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Comparative Models of Capitalism in the Areas of Financial System and Corporate Governance – the Diversity of Capitalism Approach Perspective

Abstract

This article presents and assesses the methodology and results of a comparative analysis conducted by Bruno Amable in financial systems and corporate governance in the context of current policy and regulatory challenges. The article, which is based on a literature review and game theory examples, first describes and evaluates the methodology and final classification given by Amable. The role of Amable's core concept; namely, institutional complementarity, is underlined. A game theory application in comparative institutional studies is then presented, including the author's own "institutional game." Finally, we assess Amable's achievements in financial systems and corporate governance, concluding that they are valuable, innovative and useful despite some (perhaps justified) criticisms of the framework Amable used. In particular, the value of introducing institutional complementarity into comparative studies should not be underestimated. The analysis presented here suggests that Amable's methodology may also be applicable when designing current financial reforms in the EU, especially European Capital Markets Union (CMU), because it can broaden policy maker's horizons and promote consistent solutions.

Keywords: financial markets, banking, institutional complementarities**JEL:** B52, G21, G23

Introduction

The Diversity of Capitalism (DoC) is a vital modern concept in economics and political science. It refers primarily to comparative studies. Broadly viewed, DoC is a part of New Institutional Economics (NIE) – an increasingly popular heterodox economics school. Institutions, their role in economic development, and the conditions required for institutional change are at the centre of the debate in Europe and United States [Amable, 2003]. The institutional scheme of the economy (including financial system) is now perceived as a source of comparative advantage [Hall, Soskice, 2001; Schneider, Paunescu, 2012; Johnston, Hancké, Pant, 2013]. Comparing the economic performance of different countries from the perspective of NIE therefore seems crucial when designing efficient economic policies.

This article describes and assesses the results of a comparative analysis conducted by Bruno Amable in financial systems and corporate governance [Amable, 2003]. After introducing the topic, core definitions are presented. The key concept, institutional complementarity is described in the next section of the paper. We also apply selected game theory concepts to analyse institutional interlinkages in the economy before presenting our conclusions.

Core Definitions

A widely used² definition of financial system is "the collection of markets, institutions, instruments, regulations and techniques, through which the financial securities are traded, interest rates are determined, and financial services are produced and delivered around the world" [Rose, Marquis, 2011, p. 3]. This definition presents the financial system holistically from a global perspective. According to another definition, a financial system is composed of four links: "financial instruments; financial markets; financial institutions; and the principles according to which the first three operate" [Pietrzak, Polański, Woźniak, 2008, p. 20].

Representatives of NIE stress different aspects of the financial system. They refer directly to the definition of institutions as a rule and sanction mechanism, which leads them to consider a financial system as a "bundle of external and internal institutions that apply specifically to the financial markets." Following this logic, one can claim that "the financial market³ is (...) the playing field for agents, while the financial system itself provides the rules of the game" [Engerer, Schrooten, 2002, p. 9]. The value of shares and conditions for loans in bank-based systems are settled by agents, and the financial system provides them with the rules and procedures for executing transactions. This approach

underlines the importance of game rules, playing fields and interlinkages between players. Corporate governance, from the perspective of institutional comparative studies, relates to the structure of rights and responsibilities among parties with a stake in the company [Aoki, 2001].

Amable's Research on Financial System and Corporate Governance

Amable analysed countries in different institutional areas, focusing on:

- 1) product market competition;
- 2) labour market (wage-labour nexus and labour-market institutions);
- 3) financial intermediation sector and corporate governance;
- 4) social protection; and
- 5) education system [Amable, 2003].

After analysing those areas, Amable distinguished five types⁴ of capitalism that are characterized by certain features related to complementarity [Amable, 2003]. An analysis of financial systems is essential to presenting a complete comparative assessment of different types of capitalism. According to Amable, the variety of financial systems is much more sophisticated than a simple dichotomic distinction between bank-based and market-based ones. In light of many papers [Matysek-Jędrych, 2007; Allen, Gale, 2001] as well as the theory related to the Variety of Capitalism [Hall, Soskice, 2001], Amable's broad empirical research and classification seems to be quite innovative. Many papers compare two models, namely bank-based and market-based ones.

Financial Systems and Corporate Governance in Amable's Final Results

Amable presents 5 main models of modern capitalism in terms of their financial systems and corporate governance practices. Those models are characterized by a unique set of institutional complementarities and interlinkages. Compared to previous works [Hall, Soskice, 2001]⁵, Amable's classification seems more complex and insightful [Borowski, Maszczyk, Olipra, 2015; Maszczyk, 2015]. This is because of the scope of analysis and (quite interesting) cluster method, which creates a multidimensional analysis scheme – even if some detailed assumptions may need improvement. In particular, although Amable's cluster method appears valid, such detailed assumptions as the contradiction between foreign bank concentration and bond market capitalization is controversial and may not be justified.

