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THE EFFECT OF NON-TARIFF BARRIERS ON TRADING FLOWS BOSNIA AND HERZEGOVINA WITHIN CEFTA 2006

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Abstract

Main objective of this paper is presentation of non-tariff barriers influence on trading flows among countries within CEFTA 2006, in other words, position of Bosnia and Herzegovina in terms of agreement. CEFTA 2006 represent middle-European zone of free trade founded for the purpose of trading flow strengthening within Western Balkan countries on the path of their accession to EU. According to that, Bosnia and Herzegovina as a member of CEFTA 2006 tries to reach better economic position within agreement and accelerates its integration toward EU. Although, on the path to trade liberalization country's members cancelled tariffs and quotes in their relationships, while they continued to use non-tariff barriers at the large extent. Consequently, n this paper we intended to lighten the role and trade position of Bosnia and Herzegovina within CEFTA 2006. We concluded that Bosnia and Herzegovina achieved enviable economic result regarding strength of trading flows and competitiveness. Despite of this, we also concluded that position of Bosnia and Herzegovina could be better within CEFTA 2006. if country's members eliminate invisible tariffs, or if Bosnia and Herzegovina would performed more actively in the process of reforms conduction in the field of annulling of non-tariff barriers.

Key words: *standards, barriers, administrative measures, trade, free trade, liberalization.*

JEL Classification: F1, F15

1. Introduction

CEFTA 2006 originates from previous CEFTA Agreement. CEFTA (Central European Free Trade Agreement) or middle-European zone of free trade was founded in 1992 by Hungary, Poland and former Czechoslovakia. After period of foundation, several countries accessed to them, such as: Slovenia in 1996, Romania in 1997, Bulgaria in 1999, Croatia in 2003 and Macedonia in 2006 (Zenić-Zeljkovic, 2011). In 2006, Bulgaria, Romania, Albania, Bosnia and Herzegovina, Croatia, Macedonia, Kosovo, Moldova, Montenegro and Serbia negotiated about changes and extension of original CEFTA into new CEFTA 2006. Negotiations were supported by Pact for stabilization for South Eastern Europe and European Commission. CEFTA 2006 came on force in July 2007 (Mostetsching, 2011). This agreement replaced existing bilateral agreement regarding free trade and supported multilateral trade cooperation between South Eastern Europe counties.

Western Balkan countries started liberalization of inter-regional trade flows in 2000 under the initiative of EU. This process is finished by ratification of new Middle-European agreement regarding free trade, well-known under the name CEFTA 2006 (Bjelic, et al, 2013). New agreement replaced currently signed 32 bilateral agreements among country's members, related to exchange of trade concessions on bilateral basis, in that way making inter-regional trade of products liberalized, creating regional zone of free trade also for agricultural products.

Main characteristics of CEFTA trade flows are following: low exchange of products with added value, unsatisfactory quality and amplitude of banking services supply and lack of funding sources, poor cooperation, as well as inter-regional direct investments (Bilas and Franc, 2011).

After foundation of CEFTA 2006 trade exchange grew, especially from 2008. Among country's members there were two trade processes: intra-trade and inter-trade exchange. Intra-trade exchange represents trade of similar products or products which are in different phases of production, i.e. trade exchange of goods within the same industry. On the other side, inter-trade exchange is defined as exchange of goods and products between different industries. For example, trade with agricultural products, services, machines and equipment.

Inter-regional trade increased in the first half of 2000's (period of agreement on bilateral trade) and continued to grow in the second half of decade (period from CEFTA 2006 foundation). During the first decade of 2000's trade was tripled, whilst in the second decade it was increased 6 times (Petreski, 2011). Observing key trading partners within CEFTA 2006, it could be noted that trade flows are mostly performed among key trade partners from Croatia, Bosnia and Herzegovina and Serbia. Croatia and Serbia are the largest trade exporters and achieved surplus in inter-regional trade of goods, while Montenegro, Kosovo and Bosnia and Herzegovina are connected through intra-regional trade via import.

Besides agricultural products trade, CEFTA 2006 involved new amendments on trade of services, intellectual property rights, ownership, public procurement and investment promotion. Mentioned amendments are compiled with rules of World Trade Organization and EU. This agreement strengthened process of market liberalization or trade within Western Balkan countries. The existence of traditional relationship between ex-Yugoslavia countries, could impact on stronger competitiveness of products from country's members, i.e. from regions which would find the path to European market. Agreement brings some advantages. First of all, there was increase of trade exchange of goods and services in the region. Agreement liberalized more than 90% of trade with goods and services among countries in region (Mojsovska, 2006). It means that agreement caused the growth of trade exchange and strong product competitiveness – economy of scope, decreasing of production costs, stronger efficiency and productivity and production specialization.

Implementation of CEFTA 2006 does not mean only annulling of non-tariff barriers, rather gradually cancellation of non-tariff barriers – technical barriers, sanitary and phytosanitary and administrative measures. CEFTA 2006 provides improvement of regional economic cooperation, especially in terms of export to EU (cummulation of product origin). It means that goods originated from one country signatory could be used in production of goods in other country's members and exported without negative impact on preferential status of final product origination. According to that, those products are treated as domestic products. Due to mention act 3. CEFTA 2006, diagonal cummulation of goods origin is possible between CEFTA 2006, EU and EFTA's members (Iceland, Norway, Switzerland and Lichtenstein) and Turkey (Vapa-Tankosic, et al, 2011).

CEFTA 2006 also upgrades FDI inflow, because the market from cca 27 million of consumers is much attractive for foreign investors in comparison with individual country's market. On the way of attracting foreign direct investments (FDI), members of CEFTA 2006 adopted laws which guaranteed the most privileged treatment, liberalization of public procurements, production modernization, implementation of new technologies and knowledge and business strategy etc. CEFTA 2006 stimulates process of integration to EU. Accepting the agreement, which is defined by CEFTA 2006, country's members also accept conduct of necessary reforms on the path to EU membership (Pjerotic, 2008).

Within CEFTA 2006 tariffs and quotes are completely eliminated and do not represent real problem for trade exchange discouraging. Although, their elimination was followed by invisible trading barriers in the sense of technical barriers, sanitary and phytosanitary and administrative measures. Their implementation often has the objective not for legal consumer protection, protection of environment, animals and vegetables, rather for discrimination of imported products and creation of unfair competition. According to this, country's members try to annul invisible barriers respecting the rules of World Trade Organization and EU amendments. The most often problems among countries are impersonated in: complex border procedure which constantly changes, lack of coordination of working hours between border departments on border pathways, which result in long waitings, inconsistent implementation of defined procedures, disclaiming of quality sanitary and safe certificates, causing doubled testing etc.

Abovementioned problems slower trading flows between country's members. Bosnia and Herzegovina, Moldova, Kosovo and Albania lapse in the adjustment process of elimination non-tariffs barriers. As a result, those countries dropped behind in trading exchange flows with other country's members. Consequently, it is very important to continue reform processes and especially Bosnia and Herzegovina to continue with positive changes for the aim of improvement of competitiveness position.

Basic purpose of this research is impersonated in understanding of influence non-tariff barriers on trading flows members within CEFTA 2006, with special retrospective view on the case of Bosnia and Herzegovina. Though, this paper will try to lighten the main characteristic of CEFTA 2006 agreement as well as the influence of implementation of non-tariff barriers on limitation of trading flows between country's members. Special importance and contribution of this paper is offering answers on influence of non-tariff barriers on trading flows among country's members of CEFTA 2006 and possible prospective in term of their elimination.

Research, conducted regarding CEFTA 2006 mostly, mostly focused on analysis of effects of agreement on trading flows between members. Just a few papers made research regarding impact of non-tariff barriers on trading flows among members i.e. analyses the case of Bosnia and Herzegovina. So, this paper intends to make some questions and offer some answers. First, this paper tries to define and determine the main characteristic of CEFTA 2006. Second, this paper intends to determine current status in the field of implementation and annulling of non-tariff barriers of country's members. Third, this paper intends to determine trade position of Bosnia and Herzegovina within CEFTA 2006 and achieved scope in the area of elimination non-tariff barriers, in other words, adopted measures in the area of technical barriers, sanitary and phytosanitary and administrative measures. Answers on asked questions will have important implications on understanding of non-tariff barriers effect and their impact on strengthening trading flows within CEFTA 2006 and competitive position of Bosnia and Herzegovina.

2. Review of literature

Influence of CEFTA 2006 on trading flows of country's members and implementation of non-tariff barriers are the subject of research of certain authors. In line with that, we intend to quote and briefly present the most important researches. Handzinski and Sestovic (2011) in their paper perform the problem of barriers implementation in services industry in countries of CEFTA 2006. They separately analyze limitations in some countries, that are related to market access, ownership structure, local demands regarding certain performances, transparency and property protection and rights of foreign companies, workforce movement etc.

Beside mentioned, they analyzed status and prospective of all service sectors in CEFTA 2006. Hadzinski et al, (2010) in research, related to improvement of regional trade integration in South Eastern Europe, are occupied with analysis of trading models within member of CEFTA 2006. They also analyze measures for regulation of trade and trade environment as well as reaction of countries on regional integration trends. In research of Hadziomeragic et al, (2007) is analyzed general problem of importance agreement on free trade and its effects on Bosnia and Herzegovina economy. In paper are analyzed theoretical effects of the agreement on free trade. Also, position of Bosnia and Herzegovina is analyzed within agreement on free trade, i.e. it was given description of evolution process in trading flows in Bosnia and Herzegovina economy. Furthermore, there are analyzed problem that influence on achieving positive effect from free trade zone, otherwise gravitation model of trade is presented as well as calculations that measure the trade effects. Kikrekova (2010) in her paper presents the problem of CEFTA 2006 impact on trading flows in Macedonia. She separately analyzes agreement on trade liberalization within CEFTA 2006 and trade exchange in Macedonia regarding mentioned agreement. Also, she analyzes non-tariff barriers and their impact on trading flows within agreement. Mojsoska-Blaževski and Peterski (2010) carry out the problem of Western Balkan trade with EU and CEFTA 2006, with special attention on Macedonia. They concluded that, through applying of gravitation model, trading relationship between countries depend upon level of GDP per capita. Furthermore, they determine that income was not equal in the free trade zones and CEFTA 2006. According to them, the main cause for that is existence of non-tariff barriers. Pjerotic (2008) in his paper conduct analysis of trade liberalization effects in South Eastern Europe countries, in other words, analyze trade structure between members, i.e. flows of intra-industrial exchange. Jelisavac and Zirojevic (2008) researched the significance of CEFTA 2006 formation, otherwise positive and negative effects which cooperation had on country's members. Also, they analyzed the effects of non-tariff barriers on trading flows of country's members as well as potentials of CEFTA 2006.

Bjelić and Dragutinovic Mitrovic (2013) in their paper conduct the analysis of competitiveness position of Serbia in CEFTA 2006. In order to investigate the competitiveness position of Serbia in that agreement, they used gravitation model. Model showed that Serbia exported more in less developed countries of CEFTA 2006 in comparison with export to EU countries. Beside this, they concluded that nearness of market in relation to market liberalization has significant influence on trading flows in Serbia. Bjelić et al, (2013) analyze the global financial crisis influence on export of Western Balkan countries. During financial crisis there had been decrease in export from Western Balkan countries to EU countries. According to authors, it is generally accepted that more than 90% of total export in Western Balkan countries is directed to EU. Solely economic crisis caused export decrease and made these countries less resistance. So, those countries intend to, through CEFTA, strengthen intra-regional trade flows in order to be less dependent upon external markets.

Beside abovementioned researches, there are also studies with subject of CEFTA 2006, such as: CEFTA issues paper 4 – elimination of non-tariff barriers in CEFTA (2012), CEFTA trade statistics half year (2012), Agency for statistics of Bosnia and Herzegovina – trade exchange of Bosnia and Herzegovina with foreign countries (2012, 2013), Central bank of Bosnia and Herzegovina – Bilten (2012), Foreign trade Chamber of commerce (2012, 2013).

3. Trading flows and Bosnia and Herzegovina position within CEFTA 2006

Emerging countries are faced with increased trade deficit of balance payment current account. Growth of trade deficit makes problematic macroeconomic stability of emerging countries. Foreign trade policy of Bosnia and Herzegovina is characterized with certain shortcomings which are result of poor organization of institutional system. Foreign trade is under jurisdiction of Ministry for foreign trade on the level of Bosnia and Herzegovina. Although, some segments of foreign trade policy conducting are under jurisdiction of entities who make arrangements with neighbor countries and in that way it comes to non-harmonized foreign trade policy. Despite that, in recent period is distinguished the process of harmonization of foreign trade of entities and its conducting by foreign government institutions on the state level. Precisely, from 2008 the process of harmonization in conducting of foreign trade policy has more significance than former.

One of the reasons for trade deficit existence in the economy of Bosnia and Herzegovina is adoption of Law on Foreign Trade Policy from 1997. It is much liberalized law, which provided too much opening toward foreign countries of Bosnia and Herzegovina economy. There are 3 main reasons for described situation: 1) domestic product capacities were on the very low level after the war ending and protection of domestic industry was not realistic option, 2) significant inflow of donating funds and 3) inefficient administrative capacity, i.e. non-payment of tariffs and taxes on borders. Before mentioned law does not include existence of quantitive limitations beside special cases, such as jeopardizing of public safety, safety of people, animas, vegetables etc. (Hadziomeragic, et al, 2007).

Foreign trade exchange of Bosnia and Herzegovina recorded strong import of products after war ending till nowadays. Although, coverage of import by export was very low in 2003 and amounted only 29%. After 2003, there had gradual increase of import of goods and services in Bosnia and Herzegovina. Growth of exports in countries of CEFTA 2006, EU and other trading partners, was the result trade liberalization in Bosnia and Herzegovina. During period of global financial crisis in 2008, especially during 2009, there was recorded the growth in coverage of import by export. In 2011 these rate was 53%. Although, trade deficit continued to increase in comparison with 2010 (see Table 1). Trade deficit was the highest during 2008.

Table 1. Export and import in Bosnia and Herzegovina in period 2003 – 2011

In '000 EUR

Year	Average rate of 1EUR in KM	Trade exchange level	Export	Import	Balance	Rate of coverage import by export in %
2003.	1,95583	5.518.5588	1.241.537	4.277.051	-3.035.514	29,0
2004.	1,95583	6.358.289	1.540.401	4.817.888	-3.277.487	32,0
2005.	1,95583	7.650.970	1.934.319	5.716.651	-3.782.531	33,8
2006.	1,95583	8.463.456	2.640.463	5.822.993	-3.182.531	45,3
2007.	1,95583	10.141.385	3.035.327	7.106.058	-4.070.731	42,7
2008.	1,95583	11.761.864	3.431.633	8.330.231	-4898.599	41.2
2009.	1,95583	9.145.160	2.828.057	6.317.103	-3.489.046	44,8
2010.	1,95583	10.589.745	3.627.873	6.961.872	-3.333.999	52,1
2011.	1,95583	12.142.311	4.203.925	7.938.386	-3.734.461	53,0

Source: Agency for Statistics of Bosnia and Herzegovina, 2012, p. 13.

