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Financial Regulations in the Process of Global Financial Crisis and Macroeconomics Impact of Basel III

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***Abstract*—**Basel III (or the Third Basel Accord) is a global regulatory standard on bank capital adequacy, stress testing and market liquidity risk agreed upon by the members of the Basel Committee on Banking Supervision in 2010-2011, and scheduled to be introduced from 2013 until 2018. Basel III is a comprehensive set of reform measures. These measures aim to; (1) improve the banking sector's ability to absorb shocks arising from financial and economic stress, whatever the source, (2) improve risk management and governance, (3) strengthen banks' transparency and disclosures. Similarly the reform target; (1) bank level or micro-prudential, regulation, which will help raise the resilience of individual banking institutions to periods of stress. (2) Macro-prudential regulations, system wide risk that can build up across the banking sector as well as the pro-cyclical implication of these risks over time. These two approaches to supervision are complementary as greater resilience at the individual bank level reduces the risk system wide shocks.

Macroeconomic impact of Basel III; OECD estimates that the medium-term impact of Basel III implementation on GDP growth is in the range -0,05 percent to -0,15 percent per year. On the other hand economic output is mainly affected by an increase in bank lending spreads as banks pass a rise in banking funding costs, due to higher capital requirements, to their customers. Consequently the estimated effects on GDP growth assume no active response from monetary policy. Basel III impact on economic output could be offset by a reduction (or delayed increase) in monetary policy rates by about 30 to 80 basis points. The aim of this paper is to create a framework based on the recent regulations in order to prevent financial crises. Thus the need to overcome the global financial crisis will contribute to financial crises that may occur in the future periods. In the first part of the paper, the effects of the global crisis on the banking system examine the concept of financial regulations. In the second part; especially in the financial regulations and Basel III are analyzed. The last section in this paper explored the possible consequences of the macroeconomic impacts of Basel III.

***Keywords*—**Banking Systems, Basel III, Financial regulation, Global Financial Crisis.

I. Introduction

THe global economic crisis has displayed the fact that there is a need for changing in the relationship between the government and the economy; moreover, it introduces expectations toward regulating financial sectors and market economy. If it is taken into account the liberalization process prior to the global crisis, one may expect that the government interventions and regulations will come into prominence to eliminate the problems created by the Global Crisis and also to take measurements for possible crises.

In Turkey case, the economic crisis experienced in 2001 has been a turning point with respect to financial regulations and regulating banking system of Turkey. For this reason, many economists have argued that Turkish banking system has demonstrated more stable structure during the Global Crisis. In Turkey, legal and institutional regulations aimed to financial sector and central bank system have created regulating environment to tolerate pressures from global financial fluctuations.

From this perspective, the remainder of the study is organized into three sections. First section presents conceptual framework for concepts of regulation and financial regulation. Second section discusses regulating implications of financial sectors during the Global Crisis. And finally we introduce macroeconomic analysis of measurements and decisions by the Third Basel Accord and Basel Committee.

II. Financial Regulations

The term regulation has a power of describing not only regulating function but only functions of supervision and guidance. From the government and the economy perspective, regulations have three attributions as social, economic and political. For instance, G. Majone describes regulations as a border between the government and markets for a lawyer; a generally accepted fact among the countries for a politic-scientist; and in terms of an economist as a measurement for what for, when and how the government to intervene [1].

While structural regulations contain elements such as entrances and exits to market, regulating market structures and determining features of goods and services, behavioral regulations express regulations in areas such as price controls for firm behaviors, advertisement and quality standards [2].

As a result, regulating systems and applications describe a set of policies consisted of regulatory element and tools by the government. This describing means also that regulation practices may change by the time for the reason of regulatory government. However, this changing appears in different shapes in different sectors. For this reason, it is possible that regulations display different characters with relative to sectors, governments, time dimensions. One may expect that

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regulations also display different characteristics according to policy aims, for instance, efficiency and equality are more important in regulating telecommunications while efficiency, stability and safety are prominent goals in regulating of banking sector [3].

A. Financial Regulation

With respect to financial regulations, the functions of regulating, supervising and guiding and the forms of sanction should be taken into account in sectorial level. Financial regulations in a basic form are described as controlling and forming activities and process in financial sector through rules, promptings, constrains and stimulations by any authority has sanction power. However, taken into account of sectorial dependency of describing, firstly one should determine characteristics of financial sector. In general meaning, financial systems consist of banks, financial leasing corporations, consumer financing corporations and insurance corporations [4]. Nevertheless, large section of financial system is measured by banking system, For example, banking sector in Turkey meets 78% of whole financial system.

