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## FINANCIAL SYSTEM STABILITY VS. SOCIAL POLICY

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### STABILNOŚĆ SYSTEMU FINANSOWEGO A POLITYKA SPOŁECZNA

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**Summary:** The paper adds to the discussion of social costs of financial crises through theoretical elaboration, arguing for the position that supporting the stability of financial systems, if combined with public confidence in financial markets and banking, leads to a reduction of social costs by reducing the frequency of crises associated with the long-term development of the financial sphere in the world. Following the theoretical function proposed by Adrian, Covitz and Liang [2014], the author elaborates that prudential regulation may lower the social costs of crises. This calls for an active role of regulating the financial sector and that of the central banks, as the preferred sensitivity of the financial system to shocks may be achieved by prudential regulation and the increasing of transparency of the system, as well as by the management of social perception of stability (security) of this system. The paper postulates the abovementioned relation by reviewing selected empirical studies and framing the discussion in theoretical elaboration on social costs and financial stability.

**Keywords:** social costs, financial stability, financial crisis, macro-prudential regulation.

**Streszczenie:** Autorka omawia koszty społeczne kryzysów finansowych, argumentując, że wspieranie stabilności systemów finansowych, w połączeniu z zaufaniem publicznym do rynków finansowych i bankowości, prowadzi do zmniejszenia kosztów społecznych poprzez redukcję częstotliwości kryzysów związanych z długoterminowym rozwojem sfery finansowej na świecie. W oparciu o propozycję Adrian, Covitz i Liang [2014], autorka dowodzi, iż regulacje ostrożnościowe mogą obniżyć koszty społeczne kryzysów. Wymaga to aktywnej roli instytucji regulujących sektor finansowy i banków centralnych, ponieważ preferowana wrażliwość systemu finansowego na szoki może być osiągnięta poprzez działania makroostrożnościowe i zwiększenie przejrzystości systemu, jak również przez zarządzanie społecznym postrzeganiem stabilności (bezpieczeństwa) tego systemu. W celu uzasadnienia istnienia wspomnianej powyżej relacji przytoczone są wybrane badania empiryczne, a także dokonane jest teoretyczne opracowanie dotyczące pojęcia kosztów społecznych i stabilności finansowej.

**Słowa kluczowe:** koszty społeczne, stabilność finansowa, kryzys finansowy, regulacje makroostrożnościowe.

## 1. Introduction

The concept of financial system stability, although it arises primarily in the context of systemic risk and tasks related to macro- and micro-prudential regulation, is one of the key concepts also for the modern social policy. In this discussion paper, we explore and discuss the following thesis: **supporting the stability of financial system, even at an increased cost of supervision, leads to the decrease in the total costs of the crisis, by reducing significant social costs in the economy.**

As maintaining financial stability means reducing the frequency of the crises, it seems nowadays necessary to enable a sustainable and balanced pace of development of the real sector, which, combined with the public confidence in the financial markets and banking, supports the long-term economic development. On the other hand, as the recent global financial crisis showed, a deep financial crisis is to be followed by economic stagnation, disturbing the pace of growth of the economy, directly impacting the employment rates, not to mention the costly bail-out which put significant strains on public debt.

According to the theory of classical rationalism all markets, and therefore also the financial sector, have a natural ability to self-regulate. Therefore, based on this theory, one assumes optimal allocation of goods in a free market system and expects the correct valuation of the assets anchored in their fundamental value. As practice shows, nonetheless, the financial sector management plan based on these assumptions and introduced in the United States by A. Greenspan, has resulted in a series of speculative market bubbles, which in face of increasing instability of the financial sectors in many countries around the world, ultimately led to the destabilization of the global financial system and the knock-on effect, i.e. the global financial crisis of 2008-2012.

The significant slowdown of economic growth – the inevitable consequence of this destabilization – has already resulted in an increase of the basic social costs in the form of, inter alia, unemployment or decline in confidence in financial institutions. It is, then, possible to expect that in the longer term, the allocation of goods in the real economy will also have suffered from the destabilization of the global financial sphere. Due to the recent crisis, two important trends around the world appeared in relation to the financial system: the tendency to increase regulation of the financial sector and the expansion of the research on defining and measuring its actual stability.

The purpose of this paper is to investigate the problem of social costs generated by financial crises and to put forward new arguments for maintaining financial stability, based on a new combined theoretical framework joining the theory of social costs and systemic instability. The major focus refers to the idea that even at the increased cost to the financial system, in the form of various supervisory activities and additional (costly) regulation for transparency, or even when a central bank is acting against its inflation target in the short run, these costs are smaller and more ethically distributed between the participants of the financial system, than the social costs which are generated if systemic risk materializes in the form of financial crisis.

To this aim, the paper refers to the most fundamental theory of social costs by K.W. Kapp [1971] and to the proposals of H.P. Minsky [1986] regarding instability, assorting them into one framework. Next, the contemporary changes taking place in the financial sphere and the real economy are reviewed. Subsequently, the results of selected empirical studies [Jacoby 1994; Knowles, Pernia, Racelis 1999; Cutler et al. 2002; Cruces, Wodon 2003; Suryahadi et al. 2003; Dell’Ariccia et al. 2008; Reinhart, Rogoff 2009; Claessens et al. 2009; Stuckler et al. 2009; van Dijk 2013] are recalled from the literature and summarized, indicating a wide range of social costs resulting from the banking and financial crises. This leads us to the re-definition (expansion) of the term of *social costs*. The final part of the paper is devoted to the discussion of possible theoretical mechanisms of how effective and consequent increasing of the financial system stability may potentially lower social costs of crises, based on the framework proposed by [Adrian et al. 2014] and adopted as a baseline for the discussion of social costs. The paper concludes with proposition of further empirical studies in this topic.