During 2012, trend of trade deficit increasing was continued. Fundamental cause of the growth in trade deficit was industrial production fall caused by felt of demand for half-finished materials in countries which are main trading partners, accompanied by export decrease, while, from the other side, the felt in domestic demand caused import decreasing. Observing foreign trade exchange in 2012, it could be noted that export was decreased for 272,5 million KM or 1,7%, while import was lower for 364,2 million KM or 4,4%. Trade deficit amounted 7, 39 billion KM, that is for 1,3% more than for 2011. Coverage of export by import in 2012 amounted 51,8% which is below the level for 2011 (CBBIH Bilten, 2012).

Regarding export, main trading partners for Bosnia and Herzegovina are: Croatia, Germany, Italy and Serbia. During 2012 the value of export in Bosnia and Herzegovina recorded decrease in all abovementioned countries. Export in Croatia was lower in 2012 compared with 2011 for 1,5% and amounted 277,4 million KM, export in Germany decreased for 1,7% and amounted 294 million KM, export in Italy was down for 2,5% and amounted 243 million KM, whilst export in Serbia was decreased for 33,9% and amounted 166 million KM. On the import side, main trading partners of Bosnia and Herzegovina were: Croatia, Germany, Russian Federation and Serbia. The value of imported goods from Germany was lower for 3,9% and amounted 435,4 million KM, import from Croatia was decreased for 5,5% and amounted 561 million KM, import from Russian Federation was down for 23,4% and equal 450,9 million KM and import from Serbia felt for 7,2% and amounted 367,2 million KM (CBBIH Bilten, 2012). Export in Croatia, Germany, Italy and Serbia made approximately 50% of total export in Bosnia and Herzegovina.

On the import side, main trading partners of Bosnia and Herzegovina were: Croatia, Germany, Russian Federation and Serbia. In 4Q there was decrease of value of import from those countries. The value of imported goods from Germany equals 435,4 million KM, with annual decrease of 17,6 million KM (3,9%), import from Croatia totaled 561,2 million KM and it is lower for 32,5 million KM (5,5%), whilst import from Russian Federation is lower for 93,8 million KM (23,4%) and amounted 450,9 million KM. Import from Serbia is decreased for 28,4 million KM (7,2%) and amounted 367,2 million KM (CBBIH Bilten, 2012).

In next Table 2, we can see the coverage ratio of export and import with the most significant trading partners in a period from 01. to 03. of 2013. Based on data, we can conclude that Bosnia and Herzegovina reached trade surplus only with Germany – 106,65%. After Germany, Austria and Italy are the countries with who Bosnia and Herzegovina has high rate of coverage import by export – with Austria that rate is 83,66% and with Italy 83,8%. With countries members of CEFTA 2006, and ex member of CEFTA – Croatia, the coverage ratio for observed period amounted 51,03%, while with Serbia amounted 43,50%, as the main trading partners.

Table 2. Surplus/deficit and coverage of import by export in Bosnia and Herzegovina with the most important trading partners (01.03.2013.)

in thousands of KM

Country	Export	Import	Balance	Coverage of export by import in %
Germany	338.791	317.656	21.135	106.65
Austria	151.027	180.531	- 29.505	83,66
Italy	227.483	273.479	-45.996	83,18
Netherlands	29.436	53.944	- 24.508	54,57
Turkey	46.167	87.485	- 41.317	52,77
Slovenia	172.448	327.087	- 154.638	52,72
Croatia	292.437	573.027	-280.589	51.03
Serbia	149.276	343.180	-193.904	43,50
Hungary	43.657	125.994	-91.337	27.51
Poland	20.313	91.631	- 71.318	22.17
Russian Fed.	12.313	78.626	-65.653	16,50
Switzerland	39.324	401.989	-362.665	9,78
Other country.	479.816	498.939	19.424	96,17
Total	1.994.147	3.353.567	-1.359.420	59,46

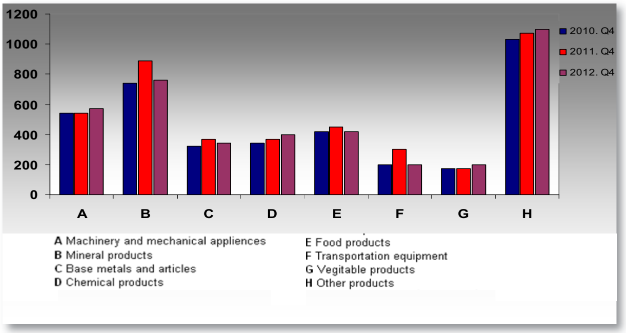
Source: Foreign Trade Chamber of Commerce of Bosnia and Herzegovina, 2013, p. 1.

Considering export structure in quoted 4 countries, in Serbia and Croatia are mostly exported products from industry of mineral gas, lubricants and similar products, where belongs also electricity. In Germany and Italy dominate export of various finished goods, products segregated according to material (metals and products based on metals, paper, products from cellulose, textile etc.).

If we consider import according to goods structure, the largest decrease recorded group of products mineral origin (share in total import – 19,1%) for 176,7 million KM or 19,4%, then processing of alimentaries (share in total import – 10,2%) for 19,2 million KM or 4,6%. The largest increase of import is recorded to following group of products that have the highest share in total import: machines, appliances, mechanical and electrical devices for 12,5 million KM or 2,4% and products of chemical industry for 15,7 million KM or 4,3% compared with the same period of previous year (see figure 1) (CBBIH Bilten 4, 2012).

Figure 1.

Share of group products in import in 4Q (in millions KM)

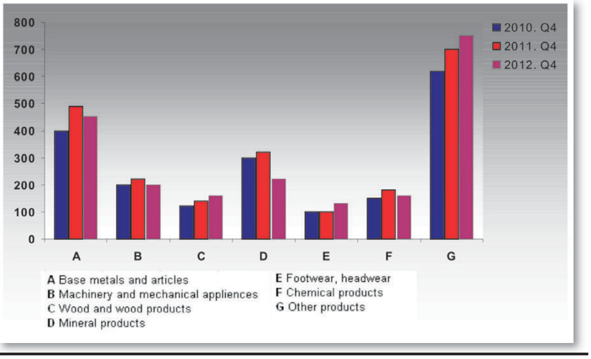


Source:
adjusted according to CBBIH Bilten 4, 2012, p. 98.

On the export side, the most significant share (22,1%) has basic metals, which recorded decrease in the amount of 38,9 million KM (8,2%) compared with same quarter of 2011. On the second place are products of mineral origin with share of 10,5% of total export, with also decreasing trend in the amount of 85,9 million KM (29,3%) vs. same period of previous year. Third group of products according to share are various products, mostly related to furniture which encompass 10,6% of export in 4Q, with rise of 17 million KM (8,9%). The largest share in trade deficit in 4Q 2012 had following group of products: products of mineral origin (mainly fuel oil) 28,3%, appliances and mechanical devices 18,1%, processing of alimentaries 16% and products of chemical industry 13,2% (see Figure 2).

Figure 2.

Share of group products in export in 4Q (in millions KM)



Source:

adjusted according to CBBIH Bilten 4, 2012, p. 98.

Although, speaking about Bosnia and Herzegovina position within CEFTA 2006 it is important to make retrospective view on CEFTA 2006 Report for the first half of 2012 – emphasizing that export of Bosnia and Herzegovina within CEFTA 2006 amounted 626,105 million EUR. For Bosnia and Herzegovina, the most important exporting partner was EU, where Bosnia and Herzegovina export equals 1,163,798 million EUR, while the rest of the world export reached 1,351,890 EUR. Bosnia and Herzegovina exported in Turkey 49,338 million EUR and in EFTA countries 25,617 million EUR, China 2,419 million EUR and Russia 5,481 million EUR. On the other side, Bosnia and Herzegovina mostly imported from EU 1,763,988 EUR and

CEFTA countries 915,259 million EUR, Russia 376,019 million EUR, China 192,894 and Turkey 107,574 million EUR and rest of the world 2.833.390 EUR (see Table 3).

Table 3. CEFTA 2006 Trade Statistic 2012 half year: case Bosnia and Herzegovina

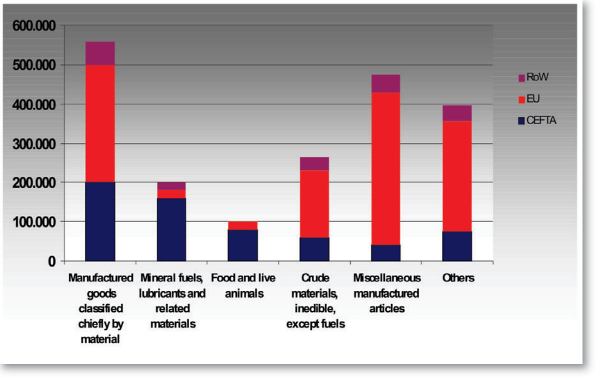
Exports		Imports	
Intra CEFTA	626.105	Intra CEFTA	915.259
RoW	1.351.890	RoW	2.833.390
EU	1.163.798	EU	1.763.988
EFTA	25.617	EFTA	25.158
Turkey	49.338	Turkey	107.574
Russia	5.481	Russia	376.019
China	2.419	China	192.894

Source: CEFTA 2006, 2012, p. 6.

Considering export of Bosnia and Herzegovina in country's of CEFTA 2006, it should be noted that Bosnia and Herzegovina mostly export to Croatia – 48% of total export. After Croatia, Serbia is the most significant exported market for Bosnia and Herzegovina with 30% of export, then Montenegro with 10%, Kosovo 6%, Macedonia 5% and Albania 2%. After leaving CEFTA 2006 from the side of Croatia, Serbia and Bosnia and Herzegovina would be the most important trading partners. On the side of import, it could be noticed that Bosnia and Herzegovina mainly imports from Croatia 57%, Serbia 38%, Macedonia 4% and Montenegro 1%. Observing according to export structure in Bosnia and Herzegovina, based on 5 leading industries, in CEFTA 2006 country's, there should be notified domination of products which are classified as materials, then, mineral fuels, lubricants and similar products, food and live stock, raw materials etc. The structure of export in Bosnia and Herzegovina economy, based on 5 leading industries, in EU countries is mostly related to products classified as materials, various product articles, raw materials etc. (see Figure 3).

Figure 3.

Top five sectors in exports to CEFTA



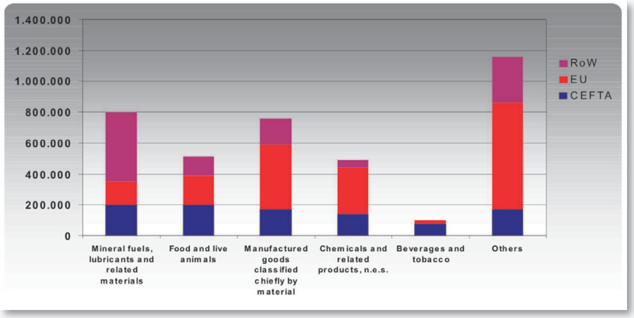
Source:
adjusted according to CEFTA, 2012, p. 6.

On the other side, considering according to import structure of Bosnia and Herzegovina economy, based on 5 leading industries from CEFTA 2006 countries, the mostly imported are mineral fuels, lubricants and similar products, food and live stock, products classified as materials, chemicals and similar products etc. (see Figure 4).

Figure 4.

Top five sectors in imports from CEFTA

Source:
adjusted according to CEFTA, 2012, p. 6.



Observing according to scope of trade exchange of agricultural and non-agricultural products in Bosnia and Herzegovina with country's of CEFTA 2006, it should be noticed that among country's members in the process of trade exchange dominate non-agricultural products compared with agricultural products. Comparing 1Q of 2011 vs. 1Q of 2012, there was recorded domination of non-agricultural products in relation with agricultural products in the process of exchange (see Table 4). Beside that, in total amount is evidenced decreasing of trade exchange with those members of CEFTA 2006 and rest of the world. The main reason for that situation is presence of economic recession in EU zone and in larger trade partners in the world.

Table 4. Bosnia and Herzegovina export and import of agricultural and non-agricultural products

Country	1H2011			1H20112		
	Agricultural products	Non-agricultural products	Total	Agricultural products	Non-agricultural products	Total
Albania	8,145	12,249	20,394	6,703	6,564	13,267
Bosnia and Herzegovina	0	0	0	0	0	0
Croatia	201,844	656,149	857,993	202,590	617,282	819,872
Macedonia	24,871	38,697	63,568	27,252	33,534	60,787
Moldova	180	952	1,131	293	935	1,228
Montenegro	10,850	78,661	89,511	10,884	64,044	74,928
Serbia	163,085	437,231	600,317	161,192	370,358	531,549
Kosovo	7,763	31,743	39,506	9,356	30,376	39,732
Rest of the World	377,535	3,808,787	4,186,322	373,076	3,812,204	4,185,280
CEFTA	416,739	1,255,682	1,672,421	418,271	1,123,093	1,541,364

Source: adjusted according to CEFTA 2006, 2012, p. 7.

In period January – May 2013, export amounted 3 billion and 464 million KM, that is for 10,8% more vs. same period of last year, whilst import amounted 6 billion 8 million KM, which is for 0,5% lower vs. same period of 2012. Coverage of import by export was 57,6%, while foreign trade deficit in goods amounted 2 billion 544 million KM. Export in CEFTA countries was 1 billion 23 million KM, which is for 4,6% more than same period of 2012, when import was 1 billion 362 million KM, that is for 7,6% less than previous year. Coverage of import by export was 75,1%. Import in EU countries was 2 billion 57 million KM, 10,3% higher than same period of 2012, while import was 2 billion 841 million KM, just 0,8% more than same period of previous year, Coverage of import by export was 72,4% (ASBIH, 2013).

4. Non-tariff barriers within CEFTA 2006

CEFTA 2006 is multilateral agreement on free trade which replaced 32 bilateral agreements on free trade on the territory of Western Balkan. Primary goal of CEFTA 2006 foundation was formation of free trade zone between country's of Western Balkan and Moldova until 2010. Agreement ensures trade liberalization of agricultural and non-agricultural goods and services and full protection of intellectual property rights. This agreement provides practice of fair competition and gradual liberalization of public procurements market in country's members. Under the term liberalization of trade exchange of non-agricultural products usually we consider annulling of all import tariffs which are not reconciled with the act VIII GATT from 1994, then complete elimination of export tariffs and measures with equivalent effects and all quantitive limitations and measures with equivalent effect.

