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DETERMINANTE I TEŽINA IMPLIKACIJA REJTINGA SUVERENIH KREDITA

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Rezime

Mada se pokazalo da su kreditni rejtinzi nepouzdani kao definitivna mera kvaliteta konkretnog dužnika ili njegove emisije duga, i da zbog toga treba da se koriste samo radi komparativne evaluacije investicionih alternativa, tražnja za kreditnim rejtingom suverena - ocene rizika koje agencije za kreditni rejting dodeljuju obligacijama centralnih vlada - drastično je porasla poslednjih godina. Moody's Investor Service (Moody's), Standard & Poor's (S&P) i Fitch Ratings (Fitch) treba da pružaju nezavisnu evaluaciju kvaliteta emitenta i duga i zato se kreditni rejtinzi neprestano ažuriraju da bi odrazili tržišne i društveno-političke uslove. Međutim, zbog nepostojanja neograničenog pristupa agencija informacijama i zavisnosti njihovih prihoda od provizija klijenata, rejtinzi koje one objavljuju u najboljem slučaju su informisana mišljenja i često su reagovanje na promene a ne njihovi pouzdani predskazivači. To je mnogo raspravljana tema koja često zanemaruje implikacije takvih rejtinga ne samo na suverene na koje se odnose, već i na banke i druga pravna lica sa domicilom u odnosnoj zemlji, kao i na druge globalne subjekte. Ovaj rad ima za cilj da ispita ključne determinante koje vode promenama u kreditnim rejtinzima suverena i efekte koje te promene imaju na globalnom i domaćem nivou.

Ključne reči: agencija za kreditni rejting, sekjuritizacija, rejting kreditnih derivata, suvereni, korporacije

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DETERMINANTS AND SEVERITY OF IMPLICATIONS OF SOVEREIGN CREDIT RATINGS

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Summary

Although it has been shown that credit ratings are unreliable as a definitive measure of quality of a particular obligor or their debt issue, and should thus be used solely for comparative evaluation across investment choices, the demand for sovereign credit ratings—the risk assessments assigned by the credit rating agencies to the obligations of central governments—has increased dramatically in recent years. Moody's Investor Service (Moody's), Standard & Poor's (S&P) and Fitch Ratings (Fitch) are meant to provide independent evaluation of both the issuer and the debt quality, and the credit ratings are thus constantly updated to reflect both the market and the socio-political conditions. However, both due to the agencies' lack of unlimited access to information and their revenue being dependent on client fees, the ratings they publish are informed opinions at best, and are often reactive to changes, rather than being their reliable predictors. This is a much-debated topic that often overlooks the implications of such ratings not only on the sovereigns they apply to, but banks and other corporates domiciled in that country, as well as other global entities. This paper aims to examine the key determinants that lead to changes in sovereign credit ratings, and the effects such changes have at a global and domestic level.

Keywords: credit rating agencies, securitization, credit rating derivatives, sovereigns, corporations

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Uvod

Istorijski, kreditni rejtinzi su korišteni kao indikatori verovatnoće neizvršenja po ugovornim obavezama. Kao takvi, od ključnog su značaja za utvrđivanje iznosa zaduženja koji se može dozvoliti da subjekat nosi i uslova po kojima treba da se ostvaruje otplata. Međutim, pošto finansijski proizvodi postaju složeniji i tržišta u sve većoj meri globalizovana, rasla je potreba za nezavisnim ocenjivanjem kreditne sposobnosti. Godinama se oslanjalo na to da nezavisne kreditne agencije, Moody's Investor Service (Moody's), Standard & Poor's (S&P) i Fitch Ratings (Fitch) pružaju stabilnu, transparentnu i objektivnu globalnu evaluaciju kreditnog rizika. Pošto se metodologija, pretpostavke i ograničenja kod rejtinga opisuju detaljno kod drugih (Bhatia, 2002; Cantor & Fons, 1999, Dimitrijevic et al., 2011; Kožul, 2012a), cilj ovog rada je da se razmotri obim i težina njihovog efekta na globalna i domaća finansijska tržišta.

Pošto većina investitora favorizuje rejtingovane hartije od vrednosti u odnosu na nerejtingovane finansijske instrumente koji nose naizgled sličan kreditni rizik, da bi dobile pristup raznovrsnijim mogućnostima za finansiranje, vlade traže kreditne rejtinge. To ima direktan efekat na sposobnost drugih emitenata domiciliranih u njihovim granicama, jer se pokazalo da agencije retko rejtinguju hartije od vrednosti koje emituju finansijske institucije određene nacionalnosti iznad rejtinga njihovih vlada. Dok su u prošlosti međunarodni investitori težili da favorizuju hartije od vrednosti emitovane u glavnim svetskim valutama, tražnja za obveznicama emitovanim u drugim valutama porasla je tokom poslenjih decenija, podstičući veći broj suverena da traže rejting za obveznice u domaćoj valuti.

Tradicionalno, vlade Zapadnih zemalja dolazile su do sredstava emisijama domaćih obveznica, jer je poverenje u njihovu sposobnost da izvršavaju svoje obligacije bilo visoko i investiranje u takve hartije od vrednosti tipično je imalo prednost nad proizvodima koje su komercijalne banke nudile pojedinačnim investitorima. Pored toga, poverenje investitora je impliciralo da se, čak i u slučaju kada kod dospeća obveznice, vlada nema dovoljno likvidnosti da otplati dug, može emitovati druga obveznica da bi se pokrio taj nedostatak. Međutim, kako je nedavna finansijska kriza pokazala, čak i vlade nekih velikih svetskih zemalja nisu imune na neizvršenje. To je veliki problem, ali domino efekat koji on ima na domaće finansijske institucije i poverenje tržišta u njihovu kreditnu sposobnost stvara zastoj, u kome čak i međubankarsko tržište stagnira.