## **2. Social cost in the theory of Karl William Kapp applied to the financial sector**

Basic Karl William Kapp, a representative of the institutionalist trend in economics, developed the idea that market competition does not lead to the socially efficient allocation of resources. Instead, the competition is what promotes the pursuit of individual profit in ways that bring costs on society. Kapp proposed the following definition:

“the *social cost* term refers to all those harmful consequences and damages which third persons or the community sustain as a result of the productive process, and for which private entrepreneurs are not easily held accountable.” [Kapp 1971, p. 14]

Just as the neoclassical version of this definition, it implies that the costs are shifted. However, in contrast to neoclassical theory, Kapp sees it as the natural phenomenon resulting from the competition in a materialistic society [Swaney, Evers 1989, p. 7-33]. According to this theory, in a free market economy, there is little incentive to generate the efficient allocation of resources. As a result, even if the economy could act as a free market, the allocation of resources would never be effective, because many costs are shifted to society, while mainly a small group of entrepreneurs (owners) is the one to benefit.

More recent literature finds the definition of social costs wider and much more general. For instance, van Dijk understands social costs as any negative impact on society postulating “a wider-angle lens [which] exposes broad-ranging implications for society” [2013, p. 1]. Among examples of such costs we find the negative effects on what we see nowadays as the elements of the social welfare and the aspects in which societies realize their human rights. He argues:

“When evaluating the consequences of a financial crisis for society (as well as potential ways to alleviate these consequences), it is (...) important to look beyond traditional economic variables and consider a wide range of other indicators of societal welfare. Financial crises tend to come at a great cost to society. Not only are the economy and banking sector of a country hit by a crisis, so are the health, education, poverty, and gender equality of its people.” [van Dijk 2013, p. 16]

Following the approach cited above, the working definition of the social costs, relevant for this discussion, is through investigation of socioeconomic indicators. In fact, it may be proposed to define social costs as all effects of disturbance in the economic or financial sphere where we observe statistically significant and time-persistent worsening of socioeconomic indicators<sup>1</sup>. Put differently, social costs may actually be understood precisely as all negative consequences carried by the society whenever an adverse event hits the economy.

In economics, there are many theoretical approaches which reject the concept of efficient self-regulation. Institutionalists, as Kapp [1971], but also Veblen [1958] and Minsky [1986], reject the idea of striving for equilibrium and perceive the financial sphere as the main source of the problem in a capitalist system dominated by material interests. Minsky introduces the term of *preanalytical vision of financial markets* and their role in guiding the evolution of the economic system. In this approach, the dynamics of the decision-making system do not seek the balance or rational behaviour of individuals, and, therefore, it leads to systematically irrational results.

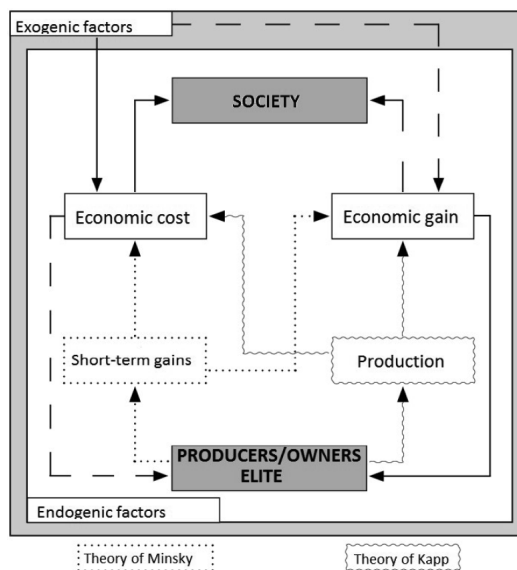
As Minsky puts it, the models used by the agents are the only known models, and the agents use these models, even though they know that their models are wrong. Thus, their behaviour is based on models which are familiar to them, of which they know they are wrong. Therefore, those models are subject to revision, and when the models change, the agents change their behaviour as well. Such approach has been later further developed and expanded in various behavioural studies<sup>2</sup>.

In the financial instability hypothesis by Minsky [1986], the uncertainty is a result of the involvement in uncertain commitments to future financial payments of financial flows which are also uncertain (as they *may* take place in future). In turn,

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<sup>1</sup> The precise definition of what is understood as “statistically significant and time-persistent” varies with empirical studies carried so far by various researchers (reviewed further), but most fundamentally, it should be understood as referring to measurable effects which exist not only directly during the crisis of any sort, but also have long-term lasting effects on social welfare.

<sup>2</sup> Many authors point to the behavioural aspects of the financial system as the source of bubbles [e.g. Miller 1977; Scherbina et al. 2002, Scherbina 2008; Ofek, Richardson 2003; Brunnermeier, Nagel 2004; Hong et al. 2008; Xiong, Yu 2011], market crashes [Flannery 1996; Caballero, Simsek 2013; Gorton, Ordóñez 2014] or even as the source of systemic risk [Bryant 1980; Acharya 2001, 2009; Acharya, Yorulmazer 2008a, 2008b; Duffie 2010; Fahri, Tirole 2012; Freixas, Rochet 2013]. Interesting source of further information may be the review studies of Brunnermeier [2009] or Benoit et al. [2015]. Some authors even propose to utilize behavioural properties in the prognostic measures of financial stability [e.g. Nelson, Perli 2007, Segoviano, Goodhart 2009; Acharya et al. 2010; Jobst 2014; Brownlees, Engle 2016; Karaś, Szczepaniak 2017].



**Fig. 1.** Social costs in the economy according to the theory of Kapp and of Minsky

Source: own study based on [Kapp 1971; Minsky 1986].

these future financial flows will not take place, unless at certain time in the future there will be readiness to take on additional financial obligations (i.e. future expenditures determine the realization of the possibility of obtaining future revenues). Therefore, what one does today depends on what the others do today and in the future.