Liberalization of trade exchange of agricultural products within agreement means elimination of tariffs and quotes as well as export subsidies. In the case that certain country continues with use of some export subsidies, other country's members have an opportunity to use barter trade tariffs in order to protect and implement the rules of fair competition on their markets. Country's members are obliged to apply rules of World Trade Organization regarding sanitary and phytosanitary measures. Also, agreement contains the rule on technical barriers within agreement of World Trade Organization and obliged its members to reconcile their national technical standards with World Trade Organization and EU until the end of 2010 (Kikerkova, 2010).

It is generally known that in international trade larger tariff liberalization of trade cause the growth of importance of non-tariff barriers. Non-tariff barriers among members of CEFTA 2006 commence due to fact that country's members are in different stages of reconciliation their regulatory rules with EU legislative. Those countries that advanced in standard harmonization with EU have an impact on other members to reconcile their legislative in short time manner, causing strength of trading flows. For that reforms processes there is necessity for time and resources (Zenic-Zeljkovic, 2011).

Members of CEFTA 2006 precisely defined deadlines for reconciliation (Jelisavac and Zirojevic, 2008):

- technical trade barriers - until 31.12.2010. members are obliged to harmonize and reconcile the process of procedure;
- competitiveness – until 01.05. 2010. – competitiveness principles begin to apply on all companies, involving state companies and those with special and exclusive rights followed by active participation of independent regulatory agency;
- public procurements – until 01.05. 2010. members will insure non-discrimination and equal treatment for all participants;
- protection of intellectual property – until 01.05. 2014 all counties must respect formerly adopted rules.

Non-Tariff Barriers involve wide spectrum of measures which significantly could influence on trading flows between members of CEFTA 2006 and in general. In non-tariff barriers we include technical barriers, sanitary and phytosanitary and administrative barriers.

Standards, technical acts and acts of compliance evaluation often cause technical barriers in trade. Governments introduce technical barriers for the purpose of achieving goals of public policy, including national security, health of nation, safety and environmental protection. Although, those acts are often the source of problem for trade directly and indirectly, especially when they are implemented disproportionately and are not directed to rightful goals. Those measures also cause deterioration of trading flows among countries when they are introduces unified and when they are not enough transparent and available to foreign producers (CEFTA 2006, 2012).

In order to offset or eliminate unnecessary technical barriers which impact on trade, World Trade Organization, through its agreement on technical barriers, intends to define rules, i.e. regulate procedures and avoid charging of unnecessary technical barriers. Most of countries in CEFTA 2006 are members of World Trade Organization and automatically accept defined rules. Simultaneously with mentioned process within EU, country's members completely reconcile technical barriers in order to strengthen its trading flows. Consequently, member of CEFTA 2006 intend to be a part of EU, as it is case with Croatia, which became the part of EU since July 1, 2013 I intend to annul non-tariff barriers, making important steps closer to EU. Those CEFTA countries which harmonized its infrastructural systems with EU automatically eliminate technical barriers between themselves and EU. Finally, task for all country's members of CEFTA 2006 is harmonization of trading system between each other, consequently with EU.

Implementation of technical barriers in trade often causes limitations in trade, although it is not the purpose of their existence in the most of cases. Technical barriers became very important tool for protection of domestic industry, bearing in mind that tariffs and quotes are annulled. But, implementation of technical barriers does not mean always limitations in trade. In some cases, technical barriers or standards and acts could initiate trade – but it is rare situation. Technical standards influence positive on strengthen consumer's confidence regarding imported goods, because imported goods should fulfill necessary standards and rules. Technical barriers influence also positive on exporters because they obtain necessary information about consumer's preferences, simultaneously decreasing costs of collection information of that type.

Institutional framework for standardization in CEFTA 2006 countries is on very low level, causing blocking trade with EU countries and between each other. Consequently, standardization of quality is cause of limitation trading flows within CEFTA 2006. Exporters mostly claim that standards are used as technical barriers in order to discourage trade, i.e. to protect domestic industry or producers from foreign competition. On the other side, domestic producers consider that standards are not used sufficiently (in terms of products quality) as technical barriers and in that way allow import of products with doubtful quality, creating unfair competition.

Based on the last CEFTA 2006 Report it is evidenced progress of all countries in term of infrastructure of standardization and regulation, representing one of the key factors for EU accession. Made progress in area of standardization is obvious, but not speed enough and comprehensive in order to provide mutually confession of quality standards between countries of CEFTA 2006. Harmonization of standards and processes of regulation consider adoption of European standards with simultaneously eliminating of technical barriers among member of CEFTA 2006 and EU. Despite of that, certain countries still stay behind in transferring technical rules from EU. In the process of transfer and adoption of technical rules and bodies for evolution of reconcile process from EU, among advancers are: Croatia, Macedonia, Serbia, Montenegro, while Albania, Bosnia and Herzegovina and Moldova should make addition effort. Bosnia and Herzegovina and other two mentioned countries, due to slow process of adoption rules from EU, are exposed to potential problems of export on CEFTA 2006 and EU markets. Because of retrogression in area of annulling trading barriers, trade exchange of Bosnia and Herzegovina is often below the potentially desirable level.

Country's members of CEFTA 2006 also intend to conduct harmonization regarding international voluntary standards that are very important for trading flows. By acceptation of international standards, products from CEFTA 2006 countries would be easier traded among members and EU countries. Implementation of international standards bring unique message regarding reconciliation of quality of products and services. Introduction of international standards has positive effects on attraction of FDIs and strengthen of trading flows. Those standards are especially important for less developed countries, because due to standards countries get the opportunity to export products on developed markets. Countries from CEFTA 2006 could not be proud regarding made steps in the area of international standards introduction. Croatia and Serbia are advancers in that process, although they are very far from European average. Other countries such as: Bosnia and Herzegovina, Albania, Montenegro, Moldova are behind in this process and from them it is expected speeding up the process in following year if they want to be closer to EU integration flows.

Countries from CEFTA 2006 executed mutual recognition adopted standards in last two years. Although, it can not be expected that process will be completed soon, because it is very sensitive field with complex process of legal regulation followed by non-existence of clearly defined time frameworks for their mutual recognition.

Table 5. Progress in Convergence to EU Standards

Country	European Standards (ENs) adopted		Conformity assessment bodies	
	2008	2009	2008	2009
Albania	14.424	15.029	n/a	16
Bosnia and Herzegovina	8.000	9.653	32	35
Croatia	10.695	21.368	123	145
FYR Macedonia	3.674	6.011	20	36
Montenegro	500	1.530	n/a	0
Serbia	2.805	5.072	325	347
Kosovo	665	1.200	0	4

Source: Hadzinski, B., et al, 2010, p. 24.

For the aim of tracking elimination of technical barriers within CEFTA 2006, there were used following indicators (CEFTA 2006, 2012):

- Institutional framework for standardization and foreign cooperation,
- Transfer of European technical rules in primary sectors,
- Adjustment of European standards in sectors defined as priority,
- Institutional framework for accreditation and foreign cooperation,
- Evaluation of reconciliation between infrastructure and procedures,
- Mechanisms of information and reporting.

Based on CEFTA 2006 Report for 2012, all countries reached positive shift measured by abovementioned indicators, in terms of elimination and reconciliation of technical trade barriers which are constraint for trade within countries from CEFTA 2006 and EU. In the Report is emphasized that Croatia, currently part of EU, reached the best performance. Former Yugoslav Republic Macedonia, Serbia and Albania are above the average for CEFTA, Montenegro is very close to average, while Moldova, Bosnia and Herzegovina and Kosovo are behind them significantly.

The second type of non-tariff barriers are sanitary and phytosanitary measures (common abbreviation – SPS). That group of measures or barriers, due to its nature, is considered acceptable because they are related to limitations which should ensure safety of food, animals and sanitary protection of vegetables. But rarely, that measures are used not just for mentioned situations, already they served for protection of domestic economy or for limitation of import from foreign countries. For the purpose of annulling sanitary and phytosanitary limitations, World Trade Organization intends, through agreement, to define and introduce international standards, guidelines and recommendations in order to discourage limitations of trading flows among countries. According to that, CEFTA 2006 members accept basic guidelines of World Trade Organization and recommendations of EU. In the first instance, they try to accept following agreements: risk evaluation (SPS measures should underlie on scientifically proved propositions); principle of equality (equal relations or treatment toward foreign and domestic exporters); reconciliation (there is a need for compliance with international standards, guidelines and recommendations) and transparency (SPS measures should be immediately published and available). For evaluation of sanitary and phytosanitary measures among CEFTA 2006 members there are used following indicators (CEFTA 2006, 2012):

- Institutional framework for SPS,
- Level of cooperation between SPS agencies within CEFTA 2006 and external levels,
- General rules on SPS measures,
- Transfer of European SPS measures, and
- Mechanism of information and reporting.

Cancellation of tariffs and quotes on agricultural products within CEFTA 2006 countries, sanitary and phytosanitary measures are intensively used as barriers in trade between country's members. Talking about sanitary and phytosanitary barriers, it is very important to stress that in the export structure of CEFTA 2006 countries dominate agricultural products. Export of agricultural products made more than a quarter of total export in CEFTA 2006. In export of agricultural products dominate Kosovo, Serbia, Macedonia (Handziski, et al, 2010).

CEFTA 2006 countries are obliged to have good coordination in the process of introduction of sanitary and phytosanitary measures. That considers that it would not be necessary to introduce those measures and that all countries would be informed in time. But, the largest problem in term of annulling of sanitary and phytosanitary measures is non-existence of clearly defined deadlines for their elimination. Countries which want to access to EU must on that path to eliminate mentioned measures. It is often that countries members unified introduce sanitary and phytosanitary measures, making harder for import products. Clear examples of introduction mentioned measures are done by Croatia, Serbia, Bosnia and Herzegovina etc. The most often complaints are related to inspections and checking of alimentary products, banning import of live stock, milk and products based on milk. Despite of that, countries members achieved significant progress in direction of convergence sanitary and phytosanitary measures. Especially are emphasized advancers in this area, such as: Croatia, Macedonia and Montenegro, whilst other countries are below the average.

Based on CEFTA 2006 Report for 2012 it is obvious that Croatia, ex-member, reached the largest progress. Former Yugoslav Republic Macedonia and Montenegro are above the average of CEFTA. Albania, Bosnia and Herzegovina and Serbia achieved similar result and they are very close to CEFTA average, while Moldova and Kosovo should conduct serious reforms in order to be closer to international practice.

Third group of non-tariff barriers is related to tariff and administrative procedures. Tariff and administrative procedures bring certain costs of business, which are inevitable due to its nature. But, some countries often introduce additional limitations on export and import of certain products, above defined measures, causing unnecessary business complication. As a result, there would be present counter-effect in term of reaching negative benefits from participation in international product chain and disincentiveness of foreign direct investments. Consequently, in order to avoid unnecessary costs and complicated tariff and administrative barriers, it should be conduct measures which will reduce cost of business, make procedures more transparent and act coherent, unbiased and unique administrative border demands, simplified of tariff system, harmonization of administrative requests, elimination of complicated procedures, implementation of international agreements regarding cooperation etc. (CEFTA 2006, 2012).

For the aim of annulling of administrative barriers in trade among members of CEFTA 2006, there are used following indicators for measuring of their elimination or harmonization (CEFTA 2006, 2012):

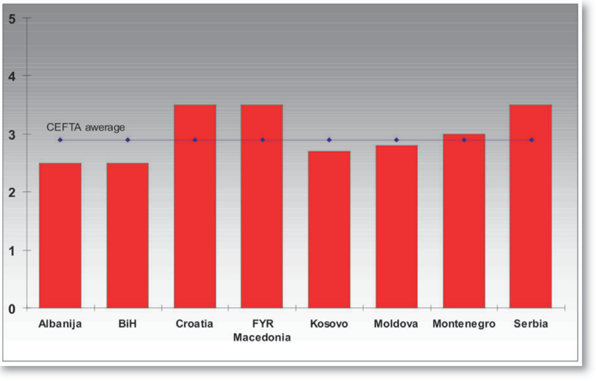
- Foundation of national tariff web page on which would be presented all information,
- Evaluation of tariff business,

- Participation in trade community,
- Improvement of rules,
- Complaint procedures,
- Fees and costs,
- Formality: documentation and electronic automation,
- Tariff procedures and processes, and
- Domestic and cross-border cooperation between agencies etc.

In term of administrative barriers CEFTA 2006 countries made progress regarding transparency and protection of enterprises rights abroad. Furthermore, all countries members published adopted laws and procedures in official gazettes and on Internet pages of authorized institutions. They apply the same business procedures toward domestic as well as toward foreign companies in institutional sense. It means that foreign companies could make complaints on made decisions on more levels, as it is case with domestic companies. In that sense, some members succeed in shortening of necessary time in arbitrage process. For example, Serbia need 6 weeks for arbitrage for domestic legal entities and 11 weeks for foreign legal entities, while in Montenegro described process lasts 45 days (Handzinski and Šestović, 2011).

Based on CEFTA 2006 Report for 2012, Croatia, Former Yugoslav Republic of Macedonia and Serbia made dynamic progress. But, Montenegro reached result that is a little above the average, whilst Albania and Moldova are close to CEFTA average. In the case of Bosnia and Herzegovina and Kosovo, there is a need for additional effort to append to progressive countries. Based on below presented graph, we could conclude that Bosnia and Herzegovina is on the bottom among countries within CEFTA 2006. Bosnia and Herzegovina's lapsed in the process of elimination of non-tariff barriers and non-conducting reforms has negative influence on trading flows and competitiveness position within agreement (see Figure 5).

Figure 5.
Total average mark for all 3 dimensions



Source: Adjusted according to CEFTA2006, 2012, p. 81.

