestic product of regional and developed stock exchanges, it is obvious that there are too many listed joint stock companies on regional stock exchanges (and the ratio of market capitalization and GDP on regional stock exchanges is relatively high), but there is not enough interest to buy those shares (turnover-to-GDP ratio is lower). Therefore, the delisting of a

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## Prilog

Country	Listed companies	GDP per capita	Population	Capitalization, percent of GDP	FD index
Argentina	91	22.063,90	44,94	8,84	0,33
Australia	1.952	49.611,86	25,36	106,52	0,88
Austria	71	56.029,61	8,88	29,90	0,65
Bahrein	43	45.010,71	1,64	69,69	0,44
Bangladesh	611	4.753,73	163,05	-	0,23
Barbados	16	15.638,83	0,29	65,23	0,43
Bermuda	13	81.797,87	0,06	39,62	0,20
Bosnia & Herz.	856	14.922,15	3,30	12,00	0,30
Botswana	856	17.766,54	2,30	-	0,26
Brazil	324	14.651,62	211,05	64,54	0,63
Bulgaria	262	23.265,62	6,98	66,40	0,38
Canada	3.358	48.886,76	37,59	101,50	0,90
Chile	203	25.131,46	18,95	72,19	0,49
China	3.777	16.116,66	1.397,71	59,37	0,65
Colombia	66	14.624,97	50,34	40,80	0,38
Costa Rica	10	20.296,82	5,05	3,59	0,29
Croatia	119	28.829,36	4,07	36,97	0,49
Cyprus	96	39.544,68	1,20	17,17	0,55
Egypt	246	11.763,25	100,39	14,58	0,23
Germany	470	53.784,78	83,13	54,34	0,73
Greece	176	30.465,45	10,72	25,57	0,51
Hong Kong	2.272	59.847,55	7,51	1.339,64	0,66



large number of companies and the appearance of more and more bonds and treasury bills on the stock exchange is a completely logical and expected way of the capital market development. The reason for concern is the fact that a large number of good companies, which are characterized by high liquidity, good creditworthiness and good credit rating, are mostly withdrawn from the stock exchange. At the same time, a small number of listed companies pay dividends. For illustration's sake, only 11 listed joint stock companies in Republika Srpska paid a dividend last year.

The research shows that the number of listed companies affects with about 1.1% of GDP per capita. The multiple correlation coefficient (R) is equal to 0.106842566 which means that there is no direct correlation between the independent and dependent variable. Therefore, hypothesis can be accepted that the number of listed joint stock companies does not affect the wealth and development of a country as measured by GDP per capita.

We observe the ratio of the number of listed companies to the number of inhabitants, and it can be noticed that R square (R<sup>2</sup>) is equal to 0.257584801. The multiple correlation coefficient (R) is equal to 0.507528129 which means that there is a weak direct correlation between the independent and dependent variables. Given that the p value of 0.0000187 is significantly less than 0.05 with a certainty of 95%, the hypothesis that the number of listed companies does not affect the number of inhabitants can be rejected. Thus, the number of listed companies is weakly related to the number of inhabitants under the assumption that other variables are unchanged.

When observing the ratio of listed companies by countries and market capitalization on stock exchanges in relation to GDP, it can be noticed that R<sup>2</sup> is equal to 0.06151026. The multiple correlation coefficient is equal to 0.24801262, which means that there is a weak direct correlation between the independent and dependent variables. Given that the p value of 0.048156289 is significantly less than 0.05 with a certainty of 95%, the hypothesis that the number of listed companies does not affect the market capitalization in relation to GDP can be accepted. Thus, it can be concluded that the number of listed companies is weakly related to the number of inhabitants under the assumption that other variables are unchanged.

Analyzing the correlation and determination of digitalization of the number of listed companies and the financial market development index in the sample, it can be noticed that R<sup>2</sup> is equal to 0.21005888. This means that the independent variable - the number of listed companies explains 21% of the market capitalization as a percentage of GDP. The multiple correlation coefficient is equal to 0.458321808 which means that there is a weak direct correlation between the independent and dependent variables. Given that the p value of 0.00013984 is significantly less than 0.05 with a certainty of 95% we can say that the number of listed companies affects the market index of the financial market.

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## Appendix

County	Listed companies	GDP per capita	Population	Capitalization, percent of GDP	FD index
Argentina	91	22.063,90	44,94	8,84	0,33
Australia	1.952	49.611,86	25,36	106,52	0,88
Austria	71	56.029,61	8,88	29,90	0,65
Bahrain	43	45.010,71	1,64	69,69	0,44

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Hungary	44	32.643,49	9,77	20,12	0,41
Indonesia	668	11.812,20	270,63	46,76	0,37
Iran	331	12.389,22	82,91	-	0,20
Israel	414	40.203,39	9,05	60,15	0,58
Jamaica	87	9.761,50	2,95	95,80	0,29
Japan	3.704	41.667,18	126,26	121,83	0,89
Kazakhstan	94	26.351,44	18,51	22,37	0,34
Kenya	59	4.329,87	52,57	26,24	0,19
Lebanon	10	14.551,58	6,86	14,88	0,30
Luxembourg	28	114.323,41	0,62	62,21	0,74
Malaysia	919	28.364,49	31,95	110,77	0,66
Malta	27	43.707,54	0,50	35,46	0,56
Mauritius	95	22.870,29	1,27	61,33	0,44
Mexico	139	19.765,92	127,58	32,60	0,40
Morocco	74	7.514,72	36,47	54,65	0,36
Namibia	11	9.637,18	2,49	21,10	0,41
New Zealand	123	43.695,15	4,92	52,13	0,59
Nigeria	180	5.135,50	200,96	9,80	0,25
Oman	111	27.299,41	4,97	22,43	0,42
Palestine	48	6.219,96	4,69	2,00	0,20
Panama	27	31.458,69	4,25	25,21	0,35
Peru	196	12.847,88	32,51	43,63	0,39
Philippines	265	8.908,18	108,12	73,06	0,37
Poland	798	33.221,54	37,97	25,45	0,47
Qatar	47	90.043,93	2,83	91,02	0,48
Romania	81	29.983,56	19,36	10,44	0,31
Russia	213	27.043,94	144,37	96,60	0,30
Rwanda	4	2.226,86	12,63	31,04	0,11
Saudi Arabia	204	46.962,15	34,27	303,52	0,42
Seychelles	33	29.223,46	0,10	66,72	0,31
Singapore	470	97.341,47	5,70	187,41	0,75
Slovenia	29	39.037,93	2,09	14,63	0,37
South Africa	274	12.481,81	58,56	300,58	0,65
South Korea	2.262	42.878,82	51,71	2,00	0,10
Sri Lanka	289	13.078,10	21,80	18,71	0,28
Switzerland	237	68.394,29	8,57	260,92	0,96
Thailand	725	18.459,99	69,63	104,72	0,74
Tunisia	81	10.755,61	11,69	21,92	0,25
Turkey	378	28.289,09	83,43	24,29	0,53
UA Emirates	130	67.119,13	9,77	58,70	0,20
UK	2.026	46.704,32	66,83	102,66	0,69
Vietnam	745	8.041,18	96,46	57,20	0,41

Izvor: prikaz autora

Bangladesh	611	4.753,73	163,05	-	0,23
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Source: Author's review