Na taj način, promena u kreditnom rejtingu može pogoditi globalnu finansijsku i ekonomsku strukturu, jer se njen efekat odražava ne samo kod vladine emisije hartija od vrednosti već i na tržište nekretnina, zaduživanje, sekjuritizaciju, devizni kurs, finansijske derivate i skoro na svaki aspekt svetske ekonomije. U narednim sekcijama, ta pitanja se obradjuju odvojeno, počevši od ključnih determinanti koje vode do promene rejtinga suverenih kredita.

Determinante rejtinga kredita suverena

Mada je metodologija koja stoji iza kreditnih rejtinga kompleksna i uključuje obuhvatnu analizu širokog kruga faktora (Kožul, 2012a), studija koju su sproveli Cantor i Packer (1996) otkriva da se agencije najviše oslanjaju na relativno mali skup dobro definisanih kriterijuma. Ključne determinante sposobnosti i volje zemlje da servisira svoj dug, prema autorima jesu:

1. Istorija neizvršenja
2. Ekonomska razvijenost
3. Spoljni bilans
4. Spoljni dug
5. Fiskalni bilans
6. Rast BDP-a
7. Inflacija
8. Dohodak per capita

Istorija neizvršenja. Mada se istorijski podaci široko koriste u finansijskim modelima kao zamena za buduće trendove, postoji malo dokaza da su dobar pretskazivač stvarnih budućih kretanja na tržištu. Saglasno tome, neizvršenje u prošlosti ne mora da ukazuje na veću verovatnoću neizvršenja u budućnosti, ali to je mera koju agencije koriste kod odlučivanja o svojim rejtinzima.

Ekonomska razvijenost. Mada dohodak po glavi stanovnika u izvesnoj meri predstavlja

Introduction

Historically, credit ratings have been used as indicators of the likelihood of default on a contractual obligation. As such, they are crucial in determining the amount of borrowing an entity can be allowed to hold and the conditions under which the repayment should be made. However, as the financial products became more complex and the markets more globalized, the need for independent assessment of creditworthiness grew. For years, independent credit agencies, Moody's Investor Service (Moody's), Standard & Poor's (S&P) and Fitch Ratings (Fitch), have been relied upon to provide stable, transparent and objective global credit risk evaluation. As the methodology, assumptions and limitations behind the ratings is described in detail elsewhere (Bhatia, 2002; Cantor & Fons, 1999, Dimitrijevic et al., 2011; Kozul, 2012a), the aim of this work is to discuss the scope and severity of their effect on global and domestic financial markets.

As most investors prefer rated securities over unrated financial instruments bearing seemingly similar credit risk, in order to gain access to more diversified funding opportunities, governments seek credit ratings. This has a direct effect on the borrowing ability of other issuers domiciled within their borders, as it has been shown that agencies seldom rate securities issued by financial institutions of a particular nationality higher than those of their governments. While in the past international investors tended to favour securities issued in the major world currencies, the demand for bonds issued in other currencies has grown in recent decades, prompting a greater number of sovereigns to seek domestic currency bond ratings.

Traditionally, governments of Western countries accessed funds through issues of domestic bonds, as confidence in their ability to meet their obligation was high and investment is such securities was typically preferential to products offered to individual investors by commercial banks. In addition, this investor confidence implied that, even in the event that, at bond maturity, government does not have sufficient liquidity to repay the debt, another bond can be issued to meet the shortfall. However, as recent financial crisis has shown, even governments of some major world countries are not immune to default. This is a major problem, but the knock-one effect it has on domestic financial institutions and market confidence in their creditworthiness creates a standstill, whereby even the interbank market stagnates.

Thus, a single sovereign credit rating change can affect the global financial and economic structure, as its effects will be seen not only in the government securities issues, but also in housing market, borrowing, securitization, foreign exchange, financial derivatives, and almost every aspect of the world economy. In the following sections, these issues will be discussed separately, starting with the key determinants that lead to shift in sovereign credit ratings.

Sovereign Credit Ratings Determinants

Although methodology behind the credit ratings is complex and includes a comprehensive analysis of a wide range of factors (Kozul, 2012a), a study conducted by Cantor and Packer (1996) reveals that the agencies most heavily rely on a relatively small set of well-defined criteria. The key determinants of a country's ability and willingness to service its debt, according to the authors, are:

1. Default history
2. Economic development
3. External balance
4. External debt
5. Fiscal balance
6. GDP growth
7. Inflation
8. Per capita income

Default history. Although historical data are widely used in financial models as a proxy for future trends, there is little evidence that they are a good predictor of the actual future market movements. By the same accord, a default in the past should not indicate higher probability of default in the future, yet it is a measure used by agencies when deciding on their ratings.

Economic development. Although per capita income is, to a certain extent, an indicator of economic development, agencies treat these two variables separately, linking the latter to the perceived risk of default, whereby when a certain development threshold is reached, indikator ekonomske razvijenosti, agencije koriste te dve promenljive odvojeno, vezujući ovu drugu za uočeni rizik neizvršenja, tako što se verovatnoća neizvršenja smanjuje kada bude ostvaren izvestan prag razvijenosti.

Spoljni bilans. Pošto visok spoljni bilans ukazuje na to da vlada nije u mogućnosti da pristupi dovoljnim sredstvima na domaćem tržištu, kako je navedeno napred, on služi kao indikator nepostojanja poverenja privatnih i privrednih investitora u njenu kreditnu sposobnost. Zato agencije visoko ocenjuju ovu promenljivu kada utvrđuju rejtinge suverena.

Spoljni dug. Vezano za prethodnu promenljivu, značajan spoljni dug ukazuje na verovatnoću da takvo finansiranje iz inostranstva može da bude neodrživo na duži rok. Ovo pitanje se dalje osložava kada se uzme u obzir strana valuta, jer nije određena samo kamatnim stopama u zemljama učesnicama, već takođe i postojećom i dugoročnom inflacijom, pored drugih faktora o kojima je reč dalje u ovom radu. Na sve njih utiču ekonomski uslovi, na koje kreditni rejting suverena ima domino efekat, dalje pojačavajući složenost ovog pitanja.