5. Non-tariff barriers: case study of Bosnia and Herzegovina

CEFTA 2006 countries are faced with unified introduction of non-tariff barriers that could be source of trading tensions between them. All countries member, also Bosnia and Herzegovina, mainly emphasized presence of following non-tariff barriers within CEFTA 2006 (CEFTA 2006):

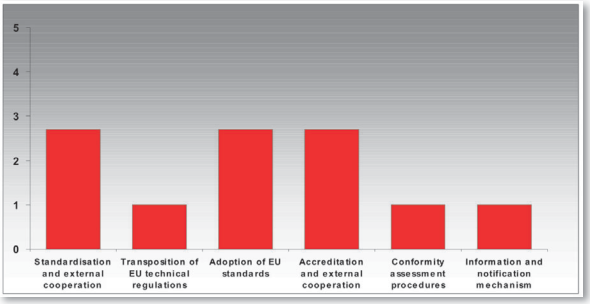
- Complicated procedures on custom border transitions, high bureaucracy and non-adjusted working hours of customs and inspection services (sanitary, veterinary, radiology);

- Lack of internationally recognized bodies for accreditation and certification and insufficient number of authorized laboratories and institutions;
- Non-recognition of quality certificates – agreements on mutual recognition of documents are not signed yet among countries in CEFTA 2006. Therefore, each country has its own control. Every shipment of goods is tested (samples) for two times on both borders;
- Problem of non-adjustment of domestic standards and technical rules with international standards;
- Lack of adequate transport and other infrastructure;
- Complicated regime of issuing licenses, corruption and smuggling.

Bosnia and Herzegovina is, in the area of technical barriers, reached certain results that are presented on figure 6. Progress is achieved especially in the field of standardization and outside cooperation, adjustment to EU standards, accreditation and outside cooperation. But, poor results are reached in the area of transferring or adoption of EU technical rules, adjustment or reconciliation of evaluation process and mechanism of information and reporting. For the purpose of elimination of mentioned deficiencies, Bosnia and Herzegovina should speed up the process of acceptation EU technical rules, strengthen physical capacities and competences and also appointed cooperative national mechanism for information and reporting.

Figure 6.

Result for technical barriers in trade - Bosnia and Herzegovina

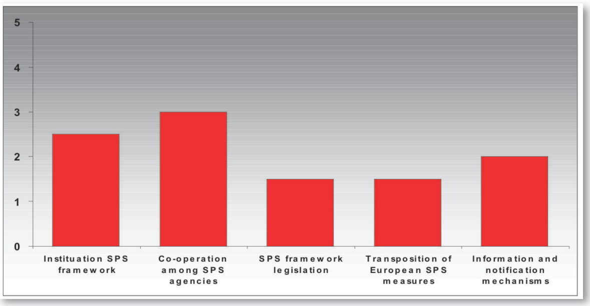


Source: adjusted according to CEFTA 2006, 2012, p. 90.

Bosnia and Herzegovina is, in the area of sanitary and phytosanitary barriers, reached good progress on cooperation between agencies for SPS. In the field of institutional framework of SPS is reached just a little progress. Also, there was recorded poor progress in the area of development mechanism of information and reporting, SPS legislatives, transferring of European SPS measures (see Figure 7).

Figure 7.

Result for sanitary and phytosanitary measures - Bosnia and Herzegovina

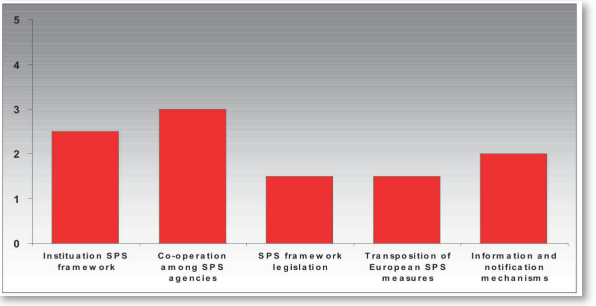


Source: Adjusted according to CEFTA 2006, 2012, p. 91.

In the field of administrative barriers Bosnia and Herzegovina reached certain progress, especially in the part of involvement in trading community and rules improvement. But, Bosnia and Herzegovina is poorly positioned in the field of development of national custom web, fees and costs, complaints procedures, documentations and automation, custom procedures and processes, domestic and cross-border cooperation between agencies and opinion polls. For the aim of speed progress in the area of administrative barriers Bosnia and Herzegovina should appoint on border pathways opinion polls on which will get information regarding trading rules and procedures. In the case of improvement of complaint procedure, it is necessary to provide right for complaint procedure against official body, which is responsible for decision-making. Strengthening of the automation process and reducing of necessary documentation should provide better cooperation with country's from CEFTA. In the field of legislature, there is need for changes in order to provide data processing ahead, just before product would be on the border. Also, it is necessary cooperation between custom and other relevant agencies which have clearly defined roles and responsibilities (see Figure 8).

Figure 8.

Total result for administrative barriers - Bosnia and Herzegovina



Source: Adjusted according to CEFTA 2006, 2012, p. 92.

Conclusion

Based on our analysis we confirmed that foundation of CEFTA 2006 improved trading position of Bosnia and Herzegovina in comparison with period within Stabilization Pact for South Eastern Europe. Bosnia and Herzegovina succeed with its membership in CEFTA 2006 to reduce trade deficit, in other words, coverage of import by export. After Croatia exit as of July 1, 2013 Bosnia and Herzegovina together with Serbia will become leading trading partners. According to that, we also validate that in the area of annulling non-tariff barriers countries in CEFTA 2006 made significant progress. Elimination of non-tariff barriers among country's members and accepting rules of World Trade Organization and EU directives means their faster integration toward EU and strengthening competitiveness position. In that sense, we determine that Bosnia and Herzegovina lapsed in term of acceptation EU directives which are related to annulling of non-tariff barriers. According to that, Bosnia and Herzegovina with that position diminishing its role in trade exchange with other country's members. Finally, we conclude that Bosnia and Herzegovina should make reforms, as other countries, in the area of technical, sanitary and phytosanitary barriers, if it wants to strengthen its competitiveness position and reach faster access to EU.

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DETERMINANTS OF FINANCIAL REPORTING QUALITY FOR LISTED ENTITIES IN MACEDONIA: EVIDENCE FROM FAIR VALUE ACCOUNTING

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Abstract

This paper examines the degree and quality of disclosures of financial information related to fair value by Macedonian listed entities and associations with several corporate attributes. An unweighted disclosure index comprising 51 disclosed information in audited financial statements of 32 listed entities for 2010 was composed. The association between the disclosure index of each company and various corporate characteristics (size, industry, ownership concentration, type of auditor, internationalization, leverage etc) was examined through multiple regression analysis. It was concluded that the size of the listed company, type of engaged audit firm and the leverage of the company are associated with the degree and quality of disclosed information on fair value. The research also reveals areas of improvement for listed companies reporting of fair value information in financial statements.

Keywords: *disclosures, fair value, financial reporting quality, company characteristics*

1. Introduction

The empirical study conducted in this paper examines determinants of disclosure practices related to fair value accounting for Macedonian listed companies in accordance to mandatory IFRS requirements. My goal was to study closely the requirements of IFRS related to fair value disclosures, construct an disclosure index and link index score with certain characteristics of listed companies such as size, industry, internationalization, leverage, ownership concentration, type of auditor and prospects for future growth. These characteristics being determinants of quality disclosure practices have been established in disclosure studies through explanations provided by several theories such as: the positive accounting theory (Watts & Zimmerman, 1978), the signaling theory (Ross, 1977), and legitimacy and institutional theory.

For the purpose of the research design, I took count of determinants of corporate disclosures analyzed in other studies such as Dumontier and Raffournier (1998), Street and Gray (2002), Glaum and Street (2003), Chalmers and Godfrey (2004), Lopes and Rodrigez (2007), but also considered the unique characteristics of Macedonian business and financial reporting environment. Since listed companies were sampled for the study, two specific independent variables were introduced in respect of the type of audit firm engaged and the concentration of ownership. As analyzed and further explained in the sample description section of this paper, the majority of Macedonian listed companies have concentrated ownership between few large shareholders and could not be defined as publicly owned. In terms of the audit market for listed companies, the majority of companies are not audited by "Big four" auditor, which is actually the case in almost all developed capital markets abroad. However, majority of Macedonian listed entities (66%) are audited by international network audit firm, and this fact again should be accounted and taken as one of the factors influencing the quality of financial reporting.

Based on the content analysis of audited financial statements of listed entities for 2010, I've identified common misstatements and omissions related to disclosure of fair value information and constructed the disclosure index for each company. Furthermore, I've developed a multivariate regression model linking disclosure index scores (dependent variable) and listed companies' characteristics (independent variables).

The remainder of the paper is organized as follows. Section 2 presents previous literature related to the determinants of disclosure and describes the development of the hypotheses. In Section 3 the research design is explained, including a description of the dependent and the independent variables. Section 4 discuses the sample selection process and its characteristics, the results of the content analysis of companies' financial statements including areas of disclosure deficiencies, and the results of the multivariate linear regression analysis. Section 5 summarizes main results and conclusions from the study.

2. Literature review

Different researchers emphasize different factors influencing quality disclosure of information in financial statements, however I highlight the relevance for the following as most relevant for my research:

- Size of reporting entities,
- Industry,
- Ownership structure,
- Type of auditor,
- Internationalization,
- Capital structure and financing.

Positive accounting theory provides arguments in respect of the size of entities and its relevance for disclosures in financial statements. According to Watts and Zimmerman (1986) political costs are higher for large companies, disclosing more information in order to increase confidence in their affairs. Large companies have superior information systems providing them with additional information at no cost. According to the proprietary cost theory developed by Verrecchia (1983) and Dye (1985) the management quantifies the costs and benefits of disclosing information and decides not to disclose if the costs exceed the benefits. According to the cost of capital theory large companies address capital markets more often in order to obtain financing. Increased transparency and voluntary disclosure of additional information reduces the overall company risk, improves the possibilities for raising capital and reduces the cost of capital (Diamond & Verrecchia, 1991). In respect of Macedonian financial reporting environment I expected that larger firms and commercial banks have more appropriate disclosures for the fair value in the financial statements. Therefore I express the first hypothesis:

H1. It is expected that larger companies will have superior levels of disclosures in comparison to smaller companies.

The industry in which the company operates can impact the motivation of the management to disclose more or less in the financial statements. According to Lopes and Rodriges (2007), firms that operate in the same industry are interested in providing the same level of disclosures as the competition, in order to avoid adverse connotation of their behavior and negative market repercussion. Furthermore, the pressure created by institutions can be observed as industry related. Therefore, I phrase the second hypothesis in relation to the industry as:

H2. Information disclosure practices are related to the type of industry of the company in question.

Auditors can play an important role motivating the management to disclosure more information. Usually big audit firms are associated with better financial reporting practices. According to DeAngelo (1981), big audit firms have large number of clients and greater motives to maintain their independence. Because of these reasons, they tend to report on misstatement in financial statements and incompliance with accounting standards disclosure requirements. Chalmers и Godfrey (2004) note that large accounting firms insist on appropriate disclosures in clients' financial statements in order to maintain reputation and reduce related risks and costs. It is usually argued that big audit firms possess greater expertise and knowledge on complex applicability of IFRS. Associated cost for implementation of IFRS and respective audits are lower for big firms in comparison to small or local audit firms. However, the empirical researches of associations between the size of engaged audit firms and the quality of disclosures in financial statements for different authors provide different results. Ahmed and Nicholls (1994), Wallace and Naser (1995 find a positive relationship between the size of the audit firm and the quality of disclosures in financial statements, however Firth (1979), Malone (1993), Ali et al. (2004) in their research find no evidence of statistically significant relationship.

Considering the audit environment in Macedonia, I was anticipating that the research will provide evidence of positive relationship between the appointment of a "Big Four" auditor and the level of disclosed fair value information in financial statements. Macedonian audit market has specific characteristic where significant market share is in possession of "Big Four" audit firms, in addition to large market share taken by former local firms who successfully joined international networks of professional accounting firms. Therefore, for this independent variable I have formulated two alternative hypotheses:

H3. The disclosure of fair value information is more appropriate for companies audited by "Big Four" audit firm.

H4. The disclosure of fair value information is more appropriate for companies audited by international network audit firm.

The ownership structure of the company influences the motivation of the management to disclose information and comply with regulatory requirements. According to the principle arguments of the agency theory largely distributed ownership structure (large number of small shareholders) results in greater request for information in order to enable shareholders to perform adequate monitoring of their investments (Jensen & Meckling, 1976). Several research studies provide empirical evidence supporting these claims. The research results verify the positive relationship between the level of information disclosure and the level of distribution of ownership structure, non-familiarity in ownership or the independence of the majority represented at board of directors (Chau & Gray, 2002; Ho & Wong, 2001; Prencipe, 2004). I predict for an inverse relationship between the ownership concentration and the quality of disclosed information in financial statements of listed entities.

H5. The quality of disclosures on fair value is expected to be lower for companies showing greater ownership concentration (owned by small number of shareholders).

Companies with greater internationalization in their operations are more motivated to disclose information, in order to present themselves more appropriate in front of different stakeholders. According to Cooke (1989), companies that operate in more geographical regions have superior management control systems due to the complexity of their activities. Sophisticated control and reporting systems provide information without additional costs. It is expected that these companies will provide more information in their financial statements.

H6 : The level of fair value disclosures is expected to increase as the internationalization in operations of the company increases.

The agency theory and cost of capital theory offer suitable explanation for the association of the capital structure and debt to equity ratio of the firm and the quantity of disclosed information in financial statements. Higher rates of leverage motivate companies to disclose more information in order to reduce agency costs, reduce information asymmetry and consequently costs of capital. This hypothesis has been set in empirical researches of Wallace and Naser (1995) and Tarca et al. (2013). However, authors are found in the literature hypothesizing in opposite direction, providing empirical evidence of inverse relationship between the leverage and information disclosure level (Abd-Elsalam & Weetman, 2003; Zarzeski, 1996). According to these authors, firms with high debt to equity ratios belong to financial systems dominated by the banks where dominant way of funding is through bank loans. In such system, capital markets are not considered as primary source of capital, therefore information on companies' activities are considered as part of the private relationship that each firm is building separately with its bank. General purpose financial statements are not considered as prime media that distributes accountability information. In my research, the hypothesis for the association between the leverage and degree of the disclosures on fair value is not limited on the sign, due to different directions of influence of this determining factor.

H7: The degree of disclosures on fair value depends on the leverage of the company.

3. Research methodology

The empirical research whose results are provided in this paper started with content analysis of audited financial statements of companies listed on the official market of Macedonian Stock Exchange for the year 2010. The objective was to identify accounting practices of disclosure of information regarding fair value and factors that are determining these practices. I took year 2010 as a referent financial reporting period, since at the end of 2009, International Financial Reporting Standard (IFRS) as published by International Accounting Standards Board (IASB) with effective date of January 1, 2009, have been translated and published for use in Macedonia. These standards were mandatory and to be used by all large and medium size entities in preparation of financial statements starting January 1, 2010. However Macedonian listed entities show different practices in applying financial reporting standards. Most companies prepare and publish financial statements according to IFRS as translated and published in Macedonia (i.e "statutory financial statements"). Some companies prepare and publish their financial statements according to updated IFRS as published by IASB, while some publish both types of statements. Because of these reasons, the differences in prepared financial statements and disclosed information because of different financial reporting frameworks applied are lowest for 2010. Additionally, I have reviewed the changes in IFRS published by IASB in 2010 and concluded that there were no changes in requirements related to disclosure of information on fair value. In 2010, IASB published IFRS 9 Financial instruments, standard that covers issues related to classification and measurement of financial instruments, but its mandatory use was prolonged for January 1, 2013.