In subsequent research [Amable, 2003], a simplistic dual vision of capitalism types was often rejected. The analysis conducted by Amable was useful for European public policies classification [Sapir, 2006], and introduced an advanced, sophisticated, comparative view that went beyond the dichotomy of *Liberal Market Economies* (LME) and *Coordinated Market Economies* (CME) and therefore should be deemed as a significant contribution.

Amable's first model is market-based (Anglo-Saxon) capitalism. Countries included in this group are: Australia, Canada, United States and the United Kingdom. These economies are characterized by a market-based financial system and shareholder-based corporate governance. Direct company financing obtained through market channels plays a major role. Bank credit is of lesser importance. In the United States, the economy is only 25% bank-financed, while in Europe this fraction is about 75–80%. In the literature one can find recommendations to shift towards a market-based system, especially in the context of stricter capital regulations for banks and potential deleveraging after the financial crisis [Wehinger, 2012]. This is a sophisticated, multi-level and crucial issue for modern debate in Europe. Different aspects need to be considered – from bank size⁶ to their complex business models, which contain both depository-lending and investment banking⁷.

In the Anglo-Saxon model banks act more as brokers and market makers for different financial instruments issued by companies. Fees and other remuneration linked to organizing equity or debt issuance represent a substantial part of banking system income. Bank credits, although present in those economies, are less developed. The profitability of the banking sector in a market-based economy is not dependent on net interest margin (the difference between interest income obtained by banks from borrowers and interest paid out to the lenders – e.g., depositors).

Company ownership is dispersed because most large and medium-sized enterprises are publicly traded. This creates an opportunity to develop investment funds, pension funds and other institutional investors. Pension funds may play a significant role in financial markets because the pension system is a capital-oriented one. Institutional investors provide services to their clients and sufficient liquidity levels to financial markets. Capital market transactions, such as mergers and acquisitions, as well as Initial Public Offerings, are frequent and well developed. Constant valuation in the stock market and, in particular – mergers and acquisitions – allows swift, effective corporate governance. The financing of risky, innovative projects is provided by venture capitalists. Innovations are supported by specialized investment funds that seek high potential businesses while accepting substantial risk.

In market-based capitalism – as previously noted – banks are often involved in capital market transactions that can boost their profitability in comparison to the deposit-lending model of banking. Although the banking business model is becoming more similar among different countries, this is still the case. If we look at the ROE of the banking sector before and after the global banking crisis of 2007 (Figure 1), we can state that banks in market-based economies are more profitable than in European countries.

FIGURE 1. ROE in banking sector for selected countries and Euro Area

Source: Economic Data – Federal Reserve Bank of St. Louis, 2016.

FIGURE 2. ROE in banking sector for Poland

Source: Economic Data – Federal Reserve Bank of St. Louis, 2016.

The value of ROE in Poland (Figure 2) is similar to observed in European Continental countries. It also shows indirectly the “traditional”, i.e. depository-lending, character of the Polish banking sector. Those features make the Polish banking sector less risky and less vulnerable to market shocks. Low interest rates, however, may affect the Polish financial system in a severe way, as its profitability is mainly based on net interest margin.

Classification of Poland's financial system is not the topic of the article. Nevertheless, it is worth mentioning here that Amable's framework does not work properly when applied to Poland and other post-socialist economies. The developing capitalism model that we observe in Poland is not consistent with any of the types identified by Amable, and constitutes a hybrid type [Romanowska, 2016], sometimes classified as a dependent market economy [Nölke, Vliegenthart, 2009]. Regarding financial systems and corporate governance, the literature [Romanowska, 2016] indicates that Poland presents elements of Mediterranean, Social-democratic, and Continental models. Some restrictions on market functioning and efficient corporate governance, the poor quality of the business environment, and the prevailing role of foreign capital and underdeveloped equity financial markets are among the elements of the Polish hybrid type of capitalism in the financial system area [Romanowska, 2016].

Amable's works focuses particularly on European Continental capitalism. The financial system is a vital pillar of that type of capitalism, which is characterized by mature transformation based on bank credits and loans. In comparison to the banking sector, financial markets are underdeveloped. In countries representing this type of capitalism (e.g., Germany, France, Austria, Norway) one can expect financial intermediaries (i.e. banks) to play an active role in strategy making, monitoring and corporate governance in the corporate sector. The diminishing uncertainty of the European banking system is – according to Amable – able to provide real economy with patient capital. As a result, it may help companies develop long-term, stable strategies and “invest” in social compromises and collaborative industrial relations.

Amable implies that funding stability is a major advantage of the European system over a market-based system. But Amable does not appear to sufficiently justify this statement in his work. Moreover, there are some counterexamples. Firstly, institutional investors (especially pension funds) can provide companies with stable capital, which they often invest in dividend “blue chips” companies. Moreover, when financing innovative ventures banks are not interested in granting loans due to high risk. It may be that private equity funds or business angel activities (as capital investors) are the primary solutions for start-up companies. The implicit – and not fully justified – assumption that bank credit is a more stable source of financing companies may undercut this part of Amable's research.