Since the commitments made in the past can no longer be verified, and those made today will not be verifiable in the future, the movement of such a system of liabilities in time does not necessarily strive for balance. Minsky postulated that the behaviour of the agent changes based on the results of previous behaviour and this causes instability in the long term, marking the classical rational economic theory imperfect. For example, during a boom (in which the expectations are almost always at least met) agents are encouraged to take on more and more risk, resulting in increased leveraging, which causes risk accumulation over time (and this risk is often not reflected in the market valuation). This phenomenon was investigated in relation to crises by many authors [see, e.g.: Bhattacharya, Gale 1987; Brunnermeier, Oehmke 2013; Brunnermeier, Pedersen 2009; Cespa, Foucault 2014; Diamond, Rajan 2005; Brunnermeier, Sannikov 2014; Brunnermeier et al. 2013].

As Minsky argues, the instability of the financial system increases as the result of innovation in the financial sector (i.e. reacting to the possibility of making profit) which is accompanied by a tendency to impose costs on society [Minsky 1986]. Some of these costs stem directly from normal business procedures, such as targeted use of the client. Other – larger social costs, are created by the effects of aggregated

risk, when a bubble – formed over time – bursts suddenly, destabilizing the entire financial system in the short term, and often the economic growth in the longer term.

In other words, we deal *not* only with mechanical shifting of costs, but with the *creation* of social costs, which are a by-product of the behaviour focused on the short-term profit. And to a large extent, these social costs are not offset by the increase in the standard of living and other pro-social effects [Minsky 1992]. Swaney and Evers put it this way:

“Over time, then, social costs multiply not so much as the result of unfortunate, accidental side effects of economic activity, but more as the result of incentives within the economic system itself. In short, social costs are predictable, endogenous outcomes, as well as exogenous accidents.” [Swaney, Evers 1989, p. 12]

The above-cited problems of the theory of social costs are particularly useful for understanding the costs generated by the crises in the financial sector. For example, the financial system basically always transfers the cost of credit risk onto society, because the governments guarantee the safety of bank liabilities to their consumers with public funds. In addition, poor quality of leveraged investments means that loans, in some cases, allow the borrowers to use obtained resources in a socially costly manner, for example, to finance the construction of real estate that will always be incomplete or unsafe to inhabit, which afterwards must then be demolished or left to decay (Chinese *shadow cities* are a good example).

Another illustrative example are the events before the bursting of the speculative bubble in real estate market in the United States. Here, not only the unintentional shifting of costs took place (e.g. related to bailouts), but also a bad practice, in which the costs of the financial system were borne by local communities. A glaring example here is the indiscriminate granting of mortgages (called predatory lending) in order to take over the property from the owner at a later point – to resell it.

Other social costs were shifted to the local communities (the depreciation in value in real estate, deterioration of whole neighbourhoods), local governments (responsibility for the maintenance of the abandoned properties, as well as the homeless), on real estate agencies (deterioration of the customer base), and finally on the budgets (the decreased base for taxation). The process of foreclosure also increased the existing costs, because the agencies that serviced the mortgages (often banks) had an incentive to extend the procedures, so that the total cost of execution would become equal to the expected sale price of the house, leaving no value for the holders of the mortgage-backed securities) [Wray 2008].

The problem of conflict of interest described above and forming of the social costs, have their origin in the construction of the multi-stakeholder management system for the mortgage value. In the period before the last crisis, lack of transparency in the financial system in its initial phase led to the market panics, which further fuelled deleveraging mechanisms. In addition, due to the multi-dimensional linkages between the financial markets in the world, the knock-on effect took over not only

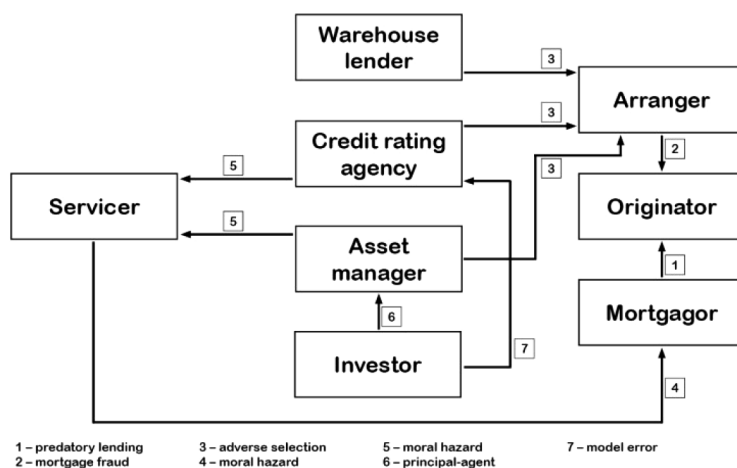


Fig. 2. Conflict of interest in the securitization process

Source: [Karaś 2014, p. 42].

the unstable, but also the more stable financial sectors of each country. As various authors point out the conflict of interest has various severe consequences for the stability of the financial system, therefore the described example may be seen as an illustration of a bigger persistent problem present in the financial sector in general<sup>3</sup>.

In the United States, the leverage on the so-called *junk assets* amounted to 500% debt to GDP, which means that every dollar of the revenue had financed an additional 5 dollars of debt in the form of mortgages, securitization and derivative instruments [Wray 2011, p. 5]. On a global scale, prices of such assets amounted to between 60 and 70 trillion US dollars at the moment of destabilization – the burst of the housing bubble [p. 6].

As another example, one can cite the systemic cumulative effect of the dot-com bubble burst in 2001, when the pension funds and funds managed institutionally, started to look for new investments which would not be correlated to equity prices. As a result, the financial institutions such as Goldman Sachs, as well as the researchers and experts from the US Pension Benefit Guarantee Corporation, pushed the pension funds to diversify into the market of commodities and raw materials.