In order to test the determinants of disclosure quality, I use a model in which the dependent variable is the disclosure index constructed on the basis on relevant requirements of IFRS 2009 for disclosure of information on fair values of different assets and liabilities. The index is composed of 51 disclosures connected to fair value and classified in 8 categories according to the accounting standard. The structure of the index is presented in the following table.

Table 1.1 The structure of disclosure index according to applicable accounting standards

Standard	**Name of the standard**	**Number of disclosures**
IFRS 2	*Share-based Payment*	5
IFRS 3	*Business Combinations*	4
IFRS 7	*Financial instruments: disclosures*	16
IAS 1	*Presentation of Financial Statements*	1
IAS 16	*Property, Plant and Equipment*	2
IAS 19	*Employee benefits*	2
IAS 28	*Investments in Associates*	1
IAS 36	*Impairment of Assets*	2
IAS 38	*Intangible assets*	3
IAS 40	*Investment property*	7
IAS 41	*Agriculture*	8
	Maximum number of disclosures	**51**

The constructed disclosure index is a dichotomous, unweighted and adjusted for disclosures which are not applicable for respective companies and their financial statements. Dichotomous means that each disclosure included in the financial statements or in the notes is assigned with the score 1 in the total sum for the index, otherwise the absence of applicable disclosure is scored 0. The total of the index for a certain company is calculated as:

$$T = \sum_{i=1}^{m} d_i$$

where што d_i is 1, if the information i is disclosed, otherwise 0; m being the maximum number of disclosures (m=51).

The total score is computed as the unweighted sum of the scores of each item. The implied assumption is that each item is equally important for all user groups. This assumption may not be realistic, but I think that the resulting bias is smaller than the one that would result from assigning subjective weights to the items. The majority of disclosure studies use this approach of unweighted indices (Chalmers & Godfrey, 2004; Cooke, 1989; Meek, Roberts, & Gray, 1995; Raffournier, 1997). The main argument for using this type of indices is related to the insignificance of the weighting, since different users of financial statements will determine different weighting factors for different disclosures dependent on their different needs. The end result, if different requirements of different users are respected, will be netting of different weighting factors and their opposite effects.

The disclosure index specifies the maximum number of individual fair value information to be included in financial statements, if the company is involved in transactions with all possible assets and liabilities. As a condition, this is highly unlikely to be satisfied, therefore each reporting company has unique transactions and economic events that generate specific portfolio of assets and liabilities. For example, it is highly unlikely for a listed bank to present biological assets in its financial statements. As a result, when valuing disclosures and determining disclosure index of each company, importance should be given to the applicability of disclosures. I have given appropriate consideration to the applicability of disclosures when the index was calculated in order not to decrease the result of the company for items that are not disclosed, and are irrelevant. Therefore, the maximum result for each company is determinable by the formula:

$$M = \sum_{i=1}^{n} d_i$$

where d_i is disclosed information; n is the number of disclosures applicable for the company (n≤51). The procedure for adjustment of the index has been applied in other relevant research papers (Cooke, 1989; Meek et al., 1995; Raffournier, 1997). The result for the index at each company as dependent variable is described through the following formula:

$$IndexOb = \frac{actual\ result\ in\ disclosures\ of\ the\ company}{maximum\ result\ of\ applicable\ results\ for\ the\ company}$$

According to the hypotheses give above, determinants of disclosures subject to testing are: the size of the company, the industry in which it belongs, the type of auditor, internationalization in operations, leverage and ownership concentration. The size of the company can be measured according to different criteria. According to the Trade Company Law, companies are classified as micro, small, medium or large, according to three criteria: total assets, total income and number of employees. In the model applied, the size of the company (SIZE) as continuous variable is measured according to two criteria: total income (TotInc) and total assets (TotAss) expressed in thousand denars. Usually these criteria for company size are used in other disclosure studies.

The industry to which the company belongs is defined as dummy variable (IND) that can take score 1 if the company belongs to the financial sector or 0 if the company belongs to non-financial sector. In the literature there is no unique way to categorize industries in order to make the best exploration of their effect on the quality of financial reporting. I believe that classification approach considered is best suited for the circumstances and the environment of the financial reporting process in Macedonia. The quality of financial reporting of Macedonian banks in general is superior in comparison to the financial reporting of commercial entities from other industries, as a result of the significant role of the Central bank of Republic of Macedonia as an effective regulator and supervisor of banks' operations.

The type of engaged audit firm is considered as dummy variable (AUD) , in this case scored 1 if the audit firm belongs to the "Big four" group (Deloitte, PWC, Ernst & Young, KPMG) or 0 if it is another audit firm. In my research of the type of auditor as determining factor of disclosure quality I've formulated an alternative model where the independent variable will take the score 1 if the audit firm is part of international network of professional firms. In that group, considering the Macedonian audit market, I've included local offices of Grant Thornton and Moore Stephens and I've reexamined the explanatory power of this variable.

Concentration of ownership (OWN) as independent continuous variable can inversely influence the degree of disclosures in financial statements. Macedonian capital market is characterized with the presence of small number of listed entities and high ownership concentration, even for listed entities which often act as family owned firms. The corporate governance environment is characterized with inappropriate separation of management and ownership of the company, where dominant shareholders often occupy top executive positions. In such companies, there is an absence of systems that will inform current and potential shareholders timely and correctly. The degree of internationalization (INT) is considered as continuous independent variable measured through foreign sales as percentage of total income.

Another independent continuous variable used in the study to explain the disclosure index of each company, is the leverage of the company (LEV). I measured this variable through the debt to equity ratio. I try to explain the quality of disclosures on fair value through another independent variable, and that is the ratio of company's fair value and its book value of total assets (GROWTH). This variable reflects market perceptions for the company's opportunities for growth. Greater the ratio, greater expectations for future growth exist (Gaver & Gaver, 1993; Smith Jr. & Watts, 1992). Companies that demonstrate greater growth are expected to disclose more information, because their agency costs and information asymmetry increase (Eng & Mak, 2003).

Based on explanations presented above regarding dependent and independent variables, the research model that describes the actual disclosure index is defined according to the following equitation:

$$IndexOb = \alpha_0 + \alpha_1 SIZE + \alpha_2 IND + \alpha_3 AUD + \alpha_4 OWN + \alpha_5 INT + \alpha_6 LEV + \alpha_7$$
GROWTH

where

Index Ob = is the disclosure index result of the company;

SIZE = log of total assets or log of total income

IND = dummy variable for the industry; 1 for financial companies, 0 for non-financial companies;

AUD = dummy variable for the audit firm; 1 for Big Four or International network firm, 0 for other audit firms;

OWN = percentage of ownership concentration for shareholders in possession of more than 5% of common shares;

INT = ratio of foreign sales/ total sales income;

LEV = ratio total debt/ book value of equity;

GROWTH = market value of the company or market capitalization/ book value of total assets.

4. Results

4.1 Sample selection and descriptive statistics

All companies listed on Macedonian Stock Exchange as at June 30, 2011 were considered for the sample used in this study. I've decided for this cut-off date, cause the majority of listed companies fulfill the requirement to submit audit financial statements for the financial 2010 by the end of june 2011. The total number of listed entities whose financial statements were subjected to content analysis was 33, however the final sample included 32 of them. One company was excluded, since its publicly available audited financial statements were incomplete (parts of the notes to the financial statements were omitted). The following table shows the industry distribution of the sample according to the predominant business activity of listed entities.

Table 1.2.

Industry distribution for sampled listed entities

Predominant business activity	N	%
Banking	4	12.5%
Manufacturing	11	34.4%
Hospitality	3	9.4%
Services	6	18.8%
Agriculture	1	3.1%
Construction industry	2	6.3%
Trade	5	15.6%
	32	**100%**

The descriptive statistic and analysis of the sample demonstrate interesting results. The analysis of ownership concentration of Macedonian listed companies shows the mean of 49.54% implicating that the ownership is concentrated within small number of dominant shareholders, while companies that are in essence publicly owned are in minority. In my sample 18 out of 32 companies had few dominant shareholders (owning more than 50% of shares with voting rights).

Table 1.3 Descriptive statistic of the sample

	N	Min	Max	Mean	S.D
Total assets (000 mkd)	32	119,371	70,830,806	5,493,156	12,502,690
Total income (000 mkd)	32	15,131	21,483,768	2,095,351	3,933,236
Foreign sales/total sales	32	0.00	0.62	0.12	0.19
Total interest debt/ equity	32	0.00	3.05	0.61	0.71
Market value/total assets	32	0.04	0.72	0.23	0.19
Ownership concentration %	32	5.94	94.07	49.54	23.88
Disclosure index	32	0.17	1.00	0.60	0.23

		N	%
Audit firm			
	„Big four"	6	18.8%
	Others	26	81.3%
Audit firm[2]			
	International network	21	65.6%
	Local firms	11	34.4%

*Standard Deviation

The data on ownership concentration were analysed from the notes to the financial statements for 2010, however financial statements of 5 listed entities included no information of ownership concentration. For these companies the data was provided in the database of the Central Depository for Securities showing ownership concentration among shareholders with more than 5% ordinary shares as at December 31, 2010.

Considering the type of engaged auditor, only 6 out of 32 listed companies engaged "Big four" auditor, which makes the Macedonian audit market as untypical. Many research papers on foreign audit markets investigating different issues and problems related to the audit, report market share above 70% of listed companies audited by "Big four" audit firm (Dumontier & Raffournier, 1998; Hassan & Mond-Saleh, 2010; Lopes & Rodrigues, 2007). However, the picture on audit market share concentration changes if audit engagements in listed companies are analyzed for all audit firms that are part of international network of firms. In this case 65.7% of all listed entities are audited by an audit firm which is part of international network ("Big four" plus Grant Thornton and Moore Stephens).

As it can be analysed in table 1.3, on average Macedonian listed entities disclosed 60% of applicable information on fair value in their financial statements. Individual transparency of each listed company varies from 17% to the maximum 100% of applicable disclosed information. I've further analyzed the disclosure index according to the accounting standard imposing the disclosure requirements. Analysis of the statistic presented in table 1.4, shows that for all listed entities the requirements of IFRS 7 Financial instruments: disclosures and IAS 1 Presentation of financial statements were applicable. The companies have been most successful with the disclosures of fair value as per the requirements of IFRS 3 Business combination and IAS 40

Investment property. The requirements of IFRS 7, that took major part of the whole disclosure index (16 out of 51 total information disclosures) were partly satisfied, i.e. companies on average disclosed 52% of applicable information.

Table 1.4. Disclosure index statistics according to the applicable IFRS

Disclosure index		Number of companies	Mean	max	min	S.D
IFRS 2	*Share-based Payment*	0	0.00	0.00	0.00	0.00
IFRS 3	*Business Combinations*	1	1.00	1.00	0.00	0.18
IFRS 7	*Financial instruments: disclosures*	31	0.52	1.00	0.00	0.28
IAS 1	*Presentation of Financial Statements*	32	1.00	1.00	1.00	0.00
IAS 16	*Property, Plant and Equipment*	2	0.25	0.50	0.00	0.09
IAS 19	*Employee benefits*	0	0.00	0.00	0.00	0.00
IAS 28	*Investments in Associates*	3	0.33	1.00	0.00	0.18
IAS 36	*Impairment of Assets*	0	0.00	0.00	0.00	0.00
IAS 38	*Intangible assets*	0	0.00	0.00	0.00	0.00
IAS 40	*Investment property*	5	0.67	1.00	0.00	0.28
IAS 41	*Agriculture*	2	0.50	0.67	0.00	0.13

The analysis of disclosure index according to the industry of listed entities and the type of engaged auditor, presented in table 1.5, reveals interesting information on average transparency of. Greatest transparency in respect of fair value information is shown by companies with predominant banking or trade business activity. Banks show smallest difference in the quality of disclosure practices compared within their industry (as analyzed through the lowest standard deviation of the index). Furthermore, my analysis of the disclosure index as per the type of engaged auditor illustrates that listed companies with "Big four" auditor have largest score for the index, with smallest difference in disclosure levels (standard deviation = 0.17). The differences in disclosure quality change when listed entities are observed as being audited by international network firm in comparison to being audited by local firm (disclosure index of 0.69 compared to 0.43, respectively). Based on these figures it can be concluded that audit firms part of international network drive towards improvement of the quality of financial reporting in Republic of Macedonia.

Table 1.5.

Descriptive statistics of disclosure index for independent variables industry and type of auditor

Industry	**Mean index**	**S.D**
Banking	0.63	0.06
Construction	0.60	0.04
Agriculture	0.57	0.00
Manufacturing	0.61	0.25
Trade	0.71	0.25
Hospitality	0.46	0.27
Services	0.55	0.29
Type of auditor	**Mean index**	**S.D**
„Big four"	0.72	0.17
Others	0.58	0.23
International network	0.69	0.18
Others	0.43	0.20

4.2. Content analysis results

The content analysis of audited financial statements of listed companies for 2010 allowed for construction of the disclosure index, however it provided interesting insights into areas of disclosure where companies are not complied with IFRS requirements.

I have identified several misstatements and omissions usually made by Macedonian listed entites when disclosing information regarding fair values:

1) In accordance with IFRS 7, for each class of financial assets and liabilities, entities should disclose the fair value of that class of assets and liabilities in an way suitable for making comparisons with the carrying amount. Only 42% of Macedonian listed companies have disclosed comparison of fair and book values. IFRS 7 allows for non-disclosure if fair values approximate book values or fair value can't be measured reliably. If the fair value can't be measured reliably, the company still has to disclose information that will enable users to perform judgment independently on possible differences between fair and book values. Only few companies that didn't disclose comparison disclosed information that fair values approximate book values. None of the companies that disclosed information about impossibility to measure fair value, provided additional required information to enable users of financial statements to perform judgment on possible differences between book and fair values.
2) According to IAS 16, if property, plant and equipment are recognized at revalued amounts, the company should disclose the methods and significant assumptions used in estimating fair values. The company should also disclose the extent to which fair values were determined directly by reference to observable prices in an active market or recent market transactions on arm's length terms or were estimated using other valuation techniques. Only two analysed companies used the revaluation method for property, plant and equipment. In both cases full disclosures are not made for the methods and assumptions used in estimating fair values, nor are information disclosed referring to the prices from an active market.
3) For investments in associates (ownership between 20% and 50%) IAS 28 requires disclosure of fair value if information exists on publicly quoted prices. Only one of three listed companies for which such disclosure was applicable has disclosed the information.
4) The assets portfolio of five listed companies included investment property. This is a property that is not used for the primary business activity, but the business model for the property is lease. Only one listed company in accordance to IAS 40 has chosen to measure investment property on the basis of fair value. Incompliant to the requirements of the standard, the company didn't disclose adequate information on methods and assumptions used in arriving at fair value, including statement that the fair value was estimated with market data or considering other factors due to the nature of the property and absence of observable market data.
5) In the group of sampled listed companies, two companies reported biological assets in their portfolio according to the requirements of IAS 41 Agriculture. The two companies failed to disclose information on the amount of fair value less selling cost estimated at the harvest point. One of the companies valued part of its biological assets at cost, failing to provide explanations why the fair value can't be measured reliably.