Fiskalni bilans. Značajan državni deficit tipično je znak da vlada ne može, ili nije voljna, da poveća poreski teret svojih građana. To sa druge strane može da implicira da su domaći ekonomski uslovi već prenapregnuti i da je nesmotreno nametanje daljih zahteva na radnu populaciju da pokrije fiskalne nedostatke.

Rast BDP-a. Pozitivan rast ukazuje na to da se domaći ekonomski uslovi popravljaju, povećavajući verovatnoću da će vlada biti u mogućnosti da mobiliše sredstva na domaćem tržištu kao i da otplaćuje obaveze po spoljnom dugu.

Inflacija. Inflacija je direktno povezana sa fiskalnim bilansom, jer kada je poreski prihod nedovoljan za ispunjenje vladine fiskalne potrebe, često se primenju inflatorne mere. To ne povećava samo verovatnoću političkog nemira, već pogađa devizni i sve bilanse spoljnog kapitala, što može voditi u neizvršenje obaveza po suverenom dugu.

Dohodak per capita. Ova promenljiva određuje iznos štednje i investicije koje pojedinci verovatno mogu da ostvare. Kao što je napred navedeno, kada je poverenje u vladu visoko (a kada je životni standard visok, onda je verovatno tako), građani će verovatnije da kupuju državne obveznice. Na taj način, suvereni će verovatnije da imaju pristup dovoljnim sredstvima i da ispunjavaju svoje dužničke obaveze putem daljih emisija domaćih obveznica. To sa svoje strane povećava njihovu kreditnu sposobnost.

Relativan značaj ključnih determinanti kreditnog rejtinga suverena

Pošto su neke od navedenih promenljivih uzajamno korelisane, teško je proceniti njihov direktan efekat na rejtinge koje agencije dodeljuju suverenima i njihovim emisijama duga. Međutim, model koji su razvili Cantor i Packer (1996) ukazuje na to da viši dohodak per capita, niža inflacija i niži inostrani dug imaju najvažniju ulogu u povećavanju kreditnih rejtinga. Ipak, nedavno, Alsakka et al. (2013) sproveli su studiju o kreditnim rejtinzima tokom nedavne finansijske krize, koja je otkrila da kreditne agencije izgleda imaju mnogo aktivniju ulogu koja se ne svodi samo na informisano gledište o kreditnoj sposobnosti. Prema autorima, agencije za kreditni rejting su dodeljivanjem ekscesno visokih rejtinga strukturiranim finansijskim instrumentima pogoršale nedavnu finansijsku krizu i njene široke efekte na globalnu ekonomiju. Pošto su kroz proces sekjuritizacije (Spasojević, 2013), američke sabprajm hipoteke bile prepakovane i prodate kao hartije od vrednosti podržane hipotekom i drugi kompleksni finansijski instrumenti investitorima širom sveta, kada se američko tržište nekretnina našlo u kolapsu, celokupna struktura je pala sa njim. Na drugoj strani, postoji široko prihvaćeno gledište da je pogrešno degradiranje evropskih suverena od strane kreditnih agencija rezultiralo stagnacijom na finansijskim tržištima i višim troškovima zaduživanja, što je dalje pogoršalo krizu.

Jasno, preterano oslanjanje na rejtinge velikog broja učesnika na tržištu predstavlja znatan rizik, jer većina kvantitativnih modela implicitno polazi od toga da nijedno veliko pomeranje cena ili volumena trgovine nije očekivano. Međutim, anticipiranje promena kreditnog rejtinga ili iznenadno degradiranje mogu da izazovu negativne trendove na tržištu. Ipak, uprkos tim priznatim efektima likelihood of default is reduced.

External balance. As a high external balance indicates that the government is unable to access sufficient funding in the domestic market, as noted above, it serves as an indicator of a lack of confidence on behalf of private and corporate investors in its creditworthiness. Thus, agencies rate this variable highly when determining the sovereign ratings.

External debt. Linked to the preceding variable, significant external debt indicates likelihood that such foreign funding may not be sustainable in the long term. This issue is further compounded when foreign exchange is taken into consideration, as it is determined not only by the interest rates in the participating countries, but also the prevailing and long-term inflation, amongst other factors discussed later in this paper. All of these are affected by economic conditions, on which sovereign credit ratings have a knock-on effect, further compounding the complexity of the issue.

Fiscal balance. Significant federal deficit is typically a sign that the government cannot, or is unwilling to, increase the tax burden on its citizens. This, on the other hand, may imply that the domestic economic conditions are already strained and that placing further demands on the working population to meet the fiscal shortfalls is imprudent.

GDP growth. Positive growth indicates that the domestic economic conditions are improving, increasing the likelihood that the government will be able to raise funds in the domestic market as well as repay external debt obligations.

Inflation. Inflation is directly linked to fiscal balance, as when tax revenue is insufficient in meeting government fiscal needs, inflationary measures are often employed. This not only increases likelihood of political unrest, but affects the foreign exchange and all external capital balances, which may lead to a default on sovereign debt obligations.

Per capita income. This variable determines the amount of savings and investments individuals are likely be able to place. As previously noted, when confidence in government is high (and when living standards are high, it is likely to be), citizens are more likely to purchase government bonds. Thus, sovereigns are more likely to access sufficient funds and meet their debt obligations through further domestic bond issues. This, in turn, increases their creditworthiness.

Relative Importance of the Key Sovereign Credit Rating Determinants

As some of the above variables are mutually correlated, it is difficult to estimate their direct effect on the ratings agencies assign to sovereigns and their debt issues. However, a model developed by Cantor and Packer (1996) indicates that higher per capita income, lower inflation and lower external debt play the most important role in increasing the credit ratings.

However, more recently, Alsakka et al. (2013) conducted a study of the credit ratings during the recent financial crisis, revealing that the credit rating agencies appear to play a much more active role than offering their informed view on creditworthiness. According to the authors, credit rating agencies, by assigning excessively high ratings to structured finance instruments, worsened the recent financial crisis and its widespread effects on the global economy. As through the securitization process (Spasojevic, 2013), the US sub-prime mortgages were repackaged and sold as mortgage backed securities and other complex financial instruments to the investors worldwide, once the US housing market collapsed, the entire structure unfolded with it. On the other hand, there is a widely held view that the erroneous downgrades of European sovereigns by credit agencies resulted in stagnation in financial markets and higher borrowing costs, which further exacerbated the crisis.