Because the storage of goods is expensive, fund managers directed their investments into commodity futures markets (buying futures contracts for delivery of goods within a period of 1-4 months, after which the contracts were rolled on

<sup>3</sup> Interesting studies of the knock-on effect have been proposed within the equilibrium modeling (especially with dynamic stochastic general equilibrium models) approach, including studies of contagion by Gai and Kapadia [2010]; Zawadowski [2013]; Babus and Hu [2015]; Acemoglu, Ozdaglar and Tabbaz-Salehi [2015] and empirical research by Markose, Giansante and Shaghghi [2012].

the day of delivery). If the prices of raw materials increased, the contracts were sold at a profit. Huge flows of managed money flooded the market of commodities, increasing its liquidity and driving dynamics of the futures' prices. Since the market prices of raw materials are usually determined by the exchange rate in relation to the price of futures contracts, this created a vicious circle: rising prices of raw materials and goods, caused successive waves of speculative capital inflows.

Meanwhile, grain prices and oil prices have been driven at the expense of consumers, leading to deterioration of the status of life in many countries around the world. In other words, financial speculation (mostly by pension funds, which provided 85% of speculative liquidity in the futures market) have created huge social costs [Wray 2011, p. 8]. In addition, at a time of commodity prices collapse, other social costs were borne, this time by farmers and other people who have invested on the basis of belief in the fundamental principles underlying the growth of prices on commodity markets. Pension funds were also affected, lessening the amount of the future pension benefits, creating additional social costs, distant in time.

### **3. The social costs of crises – an overview of the results of empirical research**

Recent studies<sup>4</sup> show that financial crises are universal and apply to both rich and poor countries, and their impact on output growth, unemployment, inflation and activity of the financial sector is very significant [Dell'Araccia et al. 2008; Claessens et al. 2009; Reinhart, Rogoff 2009, 2010].

Many authors, e.g. Reinhart and Rogoff [2009], identify 187 crises in the financial sector (mainly banks) in the period from 1970 to 2009 in 126 countries. It is estimated that, on average, each of the countries surveyed suffers from a five-year-long crisis in every forty years [2009, p. 4]. More recent literature provides plentiful empirical evidence on destabilization in various regions of the world, including most developed countries in Western Europe, as well as less developed countries in its central parts [see e.g. Jakubik, Slačík 2013; Karkowska 2015, Jajuga et al. 2017]. Interestingly enough, studies are now bringing evidence that the level of development of a particular country impacts the type of the social costs that are generated [see: Jajuga et al. 2017, pp. 137-140].

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<sup>4</sup> The studies selected for this review cover only a small portion of the research carried in this respect, nonetheless, as most comprehensive were selected only to illustrate the major arguments of this paper and should not be treated as an attempt of the extensive review, which under the length limits of this paper, is impossible. For further reference one may consult the results of: Cutler et al. [2002] who report that mortality rates increased after previous financial crises in Mexico; Stuckler et al. [2009], who find mortality rates increases in OECD countries after economic crises; Knowles, Pernia and Racelis [1999], who document the reduced public spending on education and health care after the crises in Asian countries; Jacoby [1994] who shows effects related to education in Peru; Cruces and Wodon [2003], as well as Suryahadi, Sumarto and Pritchett [2003], who research the increase in poverty after financial crises in Argentina and in Indonesia.



**Table 1.** The final bill of the social costs of financial crises

The effect type, measured 6 years after the crisis	Effect size	Research by
The average occurrence of the crisis in the financial sphere per 1 country	Frequency: once in 40 years	Reinhart and Rogoff, 2009
	Duration: 5 years	
The mean cumulative effect of the banking crisis on the economy	GDP growth: -2%	van Dijk, 2013
	Unemployment: +2%	
	Inflation: +30%	
Stratification of society	Poverty gap: +12%	Claessens, Kose and Terrones, 2009
	The share of income BY the poorest 20% in GDP: -5%	
	Decline in rates of equality in the labour market	
	The average number of immigrants from countries affected by the crisis: +50%	
	The average amount of foreign aid (and debt) for the development: +50%	
The average impact on health	Life expectancy: -9 months	Dell'Ariscia, Detragaiche and Rajan, 2008
	Growth rate of HIV infection	
	A significant reduction in fertility of the population	
The social consequences of the crisis affecting youth	Recruitment to schools: -3.5%	
	Fertility of women aged 15 to 19 years: +4.5%	

Source: own study based on the literature quoted thereof.

What should be of primary focus in this discussion are the costs to society which significantly lower the quality of life, as understood by main international organizations. Importantly, so far there is little literature that points to these costs as tangible results of financial crises and puts them as opposite to the costs of sustaining stability. So far, interesting studies were conducted for instance with regard to a wide range of indicators informing about the state of health care and education, as well as in relation to poverty and gender issues (studies cited in the table above<sup>5</sup>) after a crisis.

<sup>5</sup> The survey covers all identified 187 crises, data analysis is based on panel models, social indicators and indicator variables relating to banking crises, and all models include fixed-effect control variables relating to the country, the temporal trend and the political system, as well as natural disasters or violence. The authors examine the effects of banking crises in the short term (the same year and the next year) and in medium term, i.e. over the next six years.

These analyses reveal the scale of the social costs of the financial crisis. Perhaps the most striking indicator is that the average life expectancy decreases by more than 9 months within six years after the crisis. This result indicates serious negative consequences of the financial crisis for health care. A large increase in the growth of HIV infections and a significant reduction in fertility were also found. All such observations point to social costs in the ethical/moral sense, but also to tangible ones, which put strain on state budgets (public health insurance, social insurance, early health-related retirements, etc.) adding to public debt in the longer run.