4.3. Regression results

OLS simple regressions were estimated to check for unvariate relationships between the disclosure index and each variable. The results obtained are presented in table 1.6. For each explanatory variable data is provided on the appropriate regression coefficient and t- statistic. The explanatory power of the model is evaluated in two alternatives (Model A & B) depending on different proxies for the type of auditor (“Big four” or “International network). If correlation coefficients are analysed for the different independent variables in the model it can be concluded that there are high coefficients between the proxies for the size of the company: total assets, total income, logarithms of the absolute figures. Multicollinearity, i.e. the existence of separate linear regression between independent variables can be a problem and result in inappropriate or biased conclusions for the linear regression model. Therefore, all these proxies should not be used in the same time in the model when estimating regression coefficients. In order to cover for this problem, I took the approach previously applied by Cooke (1989). I’ve repeated the regression analysis by changing the proxy for the audit firm (Model A where the classification is “Big four” or other and Model B where the differentiation is between international network firm and others). Also, using the Durbin-Watson statistic I checked for autocorrelation in order to be certain that errors (residuals) of the model are not correlated to each other and have different variance.

Based on the results of the two regression analysis, three of the hypothesis can be statistically confirmed. The first hypothesis H1 according to which there is positive relationship between the size of the company and the degree of disclosures of fair value in financial statements is confirmed at 5% significance level ($p \leq 0.01$). The finding is consistent to the findings of Chalmers and Godfrey (2004), Ahmed and Nichols (1994) and Wallace and Naser (1995), whose empirical research provided evidence for positive relationship between the size of the companies and the quality of disclosed information on financial instruments.

The fourth hypothesis H4 according to which disclosures for fair value are expected to be better for companies audited by an audit firm part of international network, is statistically confirmed at 1% significance level ($p \leq 0.01$). My findings are consistent with the research results of Hodgdon et al. (2009), Glaum and Street (2003) and Street and Gray (2002), providing evidence of significant positive relationship between the compliance with IAS requirements and type of engaged auditor.

At lower level of statistical significance of 10% ($p \leq 0.1$) the empirical research provided evidence for the hypothesis H7, meaning that there is correlation between the leverage of the company and the degree of disclosures for the fair value. These findings are consistent with the research results of Abd-Elsalam and Weetman (2003) that provided evidence of correlation between the leverage of Egyptian companies and the level of disclosure of information in their financial statements.

Table 1.6. Regression analysis

Model A (SIZE = log total assets; type of auditor= “Big four”)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Intercept	0.887765	0.623936	1.422847	0.1676
BIG_4	0.011025	0.154726	0.071255	0.9438
LEV	0.17822	0.07814	2.280795	0.0317
IND	-0.072474	0.181588	-0.399112	0.6933
INT	-0.003685	0.246116	-0.014971	0.9882
LOGTOTASS	-0.03964	0.095947	-0.413141	0.0032
GROWTH	0.060824	0.228628	0.266038	0.7925
OWN	-0.003028	0.002068	-1.46453	0.156

R-squared	0.243488
Adjusted R-squared	0.022839
Durbin-Watson stat	2.236637
F-statistic	1.103506
Prob(F-statistic)	0.392533

Model B (SIZE = log total assets; type of auditor= "International network")

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Intercept	0.832353	0.518666	1.604794	0.1216
Int net	0.257238	0.078933	3.258945	0.0033
LEV	0.143975	0.058723	2.451759	0.0219
IND	-0.10722	0.135594	-0.79077	0.4368
INT	-0.11134	0.199416	-0.55832	0.5818
LOGTOTASS	-0.06387	0.080098	-0.79743	0.0433
GROWTH	0.140472	0.185504	0.757246	0.4563
OWN	-0.00178	0.001727	-1.03085	0.3129
R-squared		0.475455		
Adjusted R-squared		0.322463		
Durbin-Watson stat		2.16231		
F-statistic		3.107704		
Prob(F-statistic)		0.017614		

5. Summary and Conclusions

The purpose of this paper was to analyse the disclosure practices of Macedonian listed entities in relation to fair value accounting and determine factors that influence the quality of disclosures, hence the quality of financial reporting. The results of the empirical research show that the quality of disclosed information in the financial statements depends on the size of the company, its leverage and the type of engaged auditors, while internationalization in operations, ownership concentration, industry and growth expectations are irrelevant for the quality of disclosed information.

All IFRS requirements related to disclosure of fair value information were taken into consideration, while the content analysis of audited financial statements of Macedonian listed entities showed the applicability of the requirements. The results of the content analysis facilitated the conclusions in respect of typical omissions of misstatements when disclosing information on fair value. Financial statements of Macedonian listed entities lack information on methods and assumptions used in estimation of fair value, information that will support users' judgment when fair value can't be measured reliably or information on observable market prices and the extent of their use to estimate fair values.

The design and the results of the empirical research on determinants of disclosure quality are limited by the immanent disadvantage of small official market of the Macedonian Stock Exchange. Only 32 listed companies were included in the sample, limiting the number of independent variables taken into consideration when the model was constructed.

The results and conclusion of this paper could be used in designing future research models investigating issues related to:

- determinants of the quality of financial reporting practices in Macedonia;
- determining the level of compliance and factors influencing compliance with IFRS (basis for future disclosure index studies);
- comparative research and analysis of comparability of financial statements of Macedonian companies versus companies from other countries (disclosure indices are used to evaluate comparability of financial statements of entities operating in different regulatory and business environments).

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THE ROLE OF MACROPRUDENTIAL MEASURES IN TERMS OF GLOBAL ECONOMIC CRISES – THE CASE OF THE REPUBLIC OF MACEDONIA

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Abstract

The global financial and economic crisis has revealed the lack of an analytical framework that can help in predicting and dealing with growing global financial imbalances, which can cause serious macroeconomic consequences. If we make a general retrospective of the global crisis, we will determine the fundamental shortcomings in understanding the systematic risk - in fact it is a failure to assess how the aggressive risk taking by various types of financial institutions was the reason for the huge growth in the balance in the entire financial system. Excessive confidence in the ability of self-adjustment of the financial system led to an underestimation of the rising values of debt and leverage, as a result of the credit boom and the increase in the prices of assets. In addition there was an insufficient appreciation of the role of financial innovation and the financial regulation in increasing financial imbalances and the consequences of the real economy.

The global crisis was the reason for the revision of the broad policy instruments and measures. In this respect, today's crisis pointed the need to overcome the purely micro-founded approach to financial regulation and supervision and to attract particular attention to the defining of the development of macroeconomic policy elements for financial stability. Policy makers came to a consensus that the purpose of the macroprudential policy is a reduction of the systematic risk, strengthening the ability of the financial system to cope with shocks and a strong support for stable financial system functioning, without the enormous support during the crisis.

This paper will be focused on several key issues concerning macroprudential policy: defining the goals of macroprudential policies after the global financial shock; overview of the use of macruprudential measures during the crisis; analysis of the implementation and efficiency of macruprudential measures during the crisis; reasons for cooperation with monetary policy; analysis of the above mentioned issues on the case of the Republic of Macedonia, having in mind the country specific characteristics – small and open economy extremely vulnerable to global imbalances, fixed exchange rate regime.

Keywords: *crises, risk, measures, macroprudential policy, imbalances, debt*

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Introduction

The global financial and economic crisis has point out the lack of an analytical framework that can help in predicting and dealing with emerging global financial imbalances, showing that they can cause serious macroeconomic consequences . If we make a retrospective, we can detect some fundamental flaws in the understanding of systematic risk. In fact, it is a failure to assess how aggressive risk taking by different types of financial institutions - against the background of robust macroeconomic performance and low interest rates - was a cause for huge growth in balances across financial systems. Excessive confidence in the self-adjustment ability of the financial system led to an underestimation of the growing value of debt and leverage, resulting from the credit boom and the rise in the prices of assets (especially real estate) –reflected in the historically lowest level of volatility in prices of assets and risk premium. In addition, there was an insufficient understanding and considering of the role of financial innovation and regulation in the creation of the financial boom, financial imbalances and strong consequences for the real economy (see Galati and Moessner, 2011) .

The global crisis was the reason for the revision of a broad toolkit of measures and policies. In many cases microprudential supervision failed to provide sufficient levels of capital and liquidity for financial institutions, in order to successfully deal with the shock. The effectiveness of monetary policy in dealing with systematic financial risk in terms of stable inflation, initiated a wide debate. In this respect, the present crisis has underlined the need to transcend/surpass the purely micro founded approach to financial regulation and supervision and to point out the need for significant attention to be put on the development and defining the element of macroeconomic policy for financial stability. Policymakers came to a consensus that the purpose of the macroprudential policy is reduction of systematic risk, strengthening of the financial system in dealing with shocks and providing help for stable functioning without the enormous support received in terms of crisis (see Committee on the Global Financial System, 2010).

Analysis of the macroprudential policies in terms of the global crisis in most cases (as in this paper) can be presented in several parts: the definition of their objectives, set of measures, when and how to use the measures, implementation and effectiveness in dealing with financial and economic shocks and their relation to monetary policy.

Significance and role of the macroprudential policies

Macroprudential policies seek to ensure financial stability by reducing systematic risk. Systematic risk arises from relationships within the financial system, as well as from its interaction with the real economy through cyclical movements. It can be defined as: a serious break of the provision of financial services due to a disorder in whole or in parts of the financial system, which has the potential to cause serious adverse consequences for the real economy (the definition is derived from the joint work of IMF, BIS, FSB). The key role of macroprudential policies represents the dynamic aspect of the systematic risk - "cyclicity". Financial imbalances are created in the "good times", when leverage increases, and financial institutions become too/over exposed to more correlated (or aggregate) risks. Moreover, the macroprudential policies seek to prevent the creation of structural weaknesses/gaps that contribute to higher systematic risk (this is rooted in "agency problems"- a moral hazard/adverse selection and problems of collective actions). Examples: the process of securitization where misguided incentives contributed to the destruction of credit standards and transparency of financial derivatives; inadequate arrangements for implementation and settlement of transactions on derivatives markets, considering the enormous growing market for this securities; inadequate regulation/supervision, treatment of financial institutions (Lehman, AIG and others) where the process of growing financial imbalances made this institutions too important to fail; big increase in complexity and connectivity in the financial system contributed to the decreasing transparency in distribution of risk and spread the shocks through the financial system (see IMF, 2010 ; Caruana, 2010).

Macroprudential policies focus on the interactions between financial institutions, markets, infrastructure, and the wider economy. In determining the practical purposes of macroprudential policies we can indicate two points : First, strengthening the resilience of the financial system to economic downturns (negative trends) and other negative aggregate shocks; Second, actively restricting and limiting the increase of financial risks (see BIS, 2010).

Cyclical increase of the financial imbalances is mainly due to the increase in credit risk, liquidity risk and market risk. Macroprudential policies can be used to deal with these growing risks in the economy as a whole, to increase the resilience of the financial system and to enable (uninterrupted) providing financial services within the economy. Detailed structure of the set of measures see table below (see more IMF, 2010; BIS, 2010).

Table 1

Macroprudential instruments by vulnerability and financial system component

		Financial system component				
		Bank or deposit-taker		Non-bank investor	Securities market	Financial infrastructure
		Balance sheet*	Lending contract			
Vulnerability	Leverage	• capital ratio • risk weights • provisioning • profit distribution restrictions • credit growth cap	• LTV cap • debt service / income cap • maturity cap		• margin/haircut limit	
	Liquidity or market risk	• liquidity / reserve requirements • FX lending restriction • currency mismatch limit • open FX position limit	• valuation rules (eg. MMMFs)	• local currency or FX reserve requirements	• central bank balance sheet operations	• exchange trading
	Interconnectedness	• concentration limits • systemic capital surcharge • subsidiarisation				• central counterparties (CCP)

* Capital and other balance sheet requirements also apply to insurers and pension funds, but we restrict our attention here to the types of institutions most relevant for credit intermediation.

CGFS – Macroprudential instruments and frameworks: a stocktaking of issues and experiences

Source: Committee on the Global Financial System, 2010

These policies limit the financial macro-relationship (feedback) in good as well as in bad times. First, they can reduce the rising financial imbalances during periods of expansion and reduce the chances aggregate levels of credit to become unstable. Second, buffers (capital) for absorbing losses provided in good times can be used during periods when economies characterize negative trends, without compromising the capacity for lending. Finally, by limiting the scope of the vulnerabilities in the financial system, these policies also significantly reduce the likelihood of systematic risk increasing and materializing in crisis (see IMF, 2010). To ensure effective functioning of macroprudential policies they should be targeted to all related institutions which are of systemic importance for the economy. All institutions with increased leverage which provide loans, can become extremely vulnerable if macroeconomic conditions deteriorate, and their collective decisions will affect the level of aggregate loans in the economy. In some jurisdictions macroprudential policies cover all licensed depository institutions (banks). In others, they include other financial intermediaries such as leasing companies, credit unions, funds on the money markets, investment banks etc. (see wider Nier, 2009)

The structure of the macroprudential instruments in terms of the global economic crisis

The global economic crisis was a challenge for macroeconomic policy and a cause for extensive and detailed analysis of policy instruments in the wake of the financial/economic crisis as well as in the aftermath of the financial imbalances. Thus a number of countries used more frequently a wide number of instruments in order to put the systematic risk in the financial sector under control. The set of instruments contained in the dominant part prudential measures, but also a small number of other measures that are typical for other policies, including fiscal, monetary, foreign exchange policy and even administrative measures. A survey, conducted by IMF, for the financial stability and macroprudential policies (IMF Financial Stability and Macroprudential Policy Survey, 2010) showed that 10 instruments are commonly used to achieve the macroprudential goals (for details see IMF, 2011):

- Loans oriented: setting an upper limit (ceiling) on ratios loans – to - value (LTV), a ceiling on the ratios debt-to-income (DTI), an upper limit on borrowing in foreign currency and an upper limit (ceiling) on credit or credit growth .
- Liquidity oriented: limits on net open currency positions/currency mismatch (NOP), limits the mismatch of maturity and mandatory reserves
- Capital oriented: countercyclical/time related standards for capital, dynamically provision and restrictions on the distribution of profits.