Clearly, over-reliance on ratings by a large number of market participants presents a substantial risk, as most quantitative models implicitly assume that no large shifts in price or trading volume are expected. However, anticipation of a change in credit rating, or a sudden downgrade, may trigger negative market developments. Yet, despite these recognized effects of the credit ratings on the financial markets and world economy, credit rating agencies claim to offer only "opinions" (Alsakka et al., 2013) in order to avoid any legal responsibility for potential losses arising from trading.

kreditnih rejtinga na finansijska tržišta i svetsku ekonomiju, agencije za kreditni rejting tvrde da nude samo "mišljenja" (Alsakka et al., 2013) da bi izbegle svaku zakonsku odgovornost za potencijalne gubitke koji nastaju iz trgovine.

Efekti kreditnih rejtinga suverena na zaduživanje i tržište nekretnina

U zapadnim zemljama, tržišta nekretnina istorijski su bila aktivna i efikasna, jer bi pojedinci kupili i prodali nekoliko kuća tokom svog života. Kako cene imovine tipično pokazuju uzlazni trend, čak i kada se uzimala u obzir inflacija (Kožul, 2011), tipično su bile u ponudi hipoteke (bankarski krediti sa kućom koja služi kao kolateral) do 90% od kupovne cene. U pogrešnom uverenju da takvi krediti nose mali rizik, pre finansijske krize mnoge američke i evropske banke su počele da nude hipoteke iznad tekućih cena nekretnina, u očekivanju povraćaja sredstava čak i u slučaju plenidbe. Dalje, sa proširenjem skupa potencijalnih klijenata na one bez čvrstog dokaza o prihodu i kreditnoj sposobnosti, kada je značajan deo kućevlasnika došao u neizvršenje po svom dugu, tržište nekretnina više nije moglo da podrži tako veliki broj prodaja, što je dovelo do američke krize sa subprajm hipotekama, i ubrzo pogodilo druge zapadne zemlje. To je imalo, kao što je napred navedeno, široki efekat na globalnu ekonomiju, kada su banke pooštrile svoja pravila na jednoj strani i bile prinuđene da do finansiranja dolaze po višim stopama zbog degradiranja svojih kreditnih rejtinga, na drugoj.

Kada takva ekonomska nestabilnost pogodi kreditne rejtinge suverena, pristup finansiranju na međunarodnoj areni postaje otežan i skuplji, stvarajući negativnu povratnu petlju koja dalje pogoršava uslove na domaćem tržištu nekretnina. Dalje, pošto u vremenima porasta cena nekretnina mnogi pojedinci kupuju imovinu kao formu investiranja, pokrivajući troškove hipoteke izdavanjem, zbog visokih stopa nezaposlenosti, u slučaju da i vlasnik i zakupac ostanu bez posla, može da nastupi istovremeno neizvršenje na nekoliko hipoteka. Sa toliko mnogo neizdatih nekretnina, u vremenima stabilne ekonomije, niske cene bi generisale dovoljan broj kupaca, vraćajući tržište nekretnina u ravnotežu. Međutim, stroži propisi i visoka nezaposlenost posle finansijske krize učinile su da takav korak bude nemoguć. Mada su u početku vlade bile u mogućnosti da nastupe i ponude pakete spasavanja nesolventnim bankama, degradiranje suverena ubrzo je ograničilo raspoložive opcije za finansiranje takvih inicijativa.

Mnoge nedavne studije naglašavaju blisku povezanost između uočene kreditne sposobnosti finansijskih institucija i suverenih tokom finansijske krize (ESMA 2013; Bank of England 2011; MMF, 2011). Prema Blundell-Wignal (2012), pristup finansiranju za banke u Francuskoj, Nemačkoj i Velikoj Britaniji bilo je neposredno pogođeno kreditnom sposobnošću njihovih respektivnih suverena zbog prevelike izloženosti suverenom dugu. U slučaju degradiranja suverena (kao i zbog direktnog neizvršenja), neposredni gubici koje banke pretrpe na holdinge suverenog duga, nemogućnost da se u potpunosti iskoriste vladine garancije, više međubankarske stope zaduženosti i niže rejtinzi banaka su samo neki od potencijalnih načina na koje suvereni rizik pogađa domaće banke (Ferreira i Gama, 2007; Williams et al., 2013). To se neposredno odražava na sektor hipoteka, dalje zaustavljajući tržište nekretnina.

Efekti kreditnih rejtinga suverena na derivate

Derivat je finansijski instrument koji izvodi svoju vrednost iz cene osnovnog instrumenta, kao što su aktiva, indeks ili kamatna stopa, i na taj način nema unutrašnju vrednost po sebi. To je relativno novi fenomen na finansijskim tržištima, čija popularnost nastaje iz mnogo razloga, uključujući sposobnost da koristi promene vrednosti osnovnog instrumenta bez njegovog neposrednog posedovanja (i na taj način potrebe da se plati za njega), izloženost rizicima koji mogu potencijalno da donesu visoku kompenzaciju, izloženost tržištima na kojima je pristup ograničen ili nepraktičan, itd. Mada se nekim derivatima trguje na berzama (kao što su fjučersi i opcije), mnoge kreiraju investicione banke u skladu sa potrebama njihovih klijenata i oni se javljaju u vidu svopova, plafona, minimuma, forvorda i raznih njihovih kombinacija (Steiner, 1999; Taylor, 1996). Mada je inicijalno investiranje u takve proizvode po prirodi nisko i od banaka se po pravilu ne zahteva da takve ugovore drže

Effects of Sovereign Credit Ratings on Borrowing and Housing Market

In Western countries, housing markets have historically been active and efficient, as most individuals would purchase and sell several homes in their lifetime. With property prices typically showing upward trend, even when adjusted for inflation (Kozul, 2011), mortgages (bank loans with the house serving as a collateral) of up to 90% purchase price were typically offered. In the mistaken belief that very little risk would be involved in such loans, prior to the financial crisis, many US and European banks started offering mortgages in excess of the current property value, expecting to recover the funds even in the event of repossession. Moreover, as they expanded the pool of potential customers to those without solid proof of income and creditworthiness, once a significant portion of homeowners defaulted on their debt, the housing market could no longer sustain such a large number of sales, resulting in the US sub-prime mortgage crisis, which soon affected other Western countries. This, as noted earlier, had a widespread effect on global economy, with banks tightening their regulation on one hand, and being forced to access funding at higher rates due to credit rating downgrades, on the other.