Financial crises also affect young people. School recruitment decreases, suggesting that there is a tendency to interrupt the process of education of children in times of crisis, for example in order to save on the cost of education (richer countries), or to employ children to help in the household (poor countries). This may significantly affect the pace of economic growth in the longer run, implicitly bringing lower tax revenues in the future. This will mean lower investment for societies by the state, all in all decreasing the level of life in the longer horizon.

Interestingly, while the overall fertility rate falls in and after the crisis, the fertility rate among adolescents significantly increases: by 4.5% compared to the average of 62 births per 1,000 women aged 15 to 19 years. This stands in the way of the reduction in fertility of young people, which is one of the Millennium Development Goals formulated by the United Nations (Item 5.4, Objective 5: “Improvement of maternal health”) [McArthur 2014]. In addition, the gender indicators in relation to the labour market also show deterioration, only adding to the issues of inequality and discrimination of females.

It comes as no surprise, that poverty increases greatly in the emerging countries during and after the crisis. Even though, as some studies show, this effect is not statistically stable and there is no evidence of the long-term impact of the crisis on indicators of poverty and income equality, it is worth mentioning the studies which prove that both the number of refugees from a country affected by the crisis, as well as the amount of development aid flowing into the country from foreign sources, increases by about 50% on average within six years after the crisis [Claessens et al. 2009]. This generates additional deferred social costs, because in most cases such aid is burdened with the cost of debt servicing, also in the form of interest. Moreover, a major part of this funds is spent on (re)building the financial infrastructure, a certain going back to *status quo*, instead of being spent on actual further development.

If we distinguish different groups of countries in terms of economic development, it becomes obvious that most of the abovementioned social costs relate to the less developed countries, which is not surprising because these countries have worse economic mechanisms to prevent the crisis. To make things worse, the evidence was also found that highly concentrated banking sectors (typical for less developed countries) are less predisposed to help people cope with the effects of the financial crisis [Stiglitz et al. 2010]. This makes getting out of the recession more time- and

means-consuming and strengthens the effect of ineffective distribution of resources described by Minsky [1986].

On the basis of the quoted data, it can also be observed that in more developed countries (with more involved forms of social policy) the sphere of health care and education suffers less as a result of the crisis. This gives new arguments in the debate about how social policy models could be optimized from the point of view of the public good. Nonetheless, above all, financial crises clearly bring about social costs in many spheres of the social welfare, and the costs have long lasting effects. This affects not only those directly involved with the financial system as its clients, but also the rest of the community, i.e. the innocent by-standers.

It may be postulated, that when we analyse social cost in relation to the financial crises, it is crucial to extend their definition to include the *feedback effect* that increases public debt, understood both as *explicit (tangible) debt*, and also (and above all) *the implicit one* (future budgetary outflows), that will affect countries for many years to come after the crisis ends<sup>6</sup>.

#### **4. The specificity of the modern financial market in the context of the social costs**

In principle two primary interpretations of the government intervention in the economy may be identified [Williams 2004, p. 1]:

- public interest theory,
- theory of regulatory capture.

In public interest framework, the regulator intervenes in the economy as a maximiser of social welfare that efficiently corrects market failures [Pigou 1932]. Unfortunately, in its core this theory is unable to account for empirical evidence such as competing concepts of the public good, as well as ascription of unrealistic attributes to regulators or underestimation of the impact of organized interests [Baldwin, Cave 1999]. It also stays inapt in explaining why regulation fails to deliver public interest outcomes on various occasions.

The theory of regulatory capture asserts that regulation is acquired, designed and operated by a given industry for its benefits [Stigler 1971, p. 3]. Here, external regulators are perceived as the suppliers of regulatory services, demanded by the industry in a political and economic sense. Within this framework, Becker [1983, 1985] proposed the economic theory of interest groups which is able to explain the trend towards deregulation which began in the 1980s (primarily in the USA).

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<sup>6</sup> In this paper, we limit the discussion to social condition indicators, however there are many economic indicators generating implicit budget strain. A relevant example may be long term deflation, affecting not only economic growth, but also pension savings of citizens, as showed by the example of Japan (lowering the value of savings), and more recently by some European countries (and pushing back the retirement age).

In the model of this author, the taxpayers lobby for lower taxes, while the “subsidy recipients” lobby for higher subsidies. The political favours equilibrium depends mostly on the impact of the deadweight costs, which – according to Becker, “tend to lower the effectiveness of subsidized groups and raise the countervailing political power of taxpayers, giving taxpayers an intrinsic advantage in the competition for influence” [1983, p. 381]. In effect, the regulations with high social costs will not survive competition among pressure groups.

This theory may be applied to the phenomenon of deregulation (the drift towards self-regulation) that took place in the financial system. Importantly the problem that came to light in the effect of deregulation refers to the fact that much of the social costs generated by the financial market failure, as discussed before, are implicit and deferred in time. Therefore, the benefits of (costly) regulation are not clearly visible to societies in real time, and market drifts towards self-regulation.

In economic theory, self-regulation may refer to many various characteristics and phenomena. In its strongest form, the financial crisis may be called the ultimate self-regulating tool, as during a crisis the most ineffective (e.g. too leveraged, overly risky) financial institutions will fail clearing the market from inefficiencies. If the most ineffective institutions will happen to be also the biggest market participants, precisely only the crisis may force them to default<sup>7</sup>.

Arguments against self-regulation particularly apply to the financial sector in the context of the social costs. At the most basic level, traditional banking relates to customer relationships which allow for careful underwriting (assessment of creditworthiness), and what goes with it, ensuring the enforcement of the credit payment at maturity. Long-term relationships with customers increase the probability of success of the business model, because future access to banking services is pending on the fulfilment of the past and current liabilities. Moreover, the bank’s corporate culture is developed so as to ensure and enforce the rules of behaviour by employees and consumers. Also, the relationships between the banks are *de facto* a market in itself, acting on the basis of formal and informal agreements, which are necessary for mutual protection. Banks are often obliged to support each other or collapse without the support of others, due to the likelihood of contagion and the liquidity effects [Leitner 2005; Acharya 2009; Acemoglu et al. 2015].