At regulating banking system, structural regulations express determining the scope of baking services, following market concentrations, regulating entrances and exits in the system. On the other hand, behavioral regulations contain of determining elements such as the company behaviors in market process, pricing of services, quality standards, and advertisements. Essentially, banking regulations is to determine the proper criteria and ratios by regulatory agencies with respect both structural and behavioral regulations.

Taken into account the economics literature on financial regulations, it may be seen that the Law and Economics is a dominant academic approach despite of some other developing alternatives. The perspective of Law and Economics describes factors which determine well-functioning and efficiency banking system. It also accepts controversial results from examining indicators worldwide financial regulations. Naturally, the diversity in the design of banking regulations may be making controversial the results. Accordingly, activities in banking sector have affected by historical processes and regulation practices by the governments are formed by political pressures groups, historical legacy and international institutions [5]. Although the softening of regulatory constraints became increasingly common among the countries, requirement of developing countries to the loose banking regulations is also controversial. The main economic policy priorities in the developing countries to monitor should be interest rates and its impacts on economic growth [6].

Some other theoretical approaches see financial regulations as a factor which increase risk appetites of trade banks. Banking regulations lead to a dynamic macroeconomic instability, accordingly, deregulations and abolishing banking constraints will gradually ensure the stability in the sector [7]. The criteria of capital adequacy are to be a non-market and a political factor. With the acceptation of limited role of international organizations and financial regulations, independency and status of these institutions have also become a matter of discussion. International non-governmental institutions have a great impact on the issue. However, governments' impacts on managerial structures of non-governmental regulatory institutions have gradually increased [8].

With these reasons, one should explain factors which affect the evolutionary process of regulations for better understanding of the banking regulations.

B. Qualifications of Financial Regulations

There are three principal tasks of individual-country regulators [9]:

- Limiting risks of fraud, discrimination, and contract nonperformance in financial transactions;
- Operating a safety net designed to minimize risks of fire-sale losses associated with financial-institution insolvencies and unjustified customer runs;
- Operate the fraud controls and safety net honorably and at minimum opportunity cost to taxpayers.

Rapid changing and dynamic developing in financial sectors require structural changing in regulating financial institutions. First, the revolution in information technology and the development of new financial instruments have blurred the distinctions between types of financial institutions. Second, the elimination of geographic restrictions and the increasingly global character of the largest institutions have complicated regulation based on national borders and well-defined product markets. Third, the blurring in product and geographic borders has resulted in a wave of mergers, creating financial institutions far larger and more complex than those envisaged when many of our regulations were first developed [10].

It can be mentioned some major principles for sound regulation and supervision [11]:

- The objectives of regulation need to be clearly defined and circumscribed.
- A powerful market signaling and disciplining mechanism
- Specific regulatory measures should be subject to tests of effectiveness and cost benefit analysis.
- Defining competition and information for a well-functioning market
- Transparency in process of information
- Creating risk analyses, risk management and risk control systems
- Encouraging institutional management
- Classification regulated forms and sectors
- Making a distinction between wholesale and retail business
- Making regulators publicly accountable through credible mechanisms

Together the Global Crisis, financial and banking regulations are required to reevaluate according to new priorities. Financial regulations should have "cyclical" specialties according to economic conjuncture. Corresponding to the cyclical phase, it is experiencing wide scale politic pressures toward smoothening or hardening the capital

adequacy. Thus, obtaining financial stability, regulations are required to provide augmented, cost-efficient and reserve capital [12]. Recent financial regulations are also required to have the qualification toward injecting reserve capital into banks or banking system which experiencing to meet regulatory criteria with respect to increase permanent capital [13].

For successful financial regulations, it should be implicated policies such as reliable and stable macroeconomic policies, enhancing fiscal system, efficient supervising and controlling in financial sector to have early warning, practicing international standards on financial structure relative to the country's general economic situation. Also it should be mentioned that the globalizing possibility of the financial crises is required international cooperation to combat them [14].