Once such economic instability affects the sovereign credit rating, access to funding in the international arena becomes more difficult and more expensive, creating a negative feedback loop that further exacerbates the domestic housing market conditions. Moreover, as in times of housing booms many individuals purchase property as a form of investment, covering the cost of the mortgage by leasing it, due to recent high unemployment rates, in the event of both the owner and the tenants being out of work, simultaneous default on several mortgages could take place. With so many vacant properties, during stable economic times, low prices would generate sufficient number of buyers, bringing the housing market back to the equilibrium. However, more stringent regulations and high unemployment in the wake of the financial crisis had made such move impossible. While initially governments were able to step in and offer rescue packages to insolvent banks, sovereign downgrades soon limited the available funding options for such initiatives.

Many recent studies emphasise the close interconnection between the perceived creditworthiness of financial institutions and sovereigns during the financial crisis (ESMA 2013; Bank of England 2011; IMF, 2011). According to Blundell-Wignall (2012), the access to funding for banks in France, Germany and the UK was directly affected by their respective sovereign creditworthiness, due to overexposure to sovereign debt. In an event of a sovereign downgrade (as well as outright default), direct losses banks suffer on sovereign debt holdings, inability to fully capitalize on government guarantees, higher interbank borrowing rates and lower bank ratings are only a few potential ways through which sovereign risks affect the domestic banks (Ferreira and Gama, 2007; Williams et al., 2013). This directly feeds into the mortgage sector, further stalling the housing market.

Effects of Sovereign Credit Ratings on Derivatives

Derivative is a financial instrument that derives its value from the price of the underlying instrument, such as an asset, index, or interest rate and thus has no intrinsic value in itself. It is a relatively recent phenomenon in the financial markets, its popularity stemming from many reasons, including ability to capitalize on changes in the value of the underlying instrument without directly owning it (and thus having to pay for it), exposure to risks that could potentially yield high rewards, exposure to markets to which access is limited or impractical, etc. While some derivatives are traded on stock exchanges (such as futures and options), many are tailor-made by investment banks to suit their customer needs and range from swaps, caps, floors, to collars, forwards, and various combinations of these (Steiner, 1999; Taylor, 1996). Although initial investment into such products is inherently low, and banks are typically not required to hold such contracts on their books (thus reducing the amount of capital holding), the potential losses are substantial, arising from both counterparty default and adverse market movements.

u svojim knjigama (smanjujući na taj način iznos kapitalnog holdinga), znatni su potencijalni gubici koji nastaju iz neizvršenja partnera i nepovoljnih kretanja na tržištu. Uprkos tih rizka, tržište derivata je ubrzano raslo s kraja 1990-tih godina. Prema Blundel-Wignall (2012), globalni obim trgovine derivatima vredeo je 2,5 puta svetski BDP iz 1998. godine, u poređenju sa 12 puta BDP u 2008. godini. Tokom istog perioda, trgovina primarnim hartijama od vrednosti bila je uglavnom stabilna, na oko 2 puta BDP (Blundell-Wignall, 2012). Pri takvoj složenosti mnogih derivata i obuhvatanjem višestrukih instrumenata, teško je potvrditi tačnu izloženost riziku. Dalje, imajući u vidu da mnogi instrumenti proizilaze iz istog kolaterala, ta višestruka upotreba osnovnog instrumenta dalje osložava rizik partnera kroz bankarski sistem. Pri prevelikoj izloženosti domaćih banaka prema suverenom dugu u većini zapadnih zemalja, degradiranje kreditnog rejtinga suverena može da ima razoran kaskadni efekat. Na primer, ako investiciona banka drži obveznicu suverenog duga koji je pretrpeo degradiranje, i ušla je u svop sa partnerom (pri čemu se serija plaćanja po osnovu vladine obveznice periodično razmenjuje sa partnerom, po nominalnoj vrednosti koja se plaća kod dospeća ugovora), to neposredno generiše znatne gubitke zbog umanjene vrednosti obveznice. Dalje, pošto je ista obveznica mogla biti upotrebljena za stvaranje drugih derivatnih ugovora, problem se ubrzo osložava. Pored toga, banka mora da bilansira svoje knjige dnevno, pri čemu se bilo koji gubici tradicionalno pokrivaju kroz međubankarsko tržište preko noći. Sa krizom tog tržišta, lako je videti kako efekat degradiranja suverena prožima čitav finansijski sistem.

Efekti kreditnih rejtinga suverena na sekjuritizaciju

Sekjuritizacija se odnosi na konsolidovanje raznih vrsta ugovornih dužničkih obligacija (obično rezidencijalne i poslovne hipoteke, privatni krediti, dužnička salda kreditnih kartica, itd.) da bi se stvorili novi proizvodi koji generišu profit investitorima na osnovu nekih unapred utvrđenih planova otplate (Spasojević, 2013). Većina uobičajenih oblika sekjuritizacije su pass-through hartije od vrednosti ili kolateralizovane hipotekarne obligacije (CMOs), koje omogućavaju otplatu u tranšama, zavisno od nivoa rizika koji je investitor voljan da prihvati. Po takvim ugovorima, glavnica i kamata po dugu plaća se najpre konzervativnijim investitorima, stvarajući znatnu izloženost kretanjima na tržištu nekretnina za one koji, u zamenu za potencijalno veći profit, prihvataju veći rizik. Jasno, kao što je navedeno u sekciji o sabprajm hipotekarnoj krizi, ako se osnovni krediti nude partnerima koji nisu u mogućnosti da otplate svoj dug, banke ne primaju nikakav prihod, ugrožavajući ukupnu strukturu CMO-a. Dalje, u slučaju plenidbe, bilo da je nekretnina prodata uz gubitak ili ne, ugovori po sekjuritizaciji retko daju zaštitu investitorima, koji na taj način verovatno neće povratiti svoju investiciju.