The remaining three types defined by Amable are: Social-democratic, Mediterranean and Asian capitalism. They are not presented here, since Tables 1 and 2 compare Amable's capitalism models and complementary interlinkages.

TABLE 1. Financial intermediation and corporate governance – Summary of Amable's analysis

Market-based (Anglo-Saxon) Capitalism	Social-democratic capitalism	Continental European capitalism	Mediterranean capitalism	Asian capitalism ⁸
Australia, Canada, United Kingdom, United States	Denmark, Finland, Sweden	Switzerland, Netherlands, Ireland, Belgium, Norway, Germany, France, Austria	Greece, Italy, Portugal, Spain	Japan, Korea
<ul style="list-style-type: none"> – well-developed minority shareholder rights protection⁹; – free market as an effective corporate control mechanism (stock selling, mergers and acquisitions) – shareholder-oriented corporate governance; – dispersed ownership of companies; – sophisticated and well-developed financial markets – significant role of institutional investors, for example pension funds; – substantial role of venture capital / private equity funds, especially in innovative project financing 	<ul style="list-style-type: none"> – bank-based system; – market is not seen as a coordination mechanism or tool for corporate control and corporate governance; – high ownership concentration among companies; – concentrated banking sector that plays a significant role in financing companies, low level of financial market development, but with a significant role of institutional investors in the real economy 	<ul style="list-style-type: none"> – low minority shareholder rights protection; more stakeholder-oriented corporate governance; – high ownership concentration in the corporate sector; – non-market corporate control mechanism and corporate governance based on long-term relations with the participation of a highly concentrated banking sector; – relatively underdeveloped financial markets and crucial role of bank credit in financing enterprises 	<ul style="list-style-type: none"> – bank-based system; – corporate governance of relatively low quality; based especially on informal and family relations with a meaningful role of banks; – high ownership concentration in companies; – underdeveloped financial markets and a small role for venture capital funds 	<ul style="list-style-type: none"> – bank-based system; – low minority and external shareholder rights protection; – high ownership concentration in the corporate sector; – meaningful bank participation in management and corporate governance; – financial markets and capital transactions (mergers and acquisitions) rather underdeveloped compared to the Anglo-Saxon model

Source: Amable [2003].

The Role of Complementarity

The key issue that Amable brings to comparative studies of capitalism is a focus on complementarity. The concept of complementarity appears in the institutional economics literature [Aoki, 1994] and focuses on the diversity of capitalism¹⁰ [Amable, 2003].

While there is no optimal institutional structure model for the economy, the different roles of institutions and governments are features that distinguish various market economies. The consistency of arrangements driving product markets, labour markets, financial systems, corporate governance, the welfare system and education determines the actual quality of the institutional environment in a given country. Studies of complementarity were a crucial step that laid the groundwork for Amable's classification of capitalism's types.

Amable provides several definitions of complementarity; the first refers to dynamic stability. Specifically, institutional complementarity occurs when an institution (its existence and features) in one area reinforces the effectiveness of other institutions [Amable, 2003]. The second definition underlines economic performance. Two institutional forms are complementary when they facilitate better functioning of the entire economic system; pushing it to local optimum and changing the institutional combination will create worse economic outcomes (e.g. in terms of GDP growth) [Amable et al., 2005]. Table 2 presents the main channels of complementarities [Amable, 2003]. Another, recent subject of much institutional research is innovation, particularly its interlinkages with other dimensions [Allen, 2013], including the financial system and corporate governance [Tadasse, 2006].

Amable focuses on one example of complementarity interlinkage. The crucial institutional arrangement that interacts with industrial relations and labour markets is the financial system [Amable et al., 2005; Amable, 2003]. This approach is also presented in other works [Hall, Soskice 2001]. Wage bargaining methods are related to historical conditions that would likely be difficult to change in the short-term. The combination included in the model is limited to: centralized and decentralized wage bargaining on the one hand, and bank-based and market-based financial systems on the other hand. Complementarity occurs when central wage bargaining is accompanied by a bank-based financial system, as well as when decentralized wage bargaining is followed by markets-based financing. This conclusion assumes that centralized wage bargaining supports long-term strategies. In that case, companies seek stable financing and (probably) employees with specific skills and education. Stable financing may be provided by banks, because their decisions are theoretically long-term and independent of current stock prices.