C. International Regulatory Authorities

International regulation institutions are not only a discussion platform for the crisis management and financing among the countries but also they have some responsibilities for lenders. In international arena, for money, credit and capital operations, there are many important organizations such as IMF, World Bank (WB), World Trade Organization (WTO), United Nations Conference on Trade and Development (UNCTAD), The Bank for International Settlement (BIS), International Organization of Securities Commission (IOSCO), and International Association of Insurance Supervisors (IAIS), Basel Committee on Banking Supervision (BCBS) [15]. BIS, IOSCO and IAIS perform functions of the international discussion platform and the coordination for activities of banks, insurance companies and financial companies at country level.

Especially BIS is important for recording multi-national financial unions and financial transactions. Its founding members are Sweden, Belgium, France, Germany, Great Britain, Italy, Japan and US and its modern mission is to coordinate and to harmonize member countries' banking regulations. IOSCO and IAIS that cover 158 countries are relatively new organizations. In addition these institutions, it should be mentioned Joint Forum on Financial Conglomerates and Financial Stability Forum which consisted by IMF, WB and OECD [16].

Financial supervision and control in European Union have executed by national governments, and by European Central Bank (ECB) in Euro region. With respect to European Monetary Union (EMU), differences among the countries' capital markets lead to some important problems. European regulation practicing consists of regulations by central banks or regulatory institutions. While the central banks in Greece, Ireland, Italy, Netherland, Portugal, and Spain are main regulatory authority, the independent regulatory agencies in Germany, Belgium, Denmark, Finland and recently Great Britain conduct financial regulations. In France, responsibility for the regulations split up between central bank and regulatory agency, while it belongs to Finance Ministry in Austria. Great Britain gave effect financial regulations through Financial Service Authority (FSA). ECB has gained an institutional framework through composing Banking Supervision Committee of The ECB [17]. Great Britain has more detailed structural regulations with compare to other countries. Authorities of Personal Investment Authority (PIA) and some other agencies have transferred to FSA in 2000. FSA also has functions for supervising and control of banking sector. Thus, FSA has become an only unity for financial regulations and this has created a structure of simple and efficient regulation [18].

In all regions, determining a proper system for regulations is still controversial. "Lender of last resort" (LOLR) function of central banks is an important rationale for the fact that responsibility of regulating should belong to central banks. However, the limitations for responsibility should be determined properly [19].

III. Banking System, Global Financial Crises and Changing

In general, the financial structure in free market economies forms on four elements as financial system, trade banks, investment banks and trade security and insurance companies. Undoubtedly banks consists the largest part of financial structures [20].

Theoretical and empirical studies display that efficiency of banking system has positive impact on economic developing. The well-functioning banking system is essential for economic developing. Theoretical and empirical studies display that emphasis the importance of law systems, cultural structures. On the other hand some studies argue that the law systems of countries to have a little effect with relative to regional and global strategies. Addition to some studies finds the cultural and religion differences as important on differences in the financial systems. Moreover explain differences at financial systems with countries approaches to regulating and controlling the banking and financial systems [21].

A. Structural Features and Functions of Banking System

Structural features mainly express two characteristics as institutional and economic. Institutional structure comprises functional classification and shareholder definitions of banks, while economic structure is related to financial system in which performed activities and to oligopolistic structure which indicates competition imperfection [22]. Undoubtedly the most important function of the bank system is to provide capital accumulation for source needs of real economy. Especially in times of the financial crises, this classical function does not work properly. Banking systems start to serve to finance deficits of holdings which related to banks, and deficits of public budgets [23]. Problems in the banking system lead to bankruptcies and high costs of bail outs for governments. On the other hand, using the banking credit mechanisms by governments with respect to social policies is also important problem in banking sector [24].

Main factors which lead to financial crises and banking system imperfections are the weak competition in the sector, oligopolistic tendencies, incomplete audits, existence of public

banks and their importance in the system. In general, banking systems' main features of developing countries are as following; financial markets controlled by public banks, the low level depth of financial markets, imperfections in the market functioning. Although developed countries have also public banks, these banks have different mission definitions [25].

The US and UK do not have public banks; moreover, UK has a banking system which belongs to foreign banks in the large part. The distinction of trade-investment banking is especially a structural characteristic of UK banking system. In Germany, France, and Italy, the public banking is important element of the system. Some EU countries such as Spain and Greece which have similarities with Turkey have also large volume of public banking [26].