Složenost koja je svojstvena sekjuritizaciji (gde neki proizvodi konsoliduju kredite iz mnogih sektora i od različite kreditne vrednosti) ograničava sposobnost investitora da monitorišu rizik. Kreditni kvalitet sekjuritizovanog duga nije nepromenljiv zbog kompleksnih odnosa između trendova na tržištu nekretnina, kamatnih stopa, inflacije, kvaliteta drugih kreditnih sektora i strukture samog proizvoda. Kada su ekonomski uslovi stabilni, transakcija je valjano strukturirana i plan otplate duga prati očekivanu šemu, kreditni rizik svih tranši strukturiranog duga smanjuje se tokom vremena, kako se obligacije osnovnog duga približavaju dospeću i volatilnost opada. Međutim, nepravilno strukturirana sekjuritizacija, uz nepovoljne ekonomske uslove, vodi do drastičnog pogoršanje kredita, što dovodi do neizvršenja i znatnog gubitka za investitore.

Pre finansijske krize s obzirom na to da je poverenje u sve derivate i strukturirane proizvode bilo visoko, tržišta sekjuritizacije bila su konkurentna, vodeći do oštrog pada standarda pokroviteljstva. Pošto su sekjuritizacije, slično finansijskim derivatima, vanbilansni proizvodi, stepen leveridža sekjuritizovane firme mogao je da bude znatan, dalje olakšavajući rizične kapitalne strukture i vodeći do potcenjivanja kreditnog rizika. Oštrina izloženosti podoptimalnom dugu najbolje je opisana procenom od USD 10,24 biliona u SAD i USD 2,25 biliona u Evropi pre finansijske akrize (AFME, 2012). Kada se uzme u obzir i svojstveni rizik povezan sa slabo regulisanim i previše leveridžovanim proizvodima, lako

Despite these risks, the derivatives market has grown rapidly since the late 1990s. According to Blundell-Wignall (2012), the global volume of derivatives trades was valued at 2.5-times world GDP in 1998, compared to 12-times GDP in 2008. During the same period, trading in primary securities remained mostly stable, at around 2-times GDP (Blundell-Wignall, 2012). With many derivatives being so complex and involving multiple instruments, it is difficult to ascertain the exact risk exposure. Moreover, given that many instruments leverage off the same collateral, this repeated use of the underlying instrument further compounds the counterparty risk throughout the banking system. Given the overexposure of domestic banks to sovereign debt in most Western countries, sovereign credit rating downgrade can have a devastating cascade effect. For example, if an investment bank holds a sovereign bond that suffers a downgrade, yet has entered into a swap with a counterparty (whereby a series of payments leveraged off the government bond are periodically exchanged with the counterparty, with the nominal value paid at contract maturity), this directly generates substantial losses due to reduced value of the bond. Moreover, as the same bond could have been used to create other derivatives contracts, the issue soon compounds. In addition, the bank is required to balance its books on a daily basis, whereby any losses have been traditionally met through the interbank overnight market. With this market in the crisis, it is easy to see how the effect of sovereign downgrade permeates into the entire financial system.

Effects of Sovereign Credit Ratings on Securitization

Securitization refers to consolidating various types of contractual debt obligations (typically residential and commercial mortgages, private loans, credit card debt balances, etc.) to create new products that generate profit to the investors based on some predetermined repayment schedule (Spasojevic, 2013). Most common forms of securitization are pass-through securities, or collateralized mortgage obligations (CMOs), that allow the repayment to be made in tranches, depending on the level of risk the investor is willing to accept. Under such contracts, the principal and interest on the debt is paid first to more conservative investors, creating substantial exposure to housing market movements to those who, in exchange for potential greater profit, accepted greater risk. Clearly, as noted in the section on sub-prime mortgage crisis, if the underlying loans are offered to counterparties unable to repay their debt, banks receive no income, jeopardizing the entire CMO structure. Moreover, in the event of repossession, whether the property is sold at a loss or not, contracts under securitization rarely offer protection to the investors, who are thus unlikely to recover their investment.

The complexity inherent in securitization (with some products consolidating loans from many sectors and of varying creditworthiness) limits investors' ability to monitor risk. The credit quality of securitised debt is non-stationary due to complex relationships between housing market trends, interest rates, inflation, quality of other credit sectors and the structure of the product itself. When economic conditions are stable, the transaction is properly structured and the consolidated debt repayment schedule follows the expected pattern, the credit risk of all tranches of structured debt decreases over time, as the underlying debt obligations approach maturity and the volatility declines. However, improperly structured securitization, compounded by adverse economic conditions, leads to dramatic credit deterioration, resulting in default and substantial loss to investors.

Prior to the financial crisis, as confidence in all derivative and structured products was high, securitization markets were competitive, leading to sharp declines in underwriting standards. As securitizations are, similarly to financial derivatives, off-balance sheet products, the extent of leverage of the securitizing firm could be substantial, further facilitating risky capital structures and leading to under-pricing of credit risk. The severity of exposure to sub-optimal debt is best depicted in an estimated \$10.24 trillion outstanding in the United States and \$2.25 trillion in Europe prior to financial crisis (AFME, 2012). Given the inherent risks associated with so poorly regulated and over-leveraged products, it is easy to see the catastrophic effect of a sovereign je videti katastrofalni efekat degradiranja suverenog kredita na celokupan sektor. Kako je ranije navedeno, domaće finansijske institucije i njihov dug nije verovatno da će dobiti viši rejting kreditne sposobnosti od njihovih suverena. To po sebi vodi do finansijskih pitanja koja, kada su osložena krizom tržišta nekretnina i nemogućnošću da se izoluje aktiva najgore performanse iz kompleksne strukture, vodi do gubitaka za investitore i emitente.