TABLE 2. Institutional complementarity with the financial system for different models of capitalism

	Anglo-Saxon (market-based) capitalism	Social-democratic economies	Continental European capitalism	South European capitalism	Asian capitalism
Product market	High level of competition requires quickly reacting financial markets	Long-term strategies of companies require „patient” financing	Moderate competitive pressure creates room for stable finance-industry relations that are associated with the banking system	Low competitive pressure fits well with stable finance-industry relations	Protection against foreign capital impairs the development of sophisticated financial markets and corporate governance systems
Labour market	A flexible labour market is consistent with quick, effective evaluation through financial markets	Employment protection requires „patient” capital	Employment protection limits strict short-term-profit constraints	Employment stability requires a lack of short-term constraints	Specific Asian corporation-based market calls for more stable finance
Social protection	Underdeveloped public-funded social protection leaves space for capital market-based tools	Welfare state system decreases demand for market-based investment tools	Well-developed welfare system restricts the need for individual risk diversification	Low welfare expenditure may increase demand for individual risk diversification; however, informal and family relations are of a substantial importance here	Underdeveloped public social protection leaves space for private welfare funds
Education system	Private education system creates a niche for market-based financing offers for students		Stable employment perspectives call for more specific educational backgrounds		

Source: Amable [2003].

Amable's research [Amable et al., 2005] provides an interesting and sophisticated view of this issue. Using a simple game theory model, he reaches conclusions related to the dynamics of trade union – manager relations. However, while Amable's results are consistent with the aforementioned ideas, they reveal a broader view. The primary outcome of the model is that the first agent – game participant – who breaks the cooperative deal (between trade unions and management or shareholders) due to increased pressure by financiers is the weaker player. The weaker player, in turn, is one whose remuneration would be more

influenced. Secondly, one claims that strong trade unions (central wage bargaining and long-term cooperative relations between unions and management) are complementary with less developed financial markets. On the other hand, strong and influential financial markets are complementary with relatively weaker trade unions. In that case, employment conditions are negotiated individually and the position of workers is not protected. Both described combinations lead to a substantial probability of company survival. Given the above-mentioned dynamic stability definition of complementarity and Amable's analysis it appears that strong and well-developed financial markets may discourage cooperative strategies in inter-company relational settlements.

Although the presented model is convincing, the results may be hampered by the previously mentioned lack of sufficient proof that direct financing obtained through financial markets has to be more volatile than banking credit. It seems that the differentiated nature of financial markets should be included in the analysis. Financial markets are a mechanism for companies to obtain equity and debt, but a more detailed analysis is needed here. A good example of a fairly stable equity financing obtained through market channels is private equity, venture capital funds, and business angels' activities. Those investors provide companies with long-term financing and accept a high level of risk in exchange for a higher expected return. In general, pension funds are also interested in long-term capital investments.

Institutional Games

From a methodological perspective, it is worth mentioning that game theory is widely used to present complementarity [Amable, 2003]. While this method may not illustrate all potential institutional interlinkages in detail [Aoki, 2016], in general it is useful for such research.

Nash equilibrium is defined as a list of strategies, one for each player, in which no player can unilaterally change his strategy and obtain a better payoff [Turocy, von Stengel, 2001]. In other words: a set of strategy profiles that are the best answers to each other. If we link this to the definitions of complementarity presented in this article, equilibrium from game theory depicts exactly the situations when institutional "choices" of particular agents are optimal at given "choices" of partners. Finding Nash equilibrium in the "institutional game" allows us to assume that the system should be stable and none of the agents has an incentive to initiate institutional change.

Table 2 presents the most vital complementarities to financial system analysis. One can extend the game analysis proposed by Amable towards different vital complementarities. Below is an illustrative example of a sequential game, where an analysis of Nash equilibrium and Reinhard Selten's subgame perfect equilibrium¹¹ is presented. The game

refers to interlinkages underlying complementary relations between the financial and education systems in a particular country.

The game described below is another example of game theory application in institutional studies. It shows the interpretation of Selten's perfect equilibrium in the institutional context, which goes marginally beyond the framework used by Amable. It also illustrates the core idea of complementarity. Though simplistic, it may be a useful step to creating more complex models of finance-education interlinkages.

Game participants:

1. Companies ("C") that may choose between two strategies: looking for direct financing through market channel ("M") or through bank credit ("B").
2. Potential workers ("W") that may choose between two options: a general or a specific education path. This leads to four strategies in sequential game: GG, GS, SG, SS. The first letter depicts the decision, if companies chose M. The second letter shows the decision when the first actor plays B. Following that rule, the strategy defined as GS means: workers choose general education if companies are financing themselves through market channels and specific education if banks prevail in the financial system of particular country.

In the presented version of the game one can assume that the choice of financial system precedes the education framework decision. This may fit well in reality, because an education scheme may be more easily reformed than a financial system. This is, however only an assumption and the game may also be structured in other ways¹².

Those players should be treated as a personification of processes that take place in the economy with the involvement of other actors; the government as a coordinator. The payoff matrix (presented in the Scheme 1 and Scheme 2) shows that general education brings better results in countries with financial systems based on a market channel [Amable, 2003].