Turkish banking system has heavily oligopolistic tendency, and public-financed banks may direct the whole sector despite of their low financial performance. More importantly, with decreasing the volume of specialized credits, it can be said that social goals of public banking are disappearing most countries included Turkey [27].

B. The Global Crisis and Banking System

Beginning of 1990s, most developed countries has completed the term of liberalization and the process of Washington Consensus. During this process, it was thought that temporary macroeconomic stability has decreased banking risks. But this approach has created a risk appetite by changing the risk detecting [28]. On the other hand, the diversity in the financial instruments in the last quarter has also triggered the financial crisis [29].

It is clearly known that liberalization and deregulation enhance the competition and trigger the financial innovations. However, this fact may create important banking problems ever in European developed countries. European banking sector has a higher intensify rate than US. Intensify rates in banking sectors are between 30% and 80% in EU except of Germany. This rate in the US was 22% in 1998. Moreover France and Germany have important level of public banking. These factors have created fragilities and failures in European banking systems. For example, the crises have been experienced in Spain in beginning of 1980s, in Scandinavian countries in 1990s [30].

"Panic" is very important at defining the financial crises. The basic example of the economic crises can be identified with bank bankruptcies. Bank customers' panic attacks to draw back the deposits can commonly observed during the crisis. Banking bankruptcies are common characteristic in most crisis as Thailand, Indonesia, Mexico, Argentine, Turkey, and after 2008 in the US and European countries. In the financial crises, more important than the number of bankruptcies are moral hazard, financial corruption and lower level of confidence [31].

Explaining the financial crises, argue that liberalization of financial flows has created economic instability and point out political interventions and economic instabilities instead of liberalization. On the other hand some authors blame inflation to trigger the financial crises and the system's unproductivity. Some authors argue that constraints on trade bank activities and imperfect standards of regulations have led to crises. Research and reports displays the reason for the crisis to be the restrictive regulations, imperfections in democracy and private property [32]. While some reports point out that government-owned banks increase fragility in the system, the others find the corruption as important [33].

The Global Crisis of 2008 called as a financial one, although there are some other factors such as oil and good prices, inflation. Before the crisis, high level of growth, increased capital flows and financial stability led to uncontrolled growth in banking system because of excessive risk appetite and willingness high profits. More importantly, regulatory authorities were insufficient to realize risks and financial innovations in the system [34]. In the US, the liquidity crisis which appeared in 2008 affected negatively the banks' balance. Eventually the government had to inject the liquidity into the markets [35]. Developments in the process of the global crisis displayed that the typical regulations was insufficient [36].

The negative developments in the financial system not only led to consolidations but also eliminate investment banking in especially the US. European countries also experienced government bail outs toward banking system [37]. Measures can generally be classified into eight titles despite of differences country-specific; abolishing deposit guarantee, bank recapitalizations, liquidity injections, providing government guarantees to bank credit debt, nationalizations, the allocation of funds to be commercial bonds, regulations on mortgage bonds, regulations on toxic assets [38]. Innovations and developments in financial companies and trade mechanisms make more complex implicating of regulations. In this innovative environment, the best way to modernize financial regulations is to transfer responsibilities toward private investors from administrative structures [39].

Although the confidence in the banking system injured with the global crisis, and regulative efforts were inadequate against the innovative instruments, the regulations are important for future possibilities of crises and should be renewed toward even non-banking institutions such as mortgage and financial companies. For financial stability, the banking sector should efficiently be watched and monitored [40]. In this point, the importance of Basel Convention and its future impacts may be understood better.

IV. Basel Committee and Accord of Basel III

Basel Committee on Banking Supervision (BCBS) which established in the structure of Bank for International Settlements in 1974 by "group ten" provides a forum for regular cooperation on banking supervisory matters. Its objective is to enhance understanding of key supervisory issues and improve the quality of banking supervision worldwide. It publishes studies on the capital adequacy from 1975, on the risk management, money laundering, accounting and auditing from 1990. From some important initiatives, Basel I Capital Accord Directive came into effect in 1988,

Basel II which starting in 1999 came into effect in 2007, and Basel III is planning to gradually be implemented until 2019. As distinguished from others, Basel III puts forward the concept of liquidity coverage ratio (LCR) which be decisive in to solve the recent European banks' liquidity problems.