Efekti kreditnih rejtinga suverena na devizni kurs

Devizni kursevi se definišu kao relativne cene nacionalnih valuta, određene ponudom i tražnjom na deviznom tržištu. Drugim rečima, devizni kurs jednostavno izražava kotaciju nacionalne valute u odnosu na drugu (obično USD). Pošto režime (fiksne ili varijabilne) određuju centralne banke (ili vlade), postoje jasno drugi faktori koji utiču na njihova kretanja. Otuda, striktno govoreći, nivoi koje određuju međunarodna finansijska devizna tržišta nazivaju se nominalni devizni kursevi, dok kada se koriguju merama inflacije, poznati su kao realni kursevi. Faktori koji utiču na nominalne devizne kurseve jesu (Hacche, 1983):

1. Politički i psihološki faktori
2. Relativne kamatne stope
3. Relativne promene cena
4. Relativna kupovna moć
5. Trgovinski bilans
6. Trgovina, spekulacija i finansijski derivati

Politički i psihološki faktori. Mada se očekuje da ratovi i političke nestabilnosti pogode poverenje u stabilnost konkretne valute, efekti manjih društvenih nemira, politički skandali i čak prirodne katastrofe takođe imaju ulogu. Dalje, za neke valute tretirane kao mirne luke (švajcarski franak, na primer), ili koje se koriste kao oblik zaštite od deprecijacije domaće valute (kao što je ranije bila nemačka marka ili sada Euro na teritoriji bivše Jugoslavije), njihova uočena vrednost se povećava.

Relativne kamatne stope. Pošto će veće kamatne stope privući domaće i inostrane investitore, priliv kapitala iz inostranstva će povećati tražnju za domaćom valutom, koja će aprecirati kao rezultat toga. Centralna banka može koristi tu strategiju kao meru zaštite valute. Međutim, pošto je ovo takođe znak restriktivne monetarne politike, povećane kamatne stope obično takođe smanjuju domaći ekonomski rast, priliv stranog kapitala može da opadne, vodeći do deprecijacije valute. Iz tog razloga je efekat kamatne stope na devizni kurs kompleksan i treba pažljivo da se razmotri.

Relativne promene cena. Pri negativnom uticaju inflacije na realni devizni kurs, visoku stopu inflacije (naročito u odnosu na stopu u drugim zemljama) treba da prati deprecijacija valute. Međutim, pošto devizni kurs utvrđuje fiskalna politika, tačan odnos između realnog i nominalnog deviznog kursa teško je odrediti (Kožul, 2012b).

Relativna kupovna moć. Kupovni paritet govori da bi na slobodnom tržištu sva roba i usluge postigle jednake cene, nezavisno od valute u kojoj se denominuju. Ovaj zakon se onda može koristiti za izvođenje kupovne moći bilo koje valute, pošto se poređenjem cene široko dostupnih artikala, kao što su Koka kola ili obrok u Makdonaldsu, može utvrditi relativna vrednost svetskih valuta. Međutim, ovaj pristup ima svojstvenu slabost, jer na raspoloživost i troškove proizvodnje na lokalnim tržištima utiče širok krug faktora, kao što su troškovi rada, uvozne takse, komunalne usluge, troškovi zakupa prostorija, itd., da pomenemo samo neke.

Trgovinski bilans. Trgovinski bilans se odnosi na odnos izvoza prema uvozu, gde trgovinski suficit povećava stranu tražnju za domaćom valutom, koja će zbog toga aprecirati. Slično, trgovinski deficit će voditi do deprecijacije valute. Međutim, pošto cenu robe i usluga (kako je navedeno napred) utvrđuje više nego prosto kretanje kretanja valute, i obim izvoza i uvoza određuje niz socio-političkih faktora, trgovinski bilans ima složen odnos sa deviznim kursom.

Trgovina, spekulacija i finansijski derivati. Kako je napred navedeno, obim spekulativne trgovine na globalnim finansijskim tržištima povećao se u proteklim decenijama. Broj aktuelnih derivatnih ugovora višestruko prevazilazi raspoloživost osnovnih hartija od vrednosti, jer je većina investitora spekulativna i planira da zatvori svoju poziciju znatno pre dospeća ugovora. Pošto derivati mogu imati bilo koju hartiju od vrednosti za osnovu, mnogi su vezani za nivo stranih valuta, kamatnih stopa credit downgrade on the entire sector. As noted previously, domestic financial institutions and their debt are unlikely to be rated as more creditworthy than their sovereigns. This in itself leads to financing issues that, when compounded by the housing market crisis and inability to disentangle the worst-performing assets from the complex structure, lead to losses to both the investors and the issuers.

Effects of Sovereign Credit Ratings on Foreign Exchange

Exchange rates are defined as relative prices of national currencies, determined by the foreign exchange market supply and demand. In other words, the exchange rate simply expresses a national currency's quotation in respect to another (typically USD). As exchange rate regimes (fixed or floating) are determined by central banks (or governments), there are clearly other factors affecting their movements. Thus, strictly speaking, levels determined by international currency financial markets are referred to as nominal exchange rates, whereas when these are corrected by inflation measures, they are known as real exchange rates. The factors affecting nominal exchange rates are (Hacche, 1983):

1. Political and psychological factors
2. Relative interest rates
3. Relative price changes
4. Relative purchasing power parity
5. Trade balance
6. Trading, speculation and financial derivatives

Political and psychological factors. Although wars and political instability are expected to affect the confidence in stability of a particular currency, effects of minor social unrest, political scandals and even natural disasters also play a role. Moreover, with some currencies seen as safe havens (Swiss Franc, for example), or used as a form of protection form depreciation of the domestic currency (as was previously Deutschmark and now Euro within the territory of Former Yugoslavia), their perceived value increases.