That is why [M;GG] and [M;GS] are more beneficial for players than [M;SG] and [M;SS]. Choosing specific education in a country where companies are using bank credit is more beneficial due to the player's expected long-term involvement in one profession, job, or employer. This is illustrated in the game (Scheme 1 and Table 3) by the fact that [B;GS] and [B,SS] are more favourable for agents in comparison with [B;GG] and [B;SG].

It bears emphasis that the numbers presented in the schemes indicate the direction of differences between particular payoffs. They cannot be compared directly; for example, in this conceptual presentation two is bigger than one, but not necessarily two times bigger. Moreover, higher payoffs in the projected game for market-based financial systems over bank-based systems are an assumption made for the sake of presentation. In the real world, the issue of which equilibrium would be better in terms of payoffs is a very complex problem related to the history ("path dependence")¹³ and detailed features of institutions. This cannot be easily verified or even presented with formal models. Despite some limitations imposed by these assumptions, using numbers to indicate the payoff matrix makes the analysis easier and more intuitive.

The game is based on the same stable bank credit financing idea that Amable assumes [Amable, 2003]. The game is therefore consistent with what Amable achieved in the field of complementary interlinkages. Confirmation of the assumption of “stable credit financing” in the context of institutional comparative studies may be an area of potential future scientific contribution. Empirical studies¹⁴ face difficulties identifying one financial system (connected with complementary corporate governance) that supports better long-term growth [Levine, 2001]. The case of financing stability may be similar. Despite that, the lack of empirical or theoretical justification for assumed long-term and stable bank financing seems controversial, especially given the significance of this assumption to final analytical outcomes. Amable does not convince the reader that market-based financing is on average more volatile than banking credit.

SCHEME 1. Financial system – education complementarities – game in the extensive form

Source: own elaboration.

TABLE 3. Financial system – education complementarities – game in the strategic form

Companies' strategies	Workers' strategies			
	GG	GS	SG	SS
Markets	<u>7,6</u>	<u>7,6</u>	3,2	3,2
Banks	4,1	6,5	4,1	<u>6,5</u>

Source: own elaboration.

The sequential game has three Nash equilibria, namely: [M;GG], [M;GS], [B;SS]. [M;GS] and is a perfect equilibrium (aforementioned Selten's definition), because it leads to the equilibrium in each subgame. This game concept corresponds well with the essence of institutional complementarity and depicts the best educational system in relation to the previously made choice referring to financial systems.

Summary. Criticism, Limitations of Amable's Research and Further Research Directions

Amable presented an interesting method of cluster analysis applied to financial systems and corporate governance – we reviewed and compared those results here. In general, we favour building wider classifications of capitalism. Such classifications could offer more complex and accurate views in comparison to the dichotomic differentiation presented among others by Hall and Soskice [Hall, Soskice, 2001]. However, one should limit the number of classification categories to avoid describing particular countries and losing actual scientific contributions. There are still areas of improvement in Amable's analysis. Firstly, there is no convincing justification for differences between the European Continental model and the Social-democratic model in terms of finance.

Financial systems in many of the articles cited above are presented as variations of two extreme ideal models: bank-based and market-based. Creating a five-type classification may have facilitated the presentation of all institutional areas. In the case of financial systems, "partial" objection between markets and banks may be sufficient. Having said that, we recognize that the aim of Amable's work was to analyse whole economic systems – not only finance. Another issue worth mentioning is Amable's overly simplistic description of Asian economies and Asian financial systems.

Our analysis of Amable's method suggests that it is an appropriate tool for assessing types of modern capitalism. There are, however, several limits imposed by one assumption. The contradiction between foreign bank concentration and bond market capitalization does not have a strong theoretical or economic justification. The problem of rising volume of obligations (especially sovereign bonds) in bank balance sheets now goes far beyond comparative studies. This is a rather common dilemma for different economies that refers simply to a rising interdependence between the fiscal sector and stability of banks. A substantial part of the recent regulatory reforms in the EU (banking union) is aimed at stopping this adverse feedback [EC, 2015d] [BIS, 2012]. The problem also applies to other financial systems outside Europe.

Complementarity is Amable's most valuable contribution. Building classifications based on particular complementary interlinkages allows one to see the whole picture as far as macroeconomic reforms are concerned. Application of game theory principles in an institutional analysis is consistent with the observation that there is usually no best solution for institutional choices, they are interconnected and – moreover – final equilibrium states may not be Pareto optimal.¹⁵ This opens a wide space for sophisticated research programs aimed at defining desirable and achievable institutional states for economies in particular countries or regions. Despite the advantages offered by Amable's approach, there is area for improvement. Empirical evidence for assuming that banks provide companies with more stable financing than markets is needed.

Taking into consideration specific features of the financial system and corporate governance analysis, we would also stress the homogenization trend. Business finance models have become increasingly similar to each other not only from an international perspective, but also in terms of different financial sectors (banks, investment funds, insurers) [Wagner, 2008]. The institutional shape of a financial system depends on more than only “path dependence” and complementary linkages with other institutional areas in the country. There are also strong international connections that influence domestic institutions. Legal and cultural aspects are valid as well. Those issues show that many theses may be still a subject of research in comparative studies.