A. The Framework of Basel Accords and Main Principles of Basel III

Increased international convergence of capital and intentions on better management of capital flows resulted to international cooperation efforts. First convention on capital adequacy (Basel I) which primarily focused on minimum capital and the credit risk was published by the Basel Committee on Banking Supervision (BCBS) in 1988. Credit risk incurred by the bank was calculated by multiply the weighted coefficients of 0%, 10%, 20%, 50% and 100% according to classifications of banking balance items. Because this method treats similarly to all banks in different activities, it generally called as 'one-size-fits-all'. Moreover, Basel-I treats with 0% of weighting to OECD government debts, 20% of weighting to bank's debts, and 100% of weighting for non-OECD countries because of OECD club rule. Nevertheless Basel-I is accepted a successful financial standard by Financial Stability Forum. Despite of some criticizes; it has created a level playing field for the players in the market, and enhanced the financial stability in some developing countries [41].

In June 2004, Basel Committee published a new Basel convention (Basel-II) which means to abandoned Basel-I's one-size-fits-all. It was intended to create an international standard for banking regulators to control how much capital banks need to put aside to guard against the types of financial and operational risks banks (and the whole economy) face. It is not only a cluster of principles needed to convergence international capital adequacy but also an approach to encourage the banks to see the financial system as a whole [42].

In general, Basel conventions addressed three definitions of the risk:

1. Credit risk
2. Market risk
3. Operation risk

Credit risk aims to measure the possibility of not to pay the debt in maturity by those debts to banks. Market risk focuses on risks by interest rates, the stocks, exchange rates and commodity markets. Finally operational risk introduces to define risks by process, systems, humans and external factors. Basel-III supports with liquidity requirements the criteria of capital adequacy. This approach by Basel-III aims to eliminate the causes of the global crisis. Basel-III explains the global crisis as following causes:

- High level of borrowing
- Inadequate liquidity
- Weak capital structure

Thus, it accepts the banking system to have strong capital and strong liquidity to prevent possible crises.

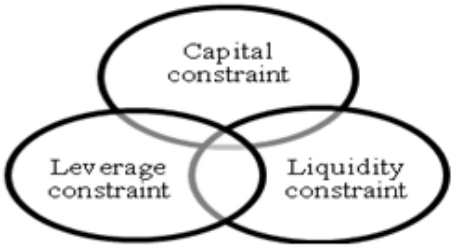

Fig. 1 Main constraints of Basel III

Basel III proposes many new capital, leverage and liquidity standards to strengthen the regulation, supervision and risk management of the banking sector. The capital standards and new capital buffers will require banks to hold more capital and higher quality of capital than under current Basel II rules. The new leverage ratio introduces a non-risk based measure to supplement the risk-based minimum capital requirements. The new liquidity ratios ensure that adequate funding is maintained in case of crisis. Regulatory liquidity risk reports will have to be produced at least monthly with the ability, when required by regulators, to be delivered weekly or even daily. This is challenging banks to put in place robust automated reporting solutions to meet this need. The first challenge banks will face is to consolidate clean exposures, liabilities, counterparties and market data in a centralized risk datamart. All portfolios' contractual and behavioral cash flows should be made available and banks should have the ability to stress those and produce liquidity gap analysis according to various scenarios. Liquidity Coverage Ratio (LCR) buffer eligibility and haircut rules rely on external ratings, Basel classification of counterparties and standardized credit risk weights. The LCR numerators run-off rates as well as Net Stable Funding Ratio (NSFR) Available Stable Funding and Required Stable Funding factors also depend on such information, usually only available in risk specific systems.

TABLE I
COMPARISON OF BASEL II AND BASEL III

BASEL II			BASEL III		
Pillar 1 Minimum Capital Requirements	**Pillar 2** Supervisory Review Process	**Pillar 3** Disclosure and Market Discipline	**Pillar 1** Enhanced Minimum Capital and Liquidity Requirements	**Pillar 2** Enhanced Supervisory Review Process for Firm-wide Risk management and Capital Planning	**Pillar 3** Enhanced Risk Disclosure and Market Discipline

Basel-III constitutes three standards for liquidity requirements and demands the banking system to follow the liquidity flows according to these standards [43].