Social policy in many developed countries promotes the use of bank liabilities as the primary means of payment. According to the theorists of social economy, this phenomenon was not created in a natural way. A well-functioning payments settlement system requires settlements with zero balance at the end of the day [Zhu 2001, p. 107]. For this reason, the zero balance accounts were introduced

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<sup>7</sup> There were recently interesting proposals put forward in scientific literature regarding regulatory solutions which attempt to better aim the costs of regulation in ways which would disable financial institution from shifting these costs at society [see: Allen, Gale 2007; Morris, Shin 2008; Perotti, Suarez 2011; Stein 2012; Freixas, Rochet 2013; Bianchi, Mendoza 2015].

already in 1913, with the Federal Reserve Act, which was created by the Central Bank of the United States, whose main objective in the early stage of operations was to ensure the settlement of the demand on deposits. However, already then, the Fed's role was limited to supporting lenders (banks) only with good liquidity position.

And so, in 1930 the payment system collapsed when the bank depositors' panic escalated, because they rightly feared losing their savings. That is why the Congress created the Federal Deposit Insurance Corporation (FDIC) to ensure the safety of depositors of banks, thrifts, and certain other financial institutions. This effectively eliminated the bank panics for some time [Zhu 2001, p. 106]. Yet, with the increasing amount of financial innovation, the number of uninsured forms of financial intermediation increased and, by the 21<sup>st</sup> century, the panic returned for other types of bank liabilities, such as the certificates of deposit (CDs) [Diamond, Rajan 2005; Brunnermeier, Pedersen 2009; Cespa, Foucault 2014].

The combination of access to the central bank – as the lender of last resort – and the deposit insurance, all gave the banks the access to very cheap and stable sources of funding. Furthermore, the regulations restricting the interest rates on deposits helped to keep the cost of the financial sector at a low level. A large part of the operating costs of banks was shifted onto the society in the form of transfer fees, card or personal account and deposit charges. All of this allowed the banks to support the payment systems. Furthermore, and most importantly, due to the fact that banks' liabilities are guaranteed, the implementation of the credit risk in crises led to the socialization of bank's losses [Zhu 2001, p. 108].

A good example of how the innovation in the banking system led to the increased volatility in the financial sector relates to investment banks. Before the crisis, these banks were largely free to select their investment portfolios and management techniques. They were obliged to report the results only on the basis of the market prices and some formal reporting. Importantly, the reports contained systematic errors, because the market did not reflect the fundamental value or level of risk of the instruments. When the financial bubble burst, systemically important investment banks went bankrupt, increasing the risk of the financial system collapse. Importantly, shortly before the global collapse, the investment banks gained access to the system payments maintenance, which increased the financial system's vulnerability to shocks. Only recently, it was decided to introduce the regulatory changes in the global financial system which committed these banks to increase the reserves and to undergo more stringent regulatory procedures [Jajuga et al. 2017, p. 37-43].

Over the last half-century, the tendency to reduce the banking based on long-term customer relationships has created a shadow banking system, which – being relatively unregulated in the presence of favourable market conditions – initiated the erosion of the stability of the financial sector. This erosion is also reflected in the change of the behaviour of banks, which largely adopted the wholesale sales model (neglecting the relationship banking and its self-regulatory benefits), and this has

changed them from the social support institutions into factories of finance [Wray 2011, p. 12].

From the point of view of hypotheses of H. Minsky, these structural changes have reduced the social performance of the financial sector. Minsky [1992] always insisted that the role of finance is to promote the economic development through a wider allocation of financial resources. In accordance with the assumptions of the mainstream institutionalists, he argued that the definition of promoting development should include streamlining the process of social distribution of wealth, equality and democracy, as well as the expansion of human capabilities. Instead, the modern financial sector promotes several different types of inequality, as it manages a major part of social resources. In the meantime, its constant unsustainable development promotes the cycles which make it often incapable of supporting the economic growth and job creation, unless – as the experience shows – it creates these jobs through the promotion of serial asset bubbles. Thus, it imposes a huge cost on the rest of society, even during the boom, but especially in periods of bust and instability.

Indeed, many attempts to rescue the financial sector (e.g. The United States, Iceland and England) caused enormous social costs. It could be argued further that rescue packages (called bailouts) *de facto* strengthened the moral hazard risk, cancelling the natural effect of catharsis which comes with every crisis<sup>8</sup>. However, as van Dijk [2013] postulates, the real economy is suffering as a result of crises, as unemployment, poverty and homelessness are rising, while, as Wray points out, politicians state not to have the resources to fight these problems [2011, p. 5].

## **5. Lowering the potential social costs of the crisis by supporting financial system stability**

It may be argued, that since financial crises bring about tangible explicit and implicit costs to society, it is sensible to postulate regulation which increases the stability of the financial system, even if the costs of this regulation would be also tangible. In the following section, we present one of the theoretical approaches defining financial stability as the sensitivity of the given system to realization of systemic risk. Then we proceed to theoretical application of such an approach to defining social costs, which are here perceived as the outcome of the sensitivity of the financial system to systemic risk materialization (i.e. financial crisis).

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<sup>8</sup> The existence of catharsis effect (the ultimate self-regulation effect), referred to herein, may be seen as a result of the tendency of markets to self-regulate, which gives the arguments to the Austrian economic school advocating the abolition of all interference in market mechanisms. Unfortunately, the hybrid-like form of regulation of the global financial system, i.e. the minimum of regulation – the maximum of security for large institutions, turned to be a form of monetary policy, both expensive and ineffective, and at the same time, restraining the natural cleansing mechanism of the market, resulting in the amplification of the risk of moral hazard.