Although Amable’s framework may be criticized for several assumptions or interpretations, the value of introducing institutional complementarity into comparative studies should not be underestimated. Research on connections between institutional complementarities and economic policy facilitate effectiveness, and assessing the potential application of Amable’s methodology to current financial EU reforms (especially CMU) [EC, 2015a; 2015b; 2015c] may constitute an interesting step in future research in this area.

Notes

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² The report Financial System in Poland 2013 prepared by National Bank of Poland [available at: http://www.nbp.pl/en/systemfinansowy/fsd_2013.pdf] refers to this definition.

³ From now on, in our article the term “financial markets” is used in a narrower sense and refers to ways of obtaining financing by companies through issuing financial instruments on the market (excluding bank’s credit).

⁴ In our article the terms “model of capitalism” and “type of capitalism” are treated as synonyms.

⁵ Hall and Soskice distinguished: Liberal Market Economies (LME) and Coordinated Market Economies (CME). According to them LMEs are: the United States, United Kingdom, Australia, Canada, New Zealand, and Ireland. CMEs are: Germany, Japan, Switzerland, the Netherlands, Belgium, Sweden, Norway, Denmark, Finland, and Austria. Moreover, Hall and Soskice underline the fact that particular countries (namely: France, Italy, Spain, Portugal, Greece and Turkey) cannot be classified in either category and are too diversified to be treated as a separate model.

⁶ In 2013 bank assets equaled 334% of GDP in the European Union. The same indicator was 86% for the United States and 196% for Japan (NBP, 2014). For Poland the relation has remained low (below 100%) in comparison to other European countries. Only in Romania and Lithuania was the indicator lower [Liikanen Report, 2012]. As can be seen from the aforementioned example, the financial sector represented by banks is substantial but differentiated by relative size. This poses – for politicians and economists – the potential dilemma of TBTF (Too-Big-To-Fail). A striking example of this threat is that assets of one bank often exceed the GDP of a home (headquarters) country. This is the case of Nordea, ING, Santander, HSBC, Barclays, and RBS. Also, Deutsche Bank and BNP Paribas are worth mentioning

in the list of systemic institutions even if their assets do not yet exceed, respectively, German and French GDP [Liikanen Report, 2012]. The crucial scientific questions nowadays are: what is the optimal size of the financial sector and leverage in the economy and how to assess the optimal size of employment in the financial sector [ASC, 2014; Arcand et al., 2012]. These vital questions are not directly related to the main topic of this article.

However, it is worth noting that in the United States – being the most obvious example of market-based capitalism – dependence on banks is relatively smaller than in Europe. However, it is too early to claim here that the US financial system is less vulnerable to TBTF problem than in Europe. Many regulatory initiatives (for example banking union and CMU) are now being undertaken in the European Union to address this issue.

⁷ The sophisticated business model of a bank with strong lending (traditional) business and investment activities is characterized by a potentially higher maturity and liquidity risk. The risk was reinforced by rising leverage and eventually brought substantial vulnerability to the system. Universal banking has become popular in western economies (Europe and the United States), which is underlined as a source of growing financial system weakness [Wilmarth, 2009].

⁸ A current view in the literature posits that types of capitalism in Asia are much more sophisticated. In [Witt, Redding, 2013] the following classification of Asian capitalism types is presented: (post) socialist, advanced city, emerging Southeast Asia, advanced Northeast Asia, and Japanese. It seems that in Amable's view [2003] the narrow and simplistic vision of Asian economies is a given.

⁹ An important issue behind differentiation between Anglo-Saxon and European capitalism is the presence of the common law in countries with latter type. Common law is connected with stronger protections of individual investors than that provided in statutory (civil) European legal acts [Ahlering, Deakin, 2007].

¹⁰ See also further research by Aoki [2001].

¹¹ A subgame perfect equilibrium (or subgame perfect Nash equilibrium) is a refinement of a Nash equilibrium used in dynamic games. A strategy profile is a subgame perfect equilibrium if it represents a Nash equilibrium of every subgame of the original game. It is vital to mention that a common method for determining subgame perfect equilibria in the case of a finite game is backward induction [Osborne, 2004].

¹² In particular, in the case of non-sequential game with the same payoff matrix one can find two points of equilibrium: [M,G] and [B,S]. Mixed strategies, however mathematically possible, are not taken into account because the aim of the game is to focus on interlinkages between defined types of capitalism. When it comes to financial system choice the interpretation would be quite intuitive – a certain part of enterprises finance themselves on the market and the rest use a bank credit (structure of companies' sector liabilities). In terms of showing the state of education system, mixed strategies would not work so well. However, it is worth noting that game theory offers a significant number of tools that may be used to analyse institutional complementarity.