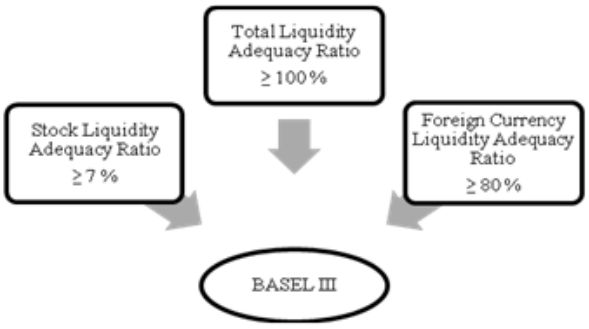

Fig. 2 Banking system standards of Basel III

1. Total liquidity adequacy ratio: Liquid assets + cash inflow within 1 week (month) maturity/cash outflow 1 week (month) maturity≥100 % (Fig. 2).
2. Foreign currency liquidity adequacy ratio: FX liquid assets + FX cash inflows within 1 week (month) maturity/FX cash outflows 1 week (month) maturity ≥80 %.
3. Stock liquidity adequacy ratio: Stock values of liquid assets regardless of maturity/Stock values of certain liabilities regardless of maturity ≥7 %.

The next challenge banks face is interfacing or merging their current risk and finance systems to meet the new Basel III Liquidity Risk ratio requirements. The funding concentration monitoring requirement will require banks to put in place a clean hierarchical referential of counterparties for consolidating their liabilities. Different LCR ratios will have to be produced per consolidation level and currencies. As it is already the case for credit risk rules, international banks will have to cope with various national discretions and local flavors for such new liquidity ratio rules and will have to generate various kinds of liquidity risk regulatory reporting templates in different electronic formats per jurisdiction [44].

TABLE II
MAIN PRINCIPLES OF THE BASEL III

Basel III-Regulatory Elements	Basel III- Proposed Requirement
Higher Minimum Tier 1 Capital Requirement	* Tier 1 capital ratio: increases from 4% to 6% * The ratio will be set at 4.5% from 1 January 2013, 5.5% from 1 January 2014 and 6% from 1 January 2015 * Predominance of common equity will now reach 82.3% of Tier 1 capital, inclusive of capital conservation buffer * Used to absorb loses during periods financial and economic stress
New Capital Conservation Buffer	* Banks will be required to hold a capital conservation buffer of 2.5% to withstand future periods of stress bringing the total common equity requirement to 7% (4.5% common equity requirement and the 2.5% capital conservation buffer) * the capital conservation buffer must be met exclusively with common equity * Banks that do not maintain the capital conservation buffer will face restrictions on payouts of dividends, share buybacks and bonuses
Countercyclical Capital Buffer	* A countercyclical buffer within a range of 0%/2.5% of common equity or other fully loss absorbing capital will be implemented according to national circumstances * When in effect, this is an extension to the conservation buffer
Higher Minimum Tier 1 Common Equity Requirement	* Tier 1 Common Equity requirement: increase from 2% to 4.5% * The ratio will be set at 3.5% from 1 January 2013, 4% from 1 January 2014 and 4.5% from 1 January 2015
Liquidity Standard	* Liquidity Coverage Ratio (LCR): to ensure that sufficient high quality liquid resources are available for one month survival in case of a stress scenario. Introduced 1 January 2015 * Net Stable Funding Ratio (NSFR): to promote resiliency over longer-term time horizons by creating additional incentives for banks to funds their activities with more stable sources of funding on an ongoing structural basis * Additional liquidity monitoring metrics focused on maturity mismatch, concentration of funding and available unencumbered assets
Leverage Ratio	* A supplemental 3% non-risk based leverage ratio which serves as a backstop to the measures outlined above * Parallel run between 2013-2017; migration to Pillar 1 from 2018
Minimum Total Capital Ratio	* Remains at 8% * The addition of the capital conservation buffer increases the total amount of capital a bank must hold to 10.5% of risk-weighted assets, of which 8.5% must be tier 1 capital * Tier 2 capital instruments will be harmonized; tier 3 capital will be phased out

Source: BCBS and BIS

Undoubtedly the most important issues in the Basel-III are "countercyclical capital buffer" and "capital conversation buffer". It should be emphasized four main points related to Basel III. It provides more openness to financial sector. It gathers the cautiousness in both micro and macro levels. The goal is to overcome the systemic risk and to establish the proper capital plans for financial system according to economic expectations. The tools of Basel-III will be proper to limit the systemic risk. Basel-III has also a reasonable transition period and regulations [45].