The stability of the financial system can be understood as its ability to perform its functions in an efficient manner in good times, in a situation of increasing negative structural changes and in the face of destabilizing events: internal and external shocks [compare: Alawode, Al Sadek 2008; Kabza 2012]. Over the recent years, many proposals on defining and supporting of financial stability were proposed. One of the more comprehensive approaches is that of Adrian, Covitz and Liang [2014]<sup>9</sup>.

Their conceptual framework of financial stability, draws from price equilibrium theory. The starting point for these authors is the observation that during expansionary booms when measured risk is low, due to loosened funding constraints financial intermediaries tend to build up leverage and maturity mismatch, which results in systemic risk build-up [Adrian, Brunnermeier 2010, Brunnermeier, Sannikov 2014, Adrian, Boyarchenko 2012]. This leads to compression of the equilibrium pricing of risk [Adrian et al. 2014, p. 3]. The authors postulate that this compression – when paired with high leverage – makes financial intermediaries likely to amplify shocks in the financial system. This is said to “produce a trade-off between the overall level of systemic risk and the cost of financial intermediation, which in turn determines real activity through credit supply” [Adrian et al. 2014, p. 8].

The second element crucial for this framework is the importance of the financial sector resilience. It is the vulnerability of the system to fundamental shocks, which determines its level of stability. According to the authors, the shock amplification and translation mechanism works through interconnections and complexity within the financial system. In other words, for Adrian, Covitz and Liang [2014], stability is the condition of the system which depends on:

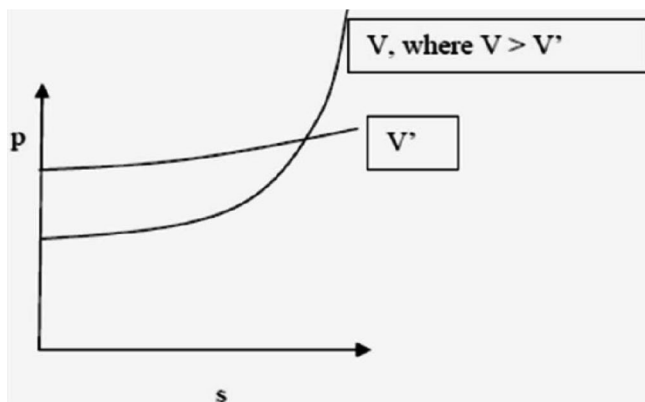
- the level of the price of risk, which increases with financial shocks;
- the vulnerability of the financial system to translation and amplification of shocks, which makes the sensitivity of the risk price to changes – high.

In other words, an unstable financial system is such a system where risk pricing is compressed, which increases system’s sensitivity to shocks and thus makes it vulnerable to systemic risk (see: Figure 3).

Adrian, Covitz and Liang [2014] postulate that the pricing of risk may be influenced with macroprudential regulation. These assumptions allow them to illustrate the notion of financial instability as a sensitivity function, where sensitivity (i.e. stability) depends on regulation. This further allows for postulating an active role of entities regulating the financial sector, as the sensitivity of the financial system to shocks can be negatively affected by regulation (see:  $\nu$  vs.  $\nu^*$ ). This can be illustrated with a similar theoretical function as the one proposed originally by the authors, which is illustrated by the next figure.

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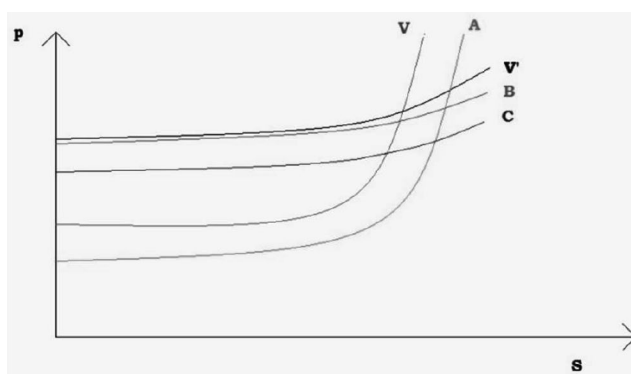
<sup>9</sup> The conceptual framework, which the authors illustrate with a sensitivity function, is only a theoretical elaboration, and as such has not been mathematically derived and drawing of the function graphically has an illustrative purpose only Proposal of such function is an interesting topic for research on its own, but as such is the purpose of this paper either. It, may, nevertheless, be expected that in the coming years, the function will become mathematically and empirically verifiable.



Note:  $p$  denotes the price of risk,  $s$  the size of the shock, and  $V$  is the vulnerability of the financial system.  $V'$  corresponds to a financial system with tighter regulation than  $V$ .

**Fig. 3.** Financial sector vulnerability to shocks and pricing of risk

Source: [Adrian, Covitz and Liang 2014, p. 5].



**Fig. 4.** Possible impact of prudential regulation and public perception of vulnerability of the financial system to shocks vs. social costs of the crisis

Source: own study.

Figure 4, illustrates the conceptual theoretical function of financial system sensitivity, of the kind similar to the one discussed above. However here, the function refers to the social cost of the crisis ( $p$ ), which depend on the strength of the destabilizing impact factor ( $s$ ). The proposed shape follows the proposal of Adrian, Covits and Liang, as it takes the same assumption about compressing of risk on the horizontal axis, as in the original framework (see the discussion above). However, as now we introduce the concept of various levels of the cost of regulation (which theoretically depends on the type and level of regulation), as well as different perceptions



of stability (following the basic behavioural theory), all in all this gives us a few potential sensitivities of the system to the crisis – and by proxy allows us to arrive at different levels of potential social costs of this crisis to society.