Relative interest rates. As higher interest rates will attract both domestic and foreign investors, influx of capital from abroad will increase demand for the domestic currency, it will appreciate as a result. The central bank can use this strategy as a currency protection measure. However, as this is also a sign of a restrictive monetary policy, increasing interest rates usually also depresses the domestic economic growth, foreign capital inflow may decline, leading to currency depreciation. Thus, the effect of interest rate on foreign exchange is complex and should be carefully considered.

Relative price changes. With the inflation negatively affecting the real exchange rate, high inflation rate (in particular relative to that prevailing in other countries) should be accompanied by currency depreciation. However, with exchange rates being determined by fiscal policies, the exact relationship between real and nominal exchange rates is hard to determine (Kozul, 2012b).

Relative purchasing power parity. Purchasing parity stipulates that, in a free market, all goods and services would achieve equal price, irrespective of the currency in which it is being denominated. This law can then be used to derive the purchasing power of any currency, as by comparing the cost of widely available items, such as Coca Cola or a McDonald's meal, relative value of world currencies can be determined. However, this approach is inherently flawed, as availability and cost of produce in local markets is affected by a wide range of factors, labour costs, import taxes, utility bills, cost of renting the premises, etc. being only a few.

Trade balance. Trade balance refers to the ratio of exports to imports, whereby trade surplus will increase foreign demand for domestic currency, which will appreciate as a result. Similarly, trade deficit will lead to currency depreciation. However, as price of goods and services is (as noted above) determined by more than simply currency movements, and the volume of exports and imports is governed by a range of socio-political factors, trade balance has a complex relationship with foreign exchange.

Trading, speculation and financial derivatives. As previously noted, volume of speculative trades in the global financial markets has expanded in the recent decades. The number of outstanding derivatives contracts surpasses the availability of the underlying securities manifold, as most investors are speculative i inflacije, oni mogu imati ulogu u već složenom odnosu između tih promenljivih.

Pošto na sve gore pomenute faktore utiču isti socio-politički i ekonomski faktori priznati kao determinante kreditnog rejtinga suverena, on ima neposrednu ulogu u uticaju na poverenje tržišta u konkretnu valutu i njenu vrednost na deviznim tržištima.

Zaključak

Ovaj rad daje samo kratak pogled na kompleksan svet finansijskih tržišta i efekat koji kreditni rejtinzi suverena imaju na domaći i međunarodni sektor. Uzevši u obzir finansijsku krizu koja još uvek traje i to da je EU suočena sa vrlo specifičnom situacijom, jer mnoge ekonomije direktno doprinose vrednosti evra, bilo bi neoprezno ponuditi bilo koji savet u pogledu toga kako se može naći potencijalno rešenje. Pošto su neke zemlje EU bile aktivniji učesnici na međunarodnim finansijskim tržištima, njihov bankarski sistem je u većoj meri jako izložen tržištima kapitala i derivata, dok se druge i dalje oslanjaju na "tradicionalniji" pristup. Interakcija ove kompleksne strukture sa krizom suverena može imati efekte koji su ozbiljni i teško predvidljivi. Zemlje čije investicione banke imaju velike izloženosti prema tržištima kapitala imaju znatne iznose aktuelnog suverenog duga drugih članica EU, tako da degradiranje kreditnog rejtinga suverena i oštra fluktuacija vrednosti te aktive predstavlja značajan kolateralni rizik, u pogledu dnevnog bilansiranja knjiga kao i potencijalnog neizvršenja. Pošto brige oko solventnosti mogu brzo eskalirati u krizu likvidnosti, lako je sagledati kompleksnost problema.

Hartije od vrednosti i finansijski derivati po svojoj prirodi su rizični proizvodi, ali kada banke imaju preveliku izloženost kompleksnim strukturiranim proizvodima i ne mogu da izvršavaju svoje finansijske obaveze zbog ograničenog i skupog pristupa sredstvima, čemu je doprinela degradacija suverena, javlja se kriza likvidnosti i banke nemaju dovoljno vremena da se dokapitalizuju kroz prihode. Ne postoje na vidiku neposredna rešenja, međutim pošto se više težine u mnogim zemljama u razvoju pridaje štednji i proizvodnji, a ne potrošnji i pristupu kreditu, možda razvijeni svet može da nauči neke vredne lekcije iz novih ekonomija.

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and thus plan to close out their position well before the contract maturity. As derivatives can have any security as underlying, many are leveraged off foreign exchange, interest rates and inflation, they play a part in the already complex relationship between these variables.

Given that the aforementioned factors are all affected by the same socio-political and economic factors recognized as determinants of sovereign credit rating, it plays a direct role in affecting the market confidence in a particular currency and its value in the foreign exchange markets.

Conclusion

This paper provided only a glimpse into the complex world of financial markets and the effect sovereign credit ratings have on both domestic and international sector. With the financial crisis still on-going and EU facing a very specific situation, as many economies directly contribute to the value of Euro, it would be imprudent to offer any advice on how a potential solution may be found. As some EU countries have been more active players in international financial markets, their banking system is more heavily exposed to capital and derivatives markets, while others still rely on a more 'traditional' approach. The interaction of this complex structure with the sovereign crisis can thus have serious and difficult to predict effects. The countries whose investment banks have large exposure to capital markets have significant amounts of outstanding sovereign debt of other EU members; thus, sovereign credit rating downgrades and sharp fluctuations in the value of these assets pose substantial collateral risk, both in terms of daily balancing of the books as well of potential default. As solvency concerns can quickly escalate to liquidity crisis, it is easy to see the complexity of the problem.

Securities and financial derivatives are inherently risky products, but when banks are overexposed to complex structured products and cannot meet their financial obligations due to limited and expensive access to funds, brought about by the sovereign downgrade, liquidity crises emerge and banks are not given the time to recapitalise through earnings. There is no immediate solution in sight; however, as in many developing countries the onus is on savings and production, rather than spending and access to credit, maybe the developed world can learn some valuable lessons from emerging economies.

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