¹³ There are multiple definitions of path dependence. According to [David, 2000, p. 5] this term should be associated with „a process ... [that – PP] is one whose asymptotic distribution evolves as a consequence (function of) the process's own history". For institutional comparative studies one can claim that this is the concept that institutions have been formed through a unique process that is valid for their current shape and functioning.

¹⁴ Research aimed at exploring the relationship between economic performance and financial structure – the degree to which a country's financial system is market-based or bank-based.

¹⁵ Game theory, specifically, the prisoner dilemma, may also be useful in illustrating suboptimal equilibrium points; for example, in the case of the Mediterranean model. This type was not, however, the topic of my article.

References

- Advisory Scientific Committee (2014), *Is Europe Overbanked?* No. 4, available at: https://www.esrb.europa.eu/pub/pdf/asc/Reports_ASC_4_1406.pdf, accessed: June, 2016.
- Ahlering, B., Deakin, S. (2007), Labor Regulation, Corporate Governance, and Legal Origin: A Case of Institutional Complementarity? *Law & Society Review*, Vol. 41, No. 4, pp. 865–908.
- Allen, M.C. (2013), Comparative capitalisms and the institutional embeddedness of innovative capabilities, *Socio-Economic Review*, No. 11, pp. 771–794.
- Allen, F., Gale, G. (1995), A welfare comparison of intermediaries and financial markets in Germany and the US, *European Economic Review*, No. 39, pp. 179–209, available at: <http://finance.wharton.upenn.edu/~allenf/download/Vita/welfare.pdf>, accessed: June, 2016.
- Amable, B., Ernst, E., Palombarini, S. (2005), How do financial markets affect industrial relations: an institutional complementary approach, *Socio-Economic Review*, No. 3, p. 311–330, available at: http://ekkehard.ernst.free.fr/files/Amable_Ernst_Palombarini_05.pdf, accessed: June, 2016.
- Amable, B. (2003), *The Diversity of Modern Capitalism*, Oxford University Press.
- Aoki, M. (1994), The Contingent Governance of Teams: Analysis of Institutional Complementarity, *International Economic Review*, Vol. 35, No. 3, pp. 657–676.
- Aoki, M. (2016), Strategies and public propositions in games of institutional change: Comparative historical cases, *Journal of Comparative Economics*, 6), available at: <http://dx.doi.org/10.1016/j.jce.2016.04.002>, accessed: June, 2016.
- Arcand, J., Berkes, E., Panizza, U. (2012), Too Much Finance?, *IMF Working Paper*, available at: <https://www.imf.org/external/pubs/ft/wp/2012/wp12161.pdf>, accessed: June, 2016.
- Bank for International Settlements (2012), *It was vital to break the adverse feedback loop between bank and sovereign risk. Interview with Mr Christian Noyer, Governor of the Bank of France and Chairman of the Board of Directors of the Bank for International Settlements*, available at: <http://www.bis.org/review/r120920a.pdf>, accessed: June, 2016.
- Baygan, G., Freudenberg, M. (2000), The Internationalisation of Venture Capital Activities in OECD Countries: Implications for Measurement and Policies, *STIW Working Paper*, No. 7, available at: [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DSTI/DOC\(2000\)7&docLanguage=E](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DSTI/DOC(2000)7&docLanguage=E), accessed: June, 2016.
- Borowski J., Maszcyk P., Olipra J. (2015), Modele kapitalizmu a zmienność wzrostu gospodarczego w wybranych krajach OECD, *Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach* ISSN 2083–8611 Nr 213, pp. 62–75, available at: http://www.ue.katowice.pl/fileadmin/_migrated/content_uploads/05_14.pdf, accessed: June, 2016.
- David, P.A. (2000), *Path dependence, its critics and the quest for 'historical economics'* All Souls College, Oxford & Stanford University, available at: <http://www.siepr.stanford.edu/workp/swp00011.pdf>, accessed: June, 2016.
- Engerer, H., Schrooten, M. (2002), Institutions, Financial Systems and the Transition Process, available at: eale2002.phs.uoa.gr/papers/Engerer%20&%20Schrooten.doc, accessed: June, 2016.
- EC (European Commission) (2015 a), *Economic Analysis Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Action Plan on Building a Capital Markets Union*, 30 September 2015, Brussels, available at: http://ec.europa.eu/finance/capital-markets-union/docs/building-cmu-economic-analysis_en.pdf
- EC (2015 b), *Action Plan on Building a Capital Markets Union*, available at: http://ec.europa.eu/finance/capital-markets-union/docs/building-cmu-action-plan_en.pdf, accessed: June, 2016.

EC (2015 c), *GREEN PAPER Building a Capital Markets Union*, available at: <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=COM:2015:63:FIN&from=EN>, factsheet available at: http://ec.europa.eu/finance/capital-markets-union/docs/cmu-factsheet_en.pdf, accessed: June, 2016.