Research has shown that these instruments are used to manage the four categories of systematic risk: the risk generated by strong credit growth and rising asset prices caused by the credit growth, the risk resulting from excessive leverage in the financial sector and its efforts to reduce, systematic liquidity risk, risk related to large and volatile capital flows, including foreign currency borrowing . According to the IMF analysis, starting from 2008 two-thirds of respondents used various instruments to achieve macroprudential goals. Developing countries used much more macroprudential policies before and after the crisis compared to developed economies. But today's economic crisis led an increasing number of developed countries to improve their macroprudential formal framework and to increase the number of macroprudential instruments in their policy set.

A number of factors are relevant for the choice of the macroprudential instruments (see Lim et al., 2011):

- The degree of economic and financial development - generally developing countries more often and more widely used these instruments, due to a higher risk of failure of the market at a time when financial markets are underdeveloped and banks dominate in the system. Developing countries are more concerned about the systematic liquidity risk and use liquidity oriented measures, while developed economies favor measures for controlling (targeting) credit (although some of them began to use liquidity oriented measures after the crisis).
- Foreign exchange rate also has a role in selecting macroprudential measures - countries with fixed exchange rate tend to use more macroprudential instruments because in this monetary regime the role of interest rate policy is limited. These countries often use credit-oriented measures (ceiling on loans –to-value and ceiling on credit growth) in order to manage credit growth in terms of a limited role of the interest rate. They also tend to use liquidity-oriented measures (limits on net open currency positions/currency mismatch) to manage the risk of external financing.
- The type of shock is an important variable in the process of selection of macroprudential instruments - capital inflows in many developing economies are characterized as shocks and many of them use credit-oriented measures to control credit growth as a result of inflows. Unlike other instruments that are oriented to the size and composition of flows, macroprudential instruments are directly aimed at the negative consequences of inflows (excessive leverage, credit growth and exchange rate cause credit risks that are systematic) .

Characteristics and the effectiveness of macroprudential policies in terms of the global economic crisis

Especially important for our analysis of the macroprudential policies in crisis are the characteristics of their use and their efficiency in dealing with established goals. Analysis/survey conducted by the Committee on the Global Financial System (CGFS) on 33 central banks in late 2009, showed that macroprudential measures and interventions were widely used. They targeted a wide field of problems arising from financial system and behavior, on the aggregate level as well as on specific levels and sectors. Dominant part of the economies have a wide concept of what constitutes macroprudential policies, their aims were quite different, and the highest complementarity is seen with monetary policy . The dominant part of macroprudential policies within countries are at an early stage of their development (which was significantly increased with the emergence of the global crisis). They are implemented through the use of existing microprudential monetary policy and policies for managing liquidity and existing institutional infrastructure. Macroprudential interventions in this situation took the form of adjustment or addition to the instruments already used for microprudential and liquidity purposes. To date most experiences with these policies are based more on self assessment and discretion rather than on rules in their usage. Rresearch also shows that most macroprudential policies are used to limit credit growth in certain sectors that are seen as potentially dangerous to excess aggregate credit growth (in particular real estate investment and development). Part of developing economies policies use reserves management as prevention of increasing domestic imbalances caused by capital inflows. Measures which are targeting the size and structure of the balance sheets of financial institutions for macroprudential purposes are rarely used, with the exeception of dynamic provision (reservations) used for years in Spain (see Committee on the Global Financial System, 2010).

In today's global financial and economic crisis, an exhaustive analysis/survey for the use of macroprudential policies on a global lavel (48 countries) is conducted by IMF (IMF Financial Stability and Macroprudential Policy Survey, 2010). Summarized conclusions concerning the use of macroprudential instruments are as follows (see beyond Lim at al., 2011):

- experiences of countries show that a combination of several instruments is frequently used in order to influence a particular risk;
- many instruments, especially those aimed at lending, were calibrated to target specific risks (size, location, type of obligations, currencies, etc.)
- a common practice represents counter-cyclical adjustment of instruments;
- design and calibration of the instruments is very often based on discretion rather than rules;
- macroprudential policies are sometimes used together with other macroeconomic policies (monetary and fiscal).

The effectiveness of macroprudential policies is a particular challenge for analysis. To date there are a limited number of empirical analyzes concerning the effectiveness of macroprudential instruments, that should be a foundation on which their further development and use should rest (see Turner, 2010). Empirical analyses pertaining in this scientific field dominantly are focused on the effectiveness of individual instruments, and only a limited number of studies are focused on the effectiveness of a wide set of instruments. According to the IMF, the macroprudential policies are effective in the largest number of countries which used these policies during the crisis. In order to determine the effectiveness of these policies, IMF apply three useful research approaches (see beyond IMF, 2011). The study of Borio and Shim (2007) investigated a number of cases in which policy makers use macroprudential policies (see more Borio and Shim, 2007). A recent IMF study analyzes the effectiveness of macroprudential instruments using the three approaches in order to address the various aspects (see more Lim at al., 2011): a case study to determine achieving goals in certain countries, easy access to see the effect of targeted variables before and after the use of instruments, and more sophisticated approach of panel regression. The summarized conclusions of the three approaches show that: most of the instruments (10 analyzed) in various degrees are efficient (within specifications economies), a significant evidence that the level of economic development, the exchange rate regime and the size of the financial sector affect the performance of the instruments is not found; macroprudential instruments are effective in limiting the correlation between credit and GDP growth, the combination of instruments causes lower cost on welfare, rather than a specific use or macroprudential and monetary policies.

The relationship of monetary and macroprudential policy

The central banks can provide expertise and information as well as a strong incentive to increase the efficiency of macroprudential policies. The expertise of the monetary authorities in the analysis of systematic risk and macro - financial relations is very useful in calibrating macroprudential policies. Monetary authorities also have a strong interest in design and effective application of macroprudential instruments, either directly or indirectly responsible for them (see beyond Nier, 2009). There are several reasons for their interdependence and synergy (see IMFa, 2010): 1) ineffective macroprudential instruments can increase the burden on monetary policy to reduce the increasing financial imbalances in normal times; 2) ineffective macroprudential policies also increase likelihood that the central banks will need to provide emergency liquidity to deal with systemic shocks that could potentially adversely affect their balance and complicate the conduct of monetary policy; 3) the use of macroprudential policies affects the transmission mechanism of monetary policy, either in crisis or normal times. Thus, much work remains to develop institutional arrangements to support macroprudential policies, including to ensure the independence of the monetary policy framework. Also technical cooperation between the functions of macroprudential and monetary policy should be provided, regardless of different institutional arrangements in different countries (see detailed Borio and Shim, 2007; Borio and Drehmann 2009 ; Trichet, 2010 ; IMFa, 2010 ; Galati and Moessner 2011).

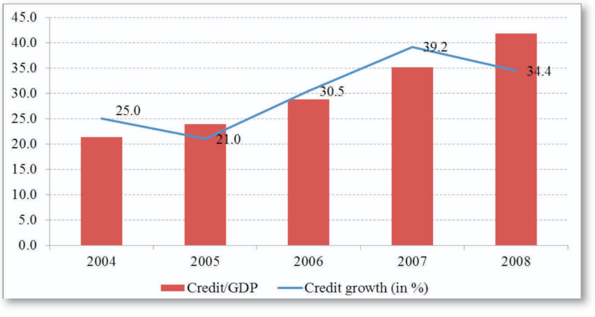
Macroeconomic ambient, risks and impact of the crisis on Macedonian economy

In the years before the the global financial and economic crisis Macedonian economy realized relatively good performances. The average annual GDP growth rate in the five years before the global financial crisis was about 5% - historically one of the highest rates of economic growth. Besides the strong external demand for Macedonian goods and services, the credit growth was one of the main driving forces of the domestic demand that realized a significant growth. The credit growth in the banking system had intensified since 2004, thus increasing significantly the share of total credits to the private sector to GDP – from around 21 percent in 2004 to around 42 percent in 2008 (Chart 1). The average annual credits growth rate in the period 2004-2008 was around 30%, or the credits to the private sector in this period increased by more than 3.5 times.

Chart 1

Credits to the private sector in the pre-crisis period

(annual growth rate and % of GDP)



Source: NBRM and SSO.

One of the main structural features of the Macedonian financial system is its relatively simple and poor structure with dominant role of the banking institutions. The most of the banking activities are financed from domestic sources (primarily deposits of residents), indicating a low correlation with the global financial market (Chart 2). This along with relatively low financial intermediation and conservative business policy banks (larger amount of deposits in relation to loans - Chart 3) helped the banking system to maintain stability amid the global financial turbulence.

Chart 2 Structure of banks liabilities

(in Denar million)

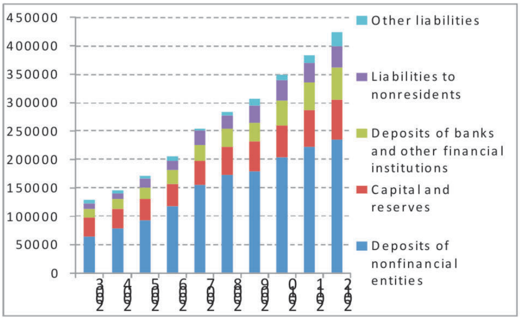
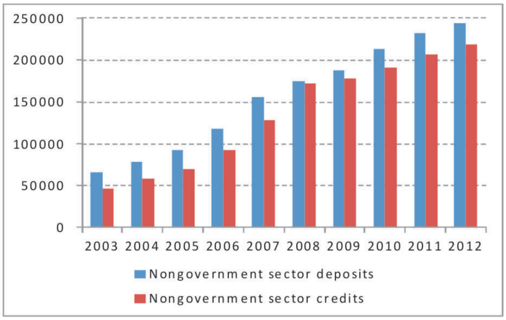


Chart 3 Nongovernment credits and deposits

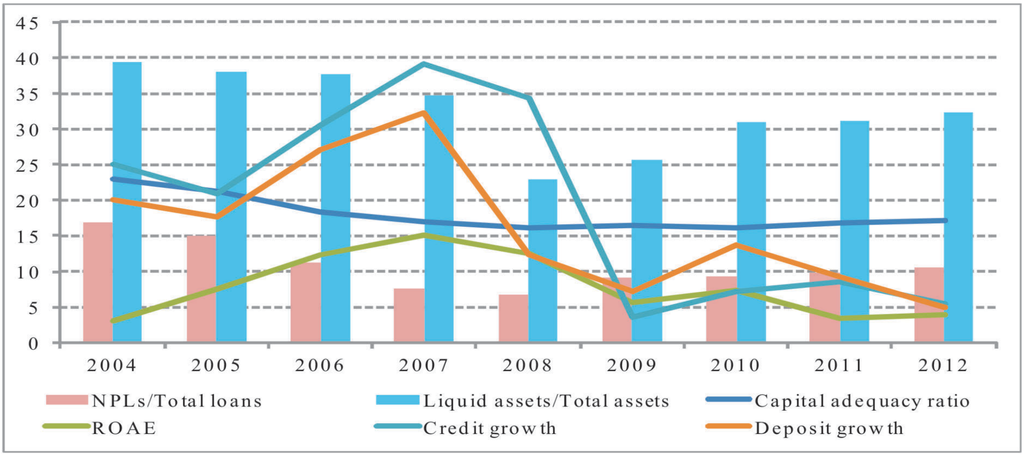
(in Denar million)



Source: NBRM.

At the end of 2008, the spillover effects of the global economic and financial crisis started to influence the domestic economy strongly, mainly through exports and the expectations channel. The escalation of the global crisis increased uncertainty and risk and influenced the balance of payments through a decrease of exports demand and a slowdown of capital flows, causing GDP declined of around 1% in 2009. The crisis caused a significant deterioration in the performance of the Macedonian banks. It was recorded a significant slowdown in the growth of deposits of non-government sector followed by a significant reduction in credit growth, reduced profitability, deterioration of the credit portfolio and increased risk of worsening the liquidity condition of the banks (Chart 4).

Chart 4 Main banks indicators before, during and after the crisis
(in %)



Source: NBRM.

In such conditions, there was a risk to increase the systemic risk of the banks due to the significant increase in the balance sheets of banks and consequently the increased risk taken in the recent years. The reduced external demand and deteriorated liquidity of Macedonian enterprises created potential risks of inability for regular servicing obligations on loans, therefore creating a risk of increased non-performing loans of the banks.

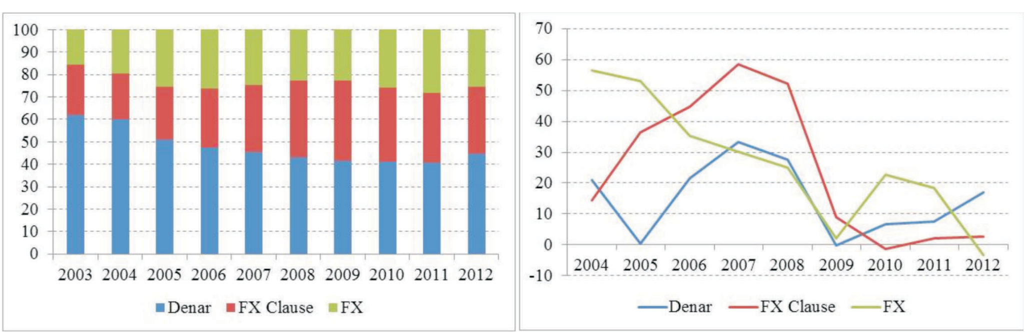
Macro-prudential measures of the NBRM during the crisis

In order to prevent the transfer / spillover of deteriorating conditions in the real economy on the increased systemic risk of the banks and to ensure a stable supply of banking services to the real economy, the NBRM continuously undertook the measures that have a macro-prudential nature. Essentially the measures intended to protect the banking system against buildup of credit risk (due to the possibility of deterioration of credit portfolio in terms of high credit growth and the worsening economic conditions) and to promote resilience of the banking sector amid the global financial and economic crisis.

Mainly the macro-prudential measures undertaken by the NBRM during the crisis *were directed to (1) control and prevention of high credit growth risk, (2) providing / ensuring an adequate level of liquidity* in terms of deteriorated macroeconomic conditions and turbulence in the financial markets.