B. Macroeconomic Impact of Basel III

The possible macroeconomic costs of Basel-III convention are examined through models which estimate the international spillover potential of increased capital requirements, especially for capital adequacy requirements. For instance, a model by Vitek in an IMF working paper uses price of output, price of consumption, quantity of output, quantity of domestic demand, price of energy, prices of non-energy and commodities as macroeconomic variables, and introduce to examine macroeconomic costs of strengthening capital and

liquidity requirements [46]. Another study by Slovik and Cournede analyses the effect of 14.4 basis point of increasing in the ratio of capital to risk-weighted for the US, Euro area and Japan [47]. The Macroeconomic Assessment Group (MAG) of Financial Stability Board (FSA) and BCBS also assumes 15 basis point of increasing in the same ratio to model its effect on the economy.

1. Basel III Impact on Bank Capital and Lending Spreads

The recent Basel III agreement2 raises the minimum capital requirements for common equity capital from 2 percent to 4.5 percent of risk-weighted assets and the Tier 1 ratio from 4 percent to 6 percent effective as of 2015. Subsequently, fully effective as of 2019, banks will be required to add a conservation buffer of 2.5 percentage points on the top of common equity and Tier 1 capital ratios.

Already, prior to the agreement on the new Basel III regulation, banks had increased their capital ratios relative to the pre-crisis levels as a result of considerable market pressures. This analyses shows that, relative to pre-crisis levels as of end-2006, 3 banks in the United States, the euro area and Japan had by end-2009 increased their common equity ratio on average by 1.3 percentage points and their Tier 1 capital ratio on average by 1.5 percentage points.

Considering that these improvements in common equity and Tier 1 ratios occurred due to market pressures for higher capital levels, the remaining efforts to meet the new Basel III requirements should be reduced by the increases already achieved. Taking the capital increases already achieved into account, until 2015 banks will need to increase their actual common equity ratio on average by about 1.2 percentage points and the Tier 1 capital ratio by about 0.5 percentage points. To meet the capital requirements effective by 2019, which include the conservation buffer, banks will need to increase their common equity ratio on average by about 3.7 percentage points and the Tier 1 capital ratio by about 3.0 percentage points. The main recapitalization efforts of banks will thus be directed towards the common equity ratio, 6 which will therefore be the focus of the following examination of the macroeconomic impact of Basel III [48].

A one percentage point increase in the ratio of capital to risk-weighted assets will push up bank lending spreads by 14.4 basis points on average across the three main OECD economies. The sensitivity will be comparatively higher in the United States (mainly due to a higher return on equity and a higher share of risk-weighted assets in bank balance sheets) and lower in Japan (mainly due to a lower return on equity and a higher share of lending assets in bank balance sheets). To meet the Basel III requirements effective as of 2015 banks would increase their lending spreads on average by approximately 15 basis points. To meet the Basel III requirements effective as of 2019 banks would increase their lending spreads on average by approximately 50 basis points.

2. Macroeconomic Impact of the Transition to Basel III

The Basel III requirements fully effective as of 2015 are estimated to reduce the level of GDP in the three main OECD economies on average by −0.23% five years after the implementation by banks. This estimate, translates into an approximate average impact on GDP growth of −0.05 percentage point per annum. If the Basel III requirements effective as of 2019 are considered, the macroeconomic effects will be larger. In this case, the average impact on annual GDP growth is estimated to be about −0.15 percentage point. Once banks start to implement the 2019 capital requirements, which could also happen ahead of the schedule (i.e. in the run-up to 2015), the actual Basel III medium-term impact will be greater than the 2015 estimates and could reach up to the 2019 estimates. On this basis, the impact of Basel III on annual GDP growth is estimated in the range of −0.05 to −0.15 percentage point over the medium term [49].

Considering potential effect of regulations by Basel-III on the output, one may expect that high capital requirements will decrease total output. Secondly, unsurprisingly regulations in the way of increased capital requirements can be expected to decrease the product output by imposed the limits on lending operations. Similarly, new regulations of Basel-III may lead to loss in the welfare through their negative effects on the consumption [50].