EC (2015 d), Updated version of first memo published on 15/04/2014 – *Banking Union: restoring financial stability in the Eurozone*, available at: http://europa.eu/rapid/press-release_MEMO-15-6164_en.pdf, accessed: June, 2016.

Hall, P.A., Soskice, D. (2001), *An introduction to varieties of capitalism. Varieties of capitalism: the institutional foundations of comparative advantage*, Oxford University Press.

Johnston, A., Hancké, B., Pant, S. (2013), Institutional Advantage in the European Sovereign Debt Crisis, Europe in Question, *Discussion Paper Series Comparative*, available at: <http://www.lse.ac.uk/europeanInstitute/LEQS%20Discussion%20Paper%20Series/LEQSPaper66.pdf>, accessed: June, 2016.

Kwok, C., Tadesse, S. (2005), National culture and financial systems, *William Davidson Institute Working Paper*, available at: <https://deepblue.lib.umich.edu/bitstream/handle/2027.42/57264/wp884%20.pdf?sequence=1>, accessed: June, 2016.

Levine, R. (2001), *Bank-Based or Market-Based Financial Systems: Which is Better?*, available at: http://faculty.haas.berkeley.edu/ross_levine/papers/2002_JFI_BB%20vs%20MBFS.pdf, accessed: June, 2016.

Liikanen, E. (2012), *High-level Expert Group on reforming the structure of the EU banking sector*, available at: http://ec.europa.eu/finance/bank/docs/high-level_expert_group/report_en.pdf, accessed: June, 2016.

Maszczyk, P. (2015), Ewolucja modeli kapitalizmu w Polsce, *Nierówności Społeczne a Wzrost Gospodarczy*, No. 41, ISSN 1898–5084, pp. 107–122, available at: <https://www.ur.edu.pl/file/85904/6%20Maszczyk%20P.pdf>, accessed: June, 2016.

Matysek-Jędrzych, A. (2007), Struktura i modele systemu finansowego, *Bank i Kredyt*, available at: http://bankikredyt.nbp.pl/home.aspx?f=/content/2007/2007_11_12/matysek.html, accessed: June, 2016.

Narodowy Bank Polski (2014), *Ekonomiczne wyzwania integracji Polski ze strefą euro*, available at: https://www.nbp.pl/aktualnosci/wiadomosci_2014/20141120_raport_wyzwania_integracji_ze_strefa_euro.pdf, accessed: June, 2016.

Nölke, A., Vliegenthart, A. (2009), Enlarging the Varieties of Capitalism: The Emergence of Dependent Market, Economies in East Central Europe, *World Politics*, Vol. 61, No. 4, pp. 670–702.

Pietrzak, B., Polański, Z., Woźniak, B. (2008), *System finansowy w Polsce*, Wydawnictwo Naukowe PWN.

Romanowska E. (2016), Wyłaniający się w Polsce model kapitalizmu w świetle typologii odmian kapitalizmu Bruna Amable'a, *Ekonomista*, No. 3, pp. 338–363.

Rose, P.S., Marquis, M.H. (2011), *Financial Institutions and Markets*, McGraw-Hill/Irwin.

Sapir, A. (2006), Globalization and the reform of European social models, *Journal of Common Market Studies*, Vol. 44, No. 2, pp. 369–390.

Schneider, M., Paunescu M. (2012), Changing varieties of capitalism and revealed comparative advantages from 1990 to 2005: a test of the Hall and Soskice claims, *Oxford Journals Social Sciences Socio-Economic Review*, Vol. 10, No. 4, pp. 731–753.

Tadesse, S. (2006), Innovation, Information, and Financial Architecture, *The Journal of Financial and Quantitative Analysis*, Vol. 41, No. 4, pp. 753–786, available at: <http://www.jstor.org/stable/27647273>, accessed: June, 2016.

Turocy, T.L., von Stengel B. (2001), Game theory, *London School of Economics CDAM Research Report*, available at: <http://www.cdam.lse.ac.uk/Reports/Files/cdam-2001-09.pdf>, accessed: June, 2016.

Wagner, W. (2008), The homogenization of the financial system and financial crises, *Journal of Financial Intermediation*, Vol. 17, No. 3, pp. 330–356.

Wehinger, G. (2012), Bank deleveraging, the move from bank to market-based financing, and SME financing, *OECD Journal: Financial Market Trends*, available at: http://www.oecd.org/finance/financial-markets/Bank_deleveraging-Wehinger.pdf, accessed: June, 2016.

Wilmarth, A. (2009), The Dark Side of Universal Banking: Financial Conglomerates and the Origins of the Subprime Financial Crisis, *Connecticut Law Review*, Vol. 41, No. 4, pp. 963–1050, available at: http://scholarship.law.gwu.edu/mwg-internal/de5fs23hu73ds/progress?id=YHYEDiwNegbOr²Vi-2dxiHk9IYpdn-Oh_m1Af1RqUoc,&dl, accessed: June, 2016.