Before we start to elaborate the concrete macro-prudential measures undertaken by the NBRM during the crisis and its effects, some NBRM measures adopted before the global financial and economic crisis deserve attention because those measures helped for easier cope with the crisis. Those are the measures that were adopted in 2006 and referred to the regulation i.e restriction of the foreign currency lending. With those measures, in order to improve the quality of foreign currency lending the NBRM tightened the conditions for providing foreign currency loans and loans with FX clause . The reason for the adoption of this measure was relatively strong growth in foreign currency lending that could cause an increase in foreign exchange risk (the so-called induced credit risk) due to a possible misalignment of currency inflows and outflows of the banks client. In the period 2004-2007 the average annual growth rate of loans with foreign exchange component (FX loans and denar loans with FX clauses) was about 40% versus the moderate growth rate of Denar loans of about 20% (Chart 4). The measure improved the quality of foreign currency lending resulting in reduced growth rates of loans with foreign currency component.

Chart 4 Banks credits to the nongovernment sector - by currency
(currency structure, in %) (annual growth rates, in %)



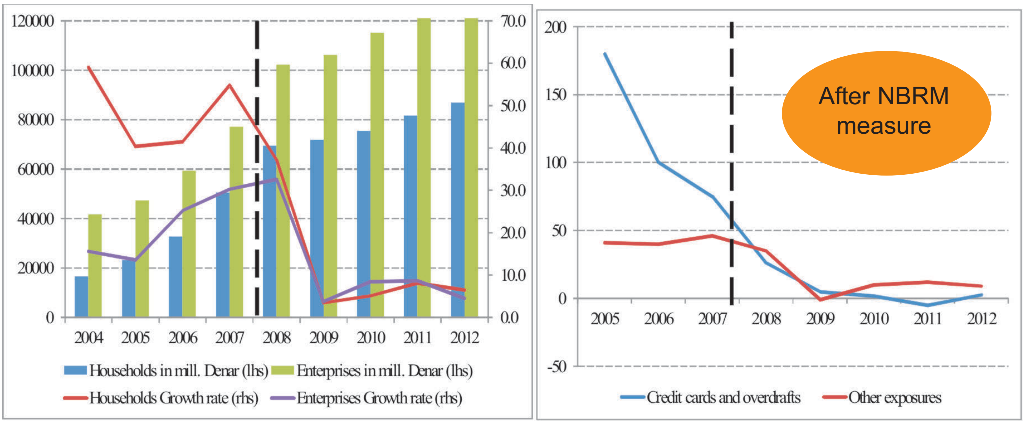
Source: NBRM.

Analyzed by sectors, in the period before the crisis a relatively high growth of loans to households was registered – at the end of the first quarter of 2008 loans to households increased by 60% while the loans to enterprises increased by 33% (Chart 5). The composition of the credit growth to households according to the type of the credit exposure illustrates an asymmetrical growth of the different credit products. The annual growth of exposure from credit cards and overdrafts to households was especially high and in some periods it reached almost 200 percent.

To deal with this, in March 2008 the NBRM adopted amendments to the Decision on the methodology for determining capital adequacy of banks, which increased the risk weight of used overdrafts based on current accounts and used credits based on credit cards by individuals (risk weights on credit cards and overdrafts was raised to 125%). The main objective of this prudent measure was to slow down of the credit expansion to households and to reduce the size of the credit risk of the banking sector, arising from the credits to households, on acceptable level. As a result of this measure, the growth of loans to households stemming from credit cards and overdrafts on current accounts recorded a significant reduction and it was reduced to single digits (Chart 5).

Chart 5 Annual growth rates of loans by sector

(structure and growth rates) (households by types of credit exposure, in %)



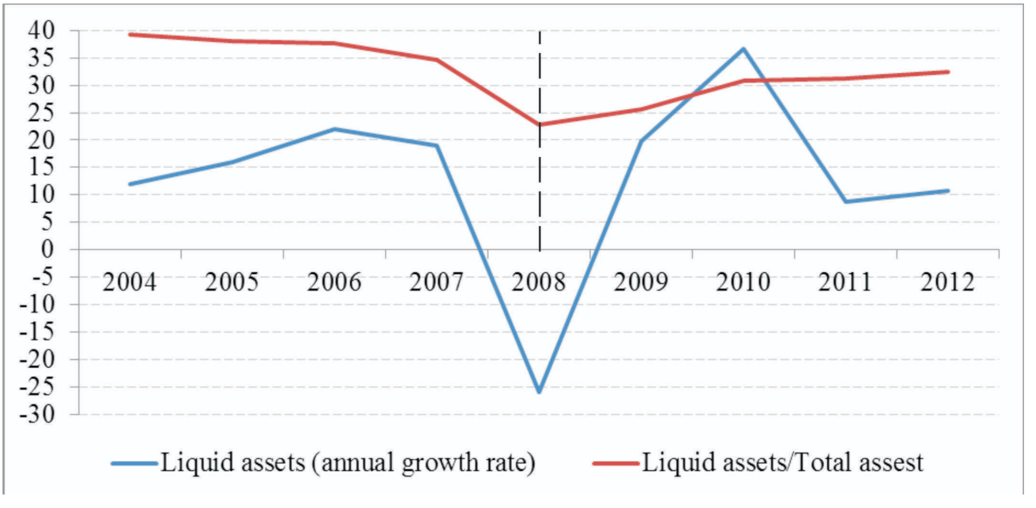
Source: NBRM.

The second measure that had reflected the credit growth of loans to households was introduced by the NBRM in June, 2008, with the adoption of the decision on the compulsory deposit with the NBRM. This decision defined the acceptable cumulative growth rates of loans to households with monthly dynamics for the rest of 2008, while in December 2008, the NBRM issued another Decision intended to cover the growth rates for 2009. With these two decisions, the annual growth rates of loans to households were projected at 39.8 percent, for the end of 2008 and 11.3 percent for the end of 2009. Whenever a bank's growth of loans to households was above the acceptable monthly rate, the bank was required to deposit with the NBRM an amount of funds equal to the achieved excess. The difference between the acceptable growth and the achieved growth constituted the compulsory deposit with the NBRM, on which NBRM paid an interest of 1 percent per annum.

The requirement for a compulsory deposit was an attempt to sterilize a certain amount of banks' funds, which could not be used for other purposes, including lending activities to households. The measure had one additional intention—to prevent the possibility of a credit growth transfer, from the exposures from credit cards and overdrafts to other similar types of exposures to households (for example, consumer loans). The NBRM measures in the area of bank lending to households have led to a significant reduction in the growth rate of loans to households - at the end of 2009 the annual growth of loans to households was reduced to about 3% (from around 38% in 2008).

The global financial markets turbulence and the contraction of the international capital flows in times of crisis determined increased risk of deterioration the liquidity position of banks - a decline of the growth of the liquid assets was registered in 2008. In order to improve banks' liquidity-risk-management systems and to strengthen their liquidity position, NBRM adopted a Decision on liquidity risk management at the end of 2008. According to this decision NBRM introduced an obligation for banks to maintain a minimum level of liquid assets. Banks are required to adhere to two minimum liquidity ratios of assets and liabilities maturing in the following 30 and 180 days. Both ratios are calculated and maintained separately for assets and liabilities in domestic and in foreign currency, and should be at least equal to one. Besides the quantitative liquidity requirements, the decision on liquidity risk management defines the minimum liquidity risk management standards that should be applied by all banks in the country. Such prudent measure on a shorter term will influence towards increase in the banks resistance to possible unfavorable effects resulting from the crisis, and on a longer term basis, this measure will enable higher certainty and viability of the banking sector's operations.

Chart 6 Liquidity positions of the banks



Source: NBRM.

In order to limit the risks in the banks in a crisis, the NBRM has adopted some additional measures:

(a) Decision on the foreign currency deposit with the NBRM, which enables the banks to deposit foreign assets with the NBRM, thus avoiding the credit risk if placing foreign assets abroad amid the global financial turbulence. The interest rates on the foreign currency deposits placed with the NBRM will be equal to the interest rates on the foreign assets placed in the central banks in the Euro area, in the international financial institutions or to the yields based on the Treasury bills of the Euro area member states;

(b) Amendments to the Decision on the exposure limits, which envisages inclusion of the exposure of the domestic banks to foreign first class banks in the calculation of the exposure limits in full amount (instead of 20% of the amount, as it was envisaged in the so far practice);

(c) Decision on managing the interest rate risk in the banking book, which prescribes the minimum necessary elements for managing the interest rate risk in the banking book, as well as the manner of measuring the banks' exposure to this risk;

(d) Decision on the reserve requirement, which enables increase in the reserve requirement allocation rate for the banks' liabilities with foreign currency component (increase in the liabilities rate in foreign currency from 10% to 11.5% and late to 13% and liabilities rate in domestic currency with FX clause from 10% to 20%). Part of the amount obtained by applying the reserve requirement allocation rate for liabilities in foreign currency is met in Denars. Simultaneously, the Decision enabled the banks full use of the assets of the reserve requirement allocated in Denars for satisfying their daily liquidity needs;

(e) Amendments to the Decision on managing banks' liquidity risk, which enables banks to include their placements in NBRM instruments (except to the reserve requirement in Euros), in the calculations of the rates for determining the necessary minimum of Denar or foreign currency liquidity.

It should be noted that at the end of 2011, following the example of developed economies, a Financial Stability Committee was established, composed of representatives from the Central Bank and Ministry of Finance. The main goal of the Committee was to analyze the risks, offer preventive macro-prudential policies and to coordinate fiscal and monetary policies.

Concluding remarks

Policymakers came to a consensus that the purpose of the macroprudential policy is reduction of systematic risk, strengthening of the financial system in dealing with shocks and to providing help for stable functioning without the enormous support received in terms of crisis. Macroprudential policies focus on the interactions between financial institutions, markets, infrastructure, and the wider economy. In determining the practical purposes of macroprudential policies we can indicate two points : First, strengthening the resilience of the financial system on economic downturns (negative trends) and other negative aggregate shocks ; Second, actively restricting and limiting the increase of financial risks. Research has shown that macroprudential instruments are used to manage the four categories of systematic risk: the risk generated by strong credit growth and rising asset prices caused by the credit growth, the risk resulting from excessive leverage in the financial sector and its efforts to reduce, systematic liquidity risk, risk related to large and volatile capital flows, including foreign currency borrowing . Developing countries used much more macroprudential policies before and after the crisis compared to developed economies. But today's economic crisis led an increasing number of developed countries to improved their macroprudential formal framework and to increase the number of macroprudential instruments in their policy set. Analysis/survey conducted on 33 central banks in late 2009, showed that macroprudential measures and interventions are widely used. They targeted wide field of problems arising from financial system and behavior, on the aggregate level as well as on specific levels and sectors. Dominant part of the economies have wide concept of what constitute macroprudential policies, their aims were quite different, and the highest complementarity is seen with monetary policy .

In order to prevent the transfer / spillover of deteriorating conditions in the real economy on the increased systemic risk of the banks and to ensure a stable supply of banking services to the real economy, the NBRM continuously undertook the measures that have a macro-prudential nature. Essentially the measures intended to protect the banking system against buildup of credit risk (due to the possibility of deterioration of credit portfolio in terms of high credit growth and the worsening economic conditions) and to promote resilience of the banking sector amid the global financial and economic crisis. Characteristics of NBRM macroprudental response to crisis:

- Financial crises first effect were smooth - the most of the banking activities are financed from domestic sources (primarily deposits of residents), indicating a low correlation with the global financial market. This along with relatively low financial intermediation and conservative business policy banks (larger amount of deposits in relation to loans) helped the banking system to maintain stability amid the global financial turbulence.

- The escalation of the global crisis increased uncertainty and risk and influenced the balance of payments through a decrease of exports demand and a slowdown of capital flows, causing GDP declined of around 1% in 2009. The crisis caused a significant deterioration in the performance of the Macedonian banks. It was recorded a significant slowdown in the growth of deposits of non-government sector followed by a significant reduction in credit growth, reduced profitability, deterioration of the credit portfolio and increased risk of worsening the liquidity condition of the banks .
- In order to prevent the transfer / spillover of deteriorating conditions in the real economy on the increased systemic risk of the banks and to ensure a stable supply of banking services to the real economy, the NBRM continuously undertook the measures that have a macro-prudential nature. Mainly the macro-prudential measures undertaken by the NBRM during the crisis were directed to (1) control and prevention of high credit growth risk, (2) providing / ensuring an adequate level of liquidity in terms of deteriorated macroeconomic conditions and turbulence in the financial markets.
- Some NBRM measures adopted before the global financial and economic crisis deserve attention because those measures helped for easier cope with the crisis. Those are the measures that were adopted in 2006 and referred to the regulation i.e restriction of the foreign currency lending. With those measures, in order to improve the quality of foreign currency lending the NBRM tightened the conditions for providing foreign currency loans and loans with FX clause
- In the period 2004-2007 the average annual growth rate of loans with foreign exchange component (FX loans and denar loans with FX clauses) was about 40% versus the moderate growth rate of Denar loans of about 20% . Analyzed by sectors, in the period before the crisis a relatively high growth of loans to households was registered – at the end of the first quarter of 2008 loans to households increased by 60% while the loans to enterprises increased by 33%. The annual growth of exposure from credit cards and overdrafts to households was especially high and in some periods it reached almost 200 percent.
- In March 2008 the NBRM adopted amendments to the Decision on the methodology for determining capital adequacy of banks, which increased the risk weight of used overdrafts based on current accounts and used credits based on credit cards by individuals (risk weights on credit cards and overdrafts was raised to 125%). As a result of this measure, the growth of loans to households stemming from credit cards and overdrafts on current accounts recorded a significant reduction and it was reduced to single digits.
- The second measure that had reflected the credit growth of loans to households was introduced by the NBRM in June, 2008, with the adoption of the decision on the compulsory deposit with the NBRM.With these two decisions, the annual growth rates of loans to households were projected at 39.8 percent, for the end of 2008 and 11.3 percent for the end of 2009.
- The NBRM measures in the area of bank lending to households have led to a significant reduction in the growth rate of loans to households - at the end of 2009 the annual growth of loans to households was reduced to about 3% (from around 38% in 2008).
- In order to improve banks' liquidity-risk-management systems and to strengthen their liquidity position, NBRM adopted a Decision on liquidity risk management at the end of 2008.
- In order to limit the risks in the banks in a crisis, the NBRM has adopted some additional measures: (a) Decision on the foreign currency deposit with the NBRM; (b) Amendments to the Decision on the exposure limits, (c) Decision on managing the interest rate risk in the banking book, (d) Decision on the reserve requirement, e) At the end of 2011, following the example of developed economies, a Financial Stability Committee was established, composed of representatives from the Central Bank and Ministry of Finance.

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