The macroeconomic impact estimated above assumes no response from monetary policy but, to the extent that the latter will no longer be constrained by the zero lower bound, it could be used to reduce the impact of Basel III. The estimated macroeconomic impact of a reduction in monetary policy rates of 100 basis points. Macroeconomic impact of Basel III on the annual GDP growth of −0.05 to −0.15 percentage point could be offset by an average reduction (or delayed increase) in monetary policy rates of about 30 to 80 basis points.

The assumption of the accounting model described in OECD working-paper that the costs of equity and debt are constant could be considered as conservative. With more capital, banks should at least in principle become safer; therefore, the cost of funding could decrease as a consequence of higher capital levels. Considering the actual Basel III capital requirements, their impact on bank funding costs could be neutralized by a fall in the required return on equity of 1.7 to 5.2 percentage points. This estimate assumes that creditor returns would not be affected.

Since regulatory requirements are not the only determining factor of actual capital levels, 15 banks could potentially react to a tightening in capital requirements by partially cutting their discretionary capital buffers. Studies in this area16 show that for banks with sufficiently large capital buffers a one percentage point increase in regulatory capital requirements would translate into an increase in actual capital levels of only about 0.5 percentage point. To the extent that banks would choose to hold smaller discretionary buffers, the actual Basel III impact on bank lending spreads and macroeconomic variables might be lower compared with the estimates presented in OECD study. However, as the financial crisis has reinforced market emphasis on prudent capital decisions, banks have become less apt to reduce their discretionary capital buffers [51].

It should be noted two points on macroeconomic effects of increased capital and liquidity requirements: to increase lending interest rates by commercial banks, and to increase the policy interest rates by central banks. An increase of 1% in the capital requirement rate is expected to have an effect of decreasing 0.5% of GDP. This impact can feel more strongly in the developing countries compared to developed countries [52].

Reports and studies by FSB/BCBS the Macroeconomic Assessment Group (MAG) estimate that high capital and liquidity requirements rates will decrease the possibility of the financial crisis. A 1% increasing in the capital requirement rate decreases the possibility of the financial crisis to 2.3% from 4.6%, despite of losses in GDP about 0.19 percentage point. On the other hand, regulations by Basel-III may lead to changings in exchange rates, commodity prices and global supply-demand balances, depending on the spear effect [53].

Turkey is one of the few countries in which no defaults were observed in its banking sector during global the financial crisis. (Even there were no banks in need for government support). Strong capital base and CAR ratios of the Turkish Banking Sector will differentiate it from the banking sectors of other countries in the long run after the implementation of Basel-III rules. It is expected that the liquidity ratios of Basel-III will not have significant effect on the credit growth and profitability of the Turkish Banking Sector. Deposit oriented banking will come back to the center of banking business in the near future. Leverage will not be a constraint for Turkish banks which brings an important advantage over the EU banks. Therefore; corporates will not be negatively affected by the implementation of the Basel-III rules by the banks in Turkey [54].

V. Conclusion

It is obvious that liberalization and deregulation in the financial markets trigger sectorial competition and financial innovations. However, uncontrolled using of new instruments is one of causes of the Global Crisis. Banks' increased risk appetite and tendencies toward unregulated areas affected negatively the global finance markets, and aggravate the systemic risks in the system.

It is accepted that dynamic developments and tendencies in the banking system weakened the effect of regulatory authorities and financial regulations. International and national banking systems which heavily depend on the confidence cannot be leaved completely the market system away from supervision and auditing. Thus, financial regulations can be expected to continue with some regulations or with possible expansions. In a free market system, more convenient way of supervising the banking system is to regulate through regulator authorities instead of direct government interventions. Nevertheless, financial regulations should be revised for giving effect to market competition, providing transparency in the information on banking system, and establishing the efficient control mechanisms.

Undoubtedly, national efforts will remain inadequate in globally integrated financial structure. For this reason, international initiatives are need to regulate the international banking systems and to coordinate and to modernize the domestic regulatory efforts. The Basel convention is especially important for this point. Taken into account expanding European banking crisis, the importance of Basel initiative can understand better way.

Estimations display that 1% increasing in the capital requirement in the way of purposed by Basel-III will decrease the possibility of a financial crisis to %2.3 from %4.6, despite of shrinking in GDP about %1.9. MAG reports assume the less effect of limitations on liquidity. Of course, regulations by Basel-III may affect exchange rates, commodity prices through international spread effect.

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