The basic sensitivity function ( $v$ ) is characteristic of the system with a low level of micro- and macroprudential regulation. In such a system, the costs incurred by the banking system in good times are low, so the social costs of financial intermediation are also low. However, since the sensitivity of such a system to shock is high, the probability of the crisis and rising of related social costs are very high (i.e. initially low  $p$  on the diagonal axis, but as the risk compresses and the destabilizing factor gains impact, the costs increase drastically). In addition, the level of stable confidence in the financial system in such a scenario is low, i.e. in face of destabilizing events, social tendency to panic is large and bank runs are highly probable (increasing the slope of the increase in the function as  $s$  progresses). This significantly increases the cost of the crisis in the long term, causing, among others, deleveraging and the consequent economic slowdown, as well as – in critical situations – buyouts of banks by the governments (increasing the costs in time and the slope of the function further).

The curve described as ( $v'$ ) characterizes a system with higher costs of economic stability, because present regulations lift the operating costs of the financial sector, and it is assumed that this sector effectively shifts these costs onto society in the form of higher service charges (higher initial level of  $p$ ). Yet, such a system is considered to be less sensitive to shocks, so in a situation of destabilization, the incurred social costs are lower (i.e. the slope of the curve is less steep, leading to lower costs for the same level of destabilizing factor  $s$  as before).

Additionally, the shape of the curves (A), (B) and (C) is dependent on the public perception of financial system stability. If, in fact, it is possible to provide a sense of social security, and thus avoid the knock-on effect caused by social panic, it can be assumed that the anchoring of expectations regarding the stability of the financial system will either:

(A) reduce the output level of the social costs (lowers the cost of doing business for banks, for example by reducing the need for advertising to get customers, as they have confidence in the banking system and are more willing to become its stakeholders – this will make funding cheaper and more available to society) without changing the level of the costs generated during destabilization (there is no additional costly fail-safe mechanisms); or

(B) reduce systemic vulnerability to shocks and the amount of the costs incurred in the crisis without changing the output level of the social costs of participation in the banking system (increased initial  $p$  as in this system regulation exists and brings about some additional costs), but only by reducing the convexity of the sensitivity function (anchored expectation of the society that the system is stable reduces the probability – and hence the costs – of panics); or

(C) affects the financial system vulnerability to exogenous shocks, both by reducing the output level of the operating costs of the system ( $p$  lower than in the case of  $\nu'$  – less costly regulation is still effective because of expectation of stability, while other costs of the financial system are lower, as the mechanism described in “A” holds ground) and by reducing the convexity of the sensitivity function (society is less prone to panic, as in “B”).

Regardless of which scenario would take place in a particular financial system, it may be assumed that introducing any effective measures for increasing the stability of the system should have a positive effect in terms of the social costs. To realize the potential for improvement to full degree, one need not only greater regulation of the financial systems, but also effective communication with the public regarding the stability of the financial system, the security of deposits and the levels of the investment risk, which must be accompanied by deepening society’s knowledge in the field of economic and financial mechanisms.

The postulation proposed above provides a field for further studies. In particular, one may attempt to empirically measure whether the postulated relationship exists and is strong enough to be statistically confirmed. Also, it seems interesting whether this relationship might have different strength in different periods of time. Nevertheless, for these aspects to be empirically investigated, a dependable (and such which can be translated among various countries) method of financial stability (where financial stability may be treated as a sensitivity function) measurement needs to be established first. Thus, these suggestions of further research relate to the research opportunities that will most likely come to exist in the following years.

## 6. Conclusions

The financial sector does not operate according to the principles of the neoclassical theory. Despite many years of rhetoric that deregulation improves efficiency by replacing the regulation with market discipline is effective, experience, as confirmed by empirical studies, shows that markets do not discipline financial institutions. As shown by the example of the securitization process, financial institutions in their final moments before the global financial did not work even in the interest of the shareholders, not to mention the public interest. Instead, leadership in large financial institutions got richer at the expense of the financial and public sector.

Deregulation of the financial sector historically was many times followed by crises, which generated social costs. As shown in the number of empirical studies, crises in the global financial sphere are extremely common, and their social costs are tangible. In terms of rising unemployment, restriction of economic development and augmentation of social stratification, one can cite specific indicators revealing the strength of the impact of the crisis on the society. All conducted analyses expose the wide-ranging consequences of the financial crisis, all decreasing the quality of life and generating not only explicit social costs, but also implicit ones postponed in time.

Studies show that financial crises have significant impact not only on unemployment and real estate prices, but also on the health and education. And most importantly, in the longer term these costs are revealed regardless of the doctrine of social policy, impacting liberal, institutional and collectivist social policy countries.

Following the approach in which the financial crisis is the reaction of a given financial system to a destabilizing factor and its impact depends on the sensitivity of the affected system to systemic risk, one can theorize that regulation, even if it is costly, benefits society by decreasing mentioned sensitivity lowering the severity of the crisis. This comes down to a basic observation, that in less affected systems, the total costs of the crises are smaller. As has been proposed, this sensitivity may be potentially brought to even a lower level, by increasing the society's expectations of stability – increasing public confidence in the financial system counteracting various behavioural effects. It seems reasonable, therefore, to say that the central monetary authority in every country, as the institution managing the financial sector, should take on the challenge of strengthening the stability of the financial system by both: prudential regulation and supervision, as well as by strengthening public confidence in the banking sector, while simultaneously educating the public about the investment risk.

The possibilities of further empirical research are plentiful. For one, social costs, understood as socioeconomic indicators worsening in relation to financial instability may be investigated with relation to European countries, especially in the face of the recent debt crisis in Europe. Another interesting area of research are longer term studies of the implicit costs of the crises. Finally, a direction of future research worth following is the verification of the sensitivities theoretically established in this paper. Such research should become possible in the years to come.

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